

Piping Packages

Soldering Instructions:

WARNING: THESE VALVES ARE DESIGNED FOR SOFT SOLDERING INTO LINES WITH THE VALVE IN THE CLOSED POSITION WITH MELTING POINT TEMPERATURES NOT TO EXCEED 465°F SEATS WILL BE DAMAGED IF HIGHER TEMPERATURES ARE EMPLOYED. PRESSURE RATINGS ON THE SOLDER JOINTS ARE ADJUSTED IN ACCORDANCE WITH ANSI B 16.18.

1. When soldering, remove the O-ring at union connection to prevent damage of the seal.
2. Always solder the valve with the ball in the closed position.
3. Care MUST be taken when heating the solder joints so as not to damage valve seats. Please refer to above warning.

Harris Stay Brite Silver Bearing Soldering

Silver Soldering:

IF SILVER SOLDERING TENSILE STRENGTH OF 14,000 PSI IS REQUIRED A LOW TEMPERATURE SILVER SOLDER IS REQUIRED. BELIMO RECOMMENDS HARRIS STAY BRITE SILVER BEARING SOLDER DUE TO A LIQUIDUS POINT AT 430° F. WARNING! THESE VALVES ARE DESIGNED FOR SOLDERING INTO LINES WITH THE VALVE IN THE CLOSED POSITION WITH MELTING POINT TEMPERATURES NOT TO EXCEED 465° F SEATS WILL BE DAMAGED IF HIGHER TEMPERATURES ARE EMPLOYED. PRESSURE RATINGS ON THE SOLDER JOINTS ARE ADJUSTED IN ACCORDANCE WITH ANSI B 16.18.

1. When soldering, remove the O-ring at union connection to prevent damage of the seal.
2. Always solder the valve with the ball in the closed position.
3. Care MUST be taken when heating the solder joints so as not to damage valve seats. Please refer to above warning.

WARNING: Protect yourself and others. FUMES AND GASES can be hazardous to your health. HEAT RAYS (INFRARED RADIATION) from flame or hot metal can injure eyes.

- Before use, read the manufacturer's instructions, Material Safety Data Sheet (MSDSs), and your employer's safety practices.
- Use enough ventilation, exhaust at the flame, or both, to keep fumes and gases from your breathing zone and the general area.
- Wear correct eye, ear, and body protection.
- See American National Standard Z49.1, published by the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126;
- OSHA Safety and Health Standards, available from the U.S. Government Office, Washington, DC 20402.

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Any suggestion of product applications or results is given without representation or warranty, either expressed or implied.

Without exception or limitation, there are no warranties of merchantability or of fitness for particular purpose or application. The user must fully evaluate every process and application in all aspects, including suitability, compliance with applicable law and non-infringement of the rights of others. J.W. Harris Co. Inc. and its affiliates shall have no liability in respect thereof.

Nominal Composition:

Silver 3.4-3.8 %

Tin Remainder

Physical Properties:

Color Bright Silver

Solidus 430°F (221°C)

Liquidus 430°F (221°C)

Electrical Conductivity 16.4

Elongation 48%

Tensile Strength 14,000 psi

Shear Strength 10,600 psi

All statements, information and data given are believed to be accurate and reliable but are presented without guarantee, warranty or responsibility of any kind, expressed or implied.

Union Valve

Installation:

1. The union should be installed with the readout port on or above the horizontal centerline. DO NOT install union with the readout port with readout port facing down, as debris from the line can clog the port during the readout process, which may cause it to leak.

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1. When soldering, remove O-ring seal at union to prevent damage of seal.
2. Care must be taken when heating the solder joints so as not to damage union or readout port seals.
3. Remember to install gasket after soldering. Unions installed without gaskets will leak.

Operation:

1. The PT readout port is provided to obtain differential pressure/temperature readings across the coil when used in pairs.
2. On chilled water systems, the readout ports may seep after a reading is taken. Re-install port caps, and wait one minute. Re-check port. If seepage is still present, re-insert port and remove slowly to allow port to seal.

Isolation Valve

1. Valve is designed to allow diagnosis and service of terminal units. Valve should be installed with union between handle and coil. This allows the coil to be isolated and removed.
2. The valve should be installed with the stem and/or readout port on or above the horizontal centerline. DO NOT install valve with the readout port facing down, as debris from the line can clog up the port during the readout process, which may cause it to leak.
3. The PT readout port is provided to obtain readings across the coil when used in pairs. 1/8" test probes are used to obtain readings through the membrane of the readout port. DO NOT remove the readout port from the threaded tapping when line is under pressure.
4. The valve is equipped with two 1/4" port tappings. This gives the Isolation Valve the ability to provide a second accessory on the valve, such as a coil drain or vent. If such an accessory is included, install so that the drain is located on the bottom of the pipe and a vent is on the top of the pipe.
5. On chilled water systems, the readout port may seep after a reading is taken. Re-install port cap, and wait approximately one minute. Re-check port. If see page is still present, re-insert probe and remove slowly to allow port to seal.

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1. When soldering, remove the O-ring at union connection to prevent damage of the seal.
2. Always solder the valve with the ball in the closed position.
3. Care MUST be taken when heating the solder joints so as not to damage valve seats. Please refer to above warning.

Manual Balance Valve

Installation:

1. The Manual Balance is a flow readout and balancing device. For it to operate properly, the flow arrow on the valve body must be in the direction of flow.
2. The valve should be installed with the stem and/or readout port on or above the horizontal centerline. DO NOT install valve with the readout port facing down, as debris from the line can clog up the port during the readout process, which may cause it to leak.

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1. When soldering, remove O-ring seal at union to prevent damage of seal.
2. Always solder the valve with the ball in the closed position.
3. Care MUST be taken when heating the solder joints so as not to damage valve seats. Please refer to above warning.

Operation:

1. The PT readout port is provided to obtain differential pressure/temperature readings for flow measurement and balancing. 1/8" test probes are used to obtain readings. DO NOT remove test port from tapping when line is under pressure.
2. To take readings, a differential pressure gauge calibrated in inches of water must be used. Connect the "high" side line to the port marked "H" (closest to the union), and the "low" side line to the port marked "L" (closest to the handle). The reading taken is then used with the Manual Balance Pressure Drop Diagram (located in Piping Package Technical Documentation, under the Manual Balance specification) to determine the flow rate.

Note: For best results, make sure that the pipe in which the valve is installed, is free of debris, and that the water is devoid of entrained air.

To Balance:

1. Take an initial flow reading with the valve fully open as described in Step 2 above. Use this reading as a baseline for the valve.
2. Using a flow chart for the valve, determine the differential pressure needed across the venturi to obtain the required flow rate. Record this differential pressure on the balancing sheet.
3. Throttle the valve until the desired differential pressure is indicated on the gauge. Loosen the memory stop on the valve handle, and rotate the stop counterclockwise until it rests on the valve body stop. Tighten the memory stop.
4. Record the indicator pad setting on balancing sheet next to differential pressure reading. This will allow the valve to be properly reset in the event that the memory stop setting is lost.

Note: On chilled water systems, the readout ports may seep after a reading is taken. Re-install port caps, and wait one minute. Re-check port. If seepage is still present, re-insert port and remove slowly to allow port to seal.

To Vent Air:

This valve has been designed to take advantage of the cavitation which often occurs across valves on the low pressure (outlet) side of the coil. An air vent tapping has been provided on top of the ball valve which will vent air ONLY if the valve is partially opened or closed.

To vent a coil:

1. Make sure an optional air vent is installed in tapping. If not, one may be installed at any time that the ball valve is fully closed.
2. Close the valve at least 50%, but no more than 80%. Open vent to purge air from coil.

Strainer Valve

These valves are designed with an integral strainer for the protection of downstream equipment such as coils and/or control valves. For proper operation, the valve should be installed with the flow arrow on valve body pointing in the direction of flow. The inlet of the valve assembly is the valve body side closest to the handle, the outlet is the union/tailpiece side.

Installation:

The valve should be installed with the stem and/or readout port on or above the horizontal centerline. DO NOT install valve with the readout port facing down, as debris from the line can clog up the port during the readout process, which may cause it to leak.

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- When soldering, remove the O-ring at union connection to prevent damage of the seal.
- Always solder the valve with the ball in the closed position.
- Care MUST be taken when heating the solder joints so as not to damage valve seats. Please refer to above warning.

Operation:

- The PT readout port is provided to obtain pressure/temperature readings across the coil when used in pairs. 1/8" test probes are used to obtain readings. DO NOT remove the test port from tapping when line is under pressure.
- On chilled water systems, the readout port may seep after a reading is taken. Re-install port cap, and wait approximately one minute. Re-check port. If seepage is still present, re-insert probe and remove slowly to allow port to seal.

Strainer Service:

- Cleaning the "Y" strainer is accomplished by opening the blowdown valve installed at the blowdown connection or by simply removing the plug in the end cap. The screen can also be removed from the body by isolating the pressure conditions, removing the cover and sliding out the screen. DO NOT remove the cover or screen when line is under pressure.
- Care should be taking in cleaning screens. After removing, they should be soaked in a cleaning solution or cleaned by using a brush. Do not allow trapped material to harden in the screen, as it will be difficult to remove. A regular cleaning schedule should be maintained so that the screens do not become clogged.

Flexible Hoses

Installation:

- Adhere to allowable radius of bend. (See table below)
- Verify the installation conditions do not cause torsion of flexible. (See figure1 below)
- If necessary modify the installation in the event that it is not possible to adhere to the allowable radius of bend (see paragraph 1 below). For example, add an intermediary right angle fitting (See figure 2 below).
- Do not submit the connectors to tension, either from the installation, or as a result of pressure or expansion (see figure 3 below).
- The braiding of the flexible (especially if it is in galvanized steel) must never be in contact with cement, plaster or all other materials or fluids capable of causing corrosion.

FIGURE 1

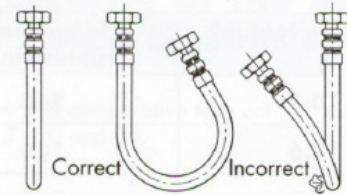


FIGURE 2

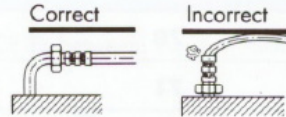
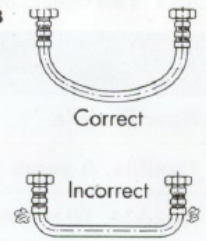


FIGURE 3

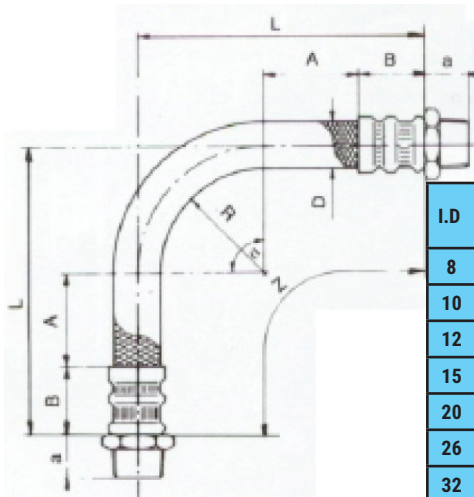


ON INSTALLATION: Avoid absolutely any tension due to stretching during the course of tightening the connectors.

- Install and tighten the fixed male connector (if applicable).
- Install and tighten the union adaptor (MNPT x female swivel NPSM male cone to MNPT adaptor) (if applicable).
- Install and tighten the swivel nut. Use two spanners in order to screw the union: one to hold the hexagon of the adaptor and the other to tighten the nut at the same time.

Flexible allowing a bend.

IMPORTANT: Do not re-screw the fixed connector or adaptor after tightening of the swivel nut ; this will cause tensioning of the flexible with a risk of rapid deterioration at this point. On removal, take precautions. If the flexible incorporates two fixed connectors, at least one must be installed on a counter-part fitting with a swivel connector or a union, if not installation is impossible.



I.D	R [mm]	A [mm]	B [mm]	L [mm]	Z for a=90°	Z for a=180°
8	25	25	25	76	139	187
10	30	30	30	88	159	218
12	35	35	35	106	193	262
15	42	42	42	134	237	320
20	55	55	55	159	290	396
26	65	65	65	193	349	479
32	100	100	100	271	489	680
40	135	135	135	352	634	887
50	210	210	210	514	922	1305

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