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INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

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Installation and Maintenance Guidelines for

NIBCO 585HP

Bronze Ball Valves
Soldered, Threaded, Press End Connections

S-585HP-LF	T-585HP-LF	PC-585HP-LF	TPC-585HP-LF
S-585HP-LF-EL	T-585HP-LF-EL	PC-585HP-LF-EL	TPC-585HP-LF-EL
S-585HP-LF-LL	T-585HP-LF-LL	PC-585HP-LF-LL	TPC-585HP-LF-LL
S-585HP-LF-NS	T-585HP-LF-NS	PC-585HP-66-LF-NS	TPC-585HP-LF-NS
S-585HP-LF-SS	T-585HP-LF-SS	PC-585HP-66-LF-SS	
S-585HP-66-LF	T-585HP-66-LF	PC-585HP-66-LF	
S-585HP-66-LF-EL	T-585HP-66-LF-EL	PC-585HP-66-LF-EL	
S-585HP-66-LF-LL	T-585HP-66-LF-LL	PC-585HP-66-LF-LL	
S-585HP-66-LF-NS	T-585HP-66-LF-NS	PC-585HP-LF-NS	
S-585HP-66-LF-SS	T-585HP-66-LF-SS	PC-585HP-LF-SS	

(Memory Stop Handle available for field installation)

CAUTION: Only qualified personnel should undertake the procedures outlined in this document. NIBCO INC., its agents, representatives and employees assumes no liability for the use of these procedures. These procedures are offered as suggestions only.

Contents

I. INSPECTION

1. Operate all valves, fully opened and closed, before installing to ensure functionality.

II. THREADED INSTALLATION PROCEDURES

1. Assure the valve is suitable for service to which it is being applied. Contact NIBCO Technical Services with any concerns or questions: (888) 446-4226.
2. To ensure proper installation, standard piping practices should be followed.
3. NIBCO 2-piece ball valves are bi-directional service valves and can be installed in any orientation, vertically or horizontally.
4. Check connecting pipe threads are free of foreign materials such as scale or metal shavings, as well as in proper and functioning form.
5. Apply 2-3 wraps of PTFE tape, covering the lower ¾ of the male thread length in a clockwise direction as viewed from the threaded end of the male pipe.

WARNING: NIBCO does not recommend applying pipe compound on threaded joints, and under no circumstance should both PTFE tape and pipe compound be applied to any threaded joint.

6. Hand tighten pipe into valve.
7. Use a flat-jawed wrench (adjustable) to engage the flats of the valve. If a pipe wrench is used, it must be applied only to the pipe, not the valve.
8. Do not apply excessive torque to assemble the joint. As a rule of thumb, tighten (2) turns past hand tight.
9. Follow all other applicable and appropriate code requirements.

III. SOLDERING INSTALLATION INSTRUCTIONS – LEAD-FREE* BRASS*/PERFORMANCE BRONZE®* BALL VALVES

NOTE: NIBCO ball valves can be soft soldered into lines using a low temperature solder such as 95/5 tin antimony solder which melts at 452° - 464°F. For all lead-free solders which melt in this temperature range, extreme care must be used to prevent seat damage since temperatures above 500°F will affect the seat materials.

For instructions on soldering NIBCO ***lead-free* Performance Bronze™ alloys* see the latest edition of NIBCO Technical Bulletin NTB-0910 (www.nibco.com) or contact NIBCO Technical Services: (888) 446-4226

1. To ensure proper installation, standard piping practices should be followed, including ASTM B828.
2. Clean and flux the surfaces to be soldered.
3. Close the valve. This does two things – it gets the handle out of the way and protects the PTFE seats from cold-flowing during heating by trapping them against the ball.
4. With the flame directed away from the valve, apply heat to the end opposite the threaded end piece. Apply solder and move off.

5. Repeat step 4 on threaded insert end.
6. Upon completion of steps 1 – 5, leave the valve in the closed position until cool.
7. Heat from soldering, if excessive, may affect PTFE stem packing. After completion of soldering, it may be necessary to tighten packing gland. Always check for leakage after installation.

WARNING: DO NOT under any circumstances, solder the downstream end of this valve while there is upstream pressure/or with fluid trapped in the cavity around the ball. Thermal expansion of this fluid could produce excessive internal pressure which could damage seat or body materials. Always drain down the system and cycle the valve two to three times after drain down is complete before applying heat. Steam created from trapped fluid in cavity around the ball could cause the valve to burst if valve is heated excessively.

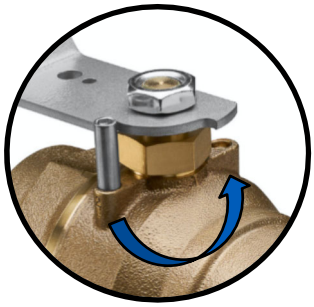
* Weighted average lead content ≤ 0.25%

IV. PRESS INSTALLATION PROCEDURES

1. Please refer to NIBCO Press System catalog for instructions on connecting Press-ended valve to piping system.

V. REVERSING HANDLE DIRECTION

1. All 585HP ball valves feature a threaded handle stop which can be removed and reinstalled in opposite threaded handle stop location, allowing for reversal of handle swing direction to avoid contact with surroundings.
2. Handle stop installation torque and hex drive sizes can be found in Table 1.



VI. THROTTLING SERVICE

Ball valves are generally not recommended for modulating service where critical flow rates are required. Contact NIBCO Technical Services for throttling service applications.

CAUTION: Throttling any ball valves is not recommended, where the valve is less than 45° open.

VII. MAINTENANCE

1. Valves must be exercised from fully opened to fully closed periodically to assure continued function. NIBCO recommends valves be put on a routine, periodic exercise program, such as cycling at least once every 6 months.
2. There are no field repairable or replaceable components within the pressure vessel of a NIBCO 2-piece ball valve.

WARNING: Under no circumstances should the pressure vessel be disassembled for any reason, including to attempt internal repairs.

3. Packing Adjustment
    a. If stem leakage occurs, tighten packing to compensate for wear. The packing nut (under handle) should be tightened in 1/8- to 1/4-turn increments, just enough to stop leakage. This can be done with any appropriate flat-jawed wrench. Packing nut shall not be tightened in excess of torque specified in Table 1.
    b. Please contact NIBCO Customer Service or reference latest applicable NIBCO Price Sheet for available replacement parts.

VIII. HANDLE OPTIONS

1. **Extended Lever Handle with Memory Stop (EL)**
    a. The Extended Lever Handle is designed to allow valve operation on insulated chilled and hot water lines, accommodating up to 2" of insulation. Memory Stop functionality is included.
    b. Installation
        i. Remove handle nut and lever handle to access bare stem.
        ii. Place extended lever handle memory stop plate over stem and install provided barrel nut (follow handle nut torque for valve size in Table 1).

        NOTE: If handle or lock plate binds on packing nut when rotated, tighten packing nut 1/8-turn and retry. Repeat until handle and memory stop plate travel freely, not to exceed 1/2-turn.
        iii. Loosen (do not remove) the screw and lock nut holding memory stop plate to bottom of extended lever handle.
        iv. Slide the memory stop plate against the valve handle stop.
        v. Tighten the screw and lock nut. The valve can now be closed and then reopened to the set position.

2. **Locking Lever Handle (LL)**
    a. The locking lever handle is a feature that allows the valve to be locked in the closed or open position.
    b. Installation
        i. Remove handle nut and lever handle to access bare stem.
        ii. Place lock plate over stem ("TOP" facing up, round hole over stem, half-round cutout touching handle stop) and reinstall handle and handle nut (see Table 1 for wrench size and torque).

        NOTE: If handle or lock plate binds on packing nut when rotated, tighten packing nut 1/8-turn and retry. Repeat until handle and lock plate travel freely, not to exceed 1/2-turn.
    c. Operation

i. Actuate valve to open or closed position, whichever shall be locked.
ii. The handle contains .150 inch and .275 inch holes for locking. Insert locking device into appropriate-sized hole in handle. Evaluate effectiveness.
iii. Lockout/tagout devices should always be confirmed for use upon installation per OSHA Lock-Out/Tag-Out guidelines.

3. **Memory Stop Lever Handle (MS)**
   a. The Memory Stop Lever Handle allows flow through the valve to be balanced by limiting ball position from full-open. The valve maintains closing capability with memory stop properly adjusted.
   b. Installation
      i. Actuate lever handle to balanced position.
      ii. Remove handle nut and lever handle to access bare stem.
      iii. Place memory stop plate over stem (part number facing up, round hole over stem,) and reinstall handle and handle nut (see Table 1 for wrench size and torque).
      iv. Slide the memory stop plate against the valve handle stop.
      v. Insert provided screw into largest hole in handle and memory stop plate's curved slot.
      vi. Install and tighten provided lock nut and screw to 60-80 in-lb.
      vii. The valve can now be closed and then reopened to the set position.

      NOTE: If handle or memory stop plate binds on packing nut when rotated, tighten packing nut 1/8-turn and retry. Repeat until handle and memory stop plate travel freely, not to exceed 1/2-turn.

      viii. Even though the handle is designed for throttling, by use of the memory stop feature, the application characteristics must be considered prior to actual usage in order to prevent damage to the valve seats from excessively high velocity.

4. **NIB-SEAL® Insulated Handle (NS)**
   a. The NIB-SEAL Extended Handle is specifically designed for use with bronze ball valves installed in insulated, chilled and hot water lines, and was tested to UL 2043-UL listed for installations in air-handling spaces (plenums). The recommended operating temperature range is 15°F to 250°F (15 psi SWP) maximum.
   b. Installation and Maintenance Instructions
      i. Measure, cut and install insulation as required.

NOTE: The clear protective sleeve is designed to separate the line insulation from the valve handle, allowing valve operation without damaging the insulation. An adhesive may be used to form a bond between insulation and the clear protective sleeve, up to approximately 1/2" below the top of the NIB-SEAL Handle. Cycle valve after adhesive has dried to assure proper rotation of the handle and proper valve function.

c. Solder End Valves
   i. Solder end valves will be supplied with handle and handle nut packed separately in the box.

CAUTION: The handle, including the clear protective sleeve, should be installed on the valve only after soldering has been completed and the valve has cooled. Use procedures listed below.

   ii. Replace the clear protective sleeve and handle by fitting the handle inside the sleeve and then over the stem and handle stop.
   iii. Replace the handle nut with the locking feature on top for easy starting of the nut. Care should be taken to avoid cross threading of nut to stem. Tighten nut securely.
   iv. Replace the insulating plug and cap.
   v. The valve is now ready for normal operation.
   vi. Heat from soldering, if excessive, may affect the stem seal. After completion of soldering, it may be necessary to tighten packing gland. Always check for leakage after soldering.

d. Memory Stop Adjustment
   i. Rotate the valve handle to the desired open position. See Section IV, Caution, note iv, regarding throttling.
   ii. Remove the center cap and insulating plug.
   iii. Loosen (do not remove) the two small screws in the bottom of the handle.
   iv. Slide the memory stop plate against the valve handle stop.
   v. Tighten the two small screws. The valve can now be closed and then reopened to the set position.
   vi. Replace the insulating plug and center cap.
   vii. The valve is now ready for normal operation.

e. CAUTIONS
   i. The handle is designed to be operated by hand. A cheater should not be used.
   ii. The maximum operating temperature of the valve must not exceed 250°F.

iii. The valve handle must never be used as a hand hold or foot support.
iv. Even though the handle is designed for throttling, by use of the memory stop feature, the application characteristics must be considered prior to actual usage in order to prevent damage to the valve seats from excessively high velocity.

IX. FIELD-REPLACEABLE REPAIR PARTS

While components inside the pressure vessel cannot be replaced, a repair kit consisting of replacement packing, packing nut, and handle stop pin are available by valve size. To order, contact NIBCO Customer Service.

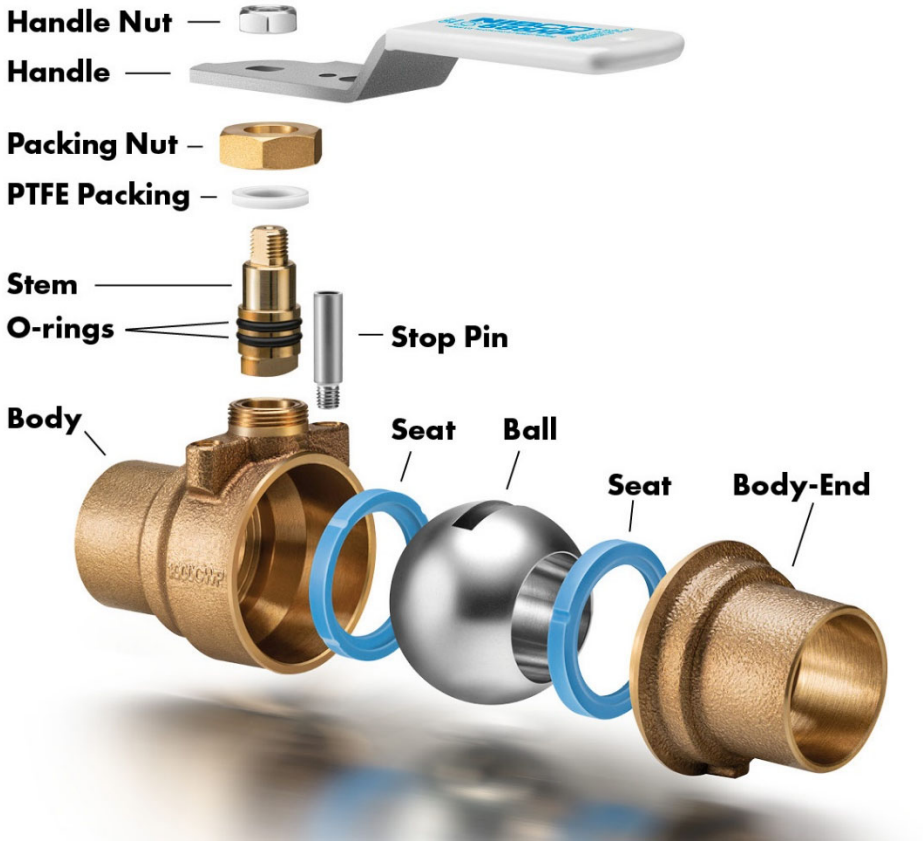


Table 1 585HP Installation Torques, Wrench/Hex Drive Sizes

Valve Size	Installation Torque **in-lb [ft-lb]**			Wrench/Hex Drive Size		
	Packing Nut	Handle Stop	Handle Nut	Packing Nut	Handle Stop	Handle Nut
1/2”	60-100	20-40	48-72	3/4”	5/32”	1/2”
3/4”	60-100	40-60	96-120	13/16”	3/16”	9/16”
1”	60-100	40-60	96-120	7/8”	3/16”	9/16”
1 1/4”	80-120	40-60	96-120	15/16”	3/16”	9/16”
1 1/2”	80-120	40-60	[15-20]	1”	3/16”	7/8”
2”	80-120	40-60	[15-20]	1 1/16”	3/16”	7/8”