2-PIECE BALL VALVES

How to use your RWV 2-piece ball valve.
(Installation, Operation and Maintenance Instructions).

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Red-White Valve Corp. assumes no responsibility for any damages or injuries resulting from non-compliance with installation instructions or standard good practice when installing, operating or maintaining the valves, even if not explicitly mentioned in these installation instructions.

GENERAL INFORMATION

RWV ball valves are produced in a wide range of ratings and connections. RWV portfolio includes models suitable for HVAC systems, oil, compressed air or gas distribution.

Instructions apply to the following RWV valve models:

2412	5083	5007AB	5026AB	5200S	5592AB
2415	5084	5008AB	5044AB	5200T	5592F
2417	5200	5009AB	5044F	5414AB	5595AB
2419	5581	5014AB	5049AB	5415AB	5595F
4550	5586	5015AB	5049F	5416AB	92UBP
4880	2417AB	5016AB	5060AB	5417AB	92UBS
5020	2419AB	5017AB	5063AB	5418AB	92UBT
5024	2420F	5017SMW	5070AB	5520AB	92UDP
5042	2422F	5018AB	5080B	5520ABX	92UDS
5060	3300AB	5019AB	5080BSS	5544AB	92UDT
5063	3320AB	5020AB	5081AB	5544DAB	99IBV
5070	3330AB	5020ABD	5082AB	5549AB	
5081	5004AB	5020ABS	5083AB	5549DAB	
5082	5006AB	5020ABX	5084AB	5586AB	

Please contact RWV for models not listed above.

CHOICE OF THE VALVE

RWV offers ball valves made of different materials: brass, lead free* brass, Dezincification Resistant (DZR) brass, lead free DZR brass, bronze, and stainless steel. We recommend using valves made of a material suitable for the specific application. Stainless steel, bronze and DZR brasses are recommended to reduce risk of de-zincification and stress corrosion. Details of the materials used for each model are listed in the specific valve technical sheet. Please refer to your local water authority for compatibility with brass products. RWV cannot be held responsible for failures caused by the quality of the water in combination with an unsuitable material chosen for the valve.

* *Federal Safe Drinking Water Act – SDWA 2011 standards have determined "lead free" as having less than 0.25% of wetted surface area.*

PRESSURE AND TEMPERATURE RATINGS

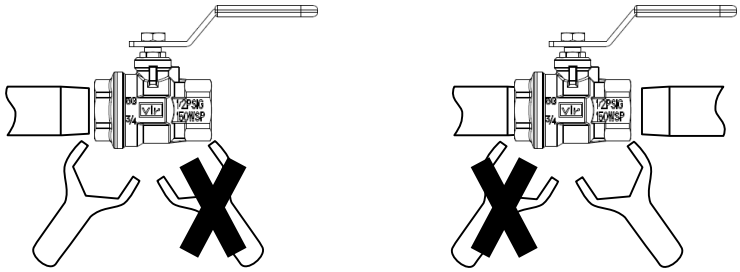
Specific information on pressure and temperature ratings of each valve model are provided in the RWV technical sheets, those can be obtained through RWV site or by contacting RWV. All contact information is provided in the last page of these instructions.
The operative conditions given in the tech sheets are intended for non-shock operating conditions: water hammer, impacts, stress loads, corrosive or erosive external environmental elements and the transport of fluids with abrasive properties should be avoided.

VALVE INSTALLATION

Prior to installation, verify the valve is suitable for the pressures, temperatures, operating fluids and environment in which it will be installed. It is the responsibility of the installer and/or of the facility designer to ensure that the application does not exceed the limits of pressure and temperature of the valve and is carried out in accordance with local current laws and regulations.
All models referred to in the above table can be installed in any position (vertical, horizontal, inclined), with flow going in both directions. The position chosen for the installation should allow for accessibility to the valve during operation, inspection and maintenance.
Pipe ends should be void of any burrs and not protrude inside the bore or obstruct any part of the flow (it's advisable to flush the line after installation or after performing maintenance on the system).
Do not subject the valve to any torsion, bending or tension. We recommend the use of pipe brackets. Pipe brackets should be installed at a distance suitable to properly support the valve. Do not to overload the valve with any unexpected additional stresses

Threaded connections
The valves shall be installed on pipes using, if necessary, a sealant suitable for the application and the expected type of fluid.

- The pipe threading shall be in accordance with the applicable standard requirements (please refer to the valve technical sheet). The pipe threading must be free of damage that could impair the correct coupling with the valve and the outward seal.
- Additional stresses on the body to body-end junction must be avoided during installation. A pipe clamp or key wrench must always grasp onto the hexagon/octagon portion of the threaded end that needs to be screwed to the pipe. In order to avoid additional stress on the valve be careful not to tighten the pipe at an excessive distance from the threaded area.
- Avoid screwing male threaded pipes too far into the valve. This could result in damage to the valve seats, resulting in leakage once the valve is operational.
- When installing a tailpiece, slide the union nut over the pipe before mounting to prevent interference between the tailpiece and union. Make sure all seals/o-rings are in place and not damaged.



Sweat connections
RWV sweat connections are designed to be soft soldered.

- Valves contain polymer materials such as o-rings and PTFE seals. These seals can be damaged by excessive heat, therefore the use of heat sinks (for example a wet towel around the valve) is required. The flame must be directed away from the center of the valve body.
- Ball valves must be placed in the closed position prior to soldering. After the installation wait for the valve to cool to room temperature before operating it.
- Make sure that the cut on the pipe is as square as possible and no burrs or rough edges are present. Clean both the valve socket and pipe end with a suitable tool until they are made bright.
- Coat both the valve socket and pipe with non-corrosive solder flux. In cold weather this should be done with the parts at ambient temperature. After applying the flux, slide the pipe to the shoulder of the socket then rotate a few times to insure flux properly covers the connection prior to soldering

- When soldering a union tailpiece remove it from the valve before the installation, this will avoid damage to the o-ring. Slide the union nut over the pipe before soldering the tailpiece.

EzPress® connections

RWV EzPress® connections are designed to be used with “K”, “L” & “M” grades of pipe/tubing. Size 2-1/2” to 4” valves are either compatible with XL or XLC series press jaws. If in doubt on which jaw to use please contact RWV.

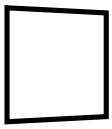
- To ensure proper operation, a minimum distance of 5 pipe diameters is required between any solder connections and an EzPress® joint. Extreme care should be taken to ensure that any heat applied to nearby fittings does not reach the EzPress® joint. It’s preferable to perform all solder connections first, allowing the pipe to cool completely before installing any EzPress® joint. A minimum of 2 pipe diameters spacing is recommended between any two press joints to ensure proper sealing of the copper pipe.
- Make sure that the cut on the pipe is as square as possible. Completely deburr both the inside and outside of the pipe, taking care to remove any raised chips or debris. If installing on existing pipe, it may be necessary to lightly sand the pipe ends to remove any scale or buildup.
- Ensure the valve ends are free from any foreign material or debris. Special care should be taken to also ensure that the o-ring in the valve end is seated correctly. For sizes 2-1/2” to 4” (both XL and XLC series press jaws) also verify correct seating of metal rings or segment rings.
- While using a twisting motion, slide the valve onto the pipe. Do not use any lubricant or sealant.
- It may be necessary to mark the insertion depth of the pipe to ensure that the joint doesn’t move prior to the crimping process. RWV female EzPress® connections have internal stops to limit the insertion depth of the pipe.
- Crimp using the appropriate crimping tool, follow the tool manufacturer’s instructions for proper calibration and use. Take care to ensure that the tool is in proper working condition and that the crimping jaws are clean and free from damage or defects.
- When installing an EzPress® tailpiece, slide the union nut over the pipe before mounting it.

PEX F1960 connections

RWV PEX connections are manufactured in accordance with ASTM1960 standard, ASTM1807 standard and REHAU EVERLOC+® patented system. For more information please refer to RWV valve technical sheets.
To ensure proper installation of a valve with F1960 PEX ASTM1960 standards the following guidelines should be followed.

- Ensure that the tubing is cut square and is free from burrs and/or debris. The tubing should be seated completely on the valve and firmly engage all of the end barbs. An appropriate sized ring should be installed using a properly sized/adjusted tool.
- Make sure that the cut on the pipe is as square as possible (never more than 5° off) and without jagged edges. Check for longitudinal cracks on the pipe wall after each cut.
- To properly make the connection:
  (a) Insert the ring onto PEX tube.
  (b) If installing a tailpiece, mount the union nut over the tailpiece before connecting it to the pipe. After the installation the tailpiece will prevent the union nut to be properly placed.
  (c) Insert the expander tool into the PEX tube and activate it.
  (d) Carefully expand the PEX tubing and ring.
  (e) Insert expanded ring/tubing onto PEX valve.

Pex Joint F1960


Ring F1960

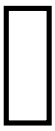
PEX Tube F1960 (expansion)

PEX F1807 connections

RWV PEX connections are manufactured in accordance with ASTM1960 standard, ASTM1807 standard and REHAU EVERLOC+® patented system. For more information please refer to RWV valve technical sheets.
To ensure proper installation of a valve with F1807 PEX ASTM1807 standards the following guidelines should be followed.

- Ensure that the tubing is cut square and is free from burrs and/or debris. The tubing should be seated completely on the valve and firmly engage all of the end barbs. An appropriate sized crimp ring should be installed using a properly sized/adjusted tool.
- Make sure that the cut on the pipe is as square as possible (never more than 5° off) and without jagged edges. Check for longitudinal cracks on the pipe wall after each cut.
- To properly make the connection:
  (a) Slide crimp ring over end of tubing.
  (b) If installing a tailpiece, mount the union nut over the tailpiece before connecting it to the pipe. After the installation the tailpiece will prevent the union nut to be properly placed.
  (c) Insert valve to end of tubing until it stops.
  (d) Position the crimp ring 1/8” to 1/4” from the end of the tubing and over the ribs of the valve.
  (e) Place the crimping end of the tool around the crimp ring and press the handle together.
  (f) Check for proper crimp with a gauge.

Pex Joint F1807


Crimp Ring F1807

PEX Tube F1807 (expansion)

EzGrip® connections

EzGrip® valves are designed to be used with copper K,L & M hard drawn tubing (ASTM BSS), CPVC pipe in CTS sizes (ASTM D-2846) and PEX A,B & C tubing (ASTM F876 & F877). A support insert is required on PEX installations. EzGrip® valves are **NOT** suitable for service on PEX tubing with an oxygen barrier on the outer layer or PEX-AL-PEX tubing.

- To ensure proper operation, a minimum distance of 5 pipe diameters is required between any solder connections and an EzGrip® joint. Extreme care should be taken to ensure that any heat applied to nearby fittings does not reach the EzGrip® joint. It is preferable to perform all solder connections first, allowing the pipe to cool completely before installing any EzGrip® joint. A minimum of 2 pipe diameters spacing is recommended between any EzGrip® joints to ensure proper sealing and the ability to remove the valve.
- Using an appropriate cutting device, cut and ensure that the ends of the tubing are square and free from burrs on both the inside and outside of the tubing.
- Inspect and ensure that there are no scratches, gouges or any form of damage on the circumference of the tubing within 1inch of the cut ends. Damage in this area may cause leakage. A light bevel or chamfer should be applied to the outside diameter of all pipe materials prior to installation. This will protect the o-ring seal from damage during installation.
- Check the valve for any signs of damage to the EzGrip® cartridge and/or any foreign material or debris that may be inside the valve.
- For PEX installations: Install the supplied PEX support insert into the PEX tubing and then insert the tubing into the valve per item # 6 below.
- Using a straight pushing movement, push the tubing fully into the valve and ensure that it is engaged properly. **Note: The tubing must be pushed completely inside the valve and fully engage the metal teeth as well as the O-Ring seal to obtain a proper joint.**
- To reposition the valve, use light force to simply rotate to the desired orientation.
- To remove the valve, use the appropriate section of the removal tool (pictured below) and while pushing this tool against the exposed plastic collar of the valve, remove the tubing. Note: This removal tool also features an integral packing nut adjustment wrench.

Removal tool

PEX support insert

REAHU Everloc+® connections
RWV PEX connections are manufactured in accordance with ASTM1960 standard, ASTM1807 standard and REHAU EVERLOC+® patented system. For more information please refer to RWV valve technical sheets.

Valves with EVERLOC+® compression-sleeve connection require EVERLOC+® PEXa compression sleeves and REHAU PEXa pipe. Installation is only performed with EVERLOC+® compression-sleeve tools. Follow all published REHAU Technical Guidelines available at *www.na.rehau.com/resourcecenter*.

USE AND MAINTENANCE

Valves need to be operated on a regular basis (at least 6 times a year) with a complete open/close cycle. Beyond routine periodic cycling no additional maintenance is required
Valves must be replaced in case of leakages and/or damages. **For models with adjustable packing nuts**, leakages through the stem may be stopped by tightening the packing nut. Rotate the nut clockwise taking care not to damage the valve body with excessive strength. Wear proper protection gear when performing any maintenance. For models without blow-out proof stems, depressurize the line before taking any action. If leakage doesn't stop, the valve may have to be replaced.
The valves have been designed and manufactured to be exclusively used as shut-off valves, therefore they shall be used in the fully open or fully closed position only. They must be operated only by acting on the lever (straight lever or wing lever) provided by RWV without any other additional device.
RWV declines any direct or indirect responsibility in case of improper use, tampering, modification or dismantling of the valves. The improper use, tampering and/or modification on any part of the valve, voids the warranty and liability for any failure or damage as well as any applicable Certification.

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