



**High Pressure
Equipment
Company**

Trunion Ball Valve Operating and Maintenance Instructions



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Ball Valve Information

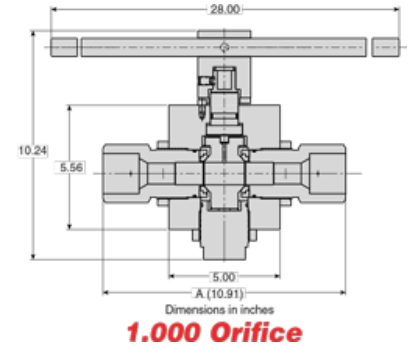
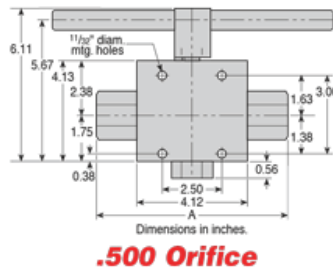
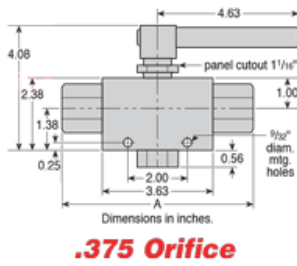
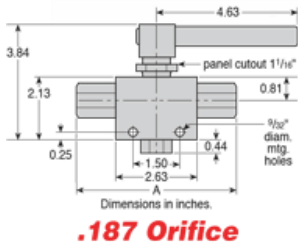
Description:

High Pressure Equipment Company introduces its TRUNION STYLE ball valves for effective shut-off of liquid and gas flow through 20,000 psi @ 400°F maximum. Our offering features a trunion ball design, making this type of valve ideal for severe duty applications. This valve is available in two-way or three-way configurations with orifices of .187", .375" or .500".

The two-way ball valve offers complete shut-off with a convenient 1/4 turn. The standard configuration of the three-way ball valve requires 1/2 turn to change port outlets and provides for complete shut-off. An optional diverter style three-way ball valve requires only a 1/4 turn to change the port outlets. Air operated actuators are available for remote control.

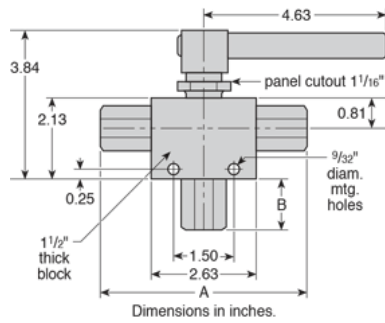
Material of construction is 316 stainless steel, O-rings are Viton, ball seat is PEEK. Alternate materials of construction are available upon request.

Two-Way Trunion Ball Valves -90°:

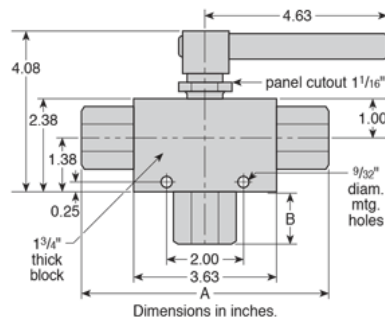


Orifice	Tube Size	Connection	Pressure Rating	Minimum Orifice	C _v	A	Catalog No.
.187	1/16"	AF1	15,000 psi	.052	0.09	4.19	15-71AF1
	1/8"	AF2	15,000 psi	.094	0.20	4.19	15-71AF2
	1/4"	AF4	10,000 psi	.125	0.45	4.69	10-71AF4
	3/8"	AF6	10,000 psi	.187	1.45	4.69	10-71AF6
	1/4"	LF4	20,000 psi	.109	0.31	4.63	20-71LF4
	3/8"	LF6	20,000 psi	.187	1.45	4.63	20-71LF6
	9/16"	LF9	20,000 psi	.187	1.45	5.13	20-71LF9
	1/4"	HF4	20,000 psi	.094	0.20	4.63	20-71HF4
	3/8"	HF6	20,000 psi	.125	0.45	4.63	20-71HF6
	9/16"	HF9	20,000 psi	.187	1.45	4.87	20-71HF9
	1/8"	1/8" NPT	15,000 psi	.187	1.45	4.63	15-71NFA
	1/4"	1/4" NPT	15,000 psi	.187	1.45	4.63	15-71NFB
3/8"	3/8" NPT	15,000 psi	.187	1.45	4.65	15-71NFC	
.375	3/8"	AF6	10,000 psi	.250	2.70	5.13	10-74AF6
	9/16"	LF9	15,000 psi	.312	4.22	6.25	15-74LF9
	3/4"	LF12	15,000 psi	.375	6.08	6.67	15-74LF12
	1"	LF16	15,000 psi	.375	6.08	7.45	15-74LF16
	1/4"	1/4" NPT	15,000 psi	.250	2.70	5.63	15-74NFB
	3/8"	3/8" NPT	15,000 psi	.375	6.08	5.63	15-74NFC
.500	3/4"	LF12	10,000 psi	.500	10.2	6.56	10-80LF12
	1"	LF16	10,000 psi	.500	10.2	7.44	10-80LF16
	3/4"	3/4" NPT	10,000 psi	.500	10.2	6.44	10-80NFF
	1"	1" NPT	10,000 psi	.500	10.2	7.44	10-80NFH
1.000	1 1/2"	LF24	10,000 psi	1.000	30.0	10.91	10-83LF24

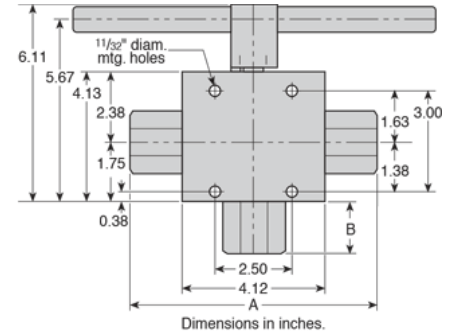
Three-Way Trunion Ball Valves:



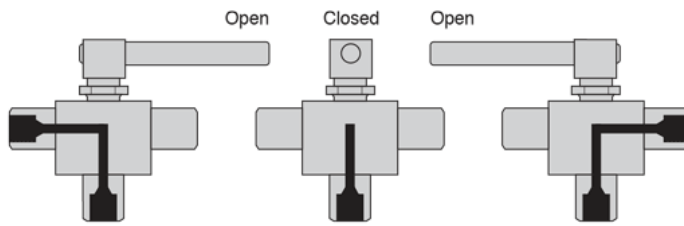
.187 Orifice



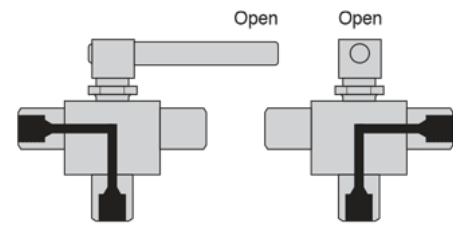
.375 Orifice



.500 Orifice



180° Three-Way Ball Valve



90° Three-Way Diverter Valve

Orifice	Tube Size	Connection	Pressure Rating	Minimum Orifice	C _v	A	B	3-Way 90° Catalog No.	3-Way 180° Catalog No.
.187	1/16"	AF1	15,000 psi	.052	0.04	4.19	0.55	15-73AF1	15-72AF1
	1/8"	AF2	15,000 psi	.094	0.10	4.19	0.55	15-73AF2	15-72AF2
	1/4"	AF4	10,000 psi	.125	0.22	4.69	0.83	10-73AF4	10-72AF4
	3/8"	AF6	10,000 psi	.187	0.71	4.69	1.01	10-73AF6	10-72AF6
	1/2"	LF4	20,000 psi	.109	0.15	4.63	1.00	20-73LF4	20-72LF4
	3/8"	LF6	20,000 psi	.187	0.71	4.63	1.00	20-73LF6	20-72LF6
	9/16"	LF9	20,000 psi	.187	0.71	5.13	1.25	20-73LF9	20-72LF9
	1/4"	HF4	20,000 psi	.094	0.10	4.63	0.81	20-73HF4	20-72HF4
	3/8"	HF6	20,000 psi	.125	0.22	4.63	0.94	20-73HF6	20-72HF6
	9/16"	HF9	20,000 psi	.187	0.71	4.87	1.19	20-73HF9	20-72HF9
	1/8"	1/8" NPT	15,000 psi	.187	0.71	4.63	0.50	15-73NFA	15-72NFA
1/4"	1/4" NPT	15,000 psi	.187	0.71	4.63	1.06	15-73NFB	15-72NFB	
3/8"	3/8" NPT	15,000 psi	.187	0.71	4.65	1.06	15-73NFC	15-72NFC	
.375	3/8"	AF6	10,000 psi	.250	1.07	5.13	0.75	10-76AF6	10-75AF6
	9/16"	LF9	15,000 psi	.312	1.67	6.25	1.06	15-76LF9	15-75LF9
	3/4"	LF12	15,000 psi	.375	2.40	6.67	1.18	15-76LF12	15-75LF12
	1"	LF16	15,000 psi	.375	2.40	7.45	1.99	15-76LF16	15-75LF16
	1/4"	1/4" NPT	15,000 psi	.250	1.07	5.63	1.06	15-76NFB	15-75NFB
	3/8"	3/8" NPT	15,000 psi	.375	2.40	5.63	1.06	15-76NFC	15-75NFC
1/2"	1/2" NPT	15,000 psi	.375	2.40	5.63	1.06	15-76NFD	15-75NFD	
.500	3/4"	LF12	10,000 psi	.500	7.43	6.56	1.30	10-82LF12	10-81LF12
	1"	LF16	10,000 psi	.500	7.43	7.44	1.74	10-82LF16	10-81LF16
	3/4"	3/4" NPT	10,000 psi	.500	7.43	6.44	1.30	10-82NFF	10-81NFF
	1"	1" NPT	10,000 psi	.500	7.43	7.44	1.74	10-82NFH	10-81NFH

Trunion Ball Valve Operating and Maintenance Instructions:

Trunion Ball Valve Operation Instructions:

1. 2-way valves may use either port for the inlet. 3-way ball valve (Series 72, 73, 75, 76, 77, 81, 82) should be installed with flow in through the bottom port, outlet through the side ports.
2. Hold the seat glands with a wrench when tightening or loosening the tubing connections.
3. Pressurized media can become trapped inside the valve. This can be relieved by turning the handle to the “half-open” position before disassembling the valve.

Trunion Ball Valve Maintenance:

Maintenance consists of replacing the ball seat assemblies to compensate for seat and packing wear.

With no pressure in the valve, use the following procedure:

1. Ball Seat Assembly Replacement
 - a. Both ball seat assemblies should be replaced at the same time to ensure even seal quality.
 - b. While securely holding the seat glands and body, loosen the tubing connections.
 - c. Hold the body in a vice, and unscrew and remove the seat gland assembly. Note the orientation of all the components. Remove the ball seat assembly.
 - d. Place the replacement ball seat assembly into the seat gland assembly.
 - e. Lubricate all threads with an anti-seize lubricant.
 - f. Assemble the seat gland assemblies into the valve body until hand-tight.
 - g. Complete assembly of the seat glands evenly using a wrench, using the following recommendations:
 - i. -71, -72, -73: 50ft-lb
 - ii. -74, -75, -76: 70ft-lb
 - iii. -80, -81, -82: 100ft-lb