Parker Hannifin Corporation

Instrumentation

Rev. 11/2020

PARKER
TB Series Ball Valve
Installation Instructions
INI-TB

Instrumentation

WARNING

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

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your applications and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

ALL PARKER VALVES MUST PASS A RIGID OPERATIONAL AND LEAKAGE TEST BEFORE LEAVING THE FACTORY. IT IS RECOMMENDED AFTER ANY REASSEMBLY, THE VALVE SHOULD BE TESTED BY THE USER FOR OPERATION AND LEAKAGE. IF THESE INSTRUCTIONS ARE NOT FULLY COMPLIED WITH, THE REPAIRED PRODUCT MAY FAIL AND CAUSE DAMAGE TO PROPERTY OR INJURY TO PERSONS. PARKER HANNIFIN CANNOT ASSURE RESPONSIBILITY FOR PERFORMANCE OF A CUSTOMER SERVICED VALVE.

Table 1: Maximum Allowable Working Pressures

Valve Size	Maximum Pressure
TB4	2500 psig at 70°F (172 Bar at 21°C)
TB6	3000 psig at 70°F (206 Bar at 21°C)
TB8	2500 psig at 70°F (172 Bar at 21°C)

NOTE:

1. The valve is assembled to provide bubble-tight service to 1000 psig. To attain max. rating, the packing nut must be tightened.
2. The arrow on the Valve Handle may be used to indicate the normal direction of flow.
3. The Seat and Seal Material is modified PTFE.

Table 2: Installation of Panel Mounted Valve

Valve Size	Panel Thickness (Max)	Through Hole Diameter
TB4	1/4 inch (6.4 mm)	37/64 inch (14.7 mm)
TB6	1/4 inch (6.4 mm)	49/64 inch (19.5 mm)
TB8	3/8 inch (9.5 mm)	1 30/64 inch (37.3 mm)

When the Valve is mounted to a thin panel, a spacer (or washer) may be necessary to permit full Panel Nut engagement on the Valve.

1. Remove the Handle by turning the Set Screw counter-clockwise with the following size hex-socket wrench:

TB4L	5/64 inch
TB6L/TB6X	3/32 inch
TB8L	5/32 inch

2. Insert the Valve through the hole in the panel and assemble the Panel Nut. Snug the Panel Nut finger-tight, followed by proper tightening.
3. Adjust the Stem Packing as explain below and re-install the Handle.

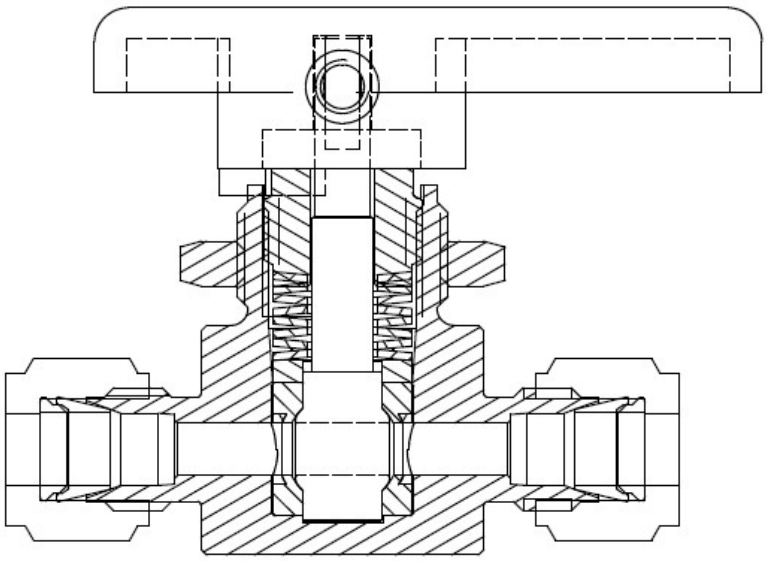

Figure 1: General Two-Way Ball Valve

Cross-Sectional View

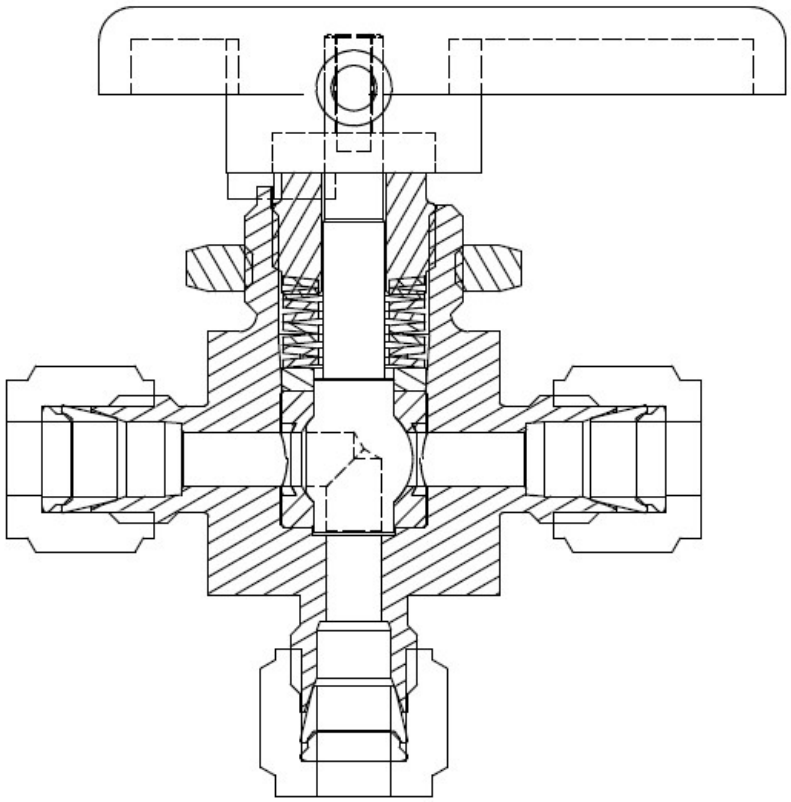

Figure 2: General Three-Way Ball Valve Cross-Sectional View

PACKING ADJUSTMENT

Packing adjustment may be necessary depending on many varied uses for the valve. It is recommended that adjustment be made shortly after the initial installation and just prior to flow start-up. Always consult your authorized Parker representative if question arise.

1. Remove the handle by turning the Set Screw counter-clockwise with the following size hex-socket wrench:

TB4L	5/64 inch
TB6L/TB6X	3/32 inch
TB8L	5/32 inch

2. Tighten the Packing nut 1/8 to 1/4 turn or, to following torque using the specified wrench, while holding the body at the wrench flats.
3. Re-install the Handle and secure by turning the Set Screw clockwise and tighten to 30 In-lbs.

Table 3: Packing Nut Tightening Parameters

for 1000 psig rating

Valve Size	Hex Wrench size	For 1000 psig rating Tightening Torque
TB4L	5/16 inch (7.9mm)	30 In-lbs (3.4 N-m)
TB6L	7/16 inch (11.1 mm)	35 In-lbs (3.4 N-m)
TB6X	7/16 inch (11.1 mm)	35 In-lbs (3.4 N-m)
TB8L	7/8 inch (22.2 mm)	40 ft-lbs (3.4 N-m)

To attain more higher rating, the packing nut must be extra tightened. Adjust the packing by turning the packing bolt clockwise in 1/16-turn increments until leak tight performance is achieved. Test valve for proper function and operation.

Periodic maintenance: Packing adjustments may be required during the service life of the valve to prevent leakage

When valves are not operated for a period time, may have a higher initial operating torque.

VALVE CONNECTOR MAKE-UP INSTRUCTIONS

MALE AND FEMALE PIPE PORTS

Wrench flats are provided on the Valve Body. It is recommended a smooth- jawed wrench or vise be used to grip the Valve Body.

1. On the male threaded part of the connection, apply a high-quality pipe joint compound or PTFE tape made for this purpose. When PTFE tape is used, it is recommended two full turns of tape be applied. PTFE tape should not be overhanging or covering the first thread.
2. Engage the Valve and the other component part together, until hand-tight.
3. With a proper wrench, holding both the Valve and the component part, continue to tighten to achieve a leak-tight joint.

TUBE FITTING CONNECTIONS

1. Insert the tube into the Valve port until the tube bottoms out in the Valve Body. Care should be exercised to insure the tube is properly aligned with the Valve Body and port.
2. Normal make-up for US Customary port sizes 1 thru 3 (1/16 thru 3/16 inch) and SI port sizes 2 thru 4 (2 thru 4 mm) is 3/4 turn from finger tight. Normal make-up for US Customary port sizes 4 thru 16 (1/4 thru 1 inch) and SI port sizes 5 thru 25 (5 thru 25 mm) is 1 1/4 turn from finger tight. For larger port sizes consult Parker Ferrule Presetting Tool Instructions.

PLEASE FOLLOW THE ABOVE DIRECTIONS FOR COUNTING THE NUMBER OF TURNS FOR PROPER FITTING MAKE-UP. DO NOT MAKE-UP TUBE FITTINGS BY TORQUE OR "FEEL". VARIABLES SUCH AS TUBING AND FITTING TOLERANCES, TUBE WALL THICKNESS, AND THE LUBRICITY OF NUT LUBRICANTS CAN RESULT IN AN IMPROPERLY ASSEMBLED TUBE FITTING CONNECTION.