



3B3/MAB3 SERIES HIGH PRESSURE BALL VALVE

Parker Autoclave Brand: 2-Way, 3/16" BORE (3BD3/MAB3XPKE)
OPERATION AND MAINTENANCE MANUAL

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Series Model: **3B3/3BD3 & MAB3/MAB3XPkd SERIES
HIGH PRESSURE BALL VALVE**

Part Number: _____

Date of Purchase: _____

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WARNING - USER RESPONSIBILITY

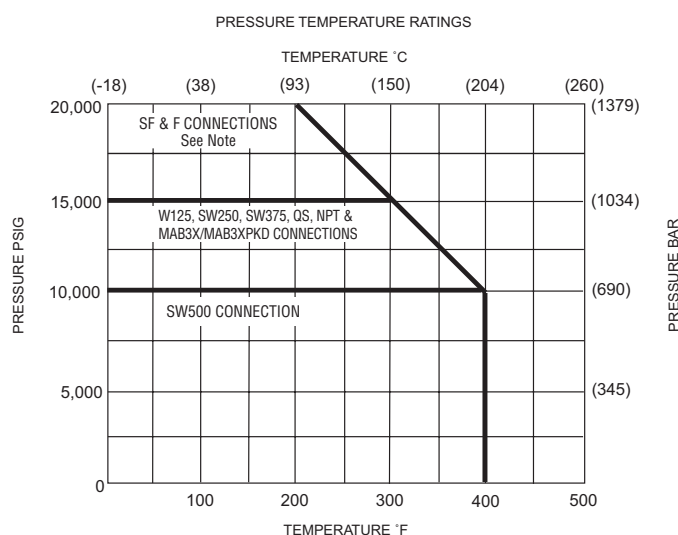
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Section 1.0 Introduction

The Parker Autoclave Engineers high pressure ball valve can be used at pressures up to 15,000 psi in side port pressure inlet and 20,000 psi in bottom port pressure inlet, depending on the tubing connections and operating temperatures. The maximum operating media pressure at room temperature is etched on the valve body. The curve shown below can be used to find the maximum operating pressure at various media temperatures.



*pressure ratings are determined by the end connections chosen, see chart.
NOTE: Maximum side connection inlet pressure 15,000 psi (1034 bar).

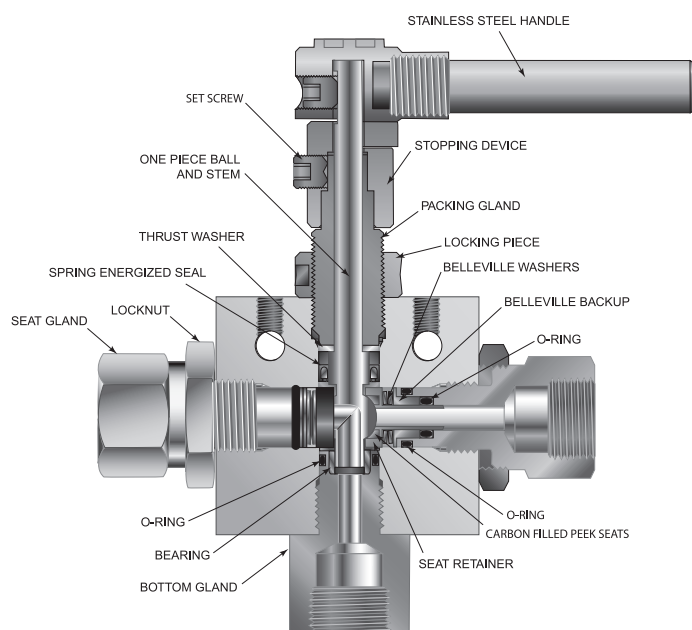
Section 2.0 Installation

The ball valve can be installed with the flow in either direction. Refer to the instruction section of the Parker Autoclave Engineers' Valve, Fitting and Tubing Catalog for proper tubing connection installation. Refer to the manufacturer's literature when using air or electric operators.

! CAUTION

While testing has shown O-rings to provide satisfactory service life, both cyclic and shelf life may vary widely with differing service conditions, properties of reactants, pressure and temperature cycling, and age of the O-ring. Frequent inspection should be made to detect any deterioration and O-rings replaced as required.

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Section 3.0 Precautions

Hold the seat glands and bottom gland with a wrench when tightening or loosening the tubing connections.

! WARNING

DO NOT OPERATE the valve with more than 30 in-lbs. (3.38 Nm) applied to the seat glands.

Ball valves can trap pressurized media inside the valve. Relieve this pressure by turning the handle to the "half-open" position before disassembling the valve.

Section 4.0 Maintenance

Routine maintenance consists of tightening the seat glands periodically to compensate for seat wear. With no pressure in the valve, use the following procedures:

- 4.1 Seat Glands
 - 4.1.1 While holding the seat glands and the body secure, loosen the tubing connections.
 - 4.1.2 Loosen locknuts from seat glands.

Section 4.0 - continued

Maintenance

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| <p>4.1.3 With the handle in the "Full Open " position, gradually tighten the glands alternating from one gland to the other in increments of 10 in. lbs. (1.12 Nm) until 30 in. lbs. (3.38 Nm) has been reached.</p> | <p>4.1.4 While holding seat gland secure with a wrench, tighten seat gland locknuts to the valve body.</p> |
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Do Not Apply More Than 30 In. Lbs. (3.38 Nm)

Section 5.0

Assembly

General Assembly Procedure 3/16" Port, 2-Way Ball Valve

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Press bottom bearing into bottom gland. 2. Install o-ring onto bottom gland and lubricate with o-ring grease. 3. Lubricate bottom gland threads with Jet Lube SS30¹ & assemble into bottom port of body so that the gland bottoms out against the body. Then tighten gland against the valve body with a wrench. 4. Using packing gland, delicately slide the stem seal and backup onto the upper shoulder of stem and lubricate the outside of the seal and ball surface with o-ring grease. 5. Lubricate the bottom bearing area of the stem with o-ring grease. 6. With the stem flat to the left, assemble packing gland, stem and stem seal with backup into the body center opening until the seal assembly fully enters the bore of the body. 7. Remove packing gland. 8. Lubricate both sides of the thrust washer with Jet Lube SS30¹ and place over the stem. 9. Lubricate the packing gland threads with Jet Lube SS30¹ and slip the packing gland over the stem and screw into the body until the hole in the ball is aligned with the center of the side ports of the body. Back packing gland out one and a half turns. 10. Press seats into seat retainers (using flat faced vise if necessary). 11. Assemble 2 belleville washers onto seat retainer with the inside diameters of the washers face to face. | <ol style="list-style-type: none"> 12. Place belleville backup washer on the seat retainers against the belleville washers with the large face of the washer facing the bellevilles. 13. Place the small o-ring onto the seat retainer behind the belleville backup washer and lubricate with o-ring grease. 14. Assemble locknut onto seat gland and lubricate the seat gland threads with Jet Lube SS30¹. 15. Install o-rings onto the seat glands and lubricate the o-rings with o-ring grease. 16. Press retainer assemblies into the seat glands. 17. While keeping the ball in the open position, torque seat glands into body using 30 in-lbs torque in 10 in-lbs alternating increments. 18. While holding seat glands in place with a wrench, tighten locknuts against the valve body. 19. Hand tighten packing gland. 20. Assemble locking piece onto packing gland. 21. Using a spanner wrench, tighten locking piece to the valve body. 22. Position stopping device loosely on top of packing gland and attach the hub and handle assembly onto the flat of the stem. Turn stopping device clockwise until it hits the handle hub. Tighten the (2) set screws on the stopping device onto the packing gland |
|---|--|

¹ SS30 is a registered trademark of Jet-Lube Corporation

Section 6.0

Installation Summary Chart

Valve Series	Connection	Seat gland Hex Size in (mm)	Locknut Hex Size in (mm)	Bottom Gland Hex Size in (mm)	Tube Gland Hex Size in (mm)	Tube Gland Torque ft-lbs. (Nm)
3B3/ 3BD3	W125	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.38 (9.7)	*
	SW250	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.63 (15.9)	*
	SW375	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.75 (19.1)	*
	SW500	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.94 (23.8)	*
	CGLX40	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.50 (12.7)	25 (33.9)
	CGLX60	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.63 (15.9)	30 (40.7)
	CGLX90	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.94 (23.8)	55 (74.6)
	F250C	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.63 (15.9)	25 (33.9)
	F375C	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.81 (20.6)	50 (67.8)
	F562C	1.38 (34.9)	1.75 (44.5)	1.38 (34.9)	1.19 (30.2)	110 (149.2)
	1/8" FNPT	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	-	-
	1/4" FNPT	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	-	-
	3/8" FNPT	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.	-
	1/2" FNPT	1.38 (34.9)	1.75 (44.5)	1.38 (34.9)	-	-
	QS250	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.63 (15.9)	**
QS375	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.75 (19.1)	***	
MAB3XPK/ MAB3XPKD	4MP7	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.56 (14.3)	***
	6MP7	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.69 (17.5)	***
	8MP7	1.0 (25.4)	1.19 (30.2)	1.00 (25.4)	.94 (23.8)	***
	9MP7	1.19 (30.2)	1.19 (30.2)	1.19 (30.2)	1.0 (25.4)	***




* Torque wrench not required for PAE Speedbite tube connections. Tighten gland until sleeve begins to grip tubing then 1-1/4 turn.

** Tighten gland nut until sleeve begins to grip tubing. Then 1-1/4 turns.

*** Use preset tool. For MPI - then tighten 1/2 turn, QSS - then tighten 1/4 turn.

Extra care is taken in the preparation of this literature, but Parker is not responsible for any inadvertent typographical errors or omissions. Information in this catalog is only accurate as of the date of publication. For a more current information base, please consult the brand landing page at [autoclave.com](https://www.autoclave.com).

Additional Resources...

		
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