



HOOK-UP COIL KITS

How to use your RWV Hook-Up Coil Kit (Installation, Operation and Maintenance Instructions).

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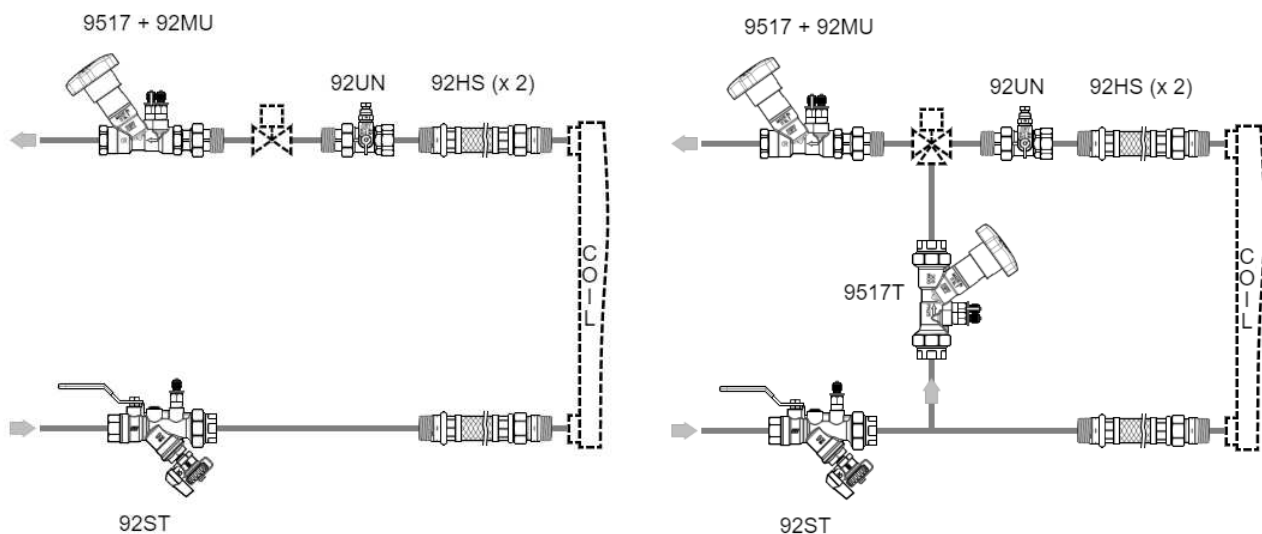
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Red-White Valve Corp. assumes no responsibility for any damages or injuries resulting from non compliance with installation instructions or standard good practice when installing, operating or maintaining the valves and components included into its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

GENERAL INFORMATION

- RWV Hook-Up Kits are provided pre-packed and labeled to easier identify and sort them on site.
- The kits can be provided in a wide range of connection types and configurations. Upon receipt of the shipment, ensure to have received the proper kits for the coils to be installed.
- If any component is damaged or missing, please contact RWV.
- Hoses, gaskets and O-rings used in RWV Coil Kits are made of EPDM Perox. Do not introduce chemicals in the system without verifying compatibility with the EPDM Perox material. Failure to follow this instruction could cause damage to the coil hoses, O-rings and gaskets, resulting in property damage.

INSTALLATION



Here above are presented, for reference only, typical 2-way and 3-way configurations.

To ensure the best performance of each installation kit the following guidelines should be followed:

- Make sure that all the valves requiring it are installed in the correct direction of flow (the flow must match the arrow marked on the valve bodies where applicable).

- The balancing valve, where provided, should be preferably installed on the return line. The minimum lengths of straight pipe upstream and downstream of the valves should be respected when indicated in the specific balancing valve technical sheet.
- Air vents, when provided, must be positioned at the highest possible location and should face upward.
- Fluid in the system should be kept as clean as possible. The installation should include a sufficient amount of strainers. All RWV combination strainers of series 92S feature a 20 mesh stainless steel screen and a blowout drain valve mounted on the cap of the strainer. RWV recommends cleaning the strainers using the blow out at least once every year. If there is an increase in pressure drop, the 20-mesh stainless steel screen may need to be cleaned. To access the strainer screen, remove the cap from the valve body. Clean out the screen and reinstall it into the valve body. Replace the strainer gasket with new, RWV-supplied component, if damage is present.
- The RWV coil kits are designed to be used with water. If any different fluid/additive is used (for example a 50% ethylene glycol and water solution) complete fluid specification should be sent to RWV for compatibility, preferably with the order.

O-RINGS INSTALLATION OR REPLACEMENT

- The o-rings in the union-type connections should be lubricated with silicon oil (use of mineral oils MUST be avoided as they damage EPDM rubber).
- Lubrication prevents the o-ring from pinching or tearing. O-rings should not be twisted, forced or rolled over any sharp corner or edge (including threading).
- Before installing the O-ring please verify the installation groove is free from foreign particles (for example metal chips or dirt). Those could damage the o-ring causing leakages and reducing its life.
- Never over-tight the union-type connections. Close them hand-tight, then apply an additional quarter turn.

VALVES INSTALLATION

Threaded connections

All Hook-up kits threaded connections are NPT. Please ensure threads are not damaged during transportation and installation.

- To install the valve only pipe sealant should be used. The use of tape may lead to overtightening and cracks in the FNPT components. Before installing the valve thoroughly deburr and/or ream the pipe to remove any materials protruding into the flow path.
- When tightening the valves to the pipe use two wrenches, one to secure the hex pad nearest the joint and the other to screw the threaded end.
- When installing a tailpiece, slide the union nut over the pipe before mounting it, as after the installation the tailpiece will prevent the union nut to be properly placed.

Sweat connections

RWV sweat connections are designed to be soft soldered.

- Valves contain polymer materials such as o-rings and PTFE seals, those can be damaged by excessive heat therefore 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.
- If a valve features a ball valve, please solder it to the line in closed position. 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 weathers this should be done with the parts at ambient temperature. After applying the coat, slide the pipe to the shoulder of the socket then rotate a few times to insure flux properly cover the connection. It's then possible to make the soldering, this has to be performed with state-of-the-art methods.
- 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, as after the installation the tailpiece will prevent the union nut to be properly placed.

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 a EzPress tailpiece, slide the union nut over the pipe before mounting it, as after the installation the tailpiece will prevent the union nut to be properly placed.

PEX F1960 connections

RWV PEX connections for Hook-up Kits are designed according ASTM1960. To ensure proper installation following guidelines should be followed.

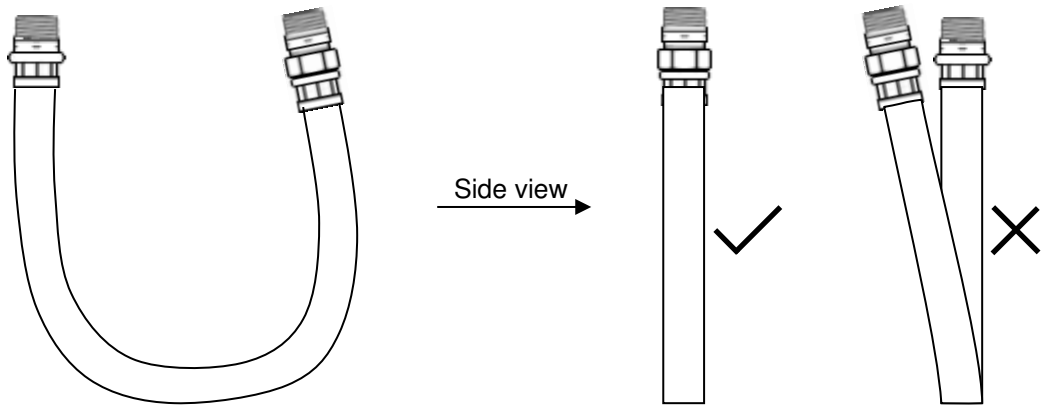
- Ensure that the tubing is cut square and is free from burrs and/or debris. The tubing should be seated completely on the valve and firmly engage all of the end barbs. An appropriate sized ring should be installed using a properly sized/adjusted tool.
- Make sure that the cut on the pipe is as square 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.

HOSES

Hoses are usually a delicate element of a coil installation. As their dimensions changes with pressure those have to be selected of a proper length to absorb expansions and contractions due to pressurization, additionally some allowance must be given when installing them.

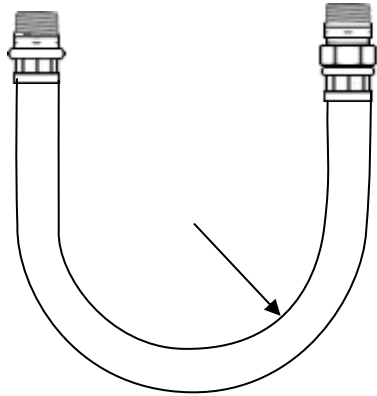


Applying torque (twisting) to the hoses must be avoided, bends should be made in such a way that a hose can always be contained in one plane.

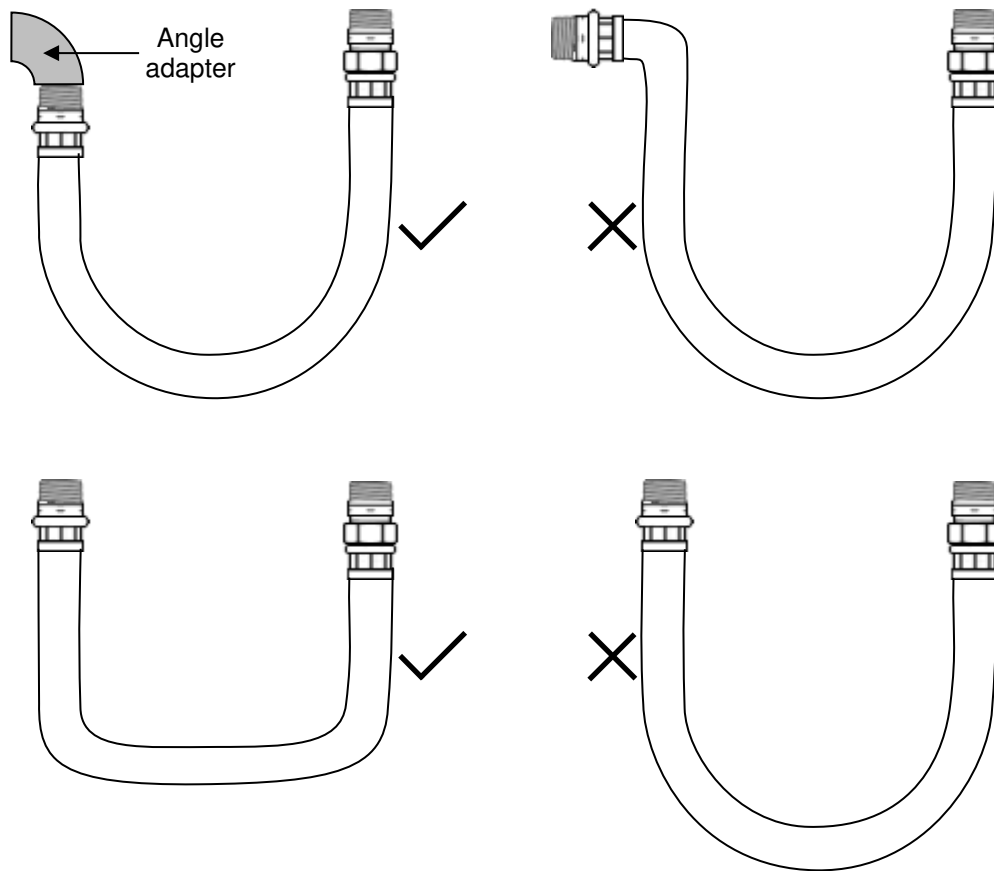


Sharp bends must be avoided. Hoses should NOT be bended to a radius lower than that indicated in the following table. If coil hoses are stored or installed at temperatures of 40°F/4°C or lower, the bend radius should be increased by 50%.

Nominal diameter	Minimum bending radius [in]
1/2"	1.77
3/4"	2.95
1"	3.54
1 1/4"	4.72
1 1/2"	5.91
2"	7.09



Whenever the bend radius falls below the indicated values, an angle adapter should be used to remove the sharp bend. In addition always keep the hose radius as large as possible.



To prevent damage to the connections, torque during assembly must not exceed hand-tight plus a quarter turn. NOTE: Over-tightening of the threaded connection on the swivel end may cause cuts in the compression gasket, resulting in leakage past the compression gasket.

After the system has been pressurized check coil hoses for leaks or discolored sections in the steel braided sections. Additionally RWV suggests to inspect hoses every year. Damaged coil hoses must be replaced, attempts to repair them must be avoided.

FLOW RATE REGULATION

Procedure for setting or measuring the flow rate depends on the type of balancing valve being included into the specific coil kit (manual balancing, metering station, automatic balancing, PICV). Please refer to the spec sheets and IOM of the specific model of balancing valve being used in the coil kit for instructions on flow rate measurement and regulation.

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