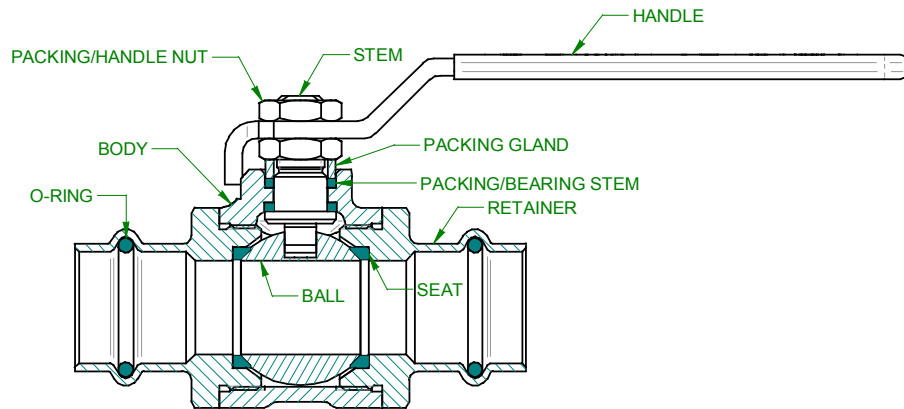


PARTS ILLUSTRATION



A Division of Conbraco Industries, Inc. Matthews, NC Pageland, SC Conway, SC

77W SERIES INSTALLATION, OPERATION, & MAINTENANCE GUIDE



INSTALLATION

The Apollo 77W Series Ball valves are bi-directional. They may be installed in vertical or horizontal pipe runs without regard to flow direction and without regard to stem orientation.

Note: Valves must be installed in piping systems that comply with the applicable portions the ASME B31 standards. Special considerations must be taken with respect to pipe line expansions and contractions and the media expansion and contractions within the piping system.

Preparing the Tube

Cut the desired length of tubing using a tubing cutter. De-burr the inside and outside diameter of the tube with a rounded file or de-burring tool. Clean the tube of all dirt, oil, grease or foreign matter.

Caution: Tubing that has burrs or out-of-round could make tube insertion difficult. Burrs must be removed and tubing ends should not be damaged. Tubing should also be squarely cut.

Inserting the Tube

Make sure that the o-rings seals are in place and free of dirt, oil, grease or other foreign matter. Insert the tube into the valve using a twisting motion. Make sure that the tube is fully inserted into the retainer stops or shoulders. Mark the tube with a permanent marker to indicated the proper depth.

Caution: Make sure tubing is inserted to the proper depth. Failure to do so could result in an improper seal that could lead to extensive property damage or bodily harm.

Warning: Do not lubricate the seal in the valve with anything other than water. Hydrocarbon based lubricants will cause the seal to soften and swell.

Pressing the Valve

⁽¹⁾ Place open jaws around valve connection. Make sure the contour of the jaw set is properly aligned with the seal bead of the valve connection. ⁽²⁾ Actuate press tool. The pressing cycle takes 4 – 8 seconds, depending on the press tool. Once a press cycle begins, and the rollers contact the jaw arms, the tool will lock-on and automatically complete the press cycle. ⁽³⁾ Press jaw arms to open jaw set. If tool malfunctions, please refer to specific tool operator's manual. ⁽⁴⁾ Remove the press tool and jaw connection.

Caution: Jaw set must be square to the tube and properly aligned with the contour of the valve. Inspect the press tool to verify it is in good working condition. Inspect the ring/jaw sets and verify that they are clean and do not display excessive wear. For battery operated units verify that the battery has an adequate charge. (A tone is normally emitted when a low battery condition occurs.) Most quality press tools require re-calibration after 20,000 cycles. See tool manufacture's IOM.

Warning: To avoid pinch point injury, keep hands and fingers away from jaws. Avoid sharp edges that may have formed on the valve during the pressing operation



Inspecting the Connection

⁽¹⁾ Check the valve and confirm the presence of the press mark. ⁽²⁾ Inspect the press connection for the following: Misaligned tubes, tubes not fully inserted, check depth marks, loose connection, incorrect jaw alignment with the fitting. ⁽³⁾ If one or more of these problems are found, then a new section of tubing and a new valve will have to be prepared, inserted and pressed. ⁽⁴⁾ Test the system in accordance with normal practice and local codes.

Troubleshooting

SYMPTOM	POSSIBLE REASONS	SOLUTION
Press cycles produced are not complete.	Wrong jaw set or press ring for the tube size or material.	Install correct jaw set.
	The jaw set or ring was not square to the tube.	Redo the joint with new tube and valve and make sure that the jaw set or ring is square to the valve.
	Jaw contour was not aligned with the valve contour.	Redo the joint with new tube and valve and make sure that the jaw set or ring is square to the valve.
	The jaw set or ring has exceeded life expectations and may have failed.	If cracked, replace old jaw set with a new jaw set and redo the joint using a new tube and valve.
Excessively large or sharp fins present at press joint parting line where jaw or ring tips come together.	Copper material build-up on jaws or rings in the contoured profile area near jaw or ring tips.	Clean jaw sets or rings in the contoured area using metal polishing pads such as Scotch-Brite®. Refer to the press tool's maintenance section for proper instructions.
	Excessively worn or damaged jaw sets or rings.	Discard jaws or press ring and replace with a new jaw set.
Jaws stick to valve excessively after completing joint.	Copper material build-up on jaws or ring in the contoured profile area near jaw or ring tips.	Clean jaw sets or rings in the contoured area using metal polishing pads such as Scotch-Brite®. Refer to press tool's maintenance section for proper instructions.

OPERATION

The valve handle is marked showing proper rotation direction for “ON” and “OFF” positions. Rotation is clockwise for “OFF” (closed) and counterclockwise for “ON” (open).

MAINTENANCE

Normal stem packing wear can be compensated for by tightening the packing gland nut. There are two nuts on the stem. The top nut retains the lever. The top nut and the lever may need to be removed for easy access to the packing nut. The packing nut is the lower nut on the stem. (Wrench part number H371400 is available to ease this operation.) Tighten the packing nut clockwise in 1/8 turn increments until observed leakage stops. Do not exceed the values shown in the table below. Reinstall the handle and handle nut.

Valve Size	Stem Thread	Packing Nut Torque (in-lbs.)
1/4" – 1/2"	5/16 – 24 UNF	35
3/4" – 1"	3/8 – 24 UNF	50
1 1/4" – 2"	5/8 – 18 UNF	150

CAUTION: Do not disassemble valve while under pressure nor with trapped hazardous fluids therein.