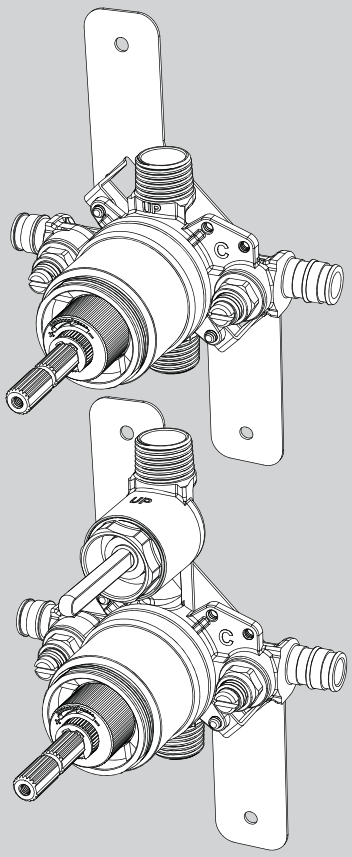
INSTRUCTIONS FOR MODELS

CPV-PB-PXE
CPV-PB-DV-PXE



NEED HELP?

For additional assistance or service please contact:

SPEAKMAN® Company
400 Anchor Mill Road
New Castle, DE 19720

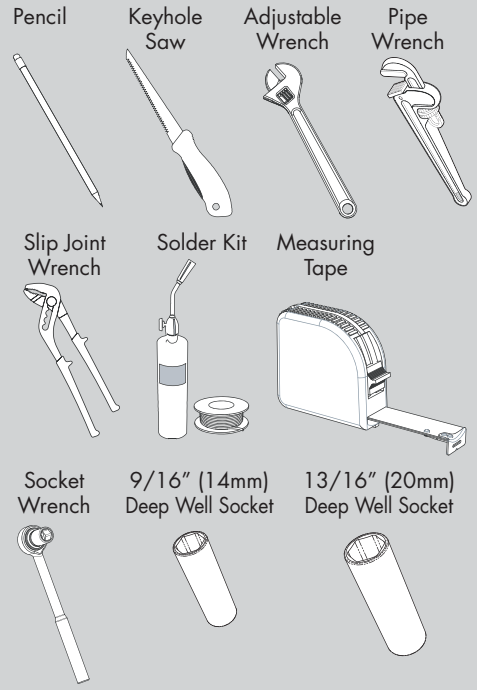
800-537-2107

customerservice@speakman.com

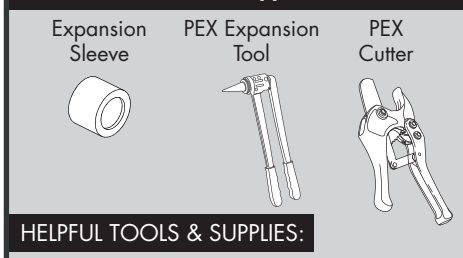
www.speakman.com

92-CPV-PB-PXE-01

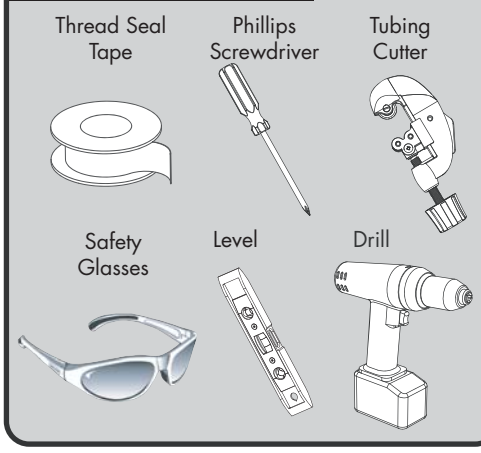
TOOLS AND SUPPLIES



NOTE: PEX tools and supplies NOT INCLUDED.



HELPFUL TOOLS & SUPPLIES:



IMPORTANT

- Be sure to read instructions thoroughly before beginning installation.
- Be sure to have properly adjusted the Temperature Limiting Stop (TLS) as outlined in this Installation Manual.
- Inspect all connections after installation of valve.
- This valve has an operating range of 20-80 psi.
- This valve is designed to be used in conjunction with a shower-head rated at 1.75 gpm (6.6 L/min) or higher flow rate.
- **NOTE:** This installation manual covers several models of valves. While the appearance of your valve may differ from those shown, the installation method is the same.
- Maximum water pressure: 125 psi static; minimum water pressure: 20 psi flowing; minimum cold supply temperature: 40 °F; maximum hot supply temperature: 160 °F; minimum hot supply temperature: 5 °F above set point.

SAFETY TIPS

Cover your drain to prevent loss of parts. Be sure to wear eye protection while cutting pipe.

MAINTENANCE

Your new Shower/Bath Valve is designed for years of trouble-free performance. Keep it looking new by cleaning it periodically with a soft cloth. The use of harsh chemicals and abrasives on any of the Speakman custom finish products may damage the finish and void the product warranty. Please be sure to only use approved cleaners. Please contact Speakman for any clarification of acceptable cleaners.

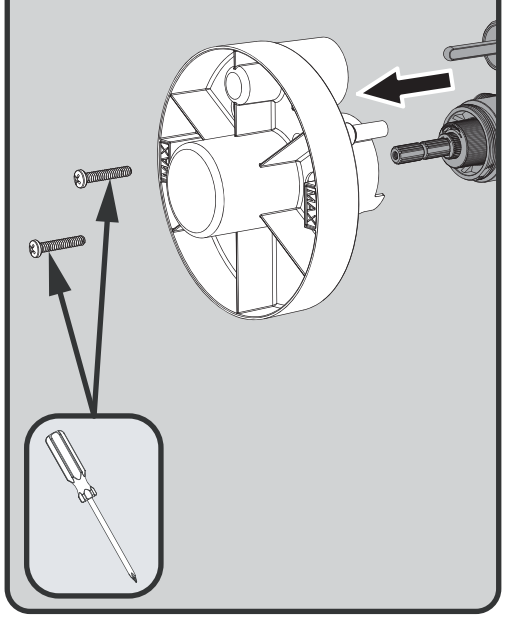
This type of valve must be cleaned and maintained on a regular basis. Periodic maintenance should be performed at least every 12 months or after any changes have been made to the building's plumbing system. This maintenance should include removing and cleaning the spring check stop components. Make sure the stop poppet in each stop moves freely. Valves that are installed outdoors should be winterized by removing all of the internal parts and removing any standing water from the valve. Quarterly the maximum hot temperature setting (TLS) should be checked and adjusted accordingly.

WARRANTY

Warranty information can be found at:
www.speakman.com

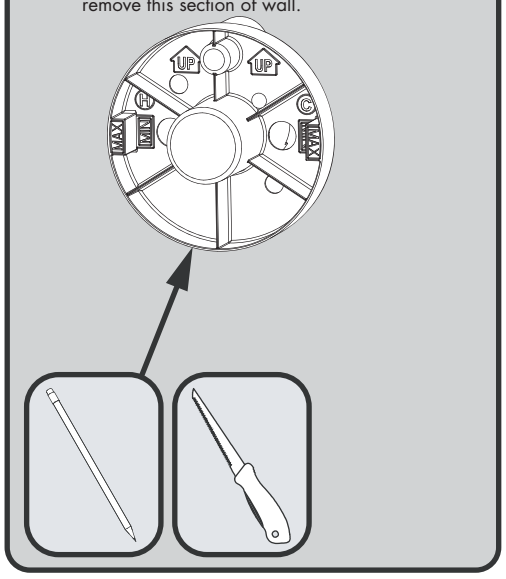
1

Remove the two Screws with a Philips Head Screwdriver then slide the Rough-In Template off the Valve.



2

Referencing the supplied rough-in dimensions (located at the end of this manual), determine the preferred location of Valve. Align the supplied Rough-In Template with this location and trace outline of Template onto wall. Using a Keyhole Saw or similar tool, cut along traced line and remove this section of wall.



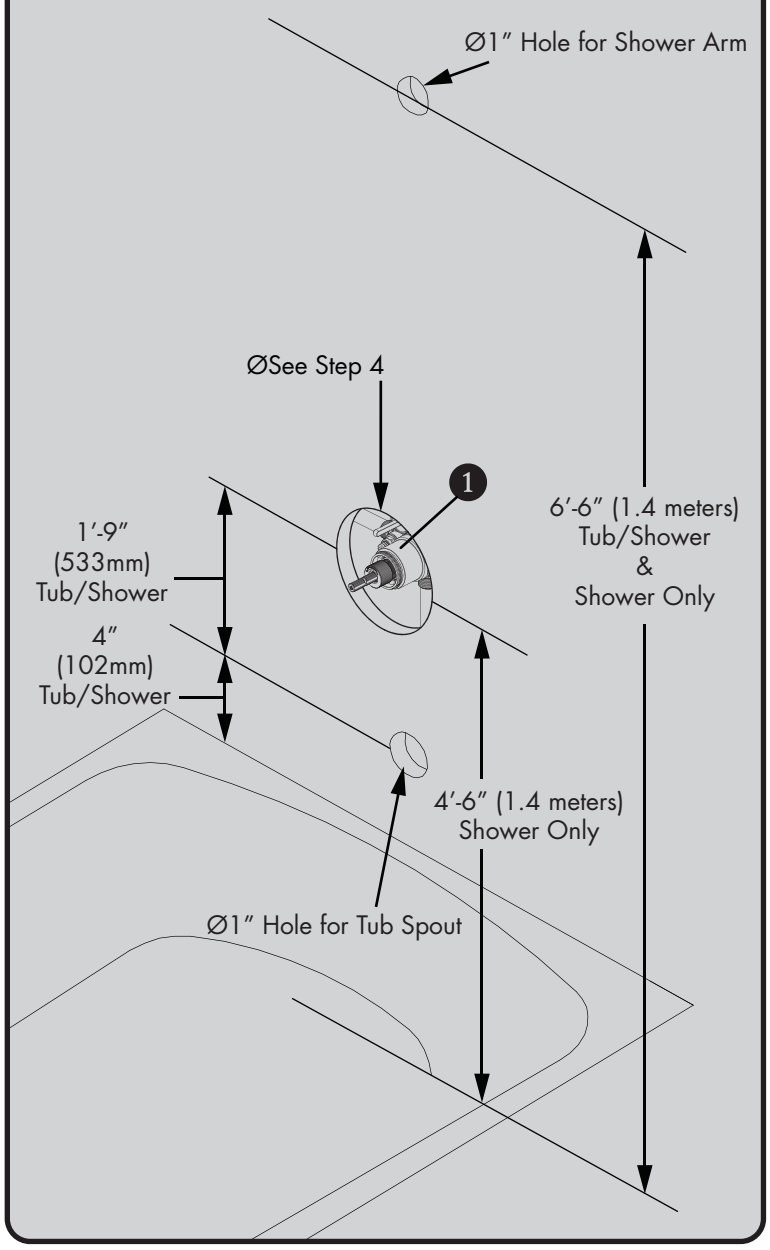
3

Shut off the water supply to the Tub and Shower. Verify that the hole sizes and positions in the wall are correct:

A. The shower and tub spout outlet holes should be 1" diameter.

B. To determine the Valve mounting depth, see **STEP 4**.

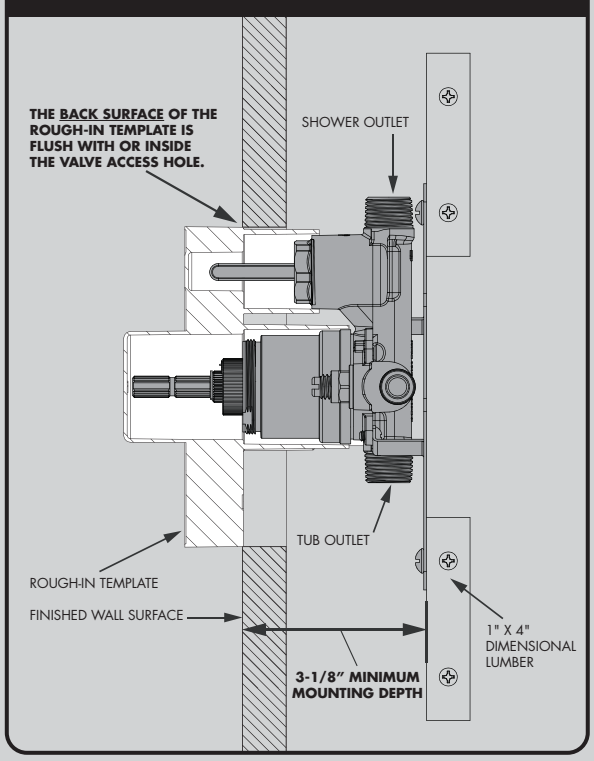
C. The distance from the Valve mounting surface to the finished wall MUST be between 3-1/8" to 4-1/8". Position the Valve Body ❶ correctly in the wall with the "UP" pointing up. The 1'-9" minimum from the Valve Body to the Tub Spout is required for proper operation.



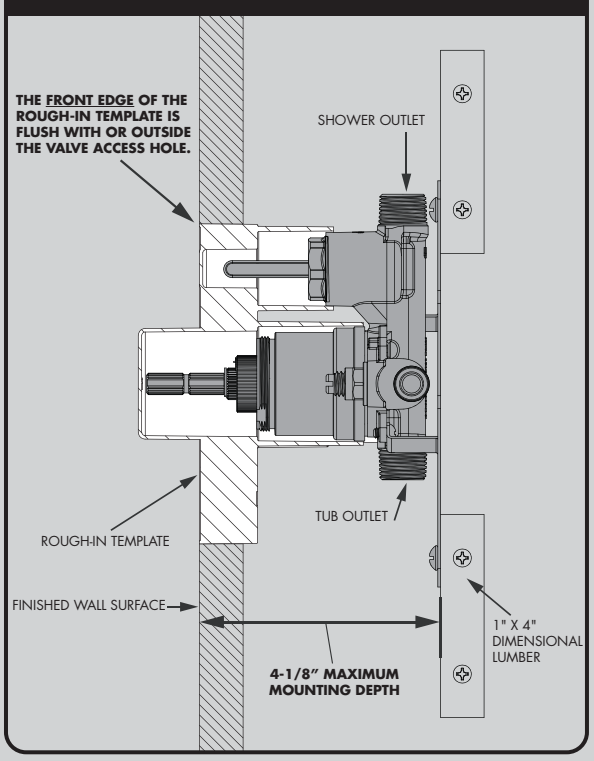
4

Install the Rough-In Template over the Shower Valve being sure the Rough-In Template sits flush against Valve Body. Following the rough-in dimensions for your model of valve (located ot the end of this manual) as well as the markings on the supplied Rough-In Template, install valve at proper depth. The distance from the Valve mounting surface to the finished wall MUST be between **3-1/8" - 4-1/8"**. See images below for reference.

MINIMUM MOUNTING DEPTH

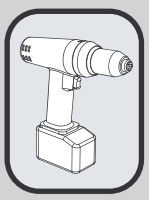


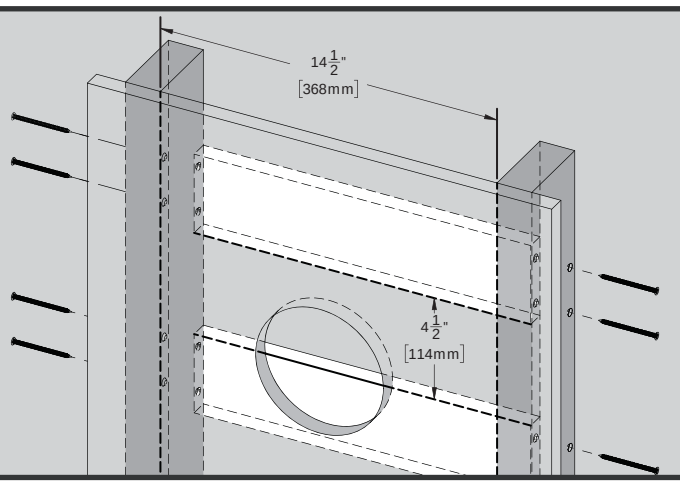
MAXIMUM MOUNTING DEPTH



5

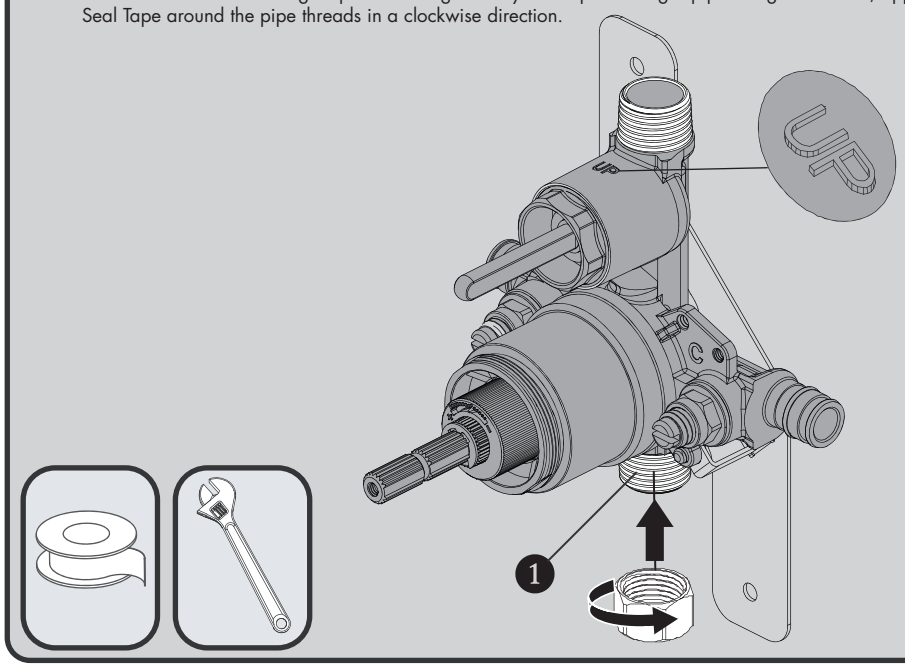
Mounting Structure behind the wall must be capable of supporting the Valve in use. Following the rough-in dimensions for your model of valve (located ot the end of this manual), reference the diagram below for the installation and placement of the bracing within a 2"x4" wall, using a 1"x4" brace. Mounting hardware is not included.





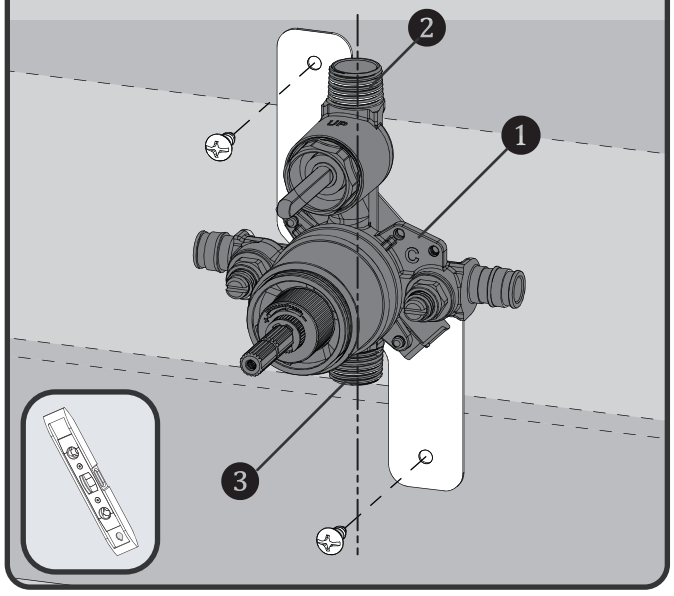
6

If your installation is for a shower only, apply Thread Seal Tape in a clockwise direction to the Tub Outlet Port ❶ and install the included Plug Cap. Wrench tighten. If you are performing a pipe fitting installation, apply Thread Seal Tape around the pipe threads in a clockwise direction.



7

Referencing the Rough-In Drawing, mount the Valve Assembly ❶ to structure within the wall. Ensuring the Shower Outlet ❷ and Tub Outlet ❸ are positioned perfectly vertical. Mounting Hardware and Mounting Structure must be capable of supporting the Valve in use. Mounting hardware is not included.



IMPORTANT:
Install all outlet connections (Pipe or Copper Sweat) **PRIOR** to installing PEX inlet connections.

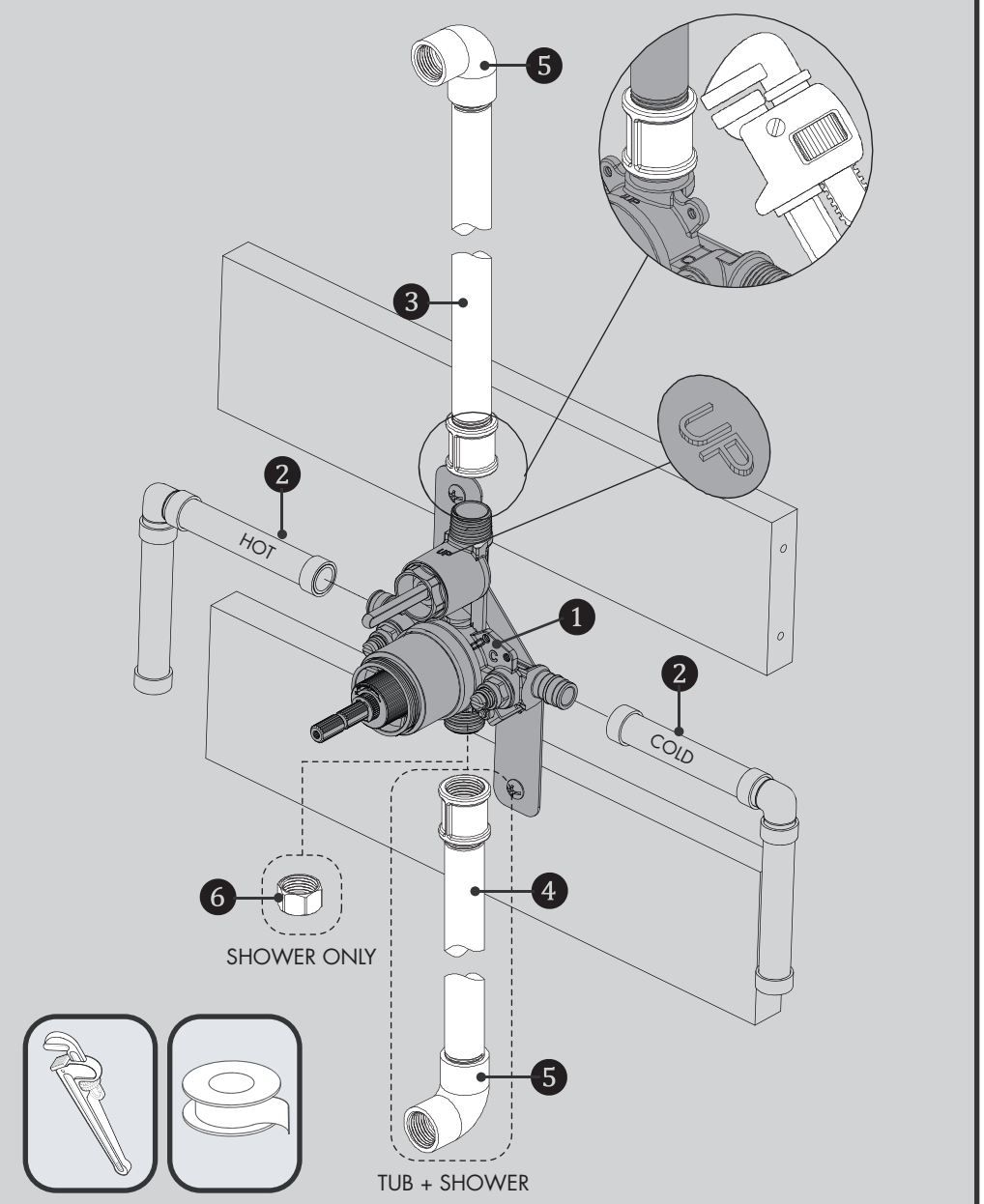
If you are performing a **Pipe Fitting Outlet Installation**, please proceed to **Step 8**.

OR

If you are performing a **Copper Sweat Outlet Installation**, please proceed to **Step 9**.

8 PIPE FITTING INSTALLATION

Connect the Shower Outlet Pipe ❸ (not included), and Tub Outlet Pipe ❹ (not included), by threading them into the Valve Body ❶ in a clockwise direction. Tighten the pipes to the Valve Body ❶ with a Pipe Wrench. Connect the Pipe Elbows ❺ (not included), to the end of the shower outlet and tub outlet pipes. If performing a shower only installation, install Plug Cap ❻ in place of tub outlet piping, as shown in **STEP 6**.

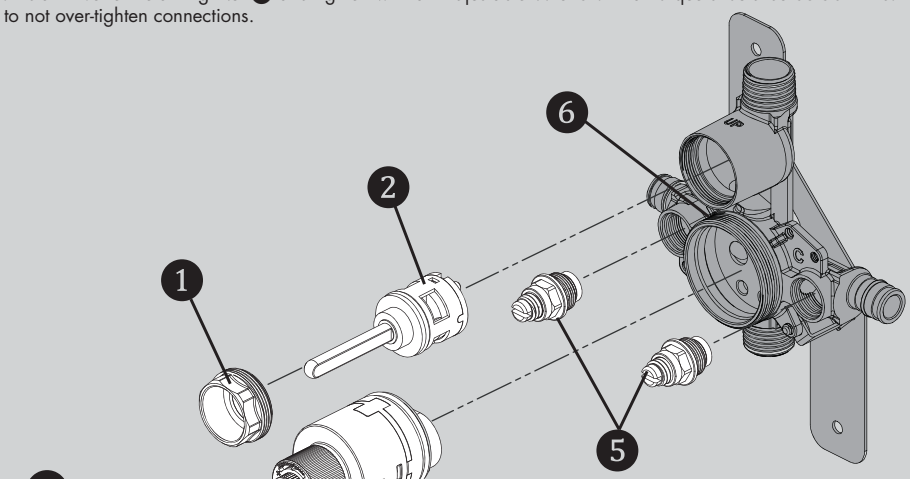


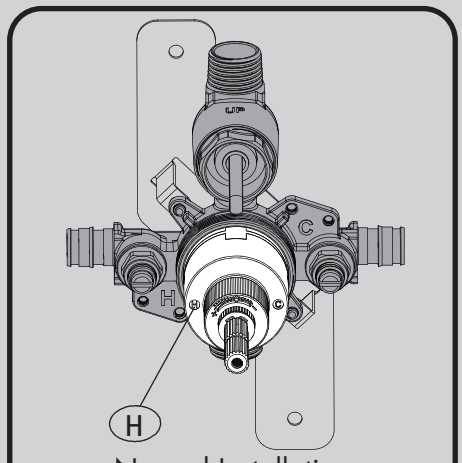
NOTE: The HOT water supply lines go into the H inlet, and the COLD water supply lines go into the C inlet. Do not use PEX or CPVC between the valve and spout.

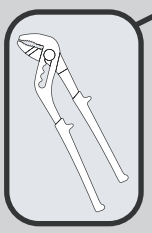
9 COPPER SWEAT INSTALLATION

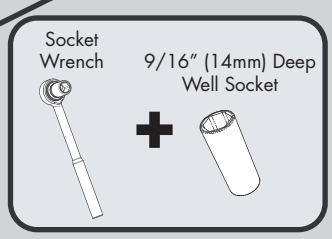
When performing a Copper Sweat installation, it is recommended that you remove the Valve Cartridge ❹, Integral Stops ❺, and Diverter Cartridge ❷ (where applicable) to prevent damage during soldering. Use a Slip Joint Wrench to unthread and remove the Bonnet ❸. Then remove Valve Cartridge ❹, from Valve Body ❻. Unthread and remove the Integral Stops ❺ using a Socket Wrench equipped with a 9/16" (14mm) Deep Well Socket. If your Shower Valve is equipped with an Integral Diverter, remove the Diverter Retaining Nut ❶ using an Adjustable Wrench. Remove Diverter Cartridge ❷ to prevent damage during soldering.

After soldering **(STEP 10)** is completed, reinstall the Valve Cartridge ❹, making sure that the mounting posts are aligned and engaged to the corresponding holes in the Valve Body ❻, with the **"H"** marking to the left side as shown below. Slide Bonnet ❸ over the Valve Cartridge ❹ and thread onto the Valve Body ❻. Tighten securely with Slip Joint Wrench on the machined flats of the Bonnet ❸. Final torque should be 88-106 in*lb. Take care to not over tighten connection or damage may occur. Reinstall the Integral Stops ❺ using a Socket Wrench equipped with a 9/16" (14mm) Deep Well Socket. Final torque should be 70-106 in*lb. If your Shower Valve is equipped with an Integral Diverter, reinstall the Diverter Cartridge ❷ taking care to align mounting posts of Cartridge with the corresponding holes in the Diverter Valve Body. Install Diverter Retaining Nut ❶ and tighten with an Adjustable Wrench. Final torque should be 35-53 in*lb. Take care to not over-tighten connections.





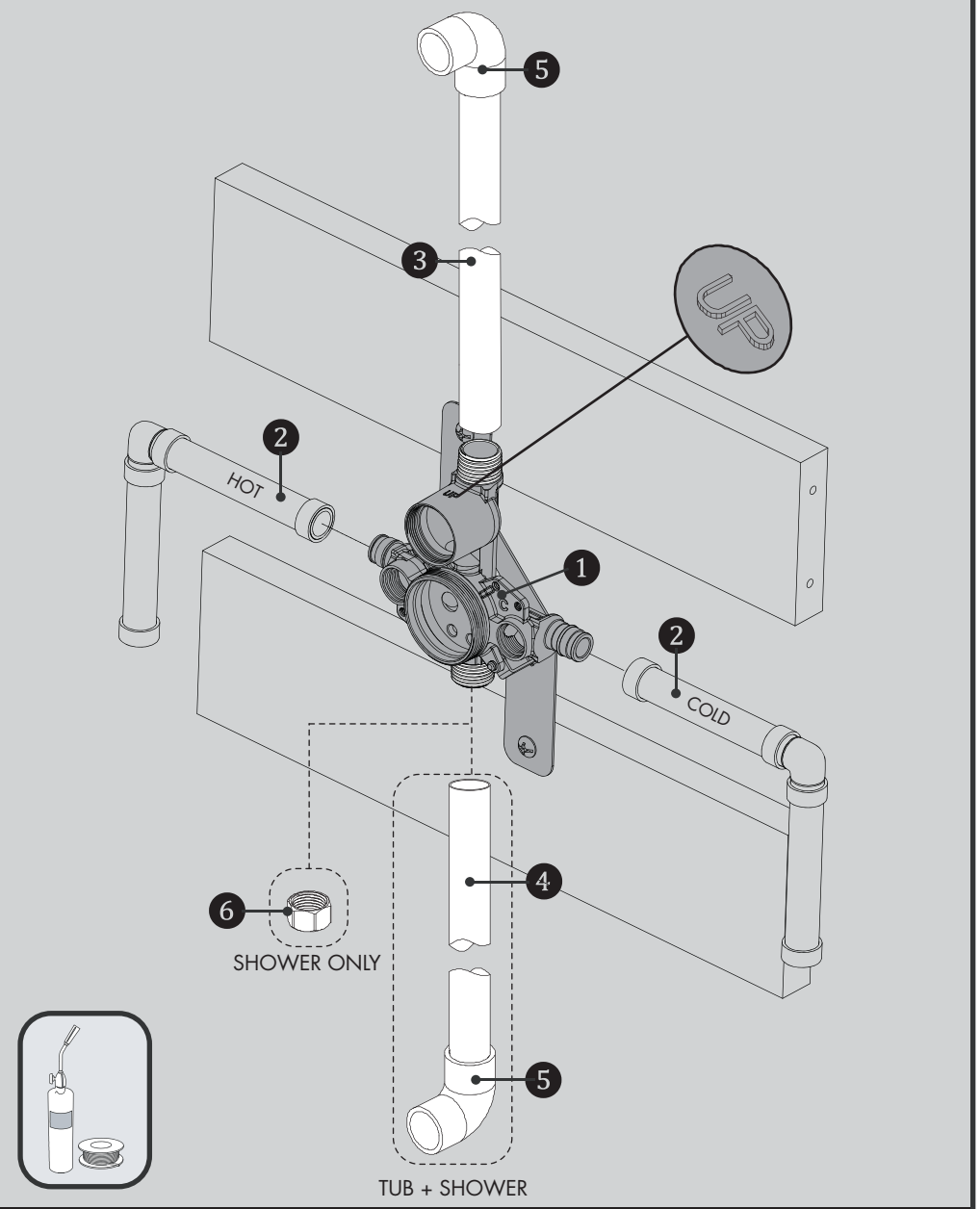




NOTE: Never install the valve body upside down!

10 COPPER SWEAT FITTING INSTALLATION

Connect the Shower Outlet Pipe ❸ (not included), and Tub Outlet Pipe ❹ (not included), by soldering them into the Valve Vody ❶. Connect the Pipe Elbows ❺ (not included), to the end of the shower outlet and tub outlet pipes. If performing a shower only installation, install Plug Cap ❻ in place of tub outlet piping, as shown in **STEP 6**. Verify that all connections are soldered. Reassemble Valve components as outlined in **STEP 9**.

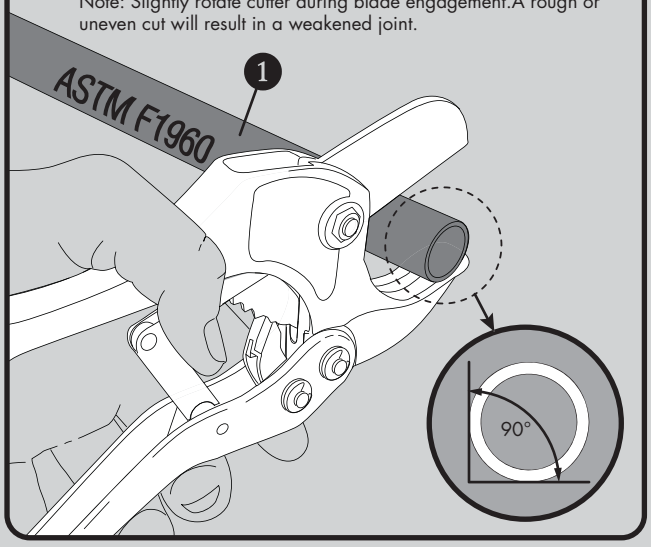


NOTE: The HOT water supply lines go into the H inlet, and the COLD water supply lines go into the C inlet. Do not use PEX or CPVC between the valve and spout.

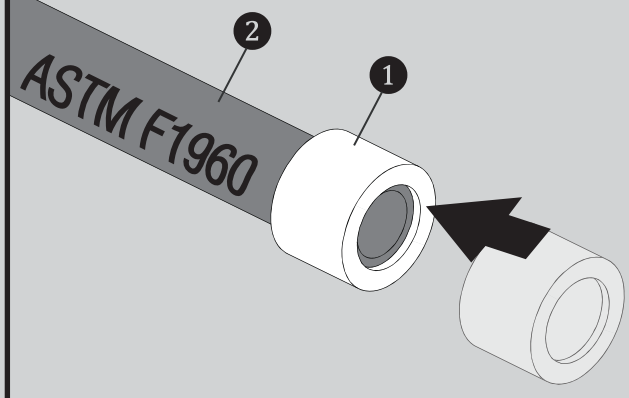
PEX (COLD EXPANSION) INSTALLATION INSTRUCTIONS

A Use Plastic Tubing Cutters (not included), to cut the ASTM F1960 compliant PEX Tubing ❶ to length. Ensure that a good square (90°) cut is obtained. A rough or uneven cut will result in a weakened joint. Do not crush Outer Diameter of tubing with cutters.

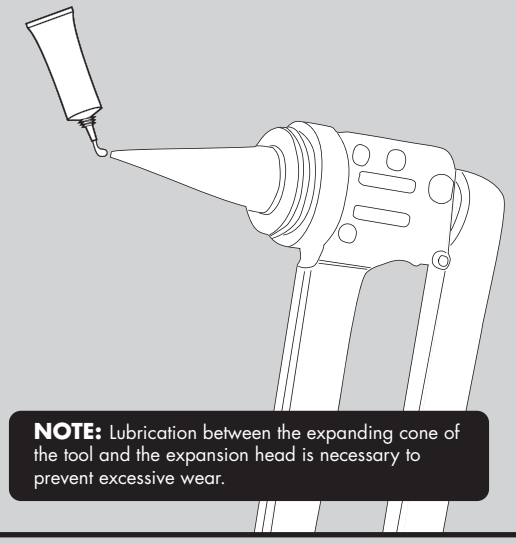
Note: Slightly rotate cutter during blade engagement.A rough or uneven cut will result in a weakened joint.



B Slide the correct size i.e., ½" ASTM F1960 compliant PEX Sleeve ❶ (not included) on to the Outside Diameter of ½" PEX Tubing ❷ (not included), until it reaches the stop edge. If the Sleeve is without a stop edge, then extend the Sleeve over the end of the tubing no more than 1/16".

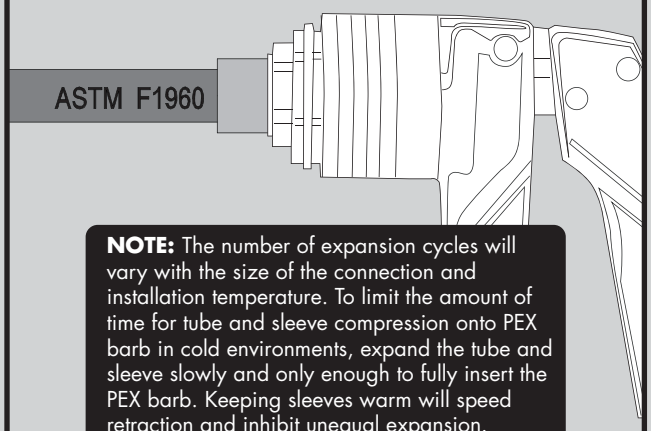


C Use ASTM F1960 Grip Expansion Tool for expanding PEX tube and sleeve together. Before installing the appropriate size expansion head on the tube expander tool, add lubricant lightly to the cone of the tool if needed. Do not allow lubricant to coat the inside of the pipe.



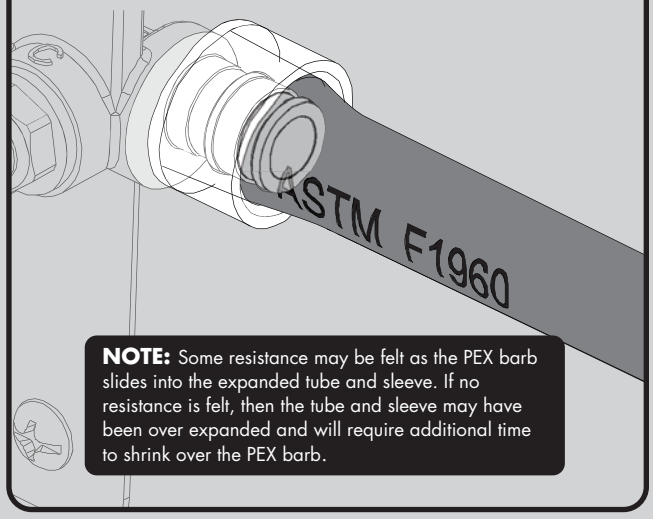
NOTE: Lubrication between the expanding cone of the tool and the expansion head is necessary to prevent excessive wear.

D Slide the tube and sleeve onto the tapered end of the expansion head as far as possible without forcing. Expand the tube and sleeve by closing the handles of the tube expander tool. Release the handles and allow the head to contract. Repeat expansions by removing the head from the tubing, rotating expander 1/8-turn, and sliding the head back into the tubing. Failure to rotate the tool between expansions may cause uneven expansion of the tube and sleeve and can create a leak path.



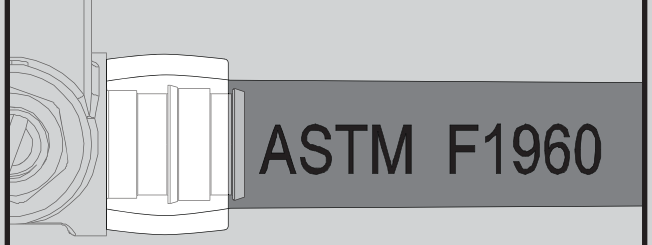
NOTE: The number of expansion cycles will vary with the size of the connection and installation temperature. To limit the amount of time for tube and sleeve compression onto PEX barb in cold environments, expand the tube and sleeve slowly and only enough to fully insert the PEX barb. Keeping sleeves warm will speed retraction and inhibit unequal expansion.

E After the final expansion, immediately remove the tool and insert the expanded tube and sleeve onto the PEX barb of the Valve until it touches the shoulder. Assure proper expansion so that PEX barb is touching the inside diameter of tube and sleeve. Hold the Valve in place until tube and sleeve memory constrict annularly around the PEX barb.



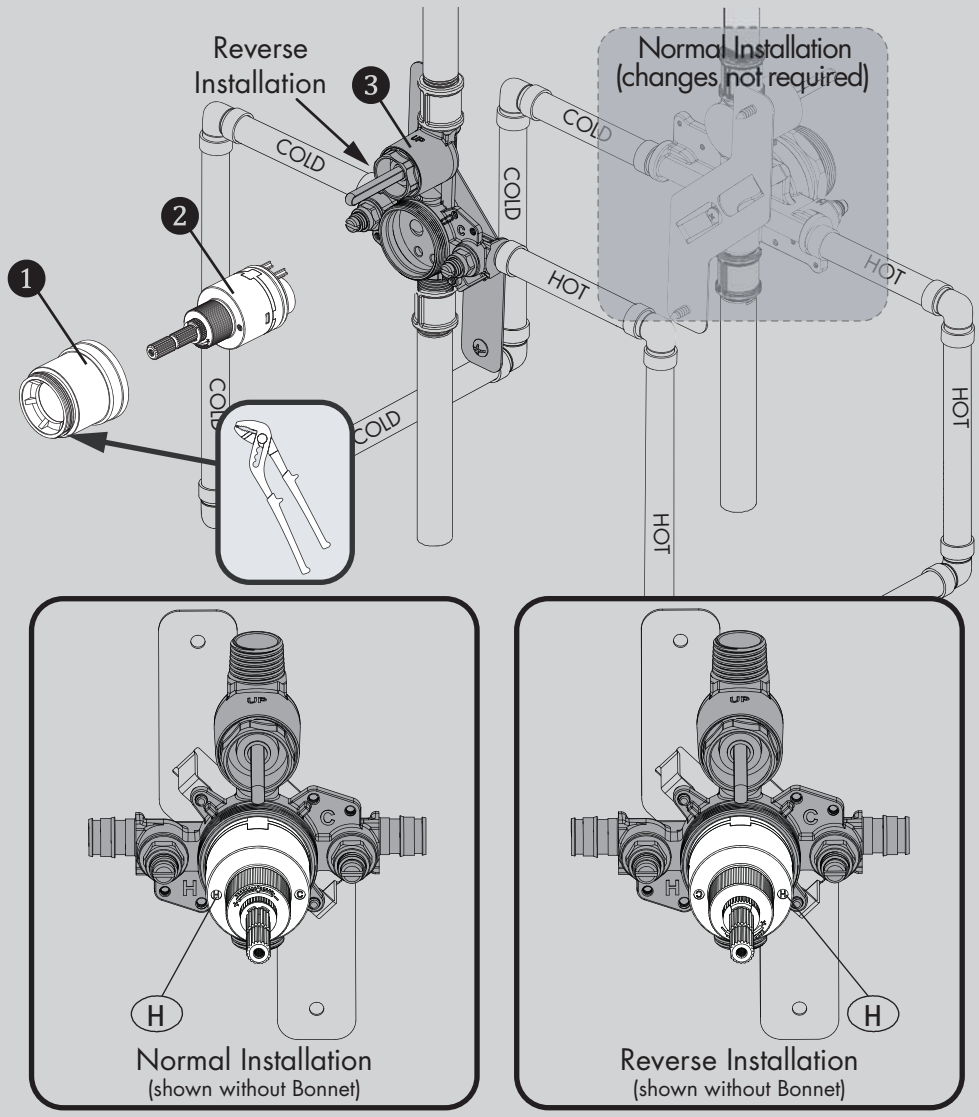
NOTE: Some resistance may be felt as the PEX barb slides into the expanded tube and sleeve. If no resistance is felt, then the tube and sleeve may have been over expanded and will require additional time to shrink over the PEX barb.

F Verify that the connection is complete and is secure.



11 BACK-TO-BACK INSTALLATION

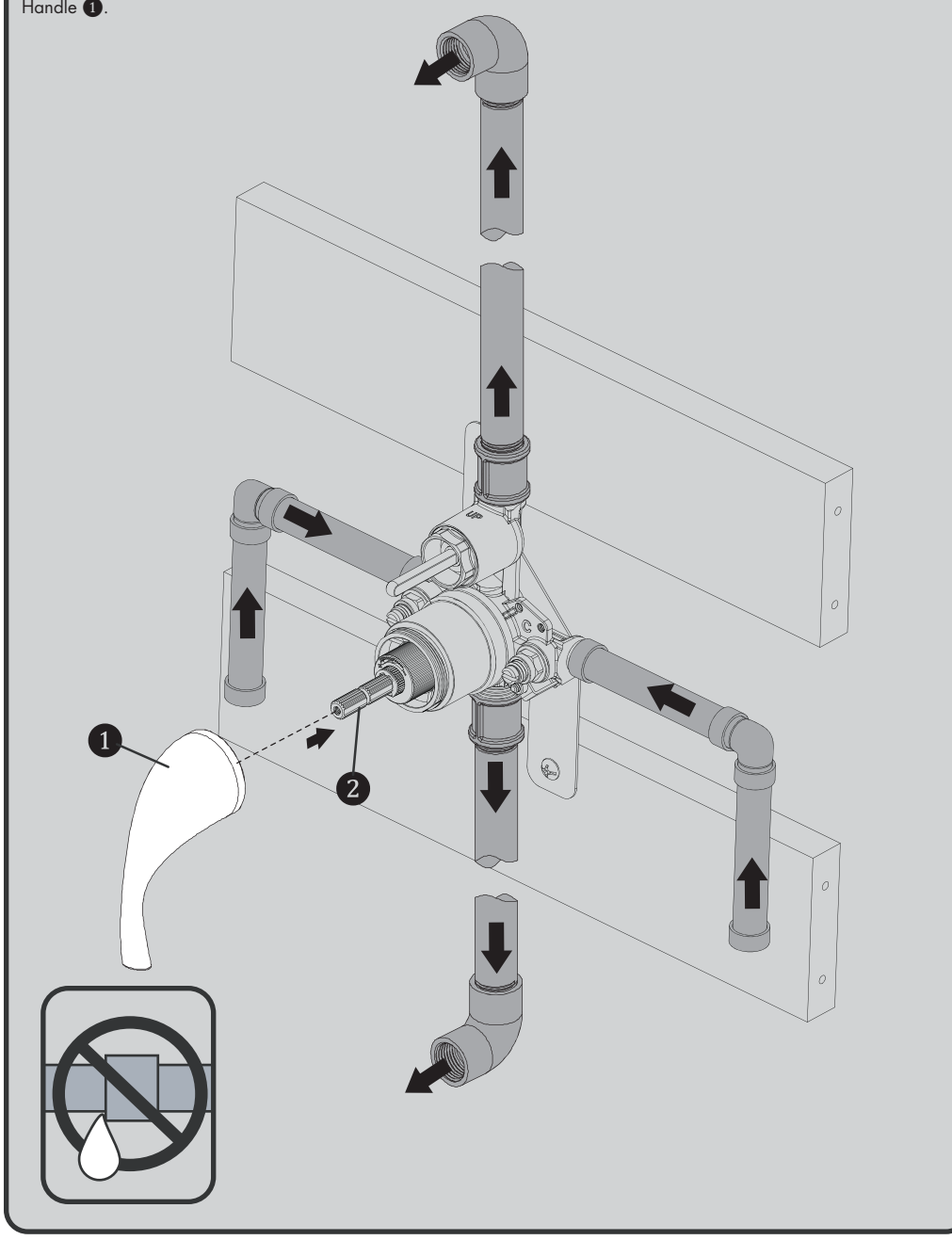
Your Shower Valve has the ability to be mounted back-to-back with another Valve in a shared space. This means the HOT and COLD inlets may be reversed. Please see the following steps to adapt your valve for back-to-back mounting or reversed inlet supplies.
If you are **NOT** making a reverse or back-to-back installation, skip this step, and continue with **STEP 12**. If the HOT and COLD water supplies are reversed (HOT on right and COLD on left), disassemble Valve Cartridge as outlined in **STEP 9**. Rotate Valve Cartridge ❷ 180° so **"H"** appears on the right. Install the Valve Cartridge ❷ making sure that the mounting posts are aligned and engaged to the corresponding holes in the Valve Body ❸. Slide Bonnet ❶ over the Cartridge and thread onto the body. Tighten securely with Slip Joint Wrench on the machined flats of the Bonnet ❶. Final torque should be 88-106 in*lb. Take care to not over tighten connection or damage may occur.



NOTE: Never install the valve body upside down!

12 FLUSHING THE WATER OUTLETS AND CHECKING FOR LEAKS

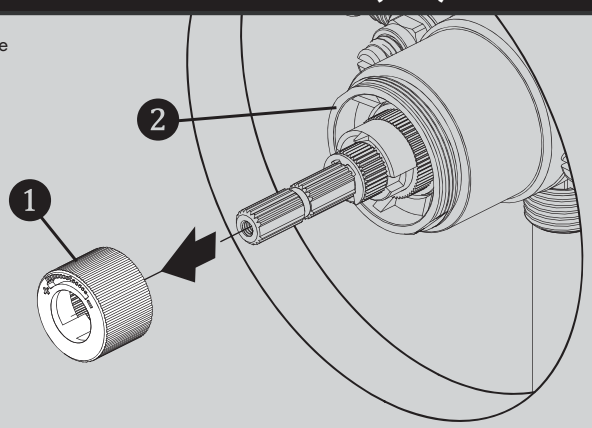
Place the Handle ❶ on the Valve Cartridge Spindle ❷ and turn the Handle ❶ clockwise to the full on mixed position. Turn on the HOT and COLD water supply lines and allow the water to flow from the outlets for one minute, or until all foreign matter has been flushed out. Check for leaks. Shut off the water at the Valve and supply lines. Remove the Handle ❶.



13 ADJUSTING THE TEMPERATURE LIMIT STOP (TLS)

The maximum outlet temperature setting adjustment (Temperature Limit Stop (TLS)) of the Valve has been factory set at 110 °F. To adjust the limit of the maximum outlet temperature the Valve delivers, adjust the Valve's temperature limit stop (TLS) collar by following the steps below.

• With the water supplies "On" and the Valve in the "Off" position, remove the (RED) TLS adjustment collar ❶ from the Cartridge ❷.

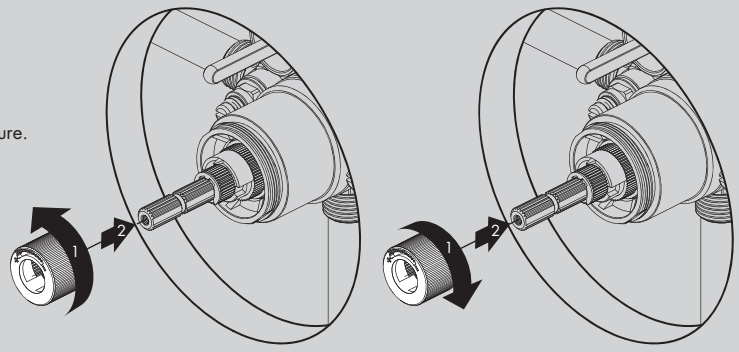


ADJUSTING THE TEMPERATURE LIMITER

• **For Colder setting**, adjust the Temperature Limiting Collar in a counter-clockwise direction and slide it back to the splined section of the Cartridge until fully seated. Rotate the Valve Spindle clockwise to check if desired outlet temperature is achieved. If not, repeat the procedure.

• **For Hotter setting**, adjust the Temperature Limiting Collar in a clockwise direction and slide it back to the splined section of the Cartridge until fully seated. Rotate the Valve Spindle clockwise to check if desired outlet temperature is achieved. If not, repeat the procedure.

• Once desired outlet temperature is achieved, rotate the spindle counter-clockwise to the "Off" position.

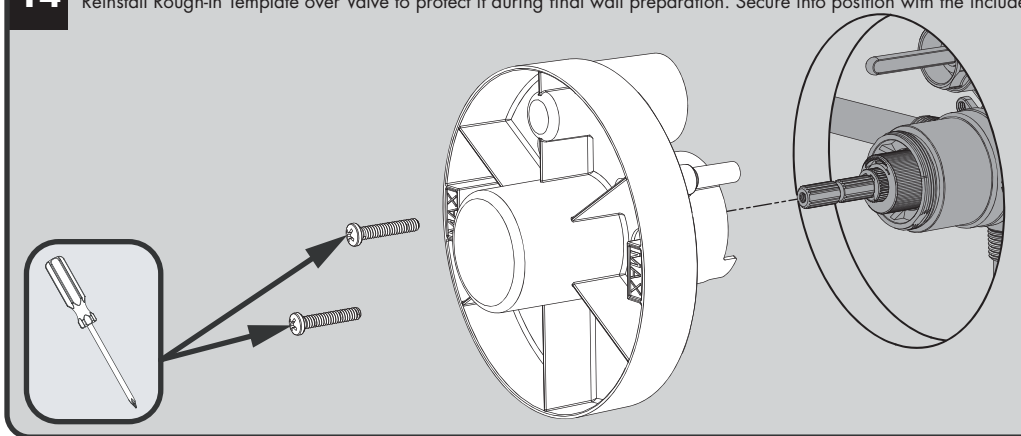


FOR **COLDER** WATER FOR **HOTTER** WATER

NOTE: A thermometer can be held at the Valve outlet to aid in either checking the existing factory setting or reaching the desired outlet temperature.

14

Reinstall Rough-In Template over Valve to protect it during final wall preparation. Secure into position with the included screws.



CPV-PB-PXE / CPV-PB-DV-PXE SERVICE INSTRUCTIONS

Service Instructions
Caution- Any repair or servicing of the Valve may effect the maximum outlet temperature setting of the Valve. After working on the Valve, make sure the maximum outlet temperature is set to the recommended setting of 110 °F.

Pressure Balance Cartridge Removal
1) Remove Trim from Valve. Close the Integral Stops of the Valve by turning the Stop Spindles clockwise.

2) With the Valve in the "OFF" position, remove the Bonnet by unthreading with a Slip Joint Wrench.

3) If necessary, remove the Cartridge from the Valve Body by pulling on the Valve spindle of the Cartridge. Verify that the Lower Cartridge Seal is in place within the Valve Cartridge, and not within the Valve Body.

4) Replace the Pressure Balance Cartridge if necessary. When replacing the Pressure Balance Cartridge, verify that the Lower Cartridge Seal is properly installed in the recess on the bottom of the Cartridge. This Lower Cartridge Seal is positioned over the HOT & COLD inlet waterways of the Valve Body.

5) Reassemble the Bonnet by threading it into the Valve Body with a Slip Joint Wrench. Final torque should be 88-106 in*lb. **Important-** Adjust the Valve's maximum outlet temperature to the recommended setting of 110 °F. See Temperature Limit Stop adjustment steps within this document.

6) Open the Integral Stops of the Valve by turning the Stop Spindles counter-clockwise. Check Valve for leaks.

7) Reassemble the Trim parts.

Spring Check Stop Parts Removal
1) Remove Trim from Valve. Shut off HOT and COLD water supply lines to the inlets of the Valve.

2) Unscrew the Stop's Retaining Nut using a Socket Wrench equipped with a 9/16" (14mm) Deep Well Socket. Carefully remove the Retaining Nut w/Spindle, Spring, and Poppet assembly. Clean and/or replace the necessary parts. Reassemble the parts, reversing the above procedure. Final torque should be 70-106 in*lb. Repeat procedure on the other Stop.

3) Turn on the HOT and COLD water supply lines. Check for leaks.

4) Reassemble the Trim Parts.

Diverter Cartridge Removal *(if present)*
1) Remove Trim from Valve. Close the Integral Stops of the Valve by turning the Stop Spindles clockwise.

2) Remove the Diverter Retaining Nut using an Adjustable Wrench.

3) Remove Diverter Cartridge from Valve Body. Verify that the Lower Cartridge Seal is in place within the Diverter Cartridge, and not within the Valve Body.

4) Replace the Diverter Cartridge if necessary. When replacing the Diverter Cartridge, make sure that the mounting posts are aligned and engaged to the corresponding holes of the Valve Body.

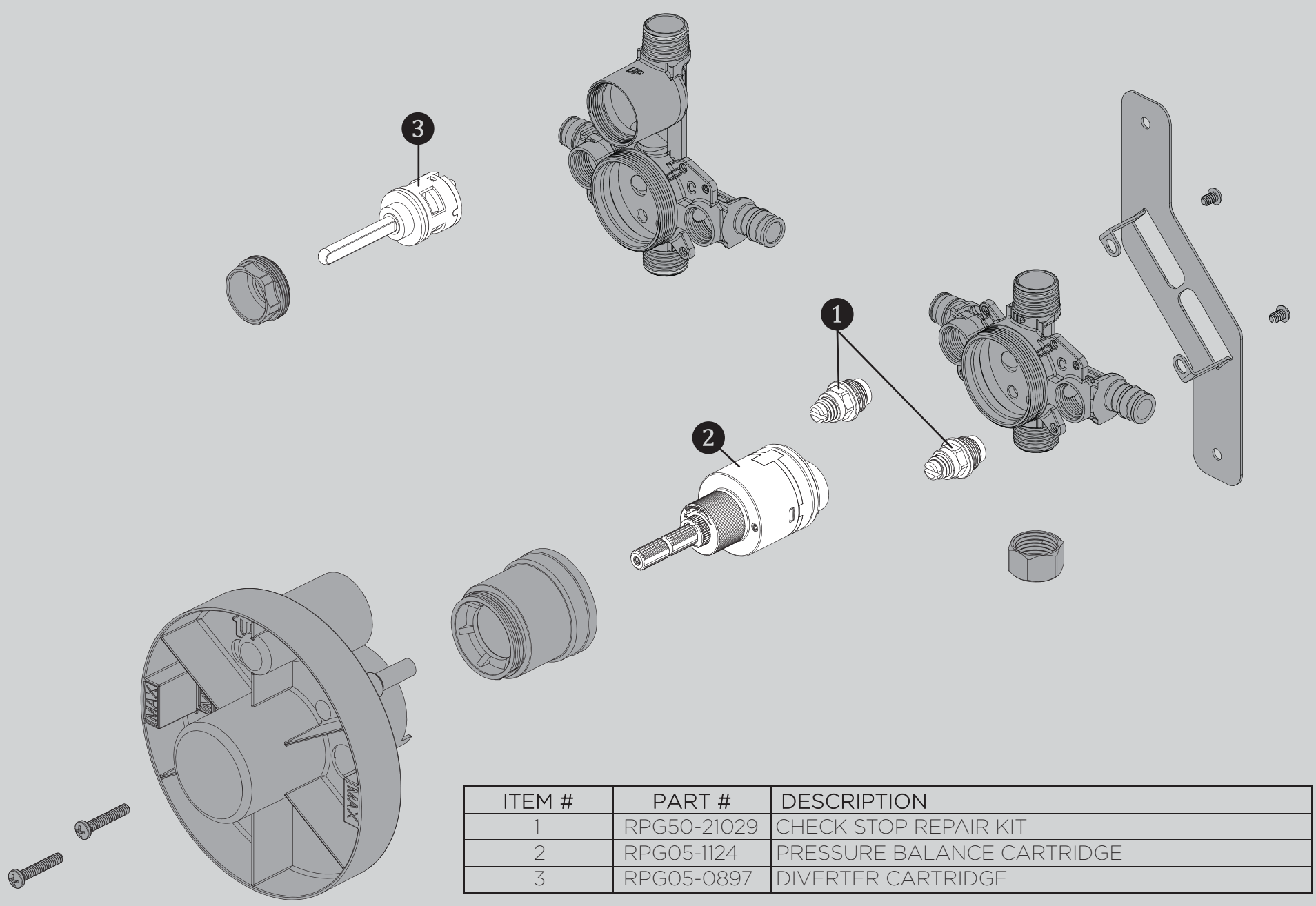
5) Reassemble the Diverter Retaining Nut using an Adjustable Wrench. Final torque should be 35-53 in*lb.

6) Open the Integral Stops of the Valve by turning the Stop Spindles counter-clockwise. Check for leaks.

7) Reassemble the Trim Parts.

CPV-PB-PXE / CPV-PB-DV-PXE REPAIR PARTS

SPEAKMAN®



ITEM #	PART #	DESCRIPTION
1	RPG50-21029	CHECK STOP REPAIR KIT
2	RPG05-1124	PRESSURE BALANCE CARTRIDGE
3	RPG05-0897	DIVERTER CARTRIDGE

CPV-PB-PXE ROUGH-IN DIAGRAM

SPEAKMAN®

NOTES:

COMPLIANCE:

ASME A112.18.1/CSA B125.1

ASSE1016/ASME A112.1016/CSA B125.16

CONNECTIONS:

Hot/Cold Inlets: ½" F1960 Cold Expansion PEX

Shower Outlet: ½" Female Copper Sweat
½" NPT Male

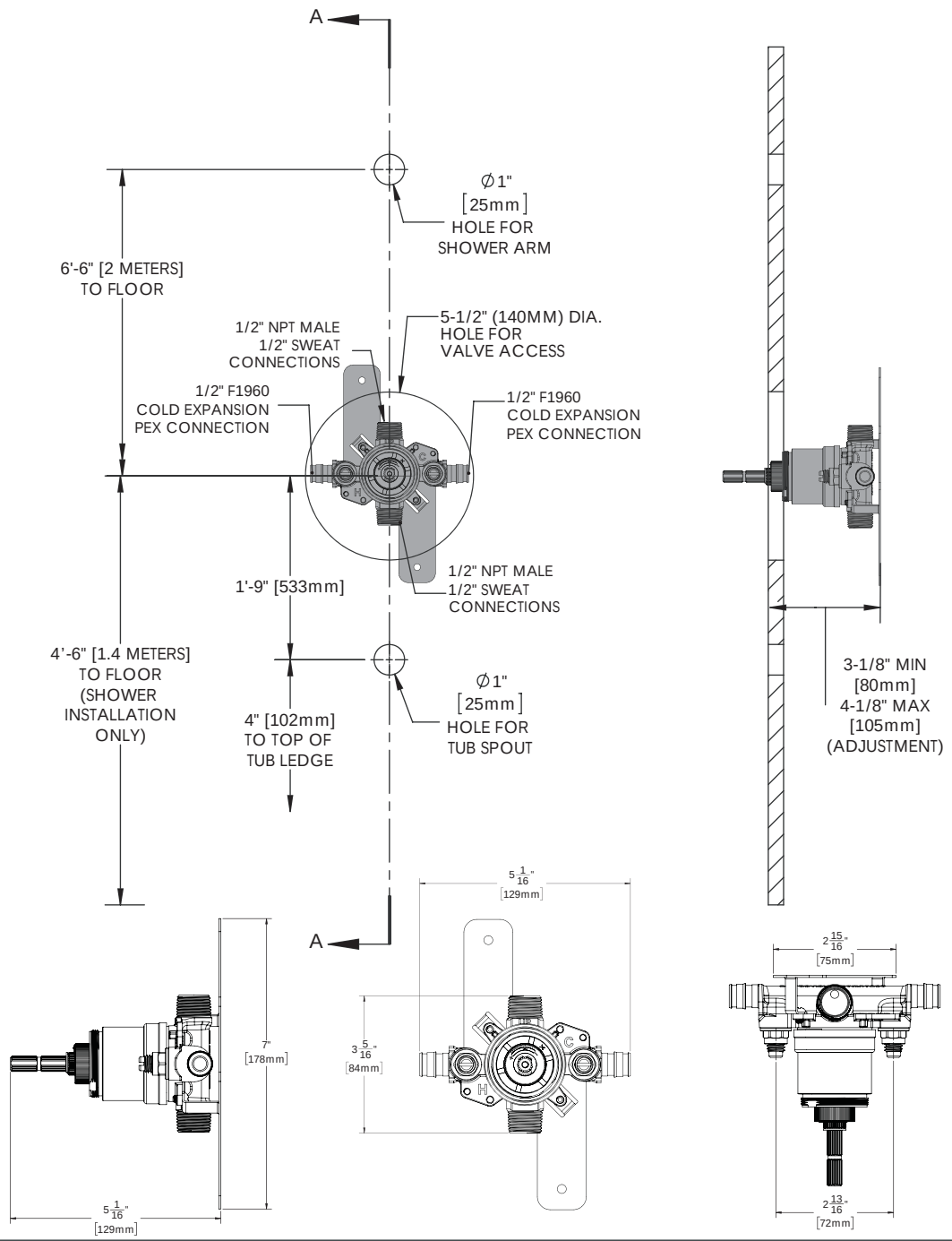
Tub Outlet: ½" Female Copper Sweat
½" NPT Male
(Cap included for Shower Only Connections)

NOTES:

This valve is designed to be used in conjunction with a shower-head rated at 1.75 gpm (6.6 L/min) or higher flow rate

Contractor to supply necessary inlet connections.

DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.
FOR ADA MOUNTING LOCATIONS, CONSULT ADAAG, ANSI A117.1, AND STATE REGULATIONS.



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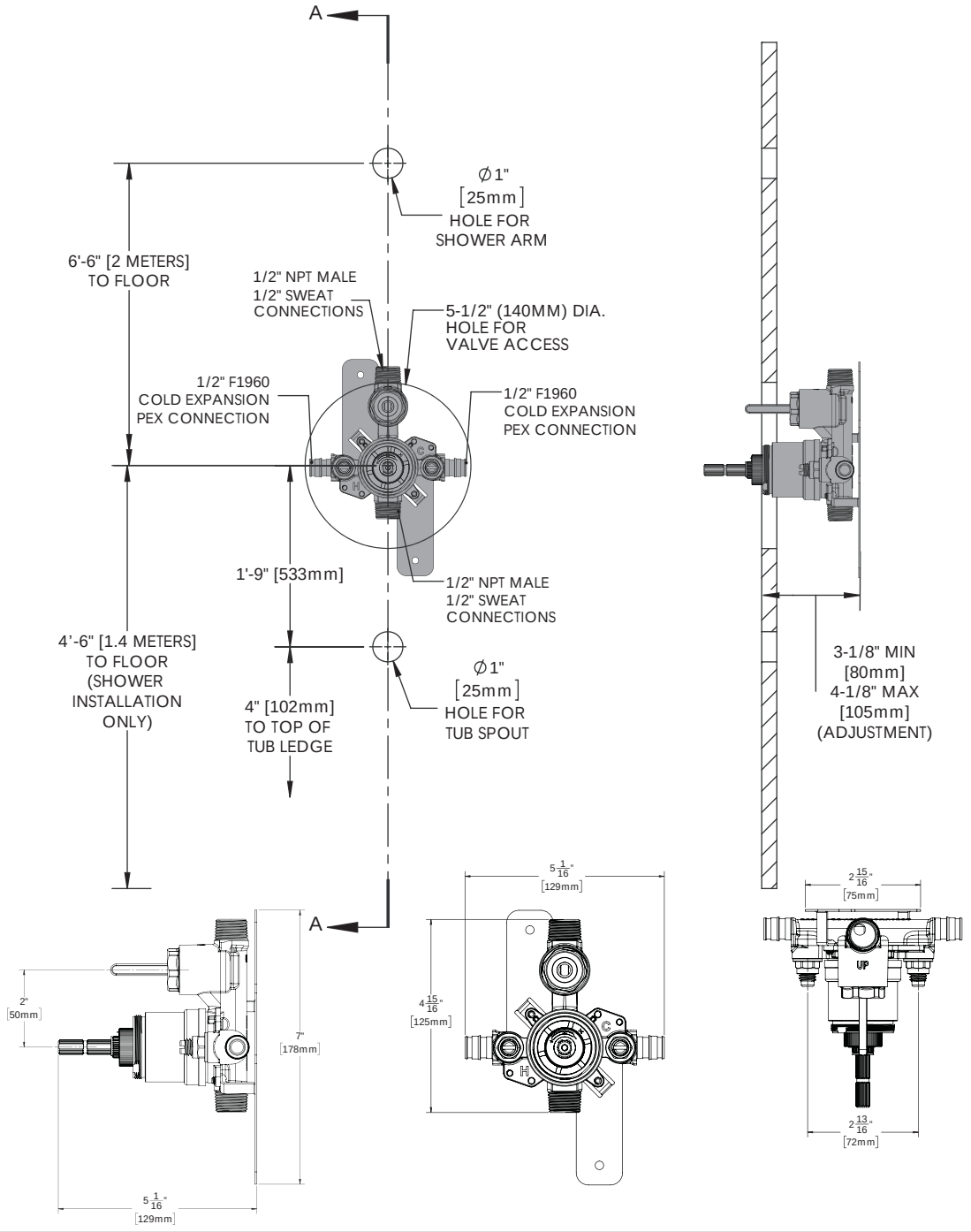

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