



Valve Series 3B8/3BD8 MAB8X/MAB8XPKD

High Pressure Ball Valve Operation and Maintenance Manual

Catalog: 02-1231ME

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aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
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Model # _____

Serial # _____

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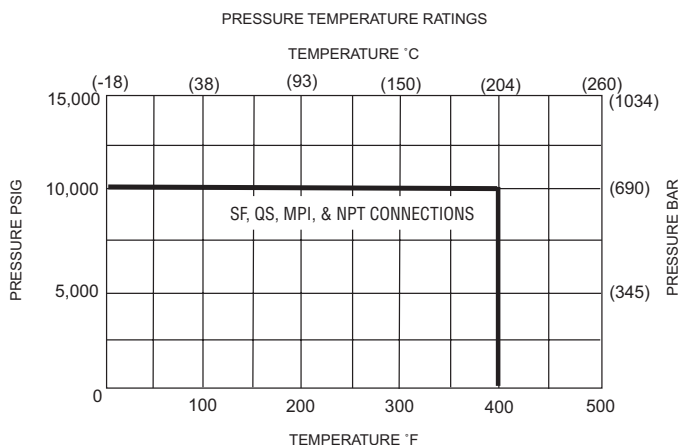
TABLE OF CONTENTS

PAGE

1.0	Introduction	2
2.0	Meaning of Safety Words.....	2
3.0	Installation	3
4.0	Precautions	3
5.0	Maintenance	3
6.0	Assembly	3
7.0	Installation Summary Chart	4

Section 1.0 Introduction

The Parker Autoclave Engineers high pressure ball valve can be used at pressures up to 10,000 psi, 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.
Maximum side connection inlet pressure 10,000 psi (690 bar)

Section 2.0 Meaning of Safety Words

A safety related message is identified by a safety alert symbol and a signal word to indicate the level of risk involved with a particular hazard. The definitions of the three signal words are as follows:



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



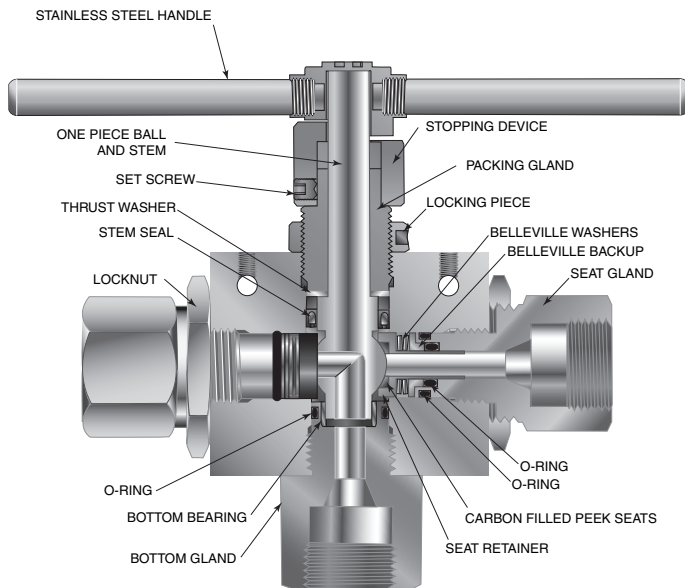
CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Special notes intended to bring attention to procedures that must be followed to ensure proper installation and performance will be placed in a box labeled NOTICE.



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.



Section 3.0 Installation

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.

Section 4.0 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 100 in-lbs. applied to the seat glands.

Section 5.0 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.

- 4.1.3 With the handle in the "Open" position, gradually tighten the glands alternating from one gland to the other in increments of 25 in-lbs. until 100 in-lbs. has been reached.

Do Not Apply More Than 100 In-Lbs.

- 4.1.4 Tighten locknuts while holding seat glands secure with wrench.

Section 6.0 Assembly

General Assembly Procedure 1/2" Port 3-Way Ball Valve

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 and 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.
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 100 in-lbs torque in 25 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 7.0 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)
3B8/3BD8	SF750CX20	1.75 (44.5)	2.25 (57.2)	1.75 (44.5)	1.19 (30.2)	90 (122)
	SF1000CX20	1.75 (44.5)	2.25 (57.2)	1.75 (44.5)	1.38 (35.1)	125 (169.51)
	3/4" FNPT	1.75 (44.5)	2.25 (57.2)	1.75 (44.5)	.	-
	1" FNPT	1.75 (44.5)	2.25 (57.2)	1.75 (44.5)	-	-
	QS750	1.88 (47.8)	#	1.88 (47.8)	1.50 (38.1)	*
	QS1000	1.88 (47.8)	#	1.88 (47.8)	1.75 (44.5)	*
MAB8X/ MAB8XPKD	12MP7	1.75 (44.5)	#	1.75 (44.5)	1.25 (31.8)	*
	16MP7	1.75 (44.5)	#	1.75 (44.5)	1.50 (38.1)	*

Uses locking device

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

WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Caution! Do not mix or interchange component parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

Caution! Parker Autoclave Engineers Valves, Fittings, and Tools are not designed to interface with common commercial instrument tubing and are designed to only connect with tubing manufactured to Parker Autoclave Engineers AES specifications. Failure to do so is unsafe and will void warranty.

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