

## Brief Introduction

This three-piece ball valve allows easy replacement of gasket, seal, and seats without special tools. Series 55 ball valves uses a “floating ball” design. Induced by the line pressure, the ball is free to move horizontally inside the valve body. The valve is capable of tight shutoff with flow in either direction or dead-end, regardless of the position of the valve in the line. The downstream seat, opposite the pressurized side of a closed valve, carries the load exerted by the line pressure on the ball, while the upstream seat is subject to little load or wear. For this reason, it is sometimes possible to increase seat life by turning the valve end-for-end in the pipeline.

### 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  $\frac{1}{4}$  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. AUTOMATED OPERATION:

3.1 Valves with actuators should be checked for valve stem alignment. Angular or linear misalignment will result in high operational torque and unnecessary wear on the stem seal.

### 4. DISASSEMBLING & CLEANING THE VALVE:

- 4.1 Ball valves can trap fluids in ball cavity when it is in closed position.
- 4.2 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.

### 5. REPLACING THE THRUST WASHER, PACKING, AND SEATS

- 5.1 Before replacing the thrust washer and the packing, the pipeline must be de-pressurized.  
*Note: Series 55 are designed with Belleville washers for automatic wear compensation. If there is sign of leakage from the stem, it is time to replace the stem packing and the thrust washer.*
- 5.2 Maintenance of parts is easy, even if the valve is installed in the line  
*By removing one body bolt and loosening the other three, valve body can be swung out. Seats, gaskets and ball can be replaced without disturbing pipe alignment.*

### 6. GENERAL INFORMATION FOR ON-SITE INSTALLATION:

- 6.1 The valve may be fitted in any position on the pipeline.
- 6.2 To prevent damage to the seats and ball surface, the pipeline must be flushed, free of dirt, burrs, and welding residues before installing the valve.

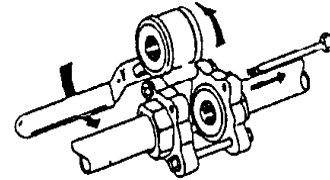
## 7. INSTALLATION OF THREADED VALVES

- 7.1 Use a pipe sealant that is approved for the service that the valve is going to be used in. There are a large number of pipe sealants on the market and the correct sealant must be chosen based on the service factors.
- 7.2 Apply wrench on the hexagon end of the valve only. On smaller valves when the hex is difficult to get to, place the valve in a vise to secure both end caps evenly then engage and tighten pipes. This will prevent the end caps from being twisted in relation to the body.
- 7.3 Tightening by using the valve body or handle can seriously damage the valve.
- 7.4 For applications where screwed end valves are back-welded on site, these valves must be dismantled according to instructions for weld end valves.

## 8. INSTALLATION OF WELD-END VALVES

- 8.1 Tack-weld the valve on the pipe in four points on both end caps.
- 8.2 With the valve in open position (lever to be parallel to the axis of the pipe), loosen all nuts on the body bolts. Remove all the bolts except one.

Swing the body outside the pipe.



- 8.3 Turn the handle to the half open position to assist in the removal of the seats.
- 8.4 Turn handle in closed position and remove ball.
- 8.5 Place all removed parts in a clean and secure place.
- 8.6 Replace the body and the removed bolt. Tighten all nuts slightly. To prevent any leakage to the body joints after welding, make sure that the body and the end caps remain perfectly parallel.
- 8.7 Finish welding both end caps onto the pipe.
- 8.8 After the pipeline and valve cools, clean end caps then remove the previous replace bolt. Swing out the body. Turn the valve to closed position, then replace the ball. Turn valve in open position and replace seats.
- 8.9 After the seats and the ball are replaced, swing back the body, replace the removed bolt, and tighten the bolt according to the following chart.

### BOLT TIGHTENING SPECIFICATIONS:

The body bolts of the valve should be tightened evenly. Tighten one-side snugly, then tighten the one diagonal across. Repeat for the other bolts, bringing them all down tightly in sequence to the torque shown below:

Valve Size	Break Away Torque (In-lbs.)	Torque of Body Bolts (In-lbs.)	Torque of Stem Nut (In-lbs.)
1/4"	62	75 ~ 90	61
3/8"	62	75 ~ 90	61
1/2"	62	95 ~ 115	78
3/4"	80	105 ~ 125	78
1"	141	115 ~ 140	113
1-1/4"	150	175 ~ 220	113
1-1/2"	257	290 ~ 320	148
2"	319	310 ~ 355	148
2-1/2"	522	370 ~ 425	191
3"	691	440 ~ 490	191
4"	1151	460 ~ 505	217

MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	Body	ASTM A351 Gr.CF8M	1
2	End Cap	ASTM A351 Gr.CF8M	2
3	Ball	SUS316	1
4	Stem	SUS316	1
5	Stem Nut	SUS304	2
6	Belleville Washer	SUS301	2
7	Handle	SUS304	1
8	Seal	PTFE	2
9	Gland	SUS304	1
10	V-Ring Packing	PTFE	§
11	Stem Seal	RPTFE	1
12	Lock Saddle	SUS304	1
13	Joint Gasket	PTFE	2
14	Bolt	SUS304	*
15	Stop Pin	SUS304	1
16	Handle Sleeve	Vinyl	1
17	Bolt Nut	SUS304	↑
18	Bolt Washer	SUS304	↑
19	Stem Washer	SUS304	1
20	Locking Device	SUS304	1

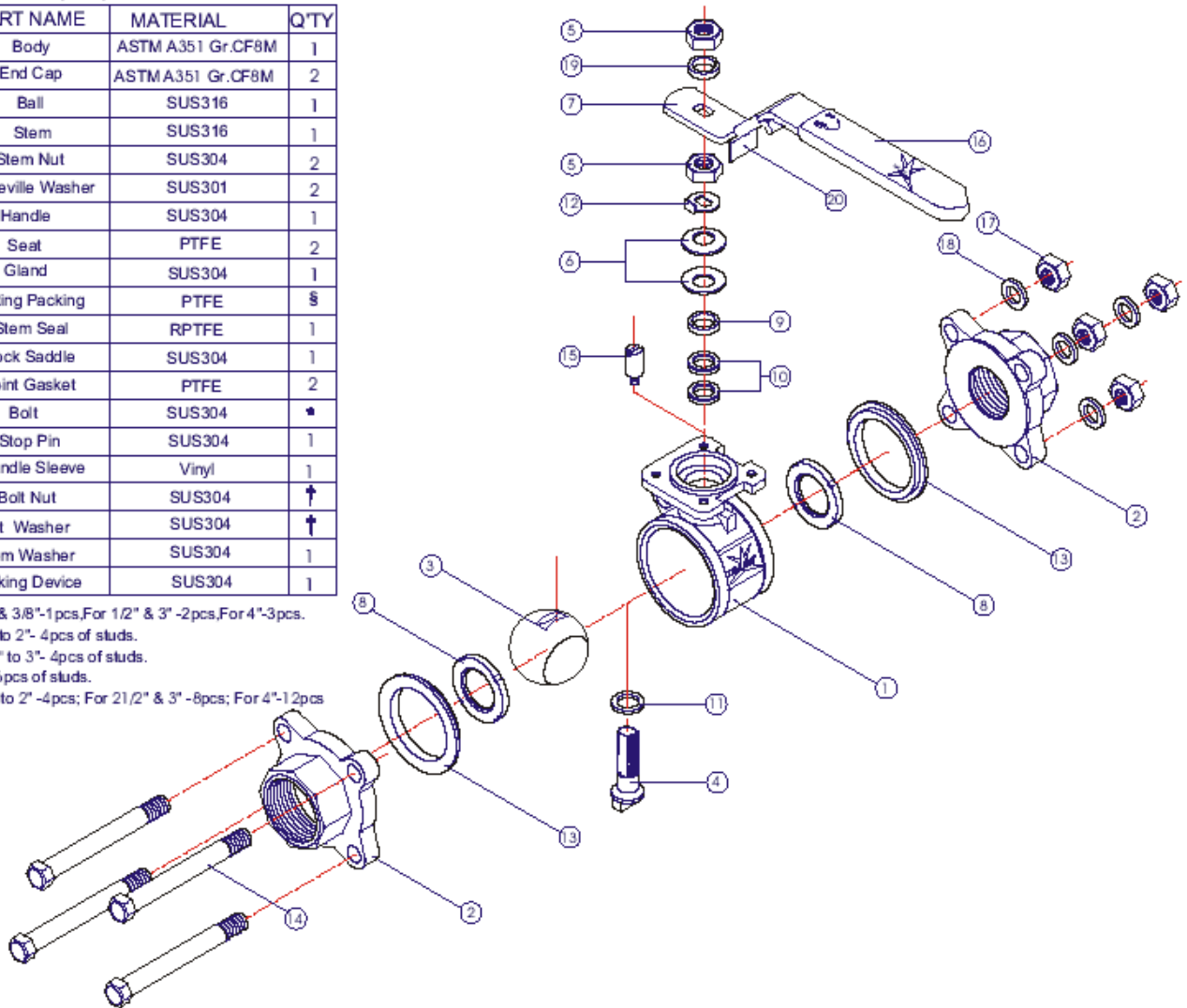
§ For 1/4" & 3/8"-1pcs, For 1/2" & 3"-2pcs, For 4"-3pcs.

\* For 1/4" to 2"- 4pcs of studs.

For 2 1/2" to 3"- 4pcs of studs.

For 4"- 6pcs of studs.

↑ For 1/4" to 2"-4pcs; For 2 1/2" & 3"-8pcs; For 4"-12pcs



A-T Controls product, when properly selected, is designed to perform its intended function safely during its useful life. However, the purchaser or user of A-T Controls products should be aware that A-T Controls products might be used in numerous applications under a wide variety of industrial service conditions. Although A-T Controls can provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser / user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of A-T Controls products. The user should read and understand the installation operation maintenance (IOM) instructions included with the product, and train its employees and contractors in the safe use of A-T Controls products in connection with the specific application.

While the information and specifications contained in this literature are believed to be accurate, they are supplied for informative purposes only. Because A-T Controls is continually improving and upgrading its product design, the specifications, dimensions and information contained in this literature are subject to change without notice. Should any question arise concerning these specifications, the purchaser/user should contact A-T Controls.

For product specifications go to <http://download.a-tcontrols.com/>

A-T Controls, Inc. • 9955 International Boulevard, Cincinnati, OH 45246 • Phone: (513) 530-5175 • Fax: (513) 247-5462 • [www.a-tcontrols.com](http://www.a-tcontrols.com)