

### Application:

The Legend-Press valves are designed for installation onto pipe and/or ASTM B 88 types K, L and M seamless, hard-drawn, copper water tubing commonly used in residential, commercial and industrial potable, heated and chilled water applications.

Legend-Press valve connections require the use of common plumbing hand tools and commercially-available pressing tools with corresponding VUS and XL-C profile jaws

**WARNING!** Read and understand the tool manufacturer's instructions prior to installation of the Legend-Press valves. In the event that these instructions conflict with the tool manufacturer's instructions, the tool manufacturer's instructions shall take precedence. Failure to follow the tool manufacturer's instructions may result in property damage, serious injury or death.

**The following instructions are applicable to all 1/2" through 2" Legend-Press valves. For 2-1/2" through 4" valves please see the back of this instruction sheet**

1. Where applicable, (MNPT, FNPT or Male union x Legend-Press valves), make all threaded connections prior to making the Legend-Press connections. Threaded joints shall be made in accordance with the hand-tight engagement and wrench make-up lengths shown on Table 2 of the ANSI/ASME B1.20.1 Pipe Threads Standard.

2. For tubing connections, use only clean, undamaged ASTM B 88, rigid length Type K, L or M copper tubing with the Legend-Press valve connection. Coiled (soft annealed) copper is not recommended, as the coiling process may result in out-of-round tubing ends. If used, the tubing ends must be trued and made round. Otherwise, damage to the O-rings or an inferior joint may result.

3. Cut the tubing to the desired length using a wheel-type tubing cutter or fine-tooth saw. Make sure the cut is square. Using the appropriate de-burring tool, de-burr the tubing I.D. and O.D., leaving no sharp edges or metal shavings.

4. Clean the tubing end, removing all oils, dirt and debris. Ensure that the tubing end is round, the cut is square and that no scratches, dents or burrs are present.

5. Inspect the valve's sockets to ensure that the EPDM O-rings are present and seated correctly within the socket. All Legend-Press ball valves will have **two EPDM O-rings** in each socket. Remove any debris, which may be present in the sockets, by carefully wiping them with a soft, damp cloth.

### CAUTION:

Take care not to dislodge or damage the EPDM O-rings when wiping them. **Under no circumstances should a petroleum-based lubricant be applied to the EPDM O-rings!** Lubricants of this type will damage the O-rings, resulting in an improper seal, joint failure and leakage. Water (from the damp cloth) will act as a lubricant during installation.

6. Using a permanent marker, make a visual reference mark, by marking the tubing to the correct insertion depth, as shown on the chart below. Insert the tubing end into the socket. Firmly push the tubing into the socket until the tubing end contacts the stop. Verify that the tubing is at the correct depth by noting the location of the reference mark, which should now be very close to the socket's edge.

### Legend-Press™ Tubing Insertion Depth

Nominal Tubing Size:	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Insertion Depth: In.	1-3/8"	1-9/16"	1-9/16"	1-9/16"	1-3/4"	2-3/16"
MM	35	40	40	40	45	55

### CAUTION:

Tubing ends that are not completely inserted into the Legend-Press sockets will result in a faulty joint and seal. If necessary, remove the tubing end **after** it has been marked, measure the insertion depth and verify, using the above chart.

7. Install the correct nominal tubing size pressing jaw into the pressing tool, following the tool manufacturer's recommendations.

8. Open the pressing jaws by pinching the jaw arms together. Place the open jaw over the Legend-Press socket making sure the raised part of the socket fits into the grooved parts of the jaws. Release the jaw arms. The ends of the jaws will remain slightly apart.

### CAUTION:

Be sure that there is no copper build-up, debris or obstruction of any kind between the jaws and the exterior of the valve's socket, as the jaws are positioned over the press area.

9. Visually verify that the tubing has remained inserted to the correct depth by checking the mark.

10. Position the pressing tool and jaw perpendicular to the tubing, at a right angle. Depress and hold the tool's trigger.

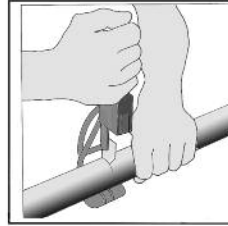
11. Observe the jaw ends during the pressing action. The open ends of the jaw will make contact, and the tool will complete the pressing cycle. Release the trigger.

12. Open the pressing jaws by pinching the jaw arms together. Remove the jaw and tool from the valve's socket.

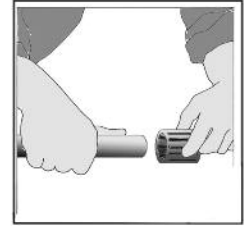
13. For Legend Press x Press valves, repeat steps two through twelve on the valve's opposite socket or male fitting end. Installation is complete.

14. Inspect all connections for properly assembled threaded and pressed joints. Pressure test all joints in accordance with local code requirements.

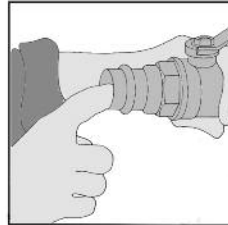
15. Support placement of the assembled pipe, tubing, fittings and valves shall be in accordance with local code requirements



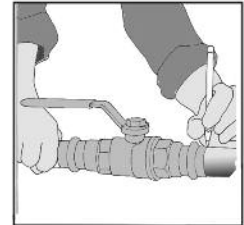
Step 1



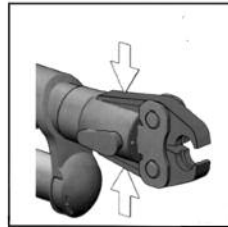
Step 2-3



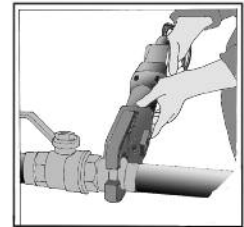
Step 4



Step 5



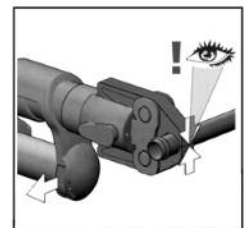
Step 6-7



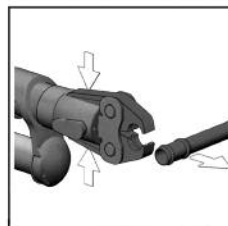
Step 8



Step 9



Step 10



Step 11



### Legend Valve and Fitting, Inc.

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1. Use only clean, undamaged ASTM B 88 compliant rigid-length Type K, L or M copper tubing with the Legend-Press valve connection. Out-of-round, damaged or contaminated tubing ends may damage the O-ring in the Legend-press connection, resulting in an inferior joint. If a vice or other clamping force is used to secure the tubing prior to cutting, make sure to keep the tubing end at least four inches away from the clamp or vice's jaws, to minimize the chances of distorting the end to be pressed.

2. Using the appropriate wheel-type tubing cutter or saw, cut the tubing end to the required length. The cut must be square.

3. De-burr and de-ridge the tubing's O.D. and I.D. with the appropriate tool, leaving no sharp edges or metal shavings. Clean the tubing end, removing all oils, dirt and debris. Ensure that the tubing end is round, that the cut is square and that no scratches, dents or burrs are present.

4. Inspect the valve's sockets, to ensure that the EPDM O-rings are present and seated correctly within each socket. **All 2-1/2" through 4" Legend-Press ball valves will have one EPDM O-ring in each socket connection.** Remove any debris which may be present in the sockets, by carefully wiping them with a soft, damp cloth.

**CAUTION!** Take care not to dislodge or damage the EPDM O-rings when wiping them. **Under no circumstances should a petroleum-based lubricant be applied to the EPDM O-Rings!** Lubricants of this type will damage the O-rings resulting in an improper seal, joint failure and leakage. Water (from the damp cloth) will act as a lubricant during installation.

5. Using a permanent marker, make a visual reference mark by marking the tubing at the correct insertion depth, as **shown on the chart below**. Carefully insert the tubing end into the socket, firmly pushing the tubing in, until it contacts the internal stop. Verify that the tubing is at the correct depth by noting the location of the reference mark, which should now be very close to the socket's edge.

**Legend-Press™ Tubing Insertion Depth**

Nominal Tubing Size:	2-1/2"	3"	4"
Insertion Depth: In.	2-3/16"	2-1/4"	2-3/8"
MM	55	58	60

**CAUTION!** Tubing ends that are not completely inserted into the Legend-Press sockets will result in a faulty joint and seal. If in doubt, remove the tubing end **after** it has been marked, re-measure the insertion depth and verify, using the above chart.

6. Complete the joint by pressing the valve's end connections using the correct pressing ring and actuator. The general guidelines that follow should be used in the event that the tool manufacturers' instructions are not available. Otherwise, the tool (and ring and actuator) manufacturer's operation instructions **supersede these instructions and must be followed!**

**CAUTION!** Tool operation may vary! Make sure to follow the instructions carefully, to include the possibility of re-calibration or adjustment.

a. Open the hinged pressing ring and position it over the bead of the valve's end connection. The ring should completely cover the smooth, machined area of the socket.

b. Install the actuator jaw into the pressing tool. Squeeze the jaw arms to open the ends and place the ends onto the pressing ring, positioning the tool and jaw perpendicular to the connection.

c. Make one final check of the tubing insertion depth (by checking your reference mark) and correct if necessary. Begin the pressing process by squeezing and holding the tool's trigger. The tool will automatically complete the pressing cycle. Release the trigger only after the cycle is complete, otherwise it may result in a faulty joint.

d. Open the jaw by squeezing the jaw arms, and disengage the actuator jaw from the pressing ring. Remove the pressing ring from the connection.

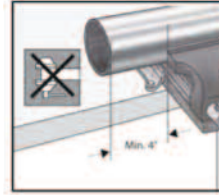
7. Repeat steps 1 through 6 to complete the opposite Legend-Press end connection.

8. Visually **inspect and gauge** both completed press connections. No uneven spacing or gapping between the tubing and the socket should exist. **Using the strip gauges supplied with each valve**, gauge both completed press connections. See the "How to use the strip gauge" section on this page.

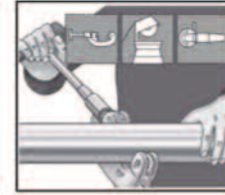
9. In accordance with local code requirements, pressure-test the entire system and inspect all connections for leaks. **Cut out and discard** any Legend-Press valves with inferior joints and repeat steps 1 through 8 with a new Legend-Press valve.

10. Support placement of the assembled tubing and valves shall be in accordance with local code requirements.

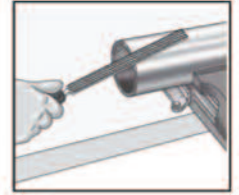
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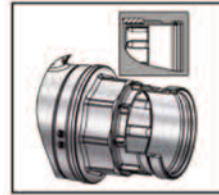
Step 1



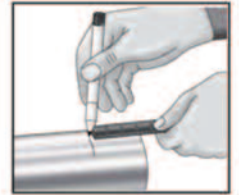
Step 2



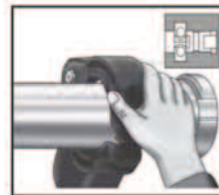
Step 3



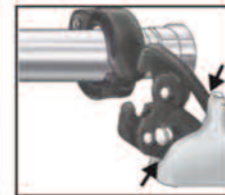
Step 4



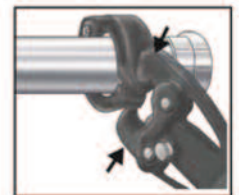
Step 5



Step 6a



Step 6b



Step 6c

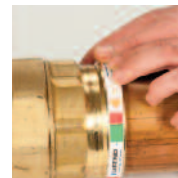
### HOW TO USE THE STRIP GAUGE



Gauging Step 1



Gauging Step 2



Gauging Step 3A



Gauging Step 3B



Gauging Step 4

**1. Prepare the pressed connection and the gauge:** To assure adhesion, wipe each pressed connection to remove any excess residue. On the end opposite of the orange arrow, on the unmarked underside of the gauge, locate and remove the paper cover to expose the adhesive. Do not remove the paper cover beneath the orange arrow.

**2. Attach the strip gauge to the pressed connection:** Squarely position the gauge onto the raised shoulder of the connection, perpendicular to the tubing and valve body. Press down lightly onto the adhesive area.

**3. Wrap the strip gauge around the shoulder, overlapping it. Observe the reading:**

**A. The orange arrow pointing within any part of the red area indicates an incorrect press.** Carefully un-wrap and remove the strip gauge from the connection. Repeat step 6 of the installation instructions, but this time, re-position the pressing ring in such a way, as to position its opening in any spot other than where it was, on the previous press (re-orient the ring so it presses the connection from a different position).

**B. The orange arrow pointing within any part of the green area indicates a correct press.**

**4. For visual confirmation of a correct, complete press, the strip gauge can be attached in the final-gauging position on the connection:** Locate and remove the paper cover beneath the orange arrow, exposing the adhesive. Press down lightly onto the adhesive area. **Make sure to repeat the gauging process for each press connection.**