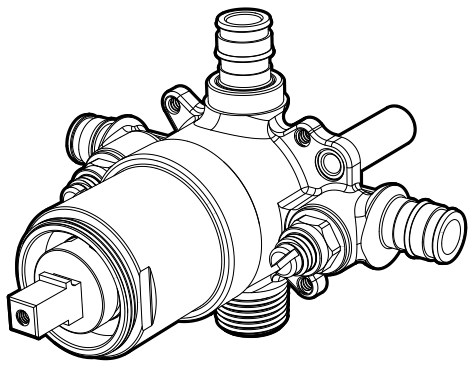
WOLVERINEBRASS®

INSTALLATION INSTRUCTIONS

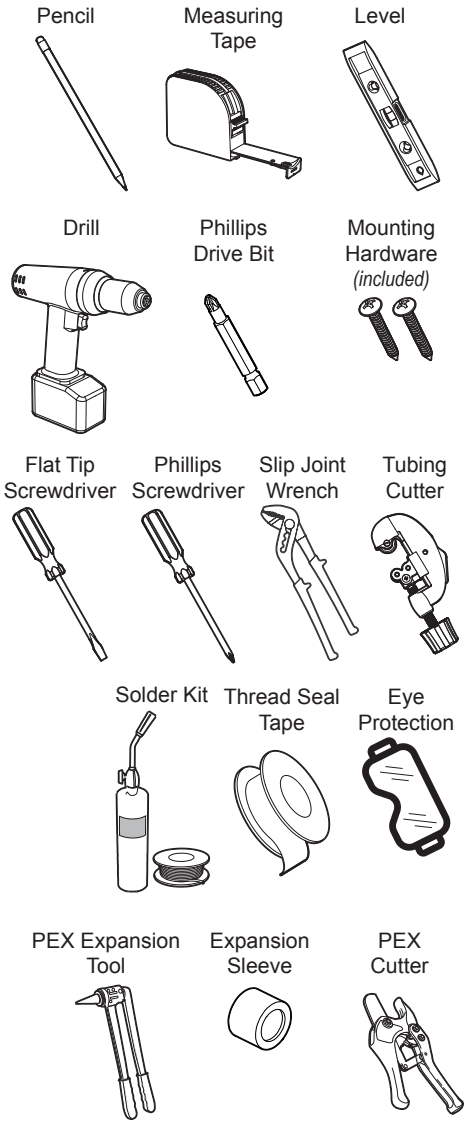
85666VCE

Balance Pressure Shower Valve
with PEX Expansion Connections



92-85666VCE-02

TOOLS & SUPPLIES NEEDED



IMPORTANT

SAFETY TIPS:
Be sure to read and understand all instructions before beginning installation.

Inspect all connections after installation.

Cover the drain to avoid loss of parts.

Be sure to wear proper eye protection.

Do NOT over tighten any connections or damage may occur.

Shut OFF water supplies before beginning installation.

Observe all local plumbing and building codes.

VALVE SPECIFICATIONS:
This Valve has an operating range of 20-80 psi.

This Valve is engineered to be used in conjunction with a Shower Head rated at 1.75 gpm (6.6 L/min) or higher flow rate.

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.

CAUTION

Risk of personal injury. Do NOT use the Valve without properly adjusting the Temperature Limit Stop (TLS) as outlined in this installation manual.

Ensure proper structure is in place to support the Valve and plumbing during use.

MAINTENANCE

Your new product is designed for years of trouble-free performance.

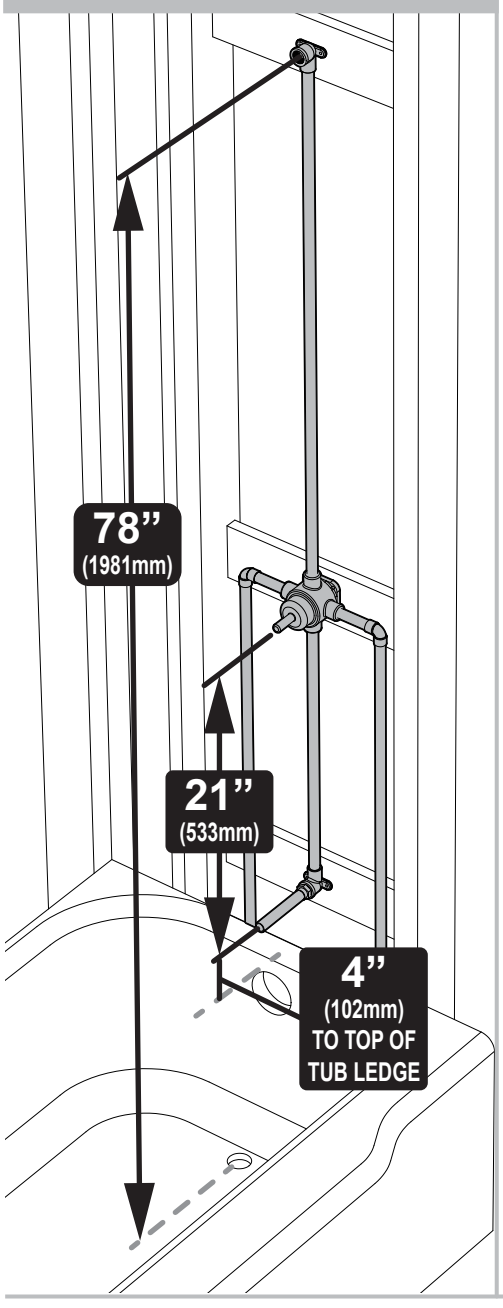
This type of valve must be cleaned and maintained on a regular basis. Periodic maintenance should be performed at least every 12 months or after any changes have been made to the building's plumbing system. Valves that are installed outdoors should be winterized by removing all of the internal parts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

FINISH MAINTENANCE:
Keep the surface finish looking new by cleaning it periodically with a soft cloth. Avoid abrasive cleaners, steel wool, and harsh chemicals as these will dull the finish and void your warranty.

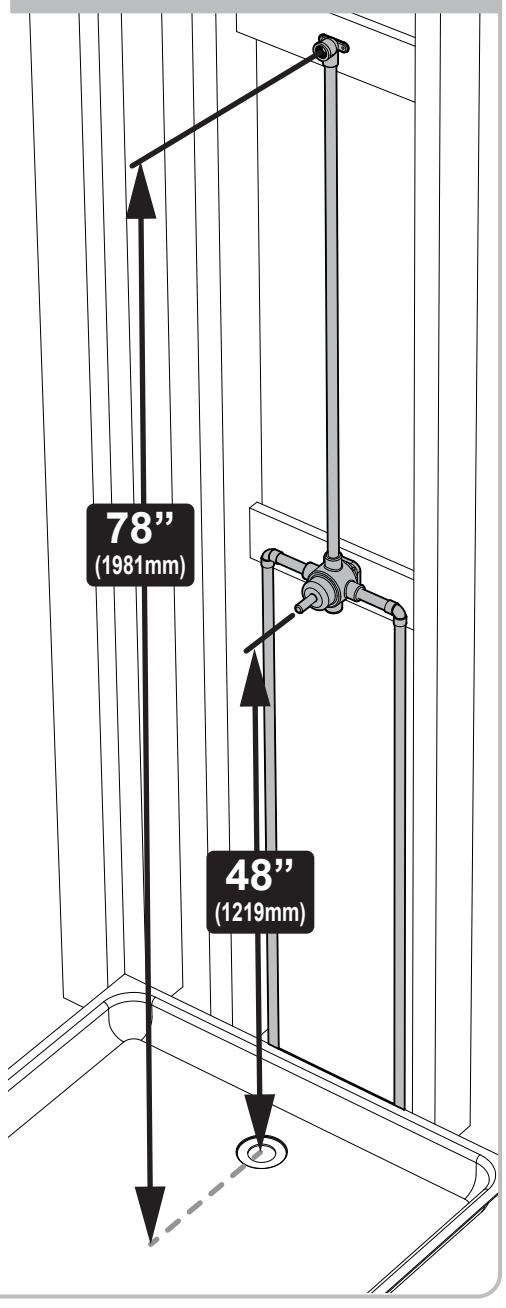
NEED HELP?
For additional assistance or service please contact: 800-944-9292 www.wolverinebrass.com

ROUGH IN VERTICAL REFERENCE

TUB/SHOWER

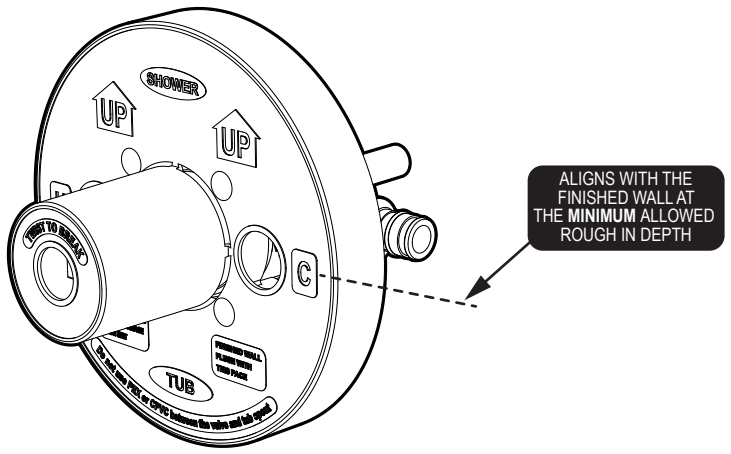


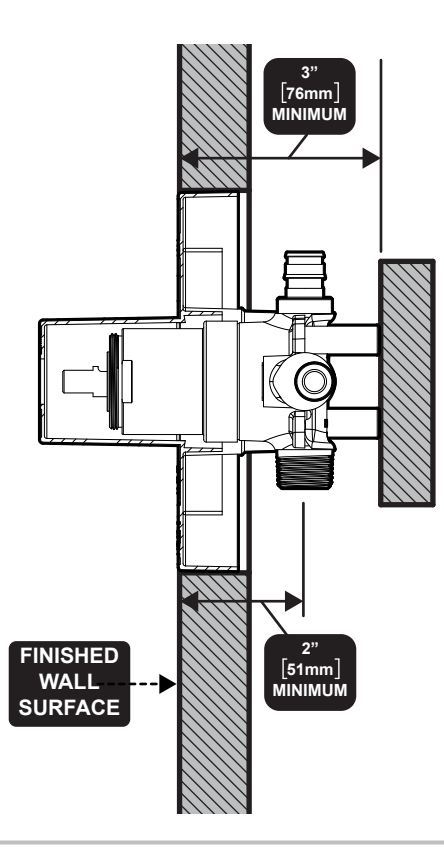
SHOWER ONLY



ROUGH IN DEPTH REFERENCE

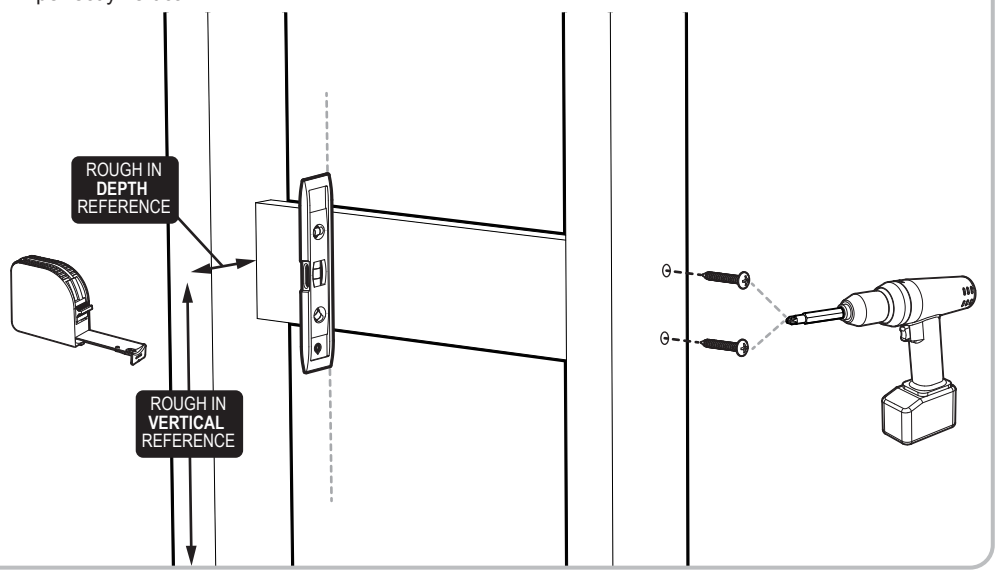
Determine the mounting depth of the Valve referencing the diagrams below. The Protective Cover on the Valve has reference markings showing where the Valve should align with the Finished Wall Surface at the Minimum Mounting Depth.





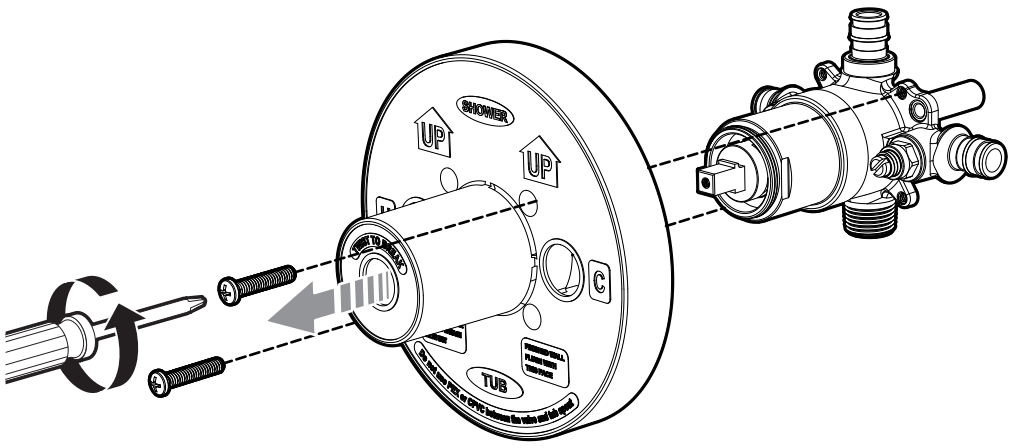
SITE PREPARATION

1 Referencing the rough in guides, install a 1” x 4” Cross Brace between the Vertical Studs at the proper height and depth outlined. Use a Level to ensure the front surface of the Cross Brace is perfectly vertical.



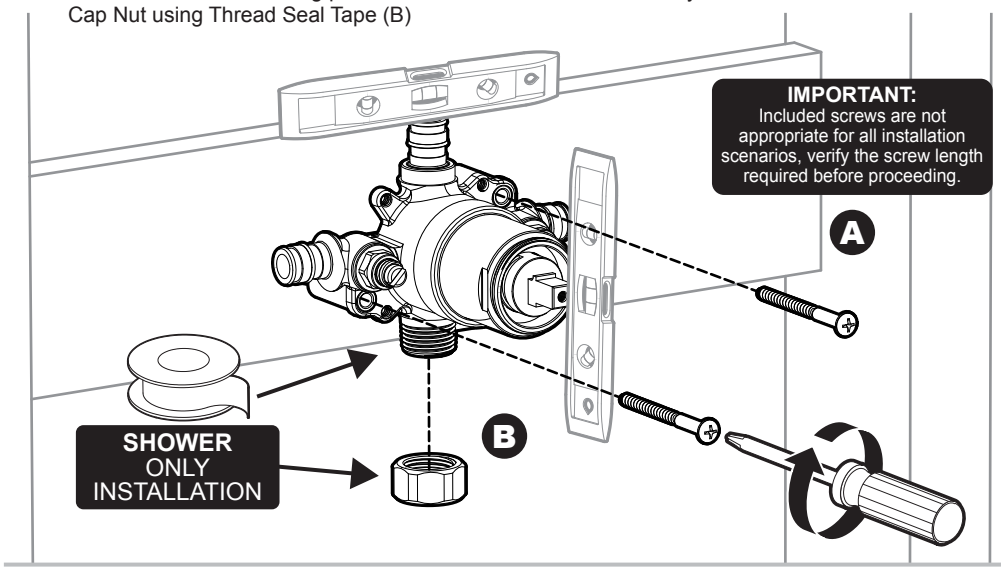
PREPARE VALVE FOR MOUNTING

2 Remove Screws, and Protective Cover from Valve. Set aside for future use.



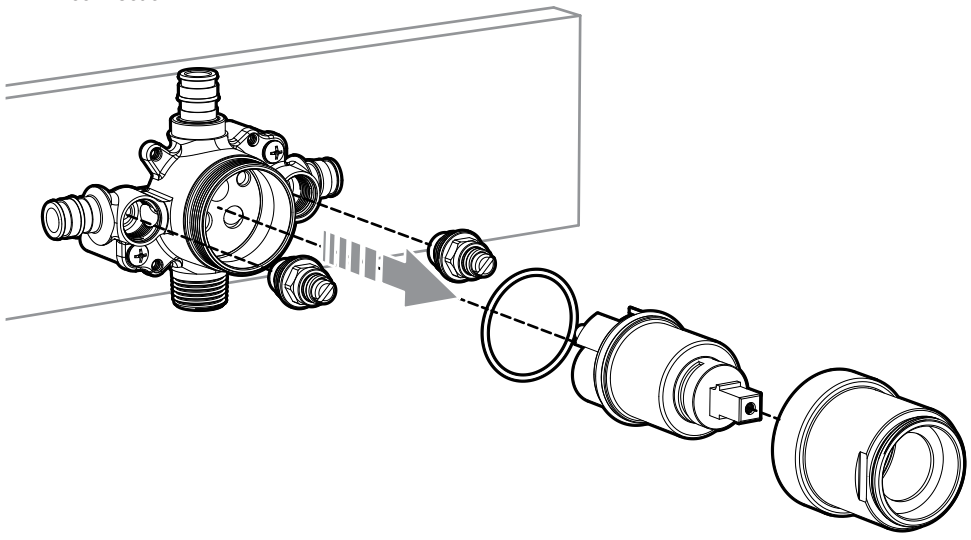
SECURE VALVE TO STRUCTURE

3 Verify proper orientation of Valve so the Threaded Outlet is pointing downwards. Using a Level, align Valve into position and secure to Cross Beam using the included Mounting Screws (A) and the non threaded mounting posts of the Valve. If this a shower only installation, install included Cap Nut using Thread Seal Tape (B)



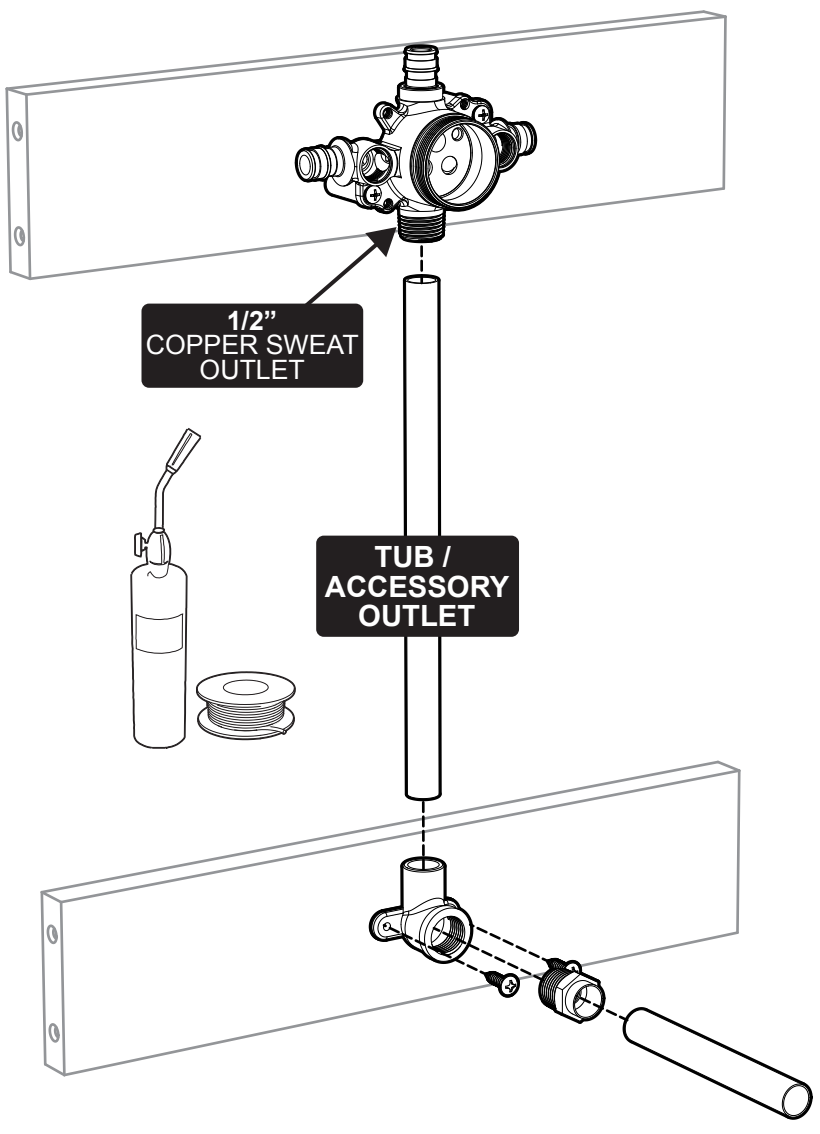
(OPTIONAL) SOLDERED TUB/ACCESSORY OUTLET

4 If making a soldered connection to the bottom outlet, remove Bonnet, Cartridge, O-Ring, and Stops from Valve Body. This will protect these components from the heat of creating a soldered connection.



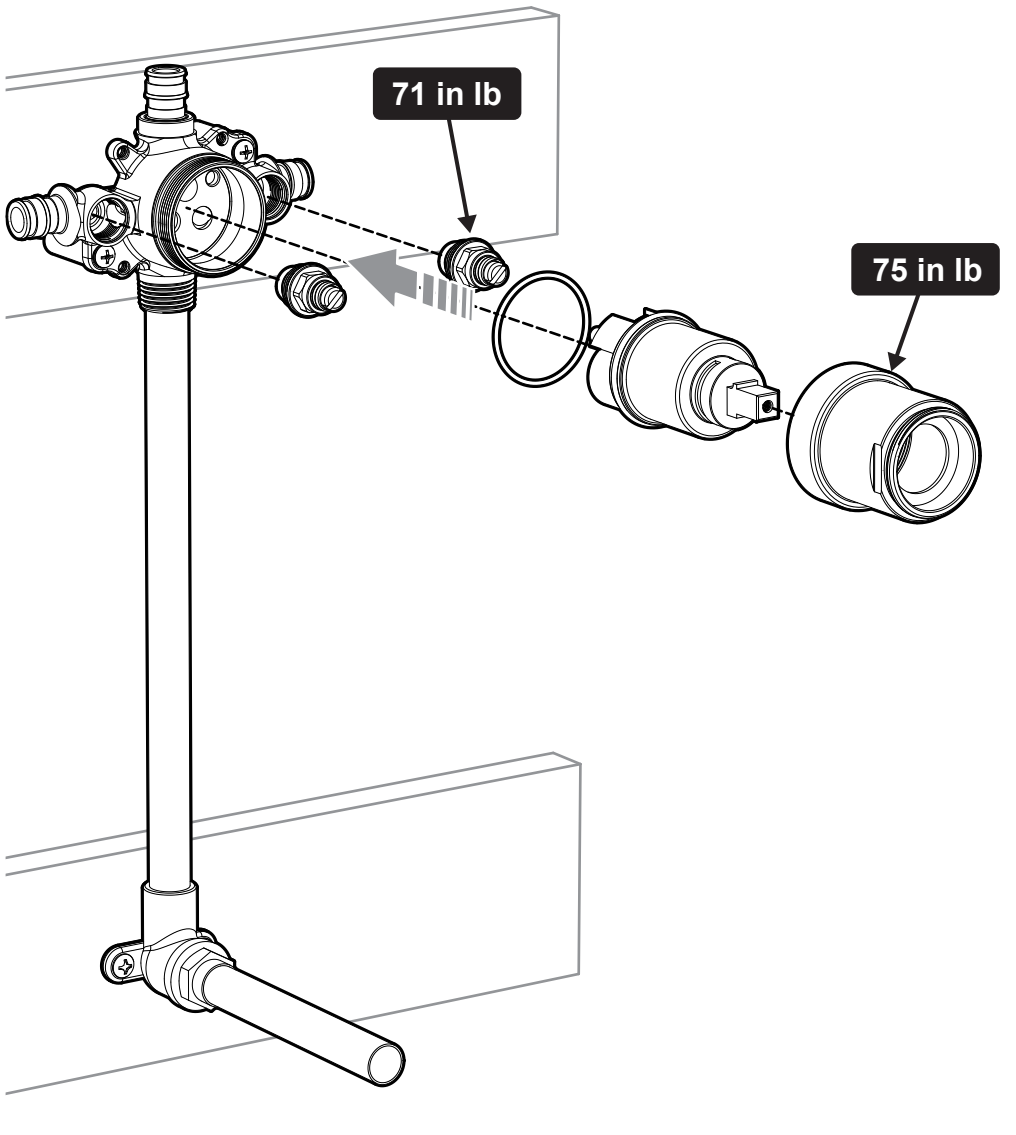
(OPTIONAL) SOLDERED TUB/ACCESSORY OUTLET

5 See “Rough In Vertical Reference” for the proper mounting height of the Tub Spout *(if used)*. Solder connections. Ensure proper bracing is in place to support the plumbing and Tub Spout or Accessory connections.



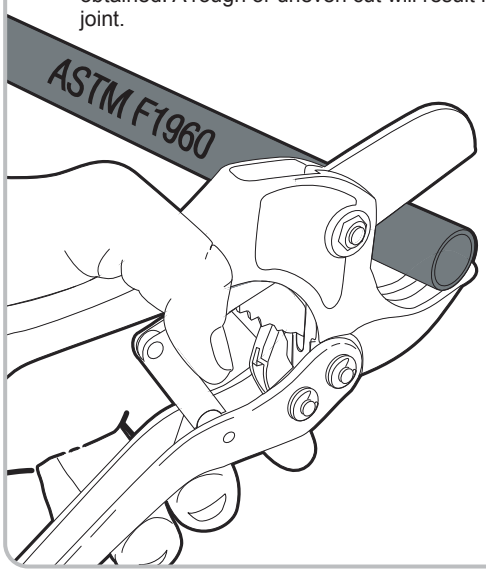
(OPTIONAL) SOLDERED TUB/ACCESSORY OUTLET

6 After soldered connections have cooled, reinstall Stops, O-Ring, Cartridge, and Bonnet.

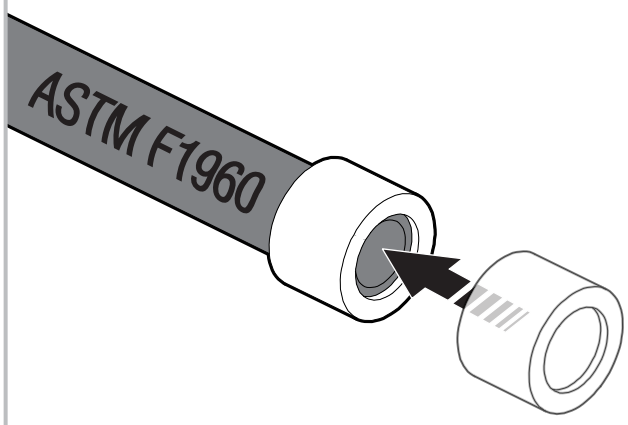


PEX (COLD EXPANSION) INSTALLATION INSTRUCTIONS

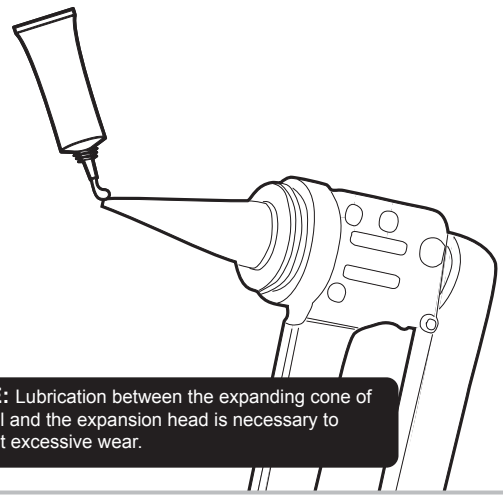
A Use Plastic Tubing Cutters (not included), to cut the PEX Tubing to length. Ensure that a good square (90°) cut is obtained. A rough or uneven cut will result in a weakened joint.



B Slide the correct size i.e., ½" ASTM F1960 compliant PEX Sleeve (not included) on to the Outside Diameter of ½" PEX Tubing (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".

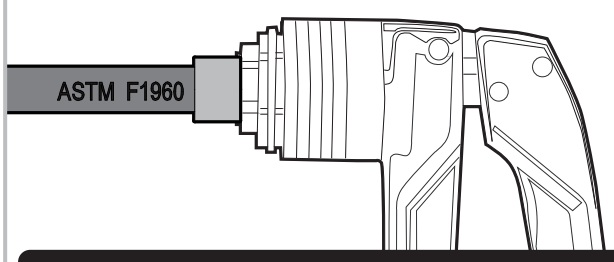


C Use ASTM F1960 Grip Expansion Tool for expanding PEX tube and sleeve together. Before installing the appropriate size expansion head on the tube expander tool, add lubricant lightly to the cone of the tool if needed. Do not allow lubricant to coat the inside of the pipe.



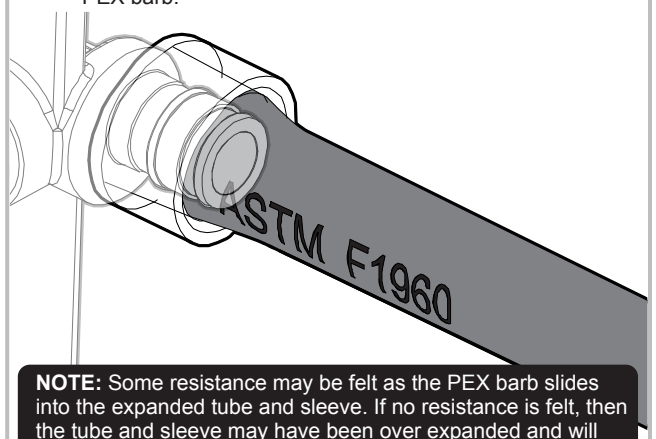
NOTE: Lubrication between the expanding cone of the tool and the expansion head is necessary to prevent excessive wear.

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.



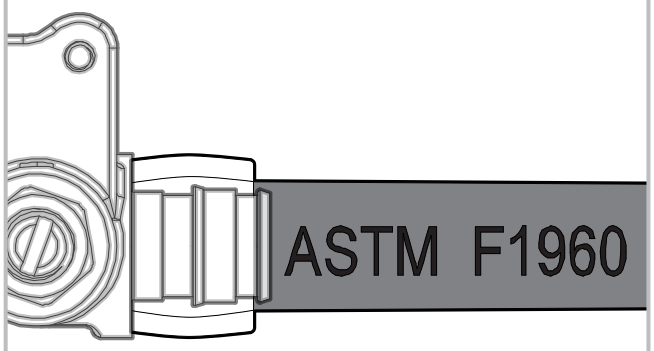
NOTE: The number of expansion cycles will vary with the size of the connection and installation temperature. To limit the amount of time for tube and sleeve compression onto PEX barb in cold environments, expand the tube and sleeve slowly and only enough to fully insert the PEX barb. Keeping sleeves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

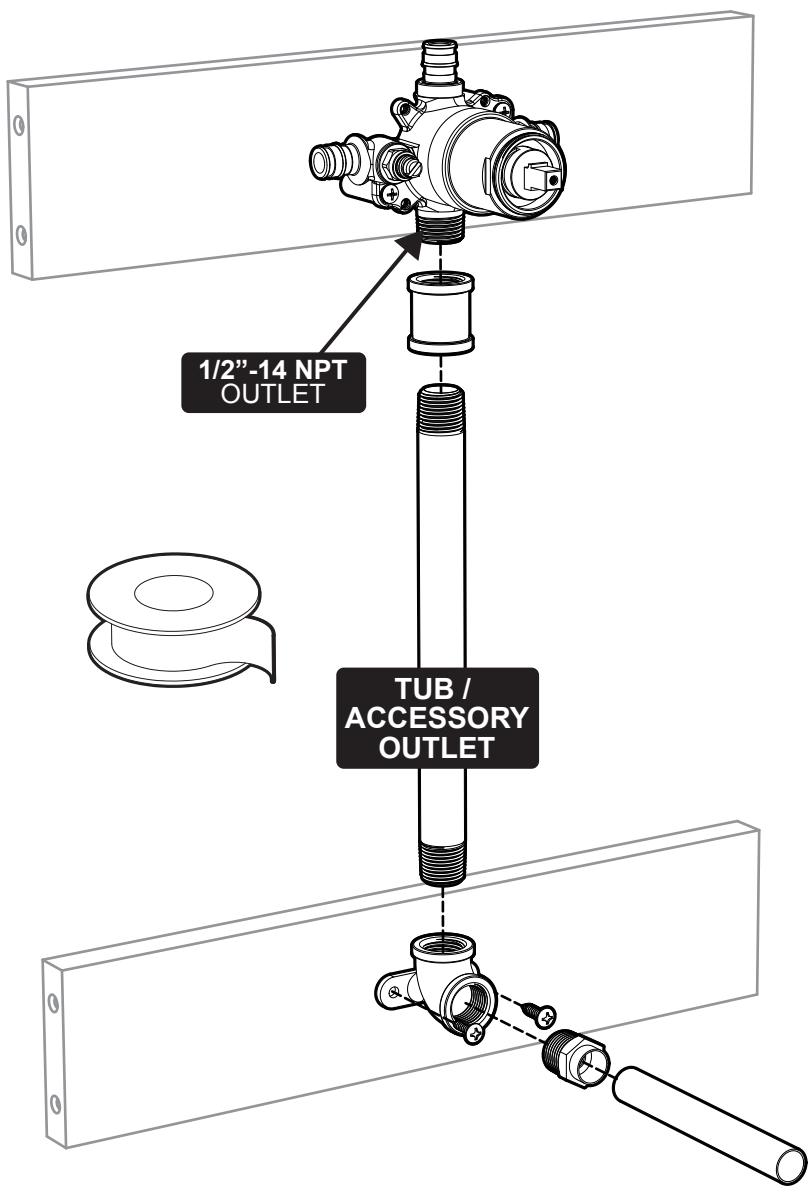
F Verify that the connection is complete and is secure.



IMPORTANT:
See Tool manufacturers' manual for proper operation.

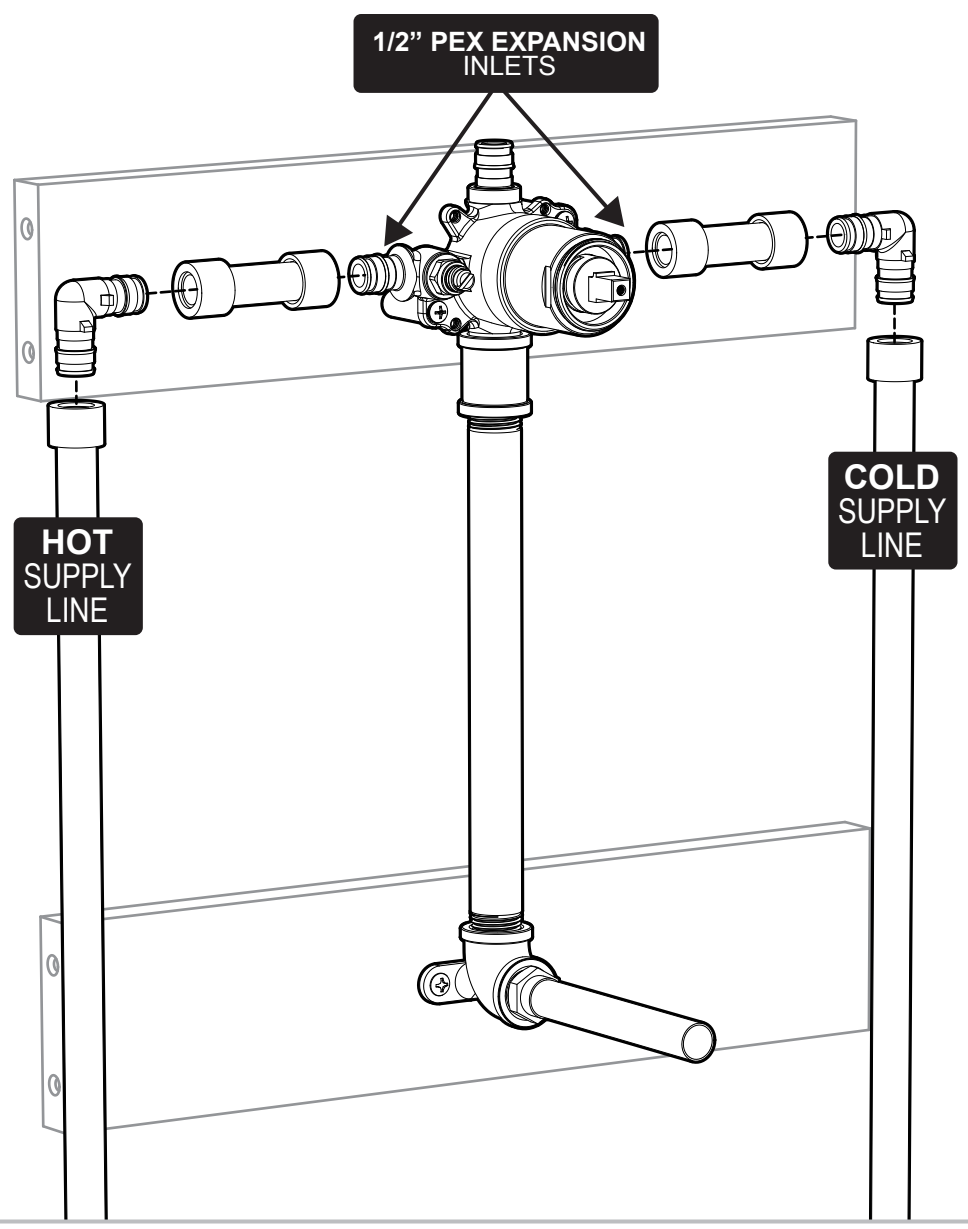
PLUMB TUB/ACCESSORY OUTLET

7 Make threaded plumbing connections to the Tub/Accessory Outlet of the Valve. Ensure Thread Seal Tape is used on all threaded connections. Tub/Accessory Outlet Connection is 1/2"-14 Male NPT. See "Rough In Vertical Reference" for the proper mounting height of the Tub Spout *(if used)*. Ensure proper bracing is in place to support the plumbing and Tub Spout or Accessory connections. If your installation does not include a Tub/Accessory, install the included 1/2" Cap Nut to the Tub/Accessory Outlet.



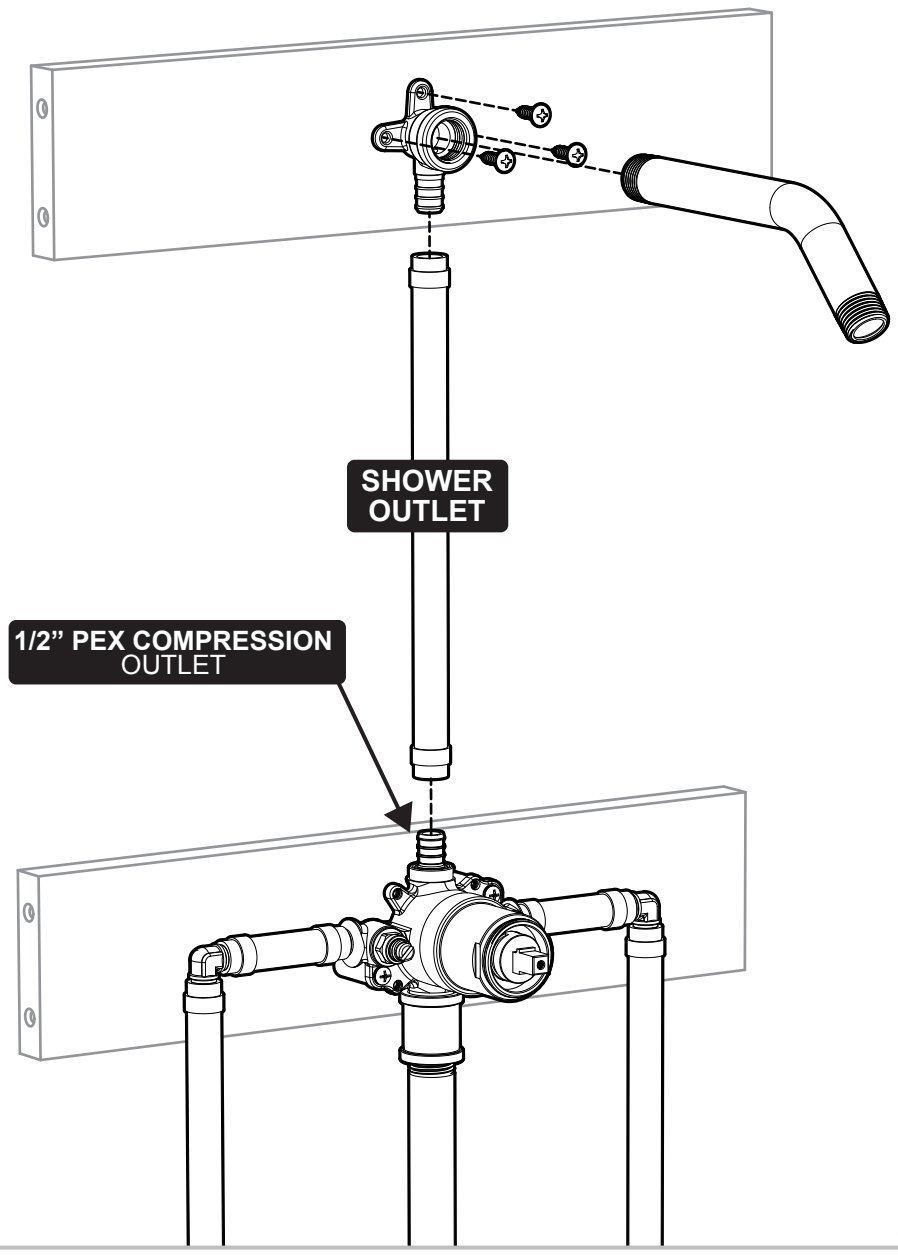
PLUMB INLET PIPING

8 Make plumbing connections to the Valve Inlets. Valve Inlet Connections are 1/2" PEX Expansion and should be used with ASTM F1960 Tubing. Cold Supply to be connected to the Right Inlet, Hot Supply to be connected to the Left Inlet. Ensure proper bracing is in place to support the plumbing.



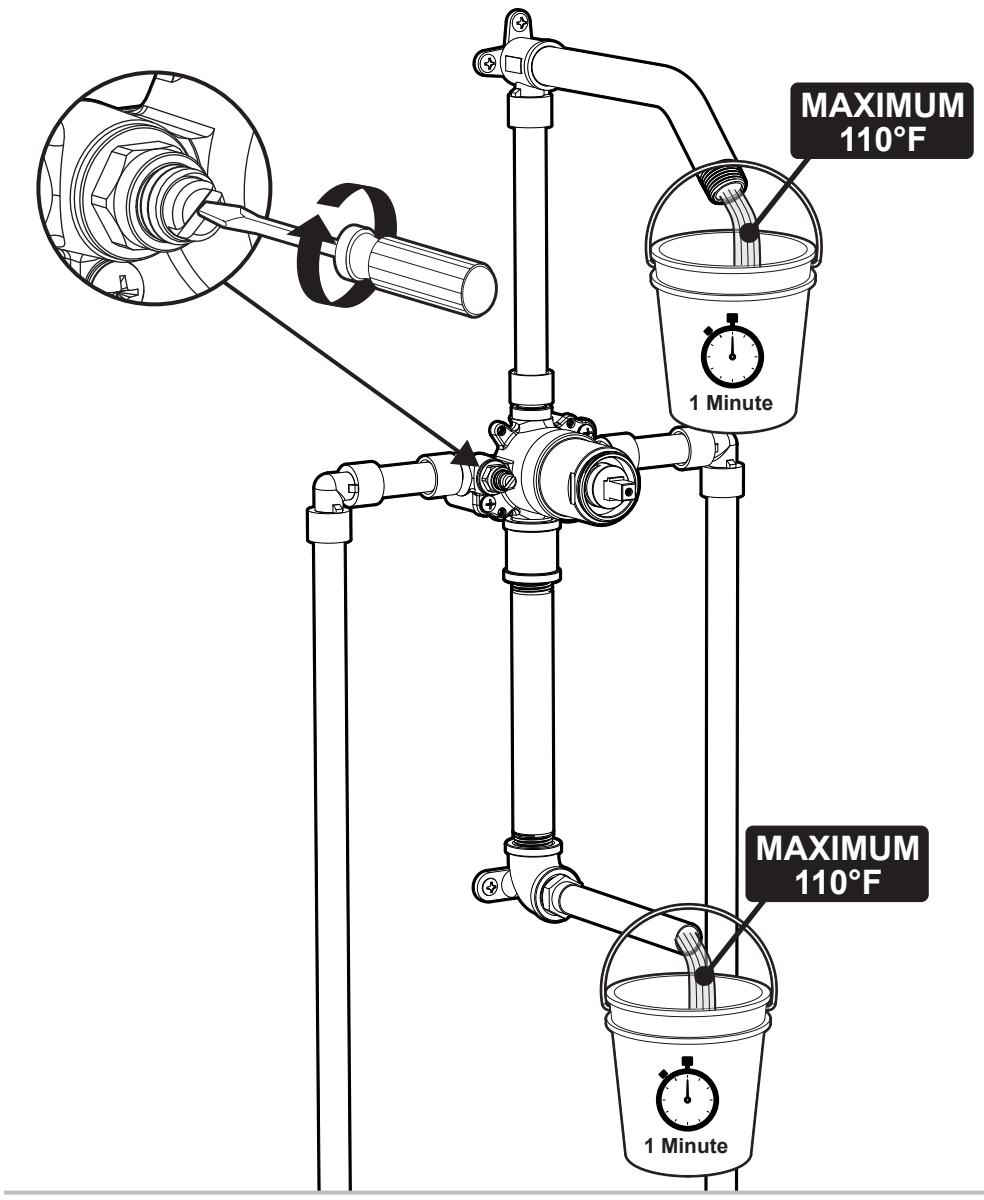
PLUMB SHOWER OUTLET

9 Make plumbing connections to the Shower Outlet of the Valve. Shower Outlet Connection is 1/2" PEX Expansion and should be used with ASTM F1960 Tubing. See "Rough In Vertical Reference" for the proper mounting height of the Shower Arm connection. Ensure proper bracing is in place to support the plumbing and Shower Arm connections.



FLUSH SYSTEM / CHECK FOR LEAKS

10 Temporarily place the Valve Handle on to the Valve Cartridge Stem. Ensure the Valve is in the "OFF" position. With the Valve in the "OFF" position, turn "ON" water supplies and inspect for leaks. Place a bucket at the Shower/Tub outlets. Lift the Handle to turn the Valve "ON". Cycle from the full COLD position to the full HOT position to flush the system. Flush each outlet for 1 minute. Verify the maximum outlet temperature using a thermometer with the Valve in the full HOT position. Return the Valve Handle to the "OFF" position. Turn "OFF" water supplies. If you desire to turn "OFF" the water supplies at the Valve, you can do so by turning the Stop Screws clockwise.

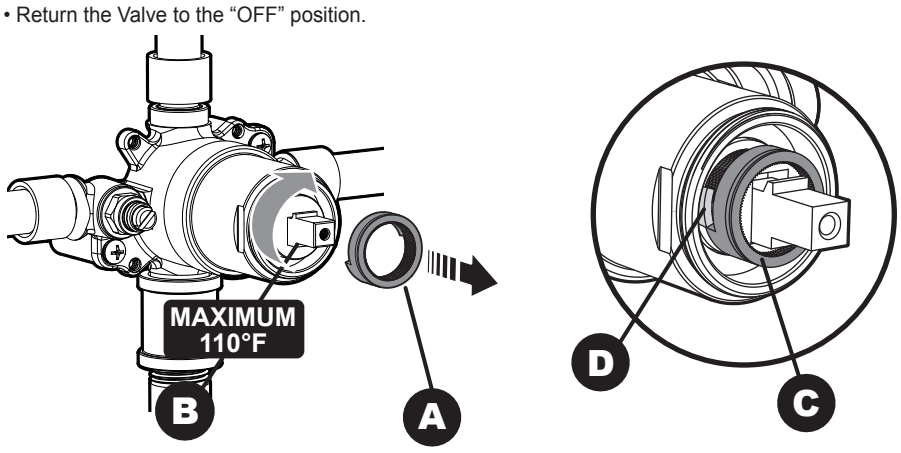


TEMPERATURE LIMIT STOP (TLS) ADJUSTMENT

11 The maximum outlet temperature setting adjustment (TLS) of the Valve has been factory set at 110 °F. If any adjustment is required, follow the steps below.

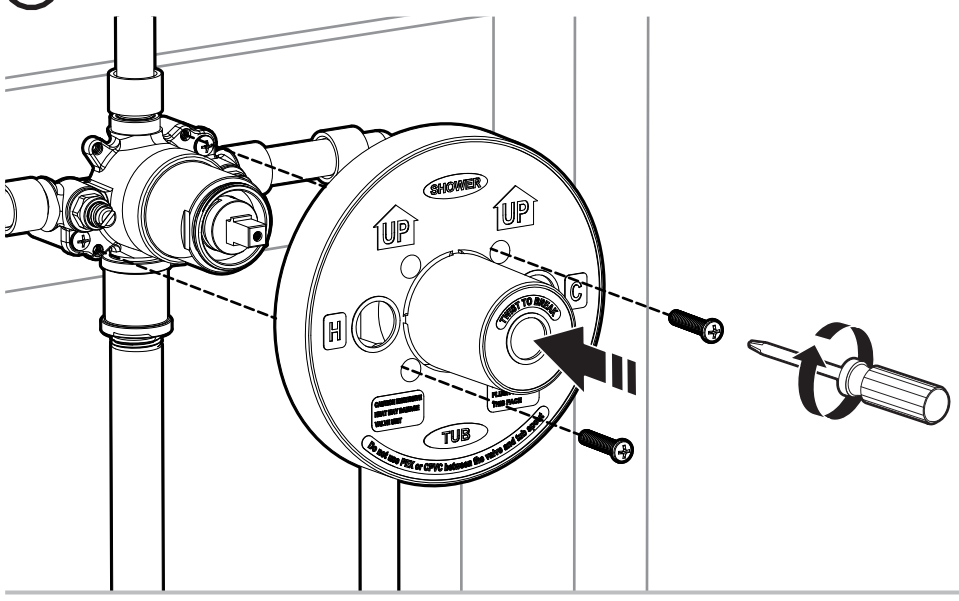
ADJUSTING THE TEMPERATURE LIMIT

- With the water supplies "On" and the Valve in the "Off" position, remove the Hot Limit Adjustment Ring (A).
- Rotate the Valve Cartridge Stem to the maximum desired temperature (B).
- Reinstall the Black Hot Limit Adjustment Ring so that the Ring Stop (C) touches the Cartridge Stop (D)
- Return the Valve to the "OFF" position.



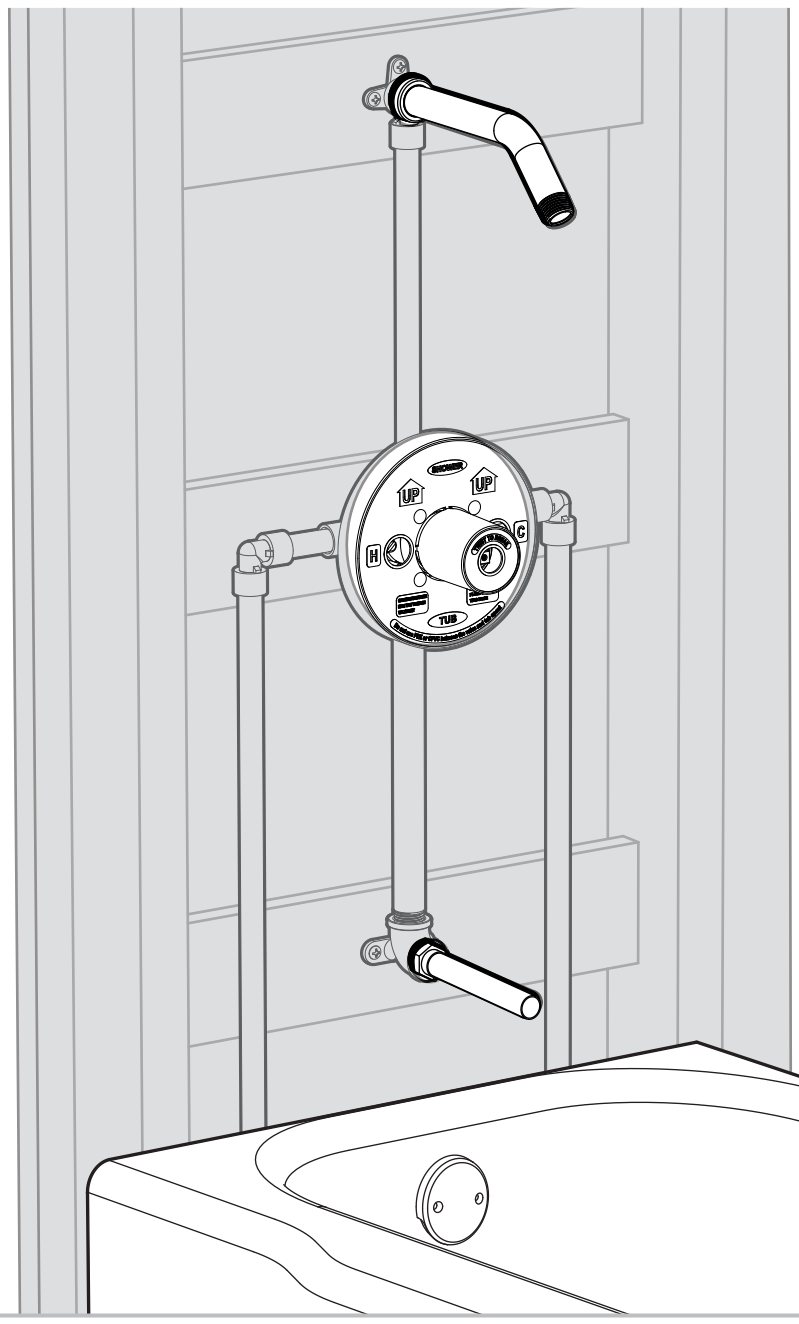
REINSTALL PROTECTIVE COVER

12 Reinstall Protective Cover, and Screws previously removed.



FINISHED WALL CONSTRUCTION

13 Complete finished wall construction and installation of both the Shower Head outlet and Tub/Accessory outlet. Cut Valve access opening using the Protective Cover as a guide. Make sure to use Thread Sealant on all threaded connections.



SERVICE INSTRUCTIONS

Service Instructions

Caution- Any repair or servicing of the Valve may affect the maximum outlet temperature setting of the Valve. After working on the Valve, make sure the maximum outlet temperature does not exceed 110°F.

Valve Cartridge Removal

1) Remove Trim from Valve. Close the Integral Stops of the Valve by turning the Stop Screws clockwise.

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

3) Remove the Valve Cartridge from the Valve Body by pulling on the Spindle of the Valve Cartridge. Verify that the Lower Cartridge Seal is in place within the Valve Cartridge, and not within the Valve Body.

4) Replace the Valve Cartridge if necessary, being sure to properly align the mounting posts of the Valve Cartridge with the corresponding recesses in the Valve Body.

5) Reassemble the Bonnet by threading it into the Valve Body with a Slip Joint Wrench. Final torque should be 75 in*lb.

Important – Adjust the Valve's maximum outlet temperature to not exceed the recommended setting of 110°F. *See Temperature Limit Stop adjustment section of this installation manual.*

6) Open the Integral Stops of the Valve by turning the Stop Screws counterclockwise. 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 71 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.

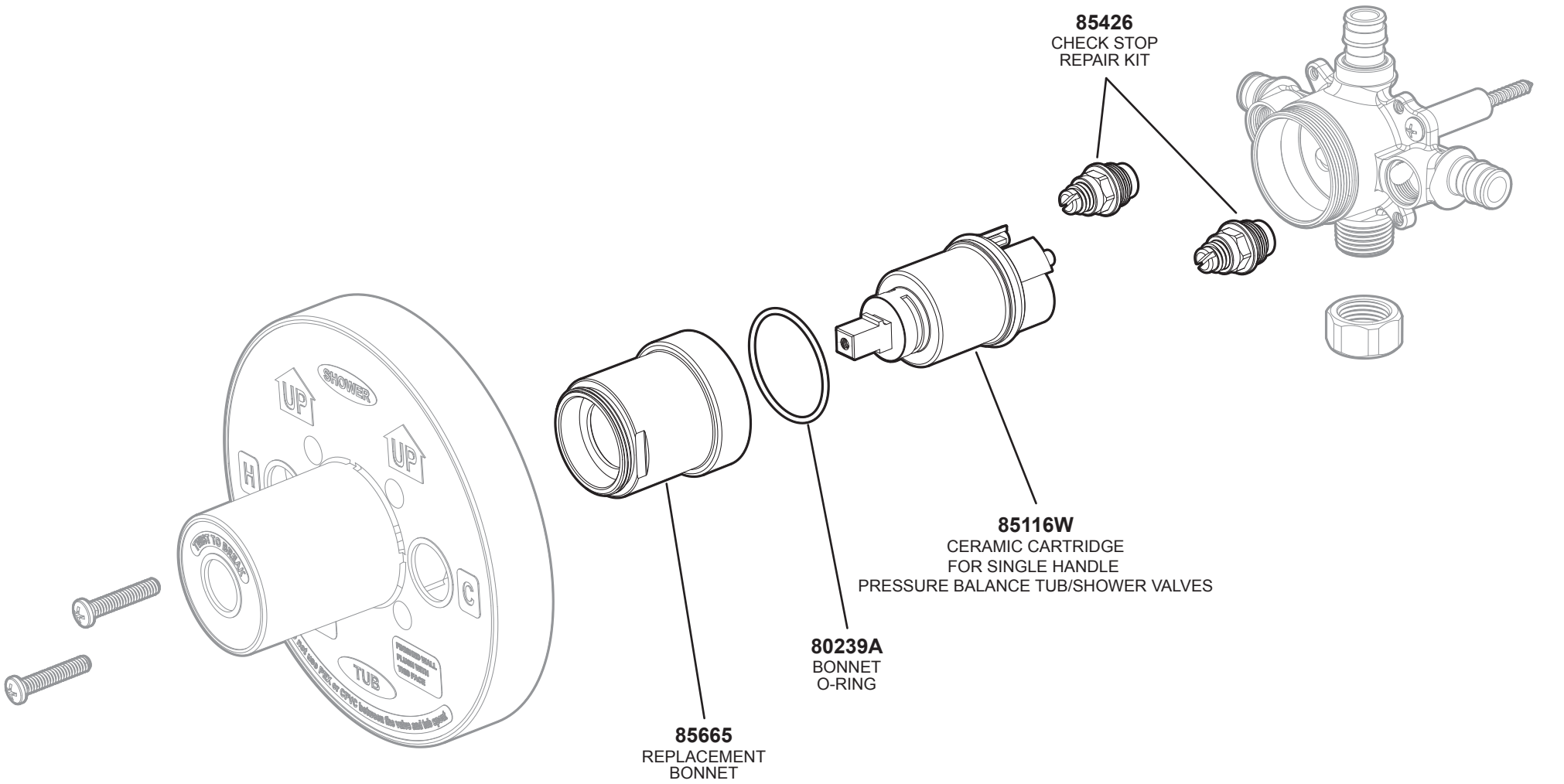
PRODUCT WARRANTY

Please see **www.wolverinebrass.com** for all warranty information.

CALIFORNIA PROPOSITION 65

CALIFORNIA PROPOSITION 65:
WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.
Wash hands after installation, repair, or removal of this product.

REPAIR PARTS



ROUGH-IN DIAGRAM

COMPLIANCE

ASME A112.18.1 / CSA B125.1
ASSE 1016 / ASME A112.1016 / CSA B125.16

CONNECTIONS

HOT / COLD Inlets: 1/2” PEX Expansion (F1960)

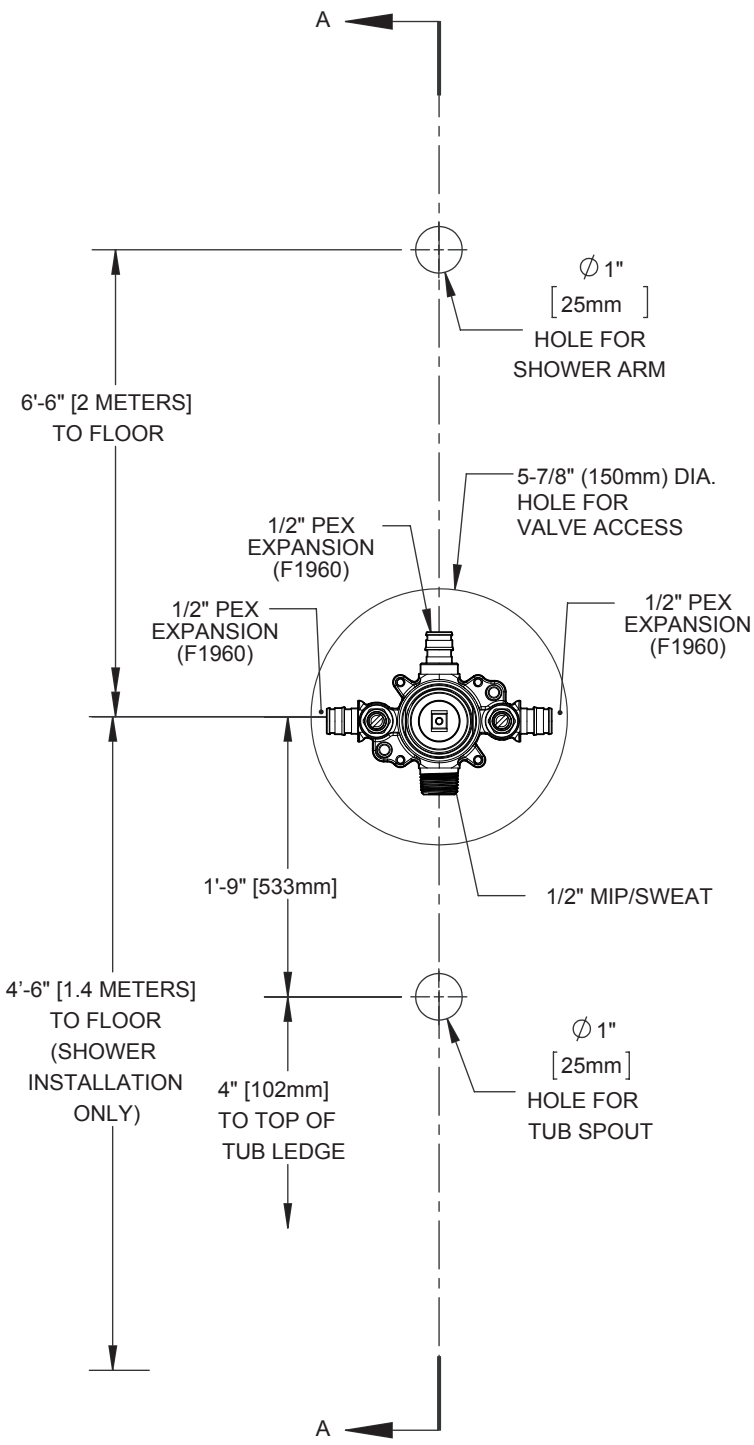
Shower Outlet: 1/2” PEX Expansion (F1960)

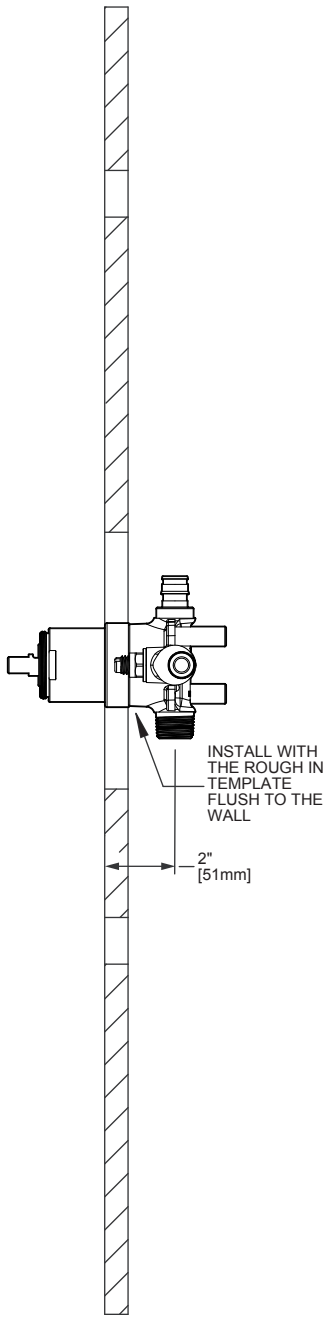
Tub/Accessory Outlet: 1/2" MIP/Sweat
*(1/2” Cap Nut **included** for Shower Only installation)*

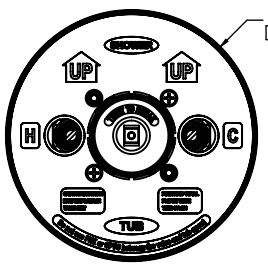
NOTES

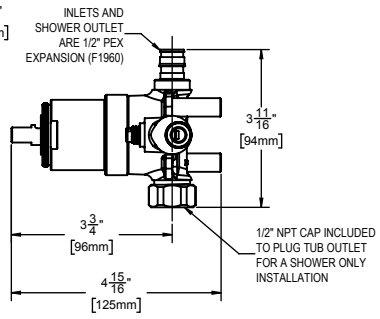
This Valve is engineered to be used in conjunction with a Shower Head rated at 1.75 gpm (6.6 L/min) or higher flow rate.

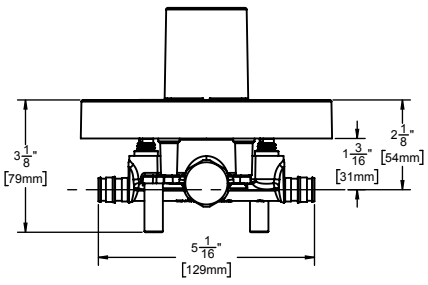
Installer to supply necessary inlet connections.











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