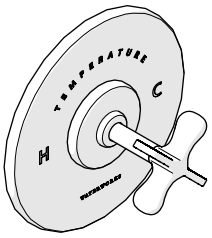
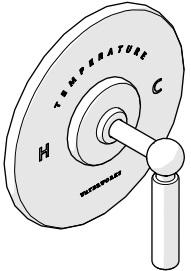
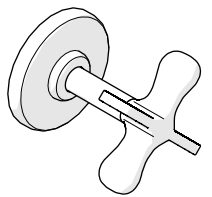
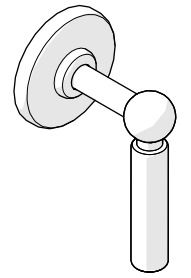
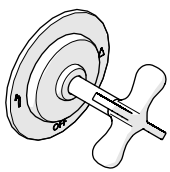
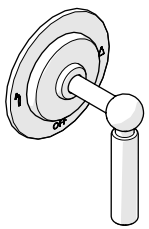
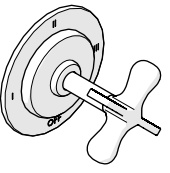
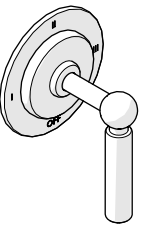


INSTALLATION GUIDELINES

LUDLOW VOLTA THERMOSTATIC SHOWER SYSTEM

WATERWORKS

	STYLE	DESCRIPTION
	LDTH05	Ludlow Volta Thermostatic Control Valve Trim with Cross Handle
	LDTH15	Ludlow Volta Thermostatic Control Valve Trim with Lever Handle
	LDVC05	Ludlow Volta Volume Control Valve Trim with Cross Handle
	LDVC15	Ludlow Volta Volume Control Valve Trim with Lever Handle

	STYLE	DESCRIPTION
	LD2T01	Ludlow Two Way Diverter Valve Trim for Thermostatic with Graphics and Cross Handle
	LD2T10	Ludlow Two Way Diverter Valve Trim for Thermostatic with Graphics and Lever Handle
	LD3T01	Ludlow Three Way Diverter Valve Trim for Thermostatic with Roman Numerals and Cross Handle
	LD3T10	Ludlow Three Way Diverter Valve Trim for Thermostatic with Roman Numerals and Lever Handle

INSTALLATION GUIDELINES

LUDLOW THERMOSTATIC SHOWER SYSTEM

IMPORTANT:

- **ALL VALVES AND TRIMS SOLD SEPARATELY.**
- To ensure these products are installed properly, you must read and follow these guidelines.
- The owner/user of these products must keep this information for future reference.
- These products must be installed by a professional licensed contractor and must be on-site prior to rough-in. This allows the installer to visualize the installation.
- Refer to the Installation Guidelines provided with each VALVE for complete rough-in installation details and related information.
- Be sure your installation conforms to all federal, state, and local codes. In the State of Massachusetts, all installations must comply with the rules and regulations set forth within 248 CMR.
- **WARNING:** The **THERMOSTATIC VALVES** (GUTH60/GUTH38) feature anti-scald protection. The risk of scalding exists until the installer has properly calibrated/adjusted the temperature setting during final TRIM installation.
- These products are sold partially assembled but shown fully disassembled for illustrative and service purposes only.
- Inspect these products to ensure you have all the parts required for proper installation.
- Use only a strap wrench or protected/smooth-jaw wrench on any finished surface.
- The use of certain plumber's putty may stain stone or tile surfaces.
- If further assistance is required, please contact Product Support at 1-800-927-2120 Monday through Friday, 8am – 6pm EST.
- Refer to the separate Service Parts Documents for available replacement parts.

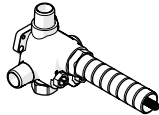
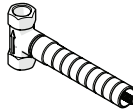
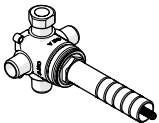
VALVE FUNCTION:

- **THERMOSTATIC VALVES** only mix hot and cold water and do not have volume or shut-off capabilities.
- **VOLUME CONTROL VALVES** controls on/off/volume and must be installed for each fitting that will have water flowing to it or a **DIVERTER VALVE** for multiple fittings.

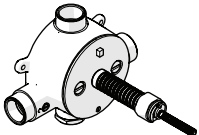
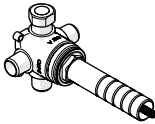
REQUIRED PLUMBING DETAILS:

- Depending on the number of end fittings in the shower system and how many are able to operate **SIMULTANEOUSLY**, the system will require either:

A. GUTH60 system for a MAXIMUM of 2 fittings flowing simultaneously or,

		STYLE	NUMBER OF OUTLETS	INLET/OUTLET CONNECTIONS
THERMOSTATIC VALVE		GUTH60	2	1/2" MALE NPT
VOLUME CONTROL VALVE		GUVC18	1	1/2" FEMALE NPT
		GUVC19		
DIVERTER VALVE		GUDV2T [SHOWN]	2	1/2" MALE NPT
		GUDV3T	3	

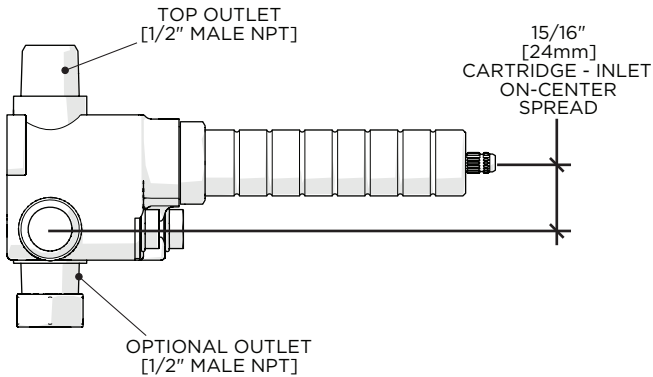
B. GUTH38 system for 3+ fittings flowing simultaneously.

		STYLE	NUMBER OF OUTLETS	INLET/OUTLET CONNECTIONS
THERMOSTATIC VALVE		GUTH38	2	3/4" FEMALE NPT
VOLUME CONTROL VALVE		GUVC16	1	3/4" FEMALE NPT
		GUVC17		
DIVERTER VALVE		GUDV2T [SHOWN]	2	1/2" MALE NPT
		GUDV3T	3	

INSTALLATION GUIDELINES

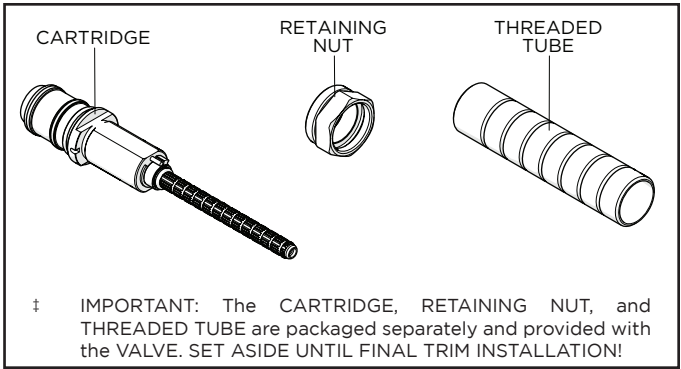
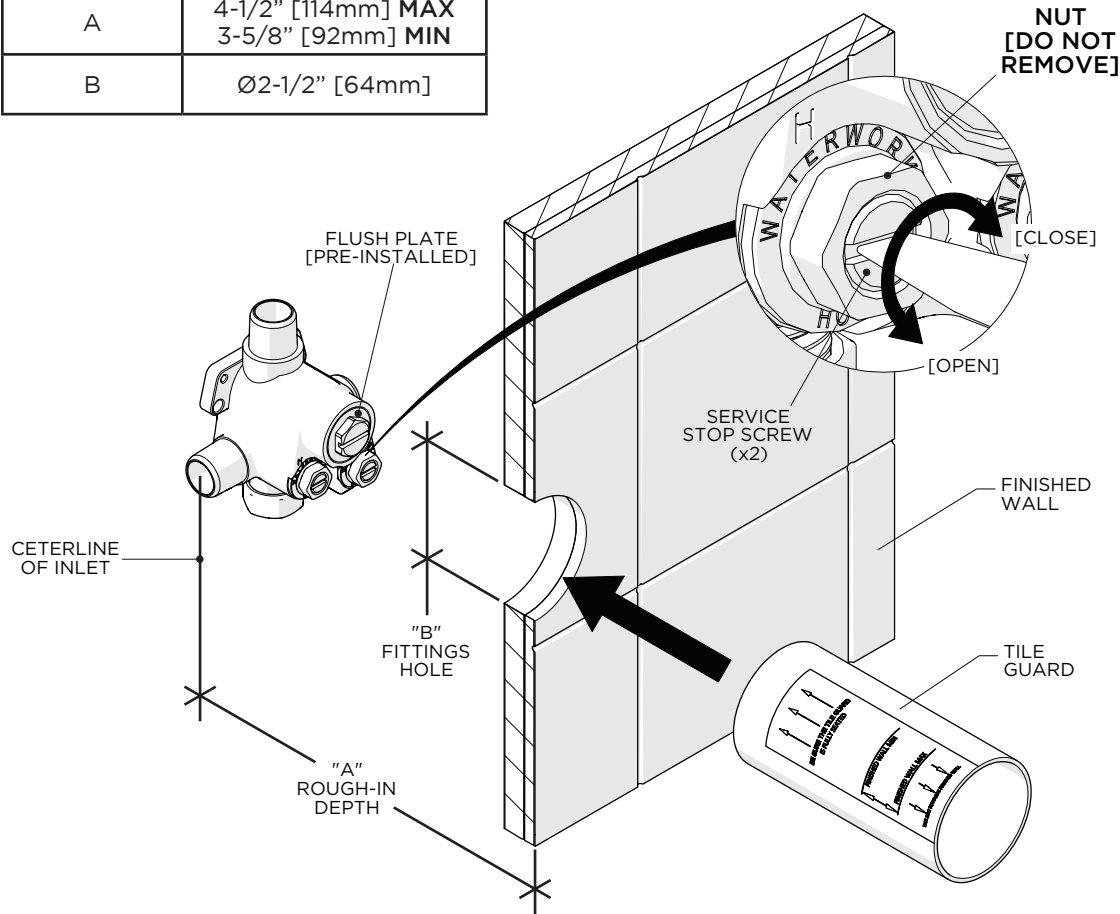
LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH60

ROUGH-IN AND VALVE PREPARATION:



- **CAUTION:** The rough-in depth is measured from the centerline of the inlets to the surface of the finished wall. If the VALVE is roughed-in too shallow, the TRIM cannot be installed correctly.
- The VALVE is shipped with a pre-installed FLUSH PLATE and is ready for flushing the supply lines.
- **CAUTION:** Before installing the THERMOSTATIC CARTRIDGE, the supply lines **MUST BE** flushed out to prevent clogging of the FILTER SCREENS. Failure to flush the lines will permanently damage the CARTRIDGE and VOID the warranty. Repeat the flushing process as needed prior to final TRIM installation.
- Remove and discard the TILE GUARD only when the finished wall surface (TILE or SLAB) is completed and the TRIM is ready for installation.

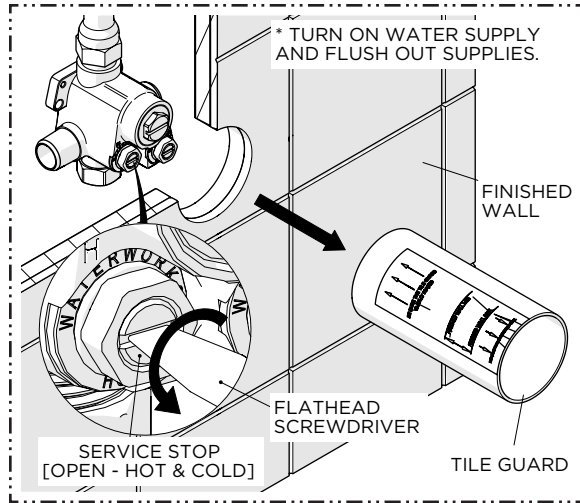
DIMENSION	VALUE
A	4-1/2" [114mm] MAX 3-5/8" [92mm] MIN
B	Ø2-1/2" [64mm]



INSTALLATION GUIDELINES

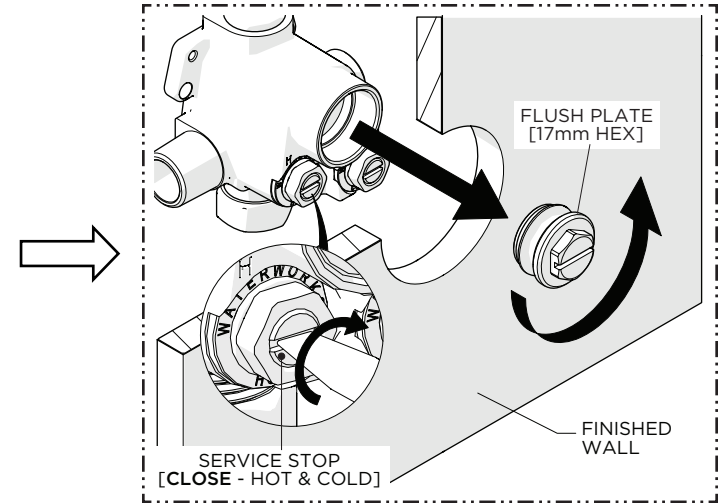
LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH60

WATERWORKS



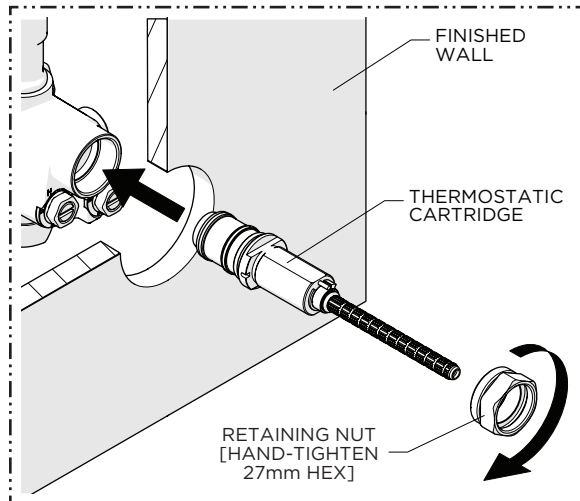
1. Turn on the water supplies then remove the TILE GUARD from the VALVE and **OPEN** the SERVICE STOPS (hot & cold) to flush out the lines.

➡ **CAUTION: FAILURE TO FLUSH THE SUPPLY LINES WILL PERMANENTLY DAMAGE THE CARTRIDGE AND VOID THE WARRANTY! REPEAT THE FLUSHING PROCESS AS NEEDED BEFORE FINAL TRIM INSTALLATION.**

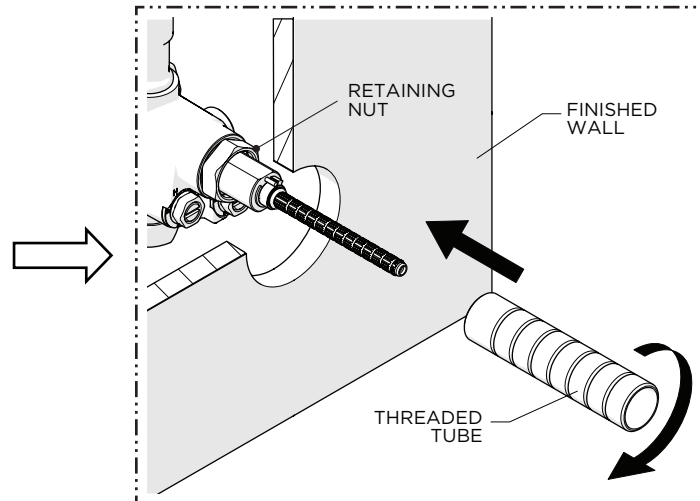


2. After the lines have been fully flushed, **CLOSE** the SERVICE STOPS (hot & cold) then unthread and remove the FLUSH PLATE.

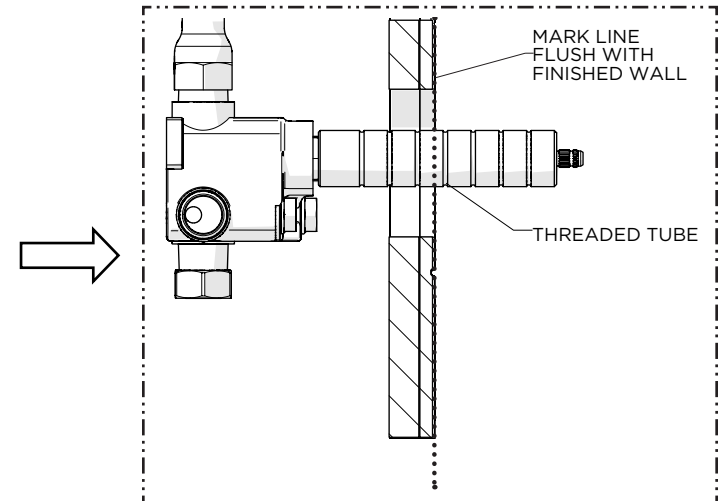
NOTE: Do **NOT** discard the FLUSH PLATE.



3. Insert the THERMOSTATIC CARTRIDGE into the VALVE BODY then thread and **hand-tighten** the RETAINING NUT into the VALVE BODY.



4. Thread the THREADED TUBE [M24] into the RETAINING NUT until it stops.



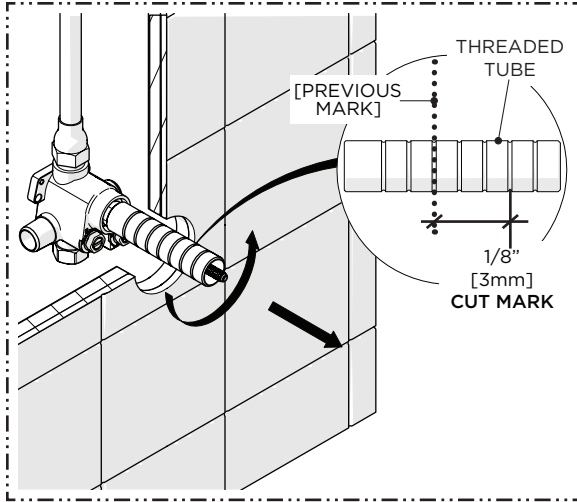
5. Mark the THREADED TUBE where it protrudes past the finished wall.

NOTE: A straight edge (not supplied) can be used to mark the TUBE.

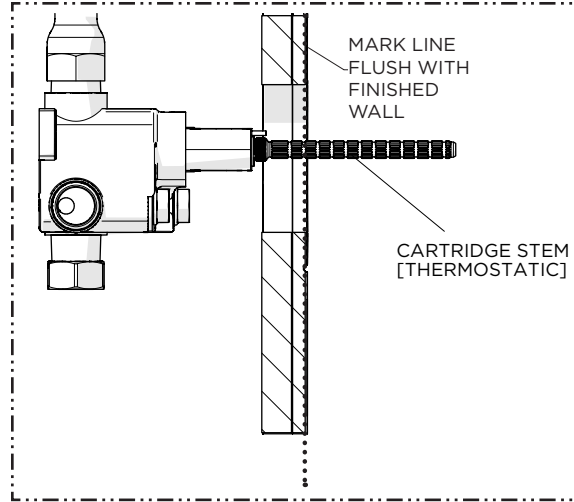
INSTALLATION GUIDELINES

LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH60

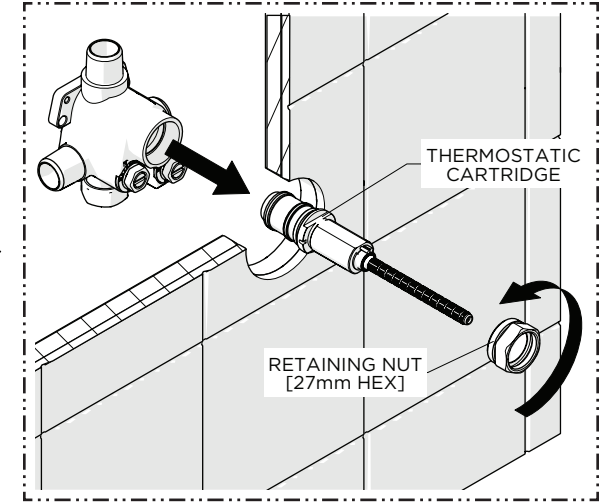
WATERWORKS



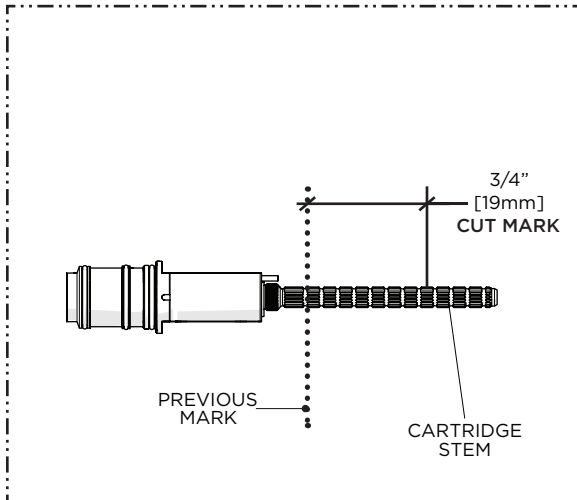
6. Remove the **THREADED TUBE** then cut it 1/8" [3mm] **in front** of the previous mark so the **TUBE** will protrude 1/8" [3mm] from the finished wall surface.



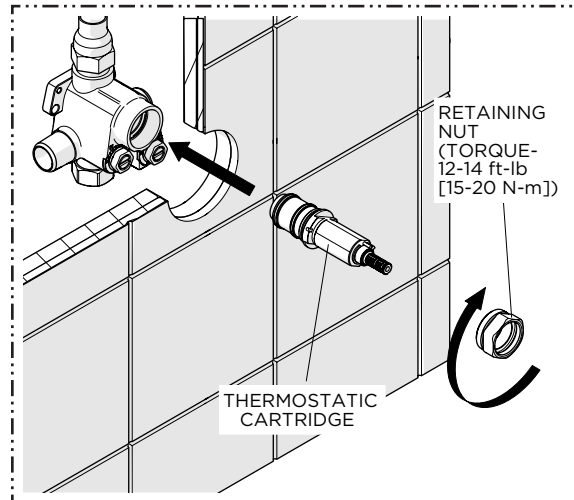
7. Mark the **CARTRIDGE STEM** where it protrudes past the finished wall.



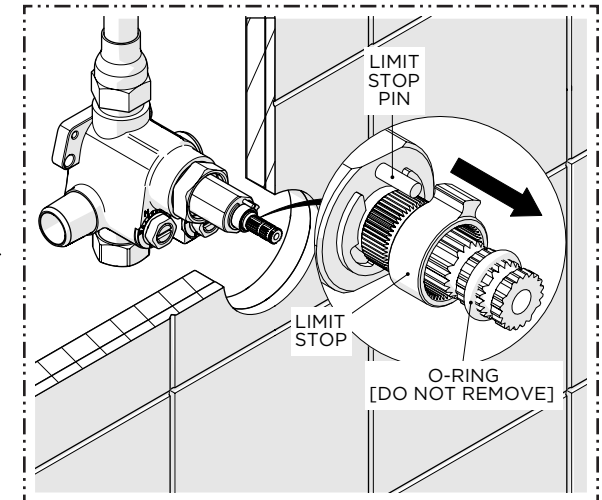
8. Unthread the **RETAINING NUT** and remove the **CARTRIDGE**.



9. Carefully cut the **CARTRIDGE STEM** 3/4" [19mm] **in front** of the previous mark so the **STEM** will protrude 3/4" [19mm] from the finished wall surface.



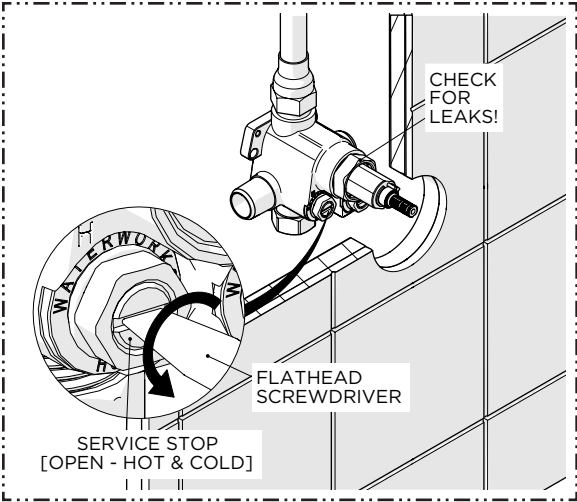
10. Insert the **CARTRIDGE** back into the **VALVE BODY** then thread and securely tighten the **RETAINING NUT** to the specified torque settings shown.



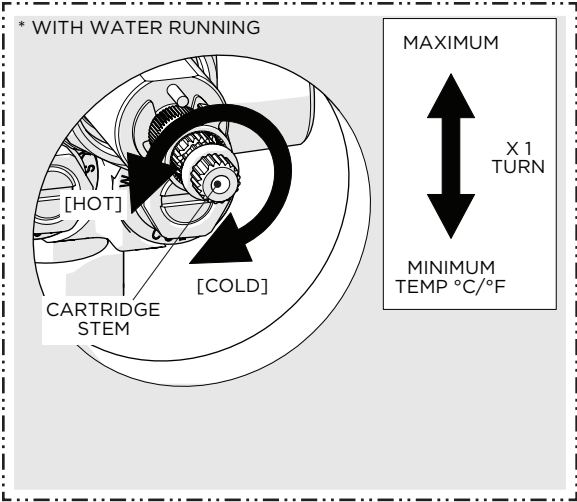
11. Slide the **O-RING** and **LIMIT STOP** on the **THERMOSTATIC CARTRIDGE** up the **STEM**.

NOTE: Do **NOT** remove or damage the **O-RING**.

INSTALLATION GUIDELINES
LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH60

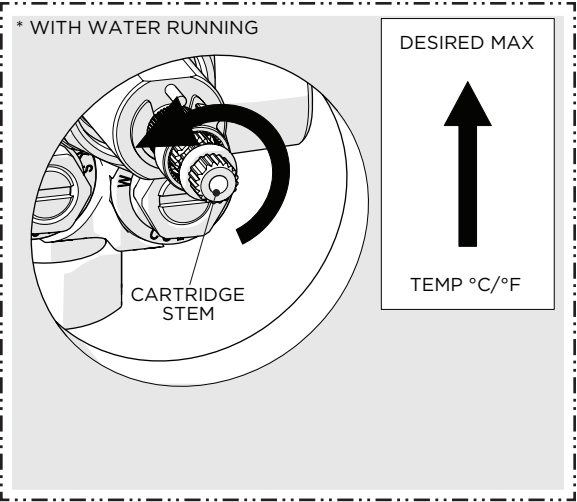


12. Open the SERVICE STOPS (hot & cold) and check for leaks.

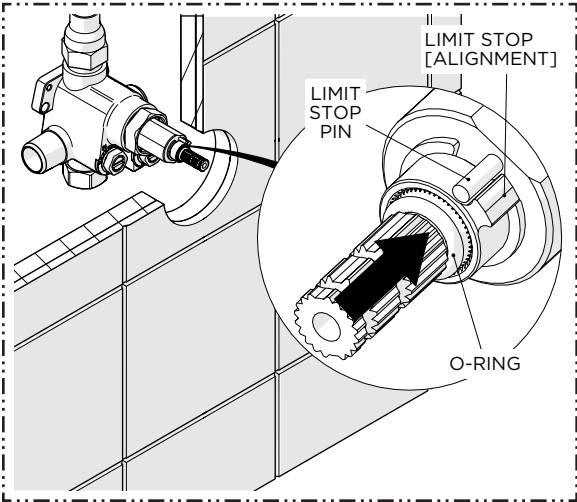


13. Open a **DIVERTER** or **VOLUME CONTROL VALVE** then slowly rotate the **CARTRIDGE STEM** clockwise to attain full cold then counter-clockwise to attain full hot. Verify that a full range of temperatures exists.

NOTE: It's approximately 1 complete rotation.

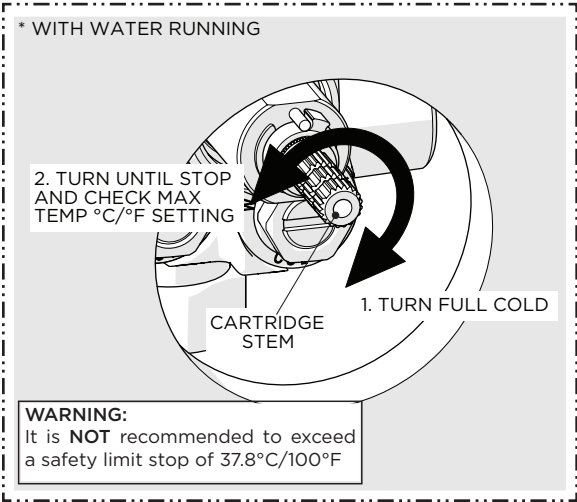


14. With water running, rotate the **CARTRIDGE STEM** to adjust the temperature to the **maximum** desired bathing temperature, verified with a thermometer, then turn the water off and make sure **NOT** to change this setting.



15. Slide the **LIMIT STOP** and **O-RING** back down the **STEM** making sure to properly align the **LIMIT STOP** with the **LIMIT STOP PIN**.

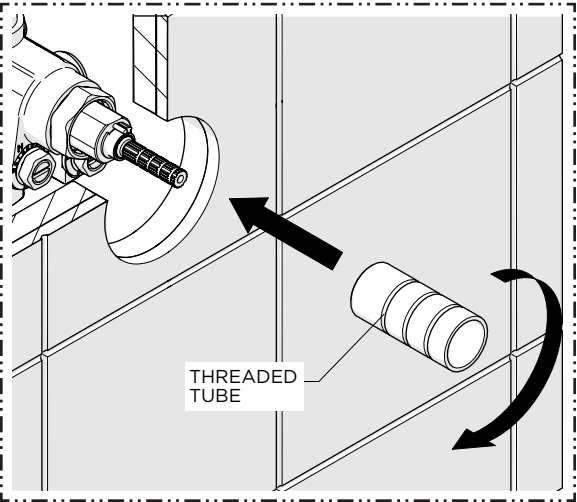
NOTE: The **O-RING** will prevent the **LIMIT STOP** from sliding off the **STEM**.



16. Turn the **CARTRIDGE STEM** clockwise to full cold then counter-clockwise until it stops and verify the **maximum** desired bathing temperature set in the previous step.

WARNING: It is **NOT** recommended to exceed a safety limit stop of 37.8°C/100°F.

➤ **IF THE MAXIMUM BATHING TEMPERATURE IS NOT CORRECT, REPEAT THE CALIBRATION PROCEDURES.**

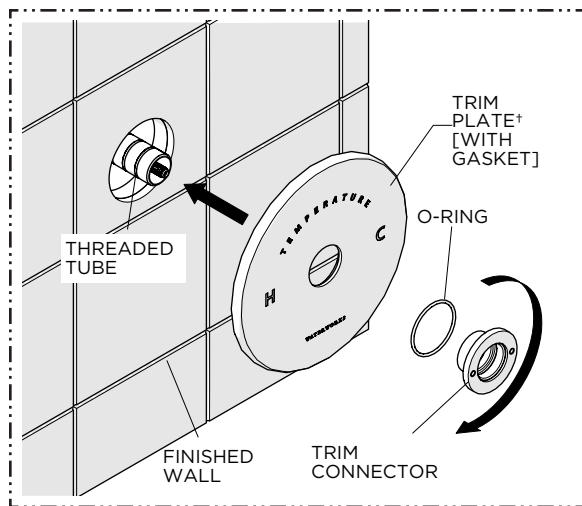


17. Thread the **THREADED TUBE** back into the **RETAINING NUT** until snug.

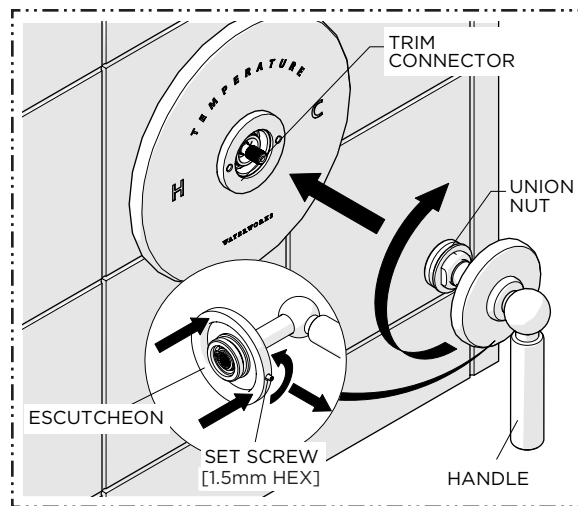
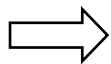
INSTALLATION GUIDELINES

LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH60

WATERWORKS

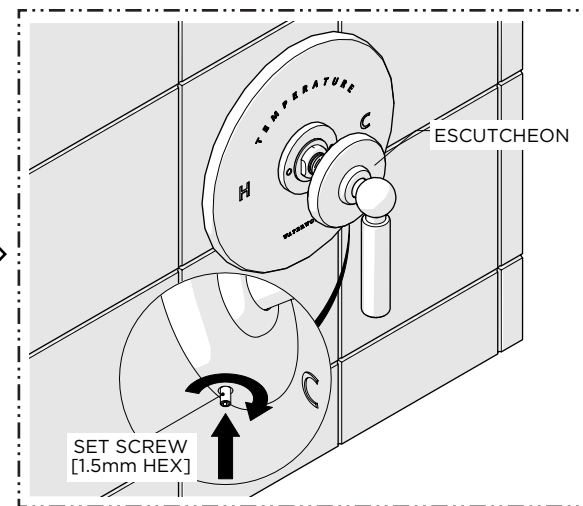
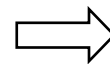


18. Firmly hold the TRIM PLATE against the finished wall then securely tighten the TRIM CONNECTOR onto the THREADED TUBE making sure to use the O-RING provided.



19. Loosen [do **NOT** remove] the SET SCREW at the base of the ESCUTCHEON then **CAREFULLY** slide the ESCUTCHEON up the HANDLE to expose the UNION NUT.

With the HANDLE in the desired orientation, thread the NUT into the TRIM CONNECTOR until snug.

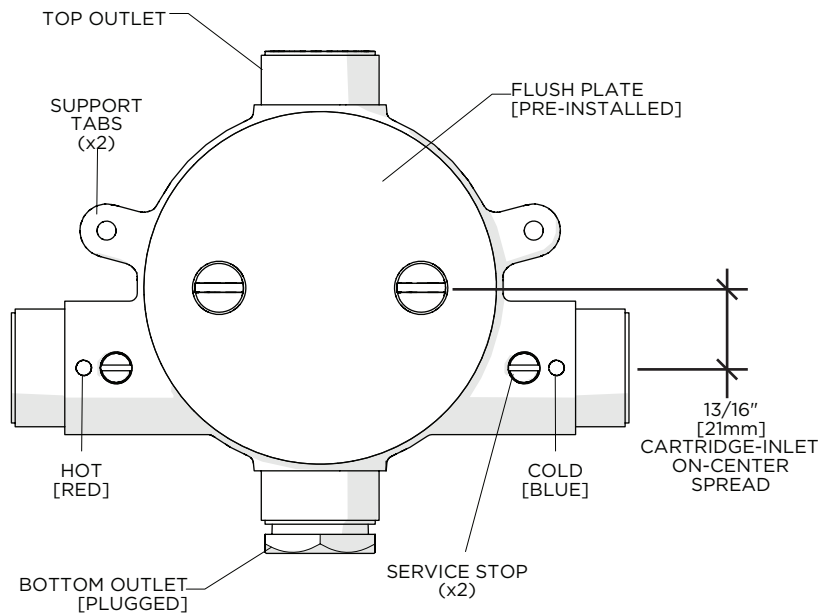


20. **CAREFULLY** slide the ESCUTCHEON down the HANDLE to conceal the TRIM CONNECTOR, then thread the SET SCREW to secure the position of the ESCUTCHEON.

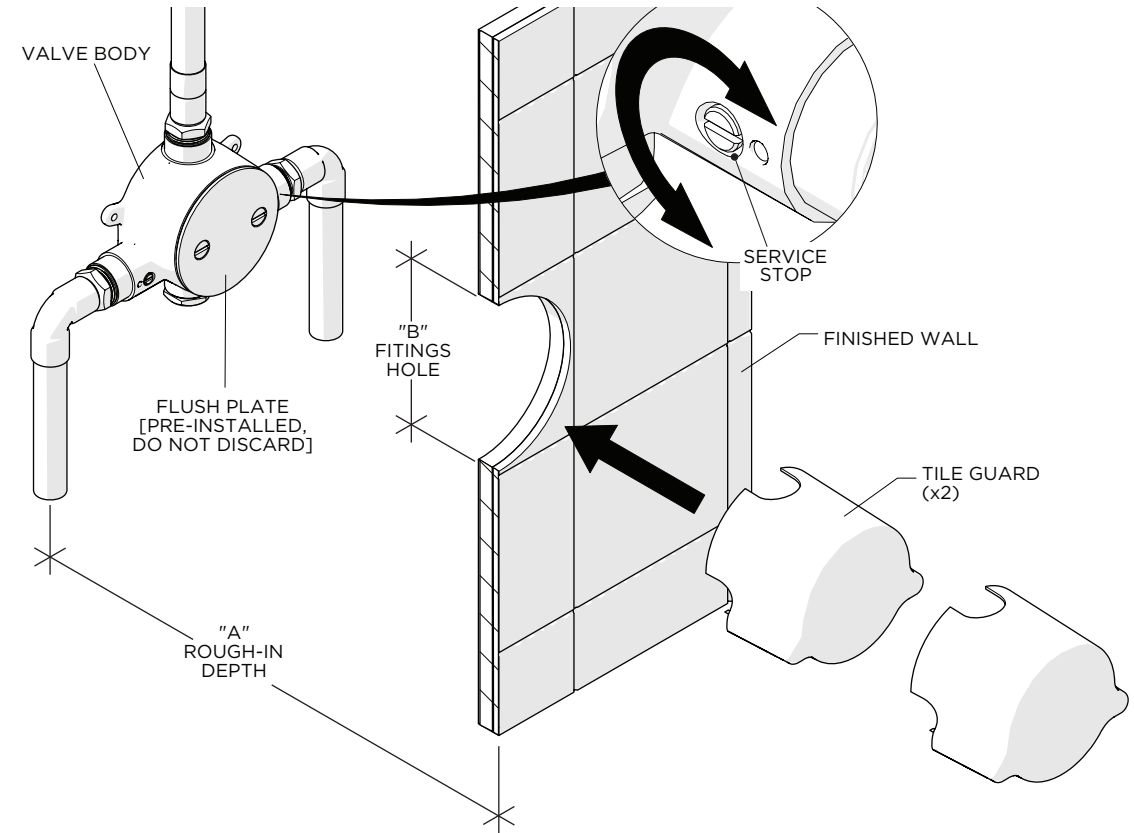
INSTALLATION GUIDELINES

LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH38

ROUGH-IN AND VALVE PREPARATION:



- **CAUTION:** The rough-in depth is measured from the centerline of the inlets to the surface of the finished wall. If the VALVE is roughed-in too shallow, the TRIM cannot be installed correctly.
- The VALVE is shipped with a pre-installed FLUSH PLATE and is ready for flushing the supply lines.
- **CAUTION:** Before installing the THERMOSTATIC CARTRIDGE, the supply lines MUST BE flushed out to prevent clogging of the FILTER SCREENS. Failure to flush the lines will permanently damage the CARTRIDGE and VOID the warranty. Repeat the flushing process as needed prior to final TRIM installation.
- Remove and discard the TILE GUARDS only when the finished wall surface (TILE or SLAB) is completed and the TRIM is ready for installation.



DIM	VALUE
A	9-5/8" [244mm] MAX 3-3/8" [86mm] MIN
B	Ø5-1/4" [133mm]

CARTRIDGE

ADAPTER

THREADED TUBE [M20]

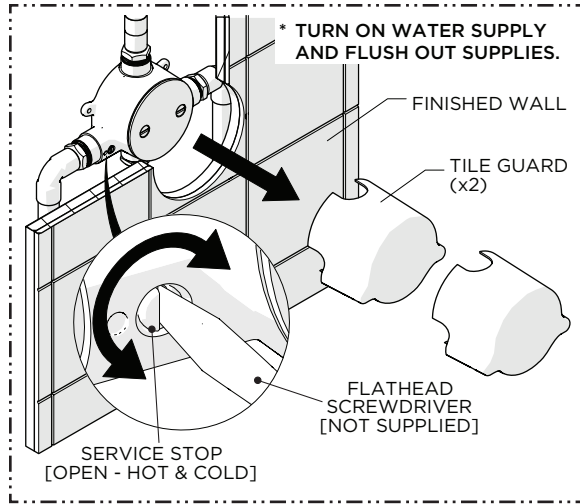
SQUARE TUBE

† IMPORTANT: The CARTRIDGE, ADAPTER, and TUBES are packaged separately and provided with the VALVE. SET ASIDE UNTIL FINAL TRIM INSTALLATION!

INSTALLATION GUIDELINES

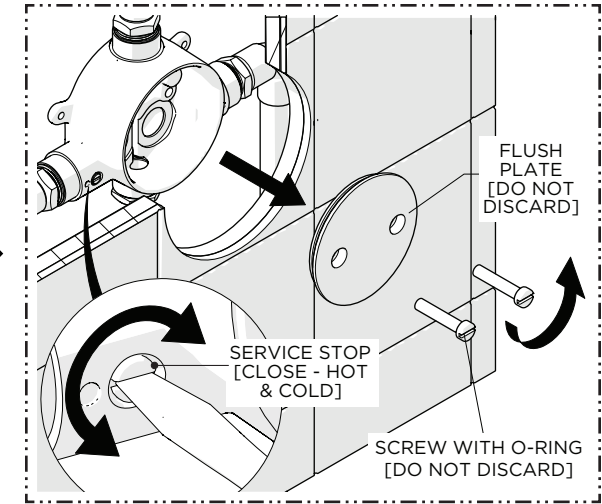
LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH38

WATERWORKS



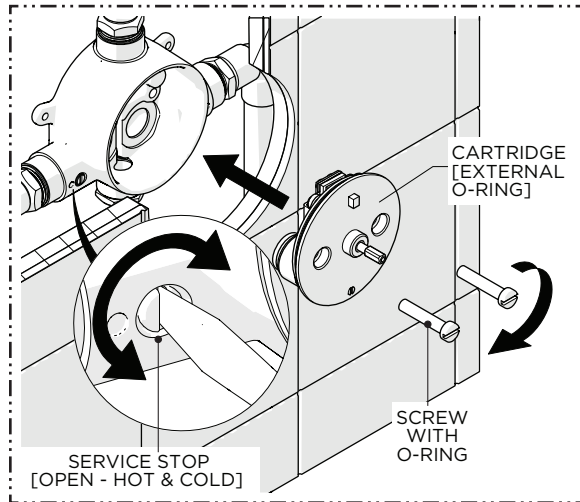
1. Turn on the water supplies then remove the TILE GUARDS from the VALVE and **OPEN** the SERVICE STOPS (hot & cold) to flush out the lines.

CAUTION: FAILURE TO FLUSH THE SUPPLY LINES WILL PERMANENTLY DAMAGE THE CARTRIDGE AND VOID THE WARRANTY! REPEAT THE FLUSHING PROCESS AS NEEDED BEFORE FINAL TRIM INSTALLATION.

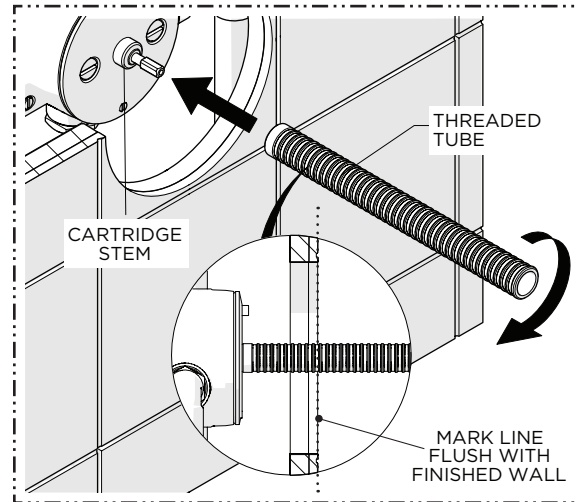


2. After the lines have been fully flushed, **CLOSE** the hot and cold SERVICE STOPS then unthread the SCREWS and remove the FLUSH PLATE.

NOTE: Do **NOT** discard the FLUSH PLATE.

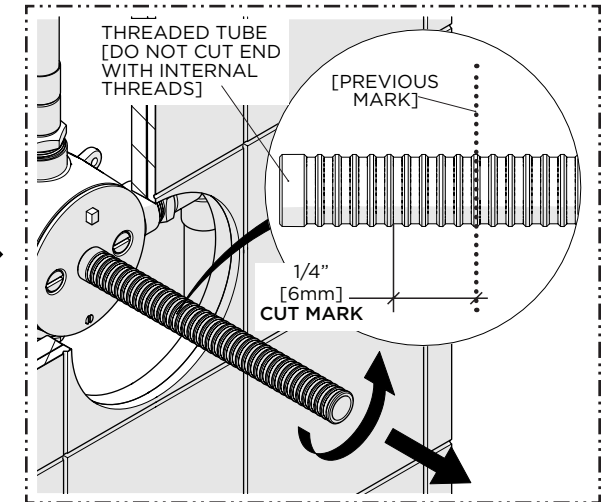


3. Insert the CARTRIDGE into the VALVE BODY then thread and securely tighten the SCREWS, re-open the SERVICE STOPS, and check for leaks.



4. Fully thread the THREADED TUBE [M20] onto the CARTRIDGE STEM and mark the TUBE where it protrudes past the finished wall.

NOTE: A straight edge (not supplied) can be used to mark the TUBE.

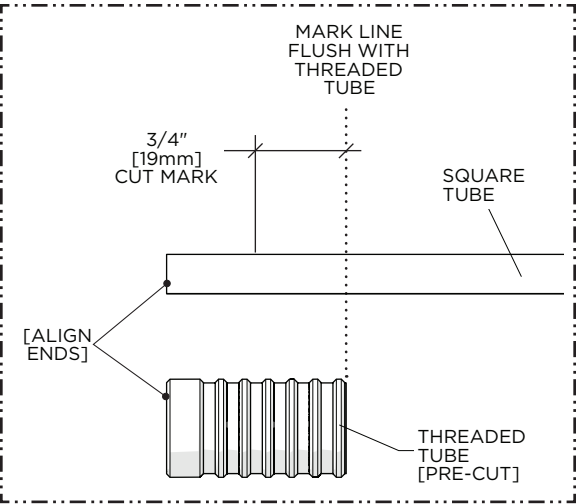


5. Remove the THREADED TUBE then cut it 1/4" [6mm] **behind** the previous mark.

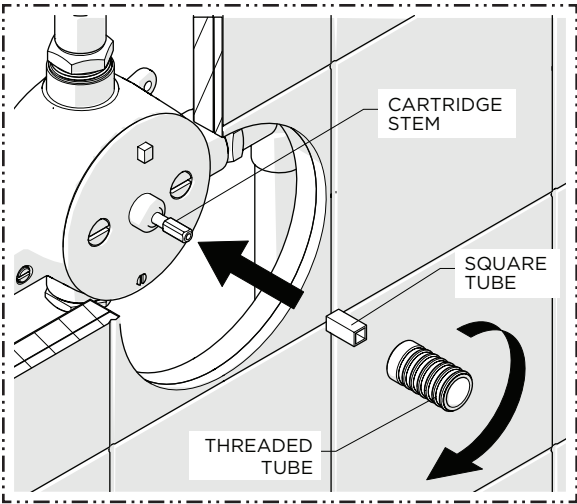
CAUTION: Do **NOT** cut the end with the internal threads.

INSTALLATION GUIDELINES

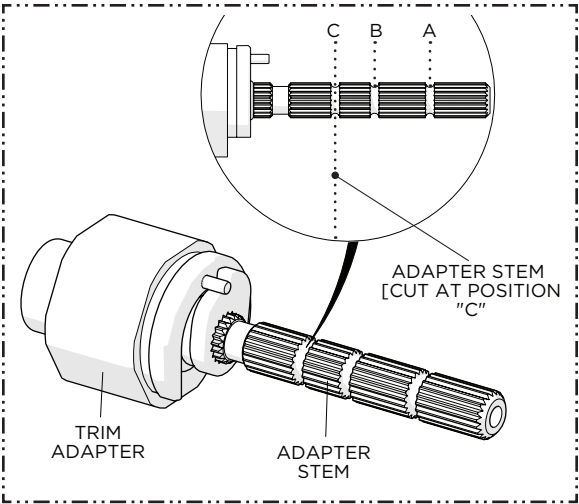
LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH38



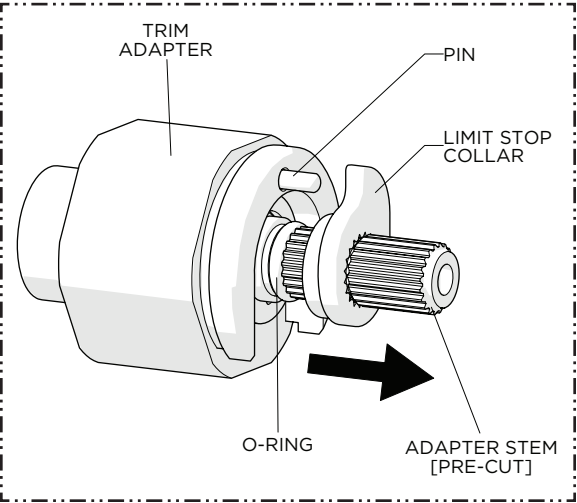
6. Align the pre-cut THREADED TUBE with the SQUARE TUBE then mark and cut the SQUARE TUBE 3/4" [19mm] **shorter** than the THREADED TUBE.



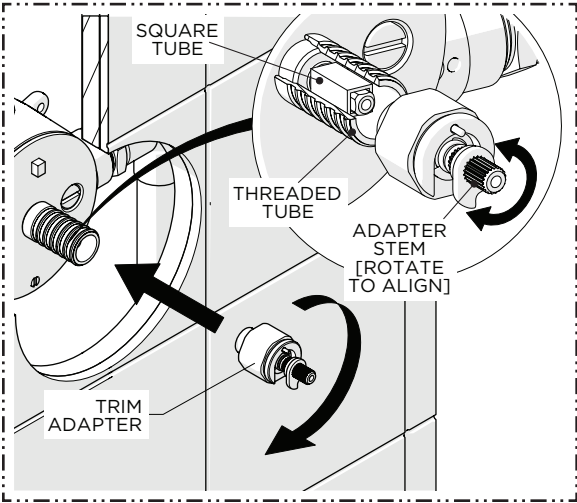
7. Slide the SQUARE TUBE onto the CARTRIDGE STEM then thread the THREADED TUBE onto the STEM until snug.



8. Before installing the TRIM ADAPTER, cut the ADAPTER STEM at position "C" as shown.

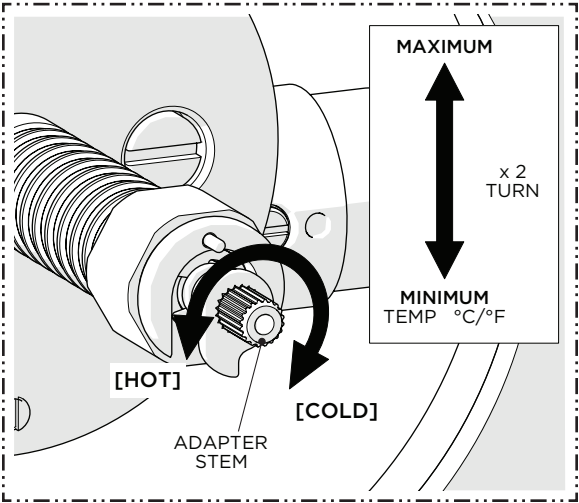


9. After cutting the ADAPTER STEM, pull the LIMIT STOP COLLAR up the STEM so it no longer contacts the PIN. The COLLAR must be unseated to allow the TRIM ADAPTER to thread properly onto the THREADED TUBE.



10. Thread the TRIM ADAPTER onto the THREADED TUBE until snug.

NOTE: ROTATING THE ADAPTER STEM WILL HELP PROPERLY ALIGN IT WITH THE SQUARE TUBE.



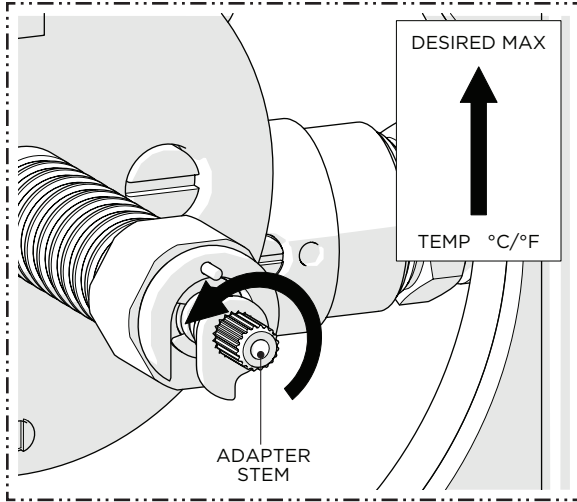
11. Open a **DIVERTER** or **VOLUME CONTROL VALVE** then slowly rotate the ADAPTER STEM clockwise to attain full cold then rotate it counter-clockwise to attain full hot. Verify that a full range of temperatures exists.

NOTE: It's approximately 2 complete rotations.

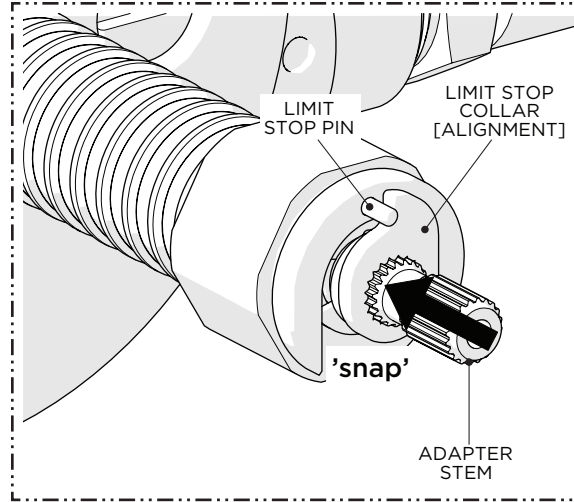
INSTALLATION GUIDELINES

LUDLOW THERMOSTATIC SHOWER TRIM WITH GUTH38

WATERWORKS

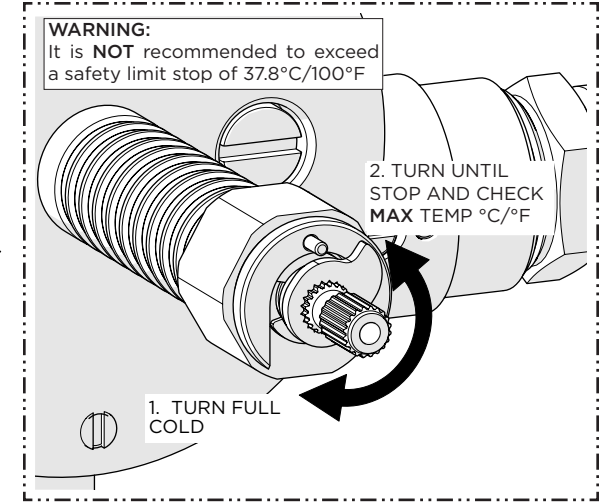


12. With water running, rotate the ADAPTER STEM to adjust the temperature to the **maximum** desired bathing temperature, verified with a thermometer, then turn the water off and make sure **NOT** to change this setting.



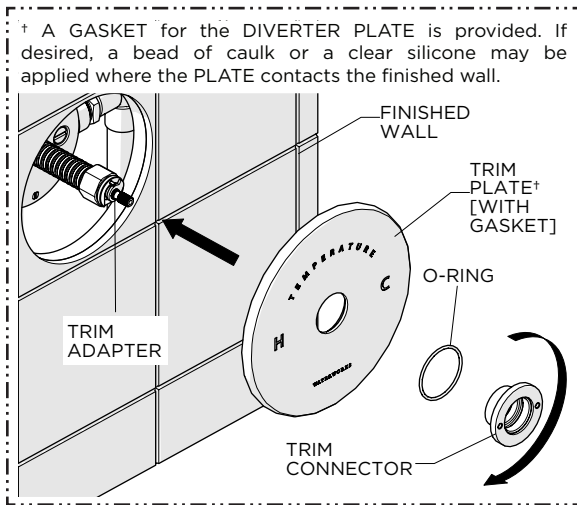
13. Slide the LIMIT STOP COLLAR back down the ADAPTER STEM making sure to properly align it with the LIMIT STOP PIN and press down firmly.

NOTE: Pressing down firmly on the COLLAR will ensure the O-RING is fully seated in its groove which will keep the COLLAR securely in place.

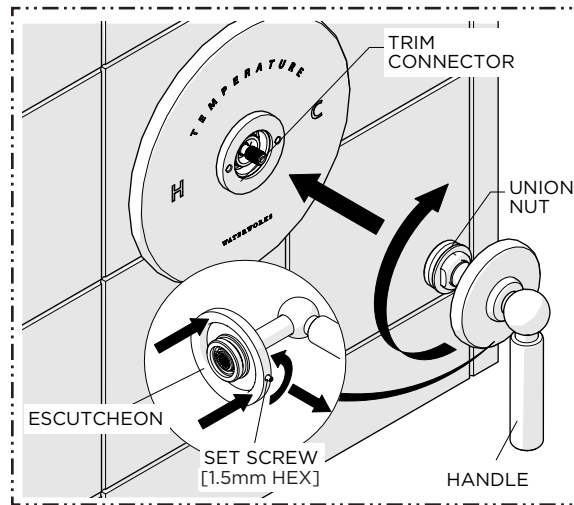


14. Turn the ADAPTER STEM clockwise to full cold then counter-clockwise until it stops and verify the **maximum** desired bathing temperature set in the previous step.

➤ **IF THE MAXIMUM BATHING TEMPERATURE IS NOT CORRECT, REPEAT THE CALIBRATION PROCEDURES.**

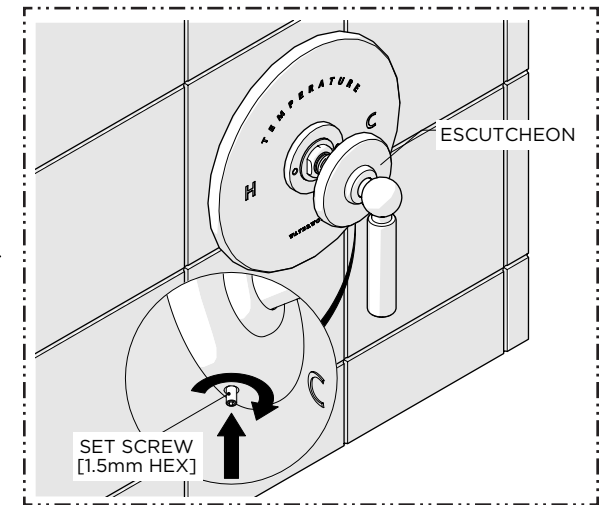


15. Firmly hold the TRIM PLATE against the finished wall then securely tighten the TRIM CONNECTOR onto the TRIM ADAPTER making sure to use the O-RING provided.



16. Loosen [do **NOT** remove] the SET SCREW at the base of the ESCUTCHEON then **CAREFULLY** slide the ESCUTCHEON up the HANDLE to expose the UNION NUT

With the HANDLE in the desired orientation, thread the NUT into the TRIM CONNECTOR until snug.

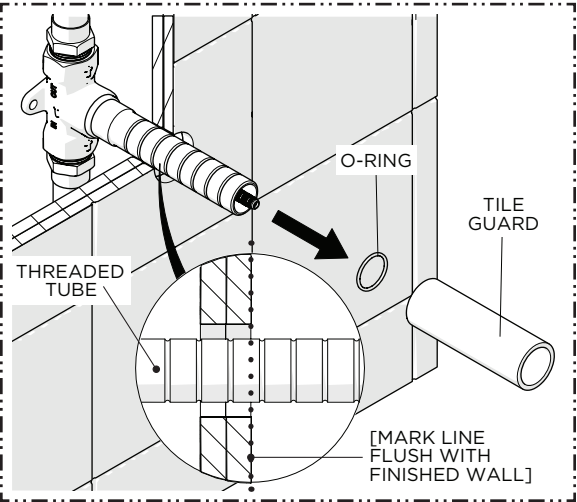
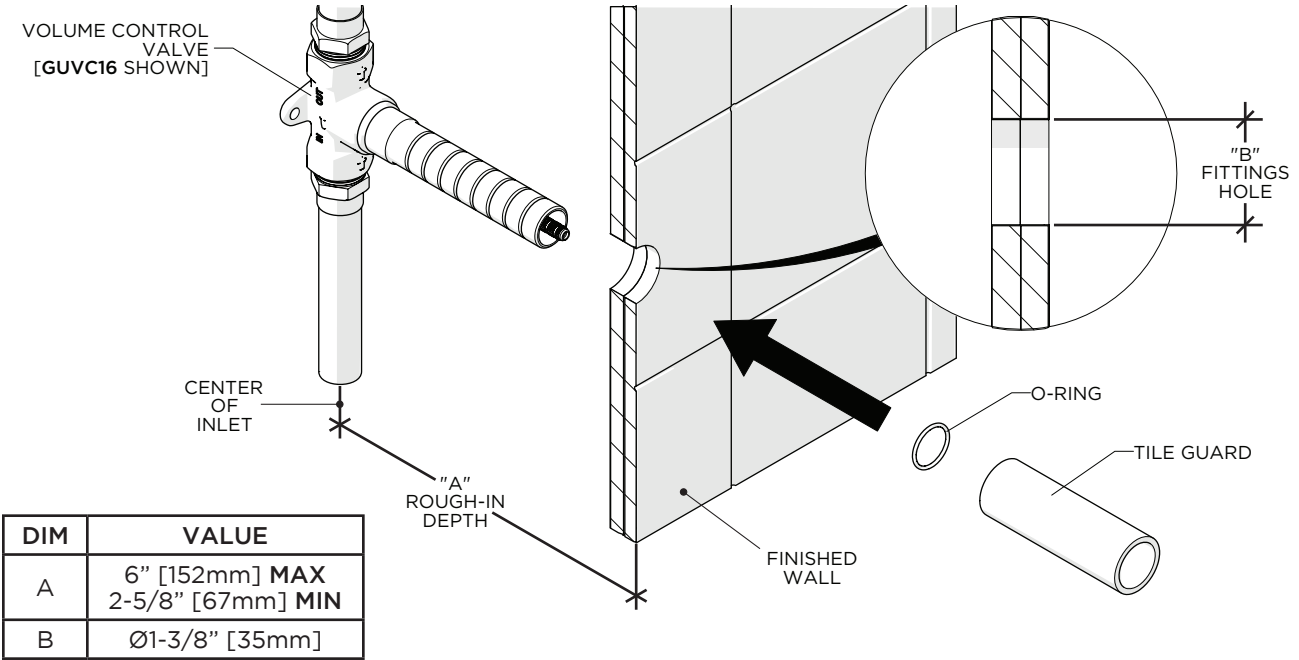


17. **CAREFULLY** slide the ESCUTCHEON down the HANDLE to conceal the TRIM CONNECTOR, then thread the SET SCREW to secure the position of the ESCUTCHEON.

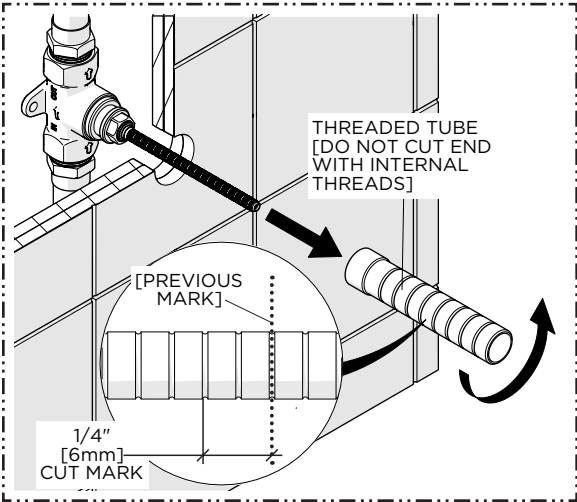
INSTALLATION GUIDELINES

LUDLOW VOLUME CONTROL TRIM WITH GUVVC16/17/18/19

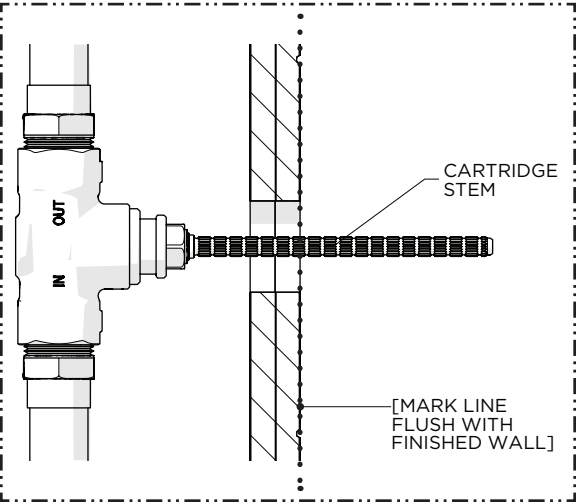
- **CAUTION:** The rough-in depth is measured from the centerline of the inlets to the surface of the finished wall. If the VALVE is roughed-in too shallow, the TRIM cannot be installed correctly.
- Remove and discard the TILE GUARD only when the finished wall surface (TILE or SLAB) is completed and the TRIM is ready for installation.



1. Remove the TILE GUARD when ready to install the TRIM then mark the THREADED TUBE where it protrudes past the finished wall.
- NOTE:** A straight edge (not supplied) can be used to mark the TUBE.



2. Remove the THREADED TUBE then cut it 1/4" [6mm] behind the previous mark so the TUBE will recess 1/4" [6mm] into the finished wall surface.

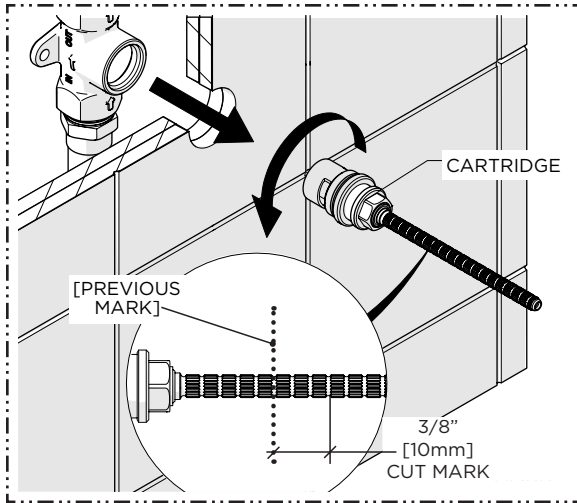


3. Mark the CARTRIDGE STEM where it protrudes past the finished wall.
- NOTE:** A straight edge (not supplied) can be used to mark the CARTRIDGE STEM.

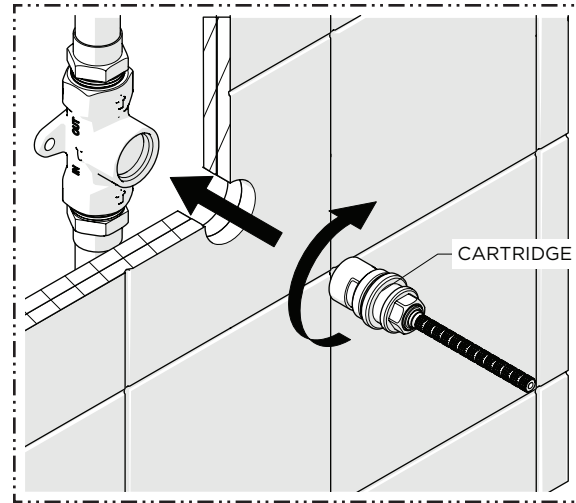
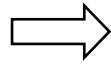
INSTALLATION GUIDELINES

LUDLOW VOLUME CONTROL TRIM WITH GUVVC16/17/18/19

WATERWORKS

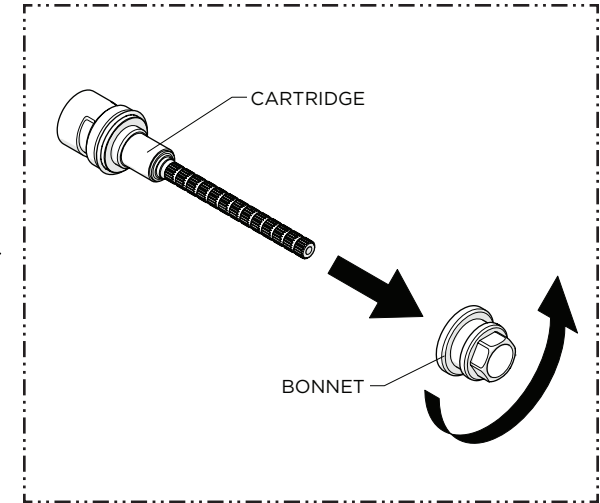
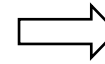


4. Remove the CARTRIDGE using a 21/32" [17mm] shower valve socket wrench (not supplied) then cut the CARTRIDGE STEM 3/8" [10mm] in front of the previous mark so the STEM will protrude 3/8" [10mm] from the finished wall surface.



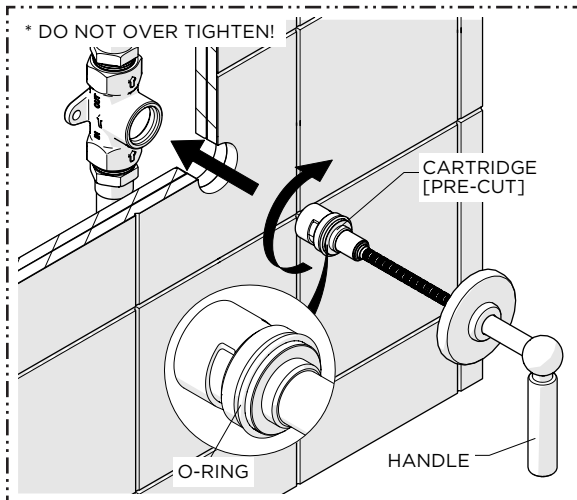
GUVVC18 & GUVVC19 ONLY:

5. Thread and securely tighten the CARTRIDGE back into the VALVE.



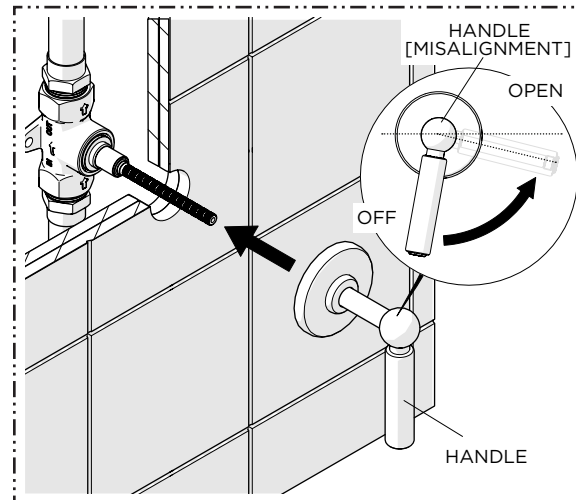
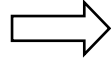
STEPS 6 - 10 GUVVC16 & GUVVC17 ONLY: HANDLE ALIGNMENT.

6. After cutting the CARTRIDGE STEM, unthread the BONNET from the CARTRIDGE if not already disassembled when removing from the VALVE.

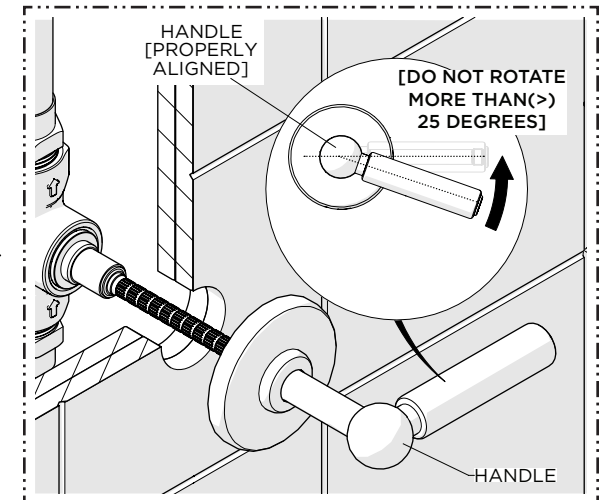
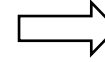


7. Using the HANDLE, thread the CARTRIDGE back into the VALVE until there is **NOTICEABLE** resistance.

NOTE: Ensure the O-RING on the CARTRIDGE has not been damaged and is properly seated.



8. Remove and replace the HANDLE to position it as close as possible to the "OFF" position then turn the HANDLE a 1/4 turn to the "OPEN" position making sure NOT to unthread the CARTRIDGE.



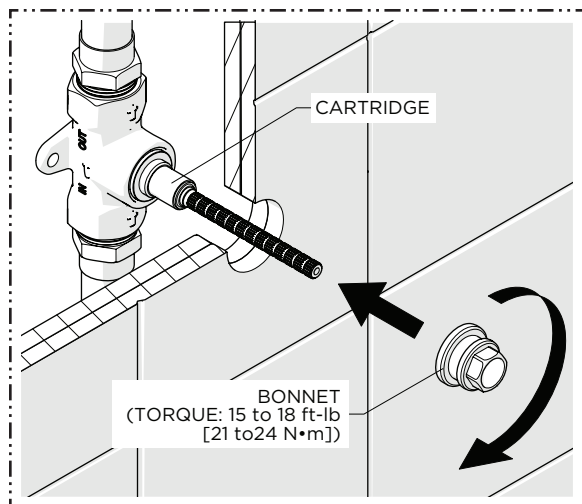
9. If needed, carefully continue to rotate the HANDLE counter-clockwise to obtain the proper alignment. Do **NOT** rotate/unthread the CARTRIDGE more than 25 degrees.

NOTE: Repeat Steps 7 & 8 if the CARTRIDGE is unthreaded too far.

INSTALLATION GUIDELINES

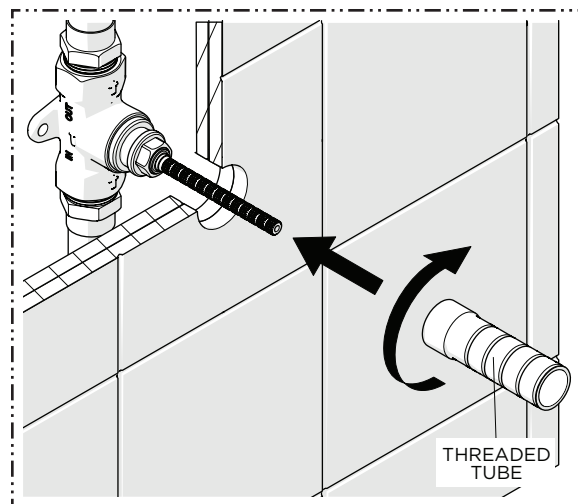
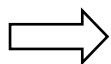
LUDLOW VOLUME CONTROL TRIM WITH GUVVC16/17/18/19

WATERWORKS

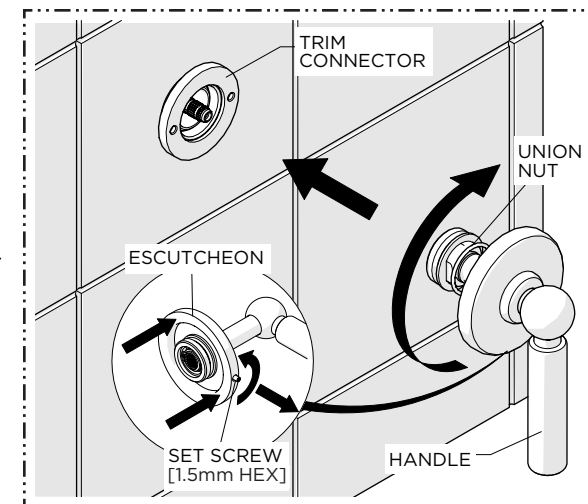
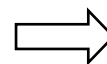


10. Remove the HANDLE then thread and securely tighten the BONNET back onto the CARTRIDGE.

NOTE: The BONNET requires a torque between 15 and 18 ft-lb [21-24 N•m].

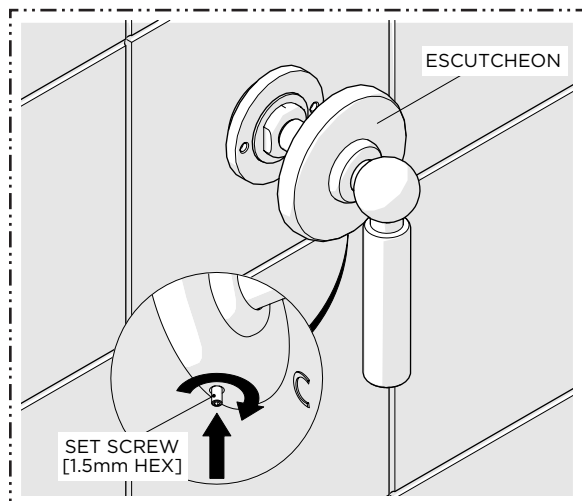


11. Thread and securely tighten the THREADED TUBE back onto the CARTRIDGE until snug.



12. Loosen [do **NOT** remove] the SET SCREW at the base of the ESCUTCHEON then **CAREFULLY** slide the ESCUTCHEON up the HANDLE to expose the UNION NUT

With the HANDLE in the desired orientation, thread the NUT into the TRIM CONNECTOR until snug.

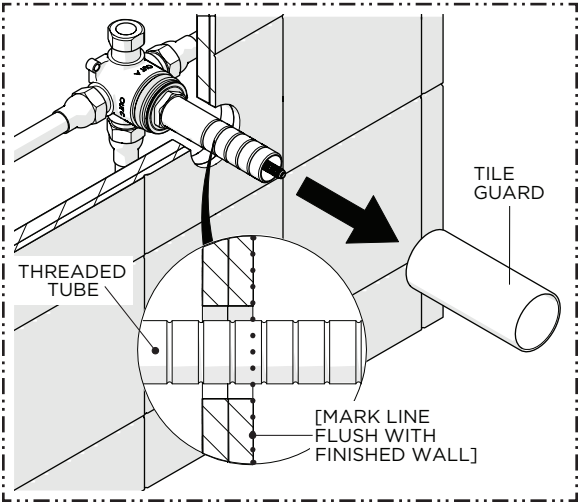
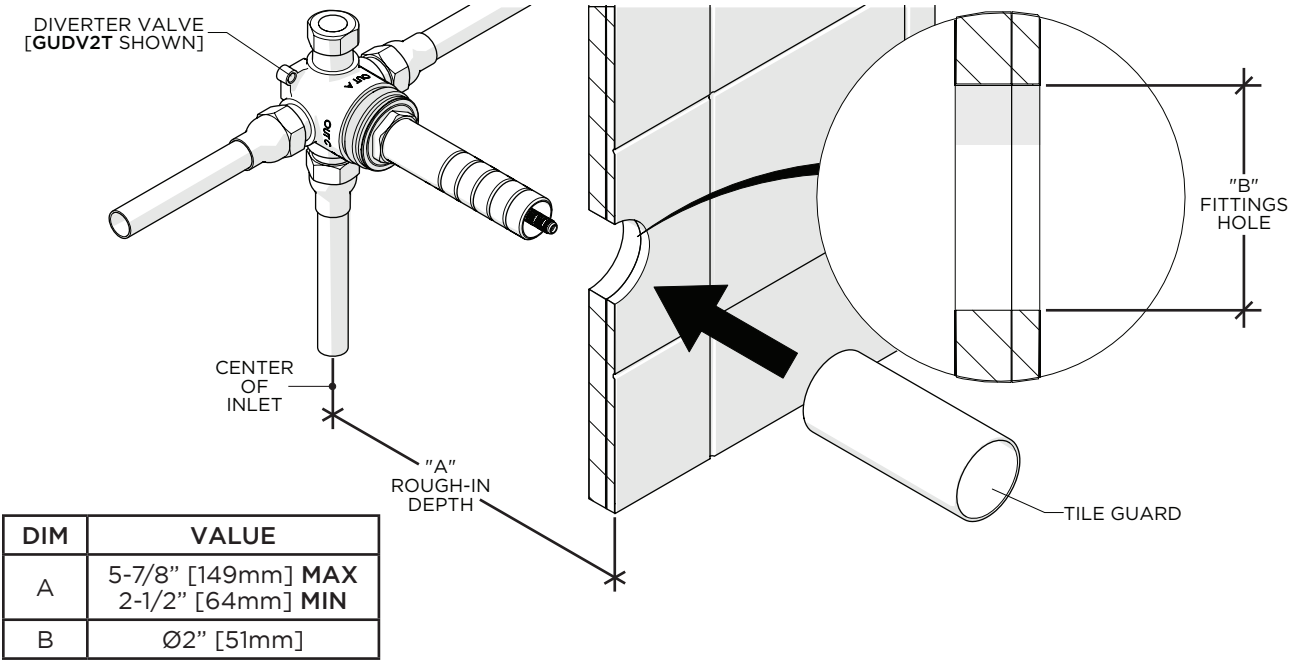


13. **CAREFULLY** slide the ESCUTCHEON down the HANDLE to conceal the TRIM CONNECTOR, then thread the SET SCREW to secure the position of the ESCUTCHEON.

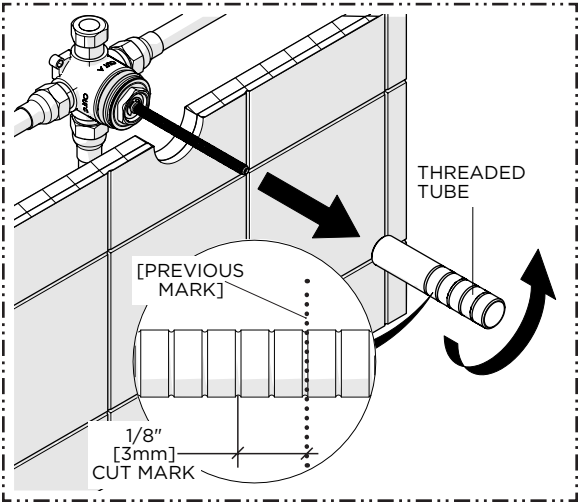
INSTALLATION GUIDELINES

LUDLOW DIVERTER TRIM WITH GUDV2T/3T

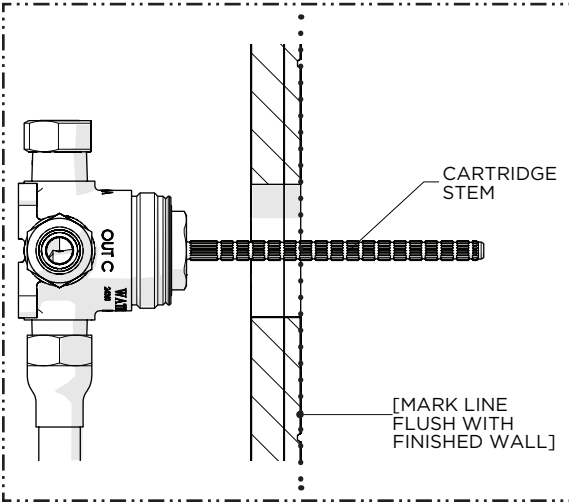
- **CAUTION:** The rough-in depth is measured from the centerline of the inlets to the surface of the finished wall. If the VALVE is roughed-in too shallow, the TRIM cannot be installed correctly.
- The DIVERTER VALVE TRIM components (i.e. HANDLE and TRIM PLATE) are packaged separately from each other.
- Remove and discard the TILE GUARD only when the finished wall surface (TILE or SLAB) is completed and the TRIM is ready for installation.



1. Remove the TILE GUARD when ready to install the TRIM then mark the THREADED TUBE where it protrudes past the finished wall.
NOTE: A straight edge (not supplied) can be used to mark the TUBE.



2. Remove the THREADED TUBE then cut it 1/8" [6mm] **behind** the previous mark so the TUBE will recess 1/8" [3mm] into the finished wall surface.

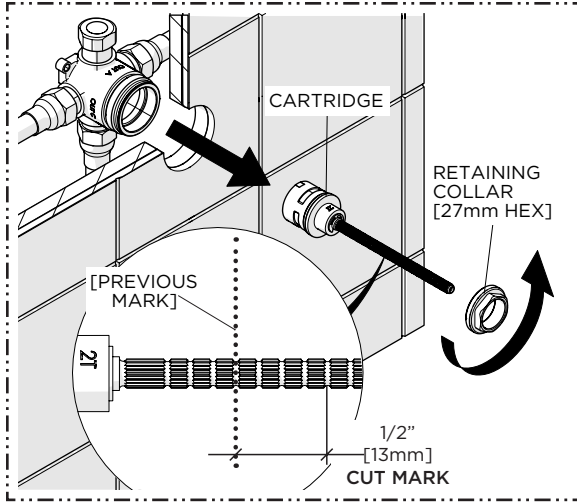


3. Mark the CARTRIDGE STEM where it protrudes past the finished wall.
NOTE: A straight edge (not supplied) can be used to mark the CARTRIDGE STEM.

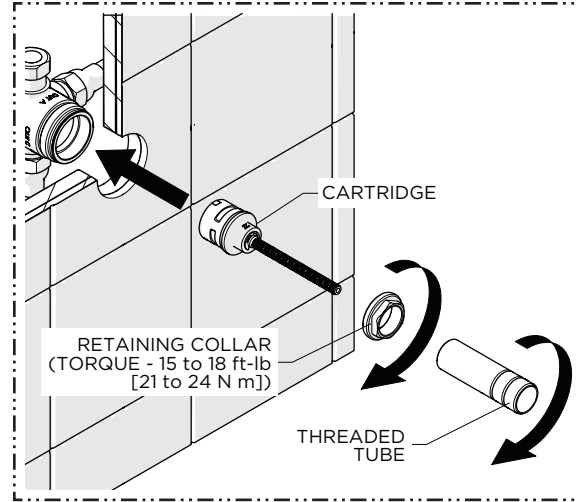
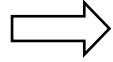
INSTALLATION GUIDELINES

LUDLOW DIVERTER TRIM WITH GUDV2T/3T

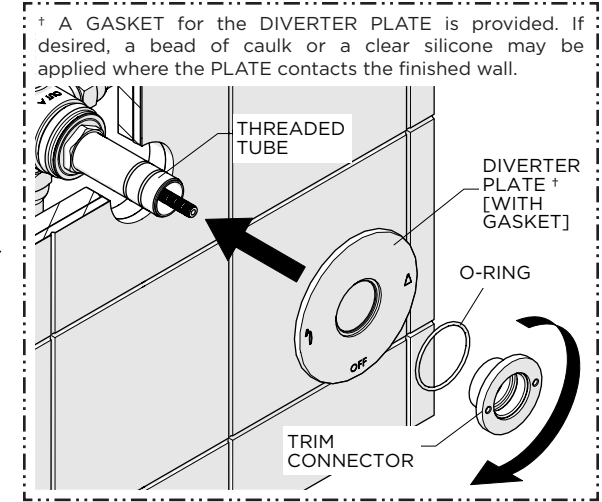
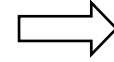
WATERWORKS



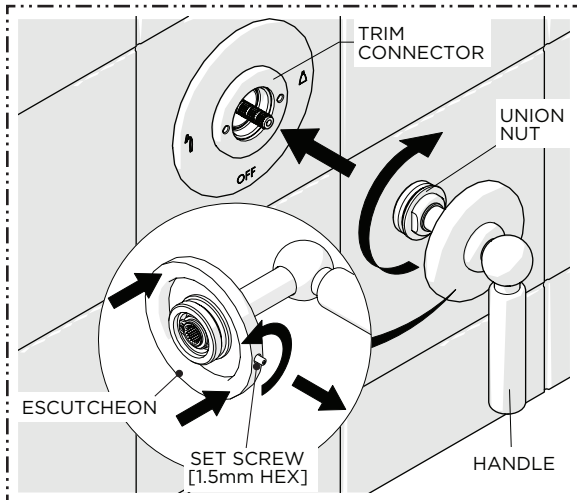
4. Unthread the RETAINING COLLAR and remove the CARTRIDGE then cut the CARTRIDGE STEM 1/2" [13mm] in front of the previous mark so the STEM will protrude 1/2" [13mm] from the finished wall surface.



5. Re-insert the CARTRIDGE into the VALVE then thread and securely tighten the RETAINING COLLAR to the specified torque setting shown.
Thread the THREADED TUBE back into the RETAINING COLLAR until snug.

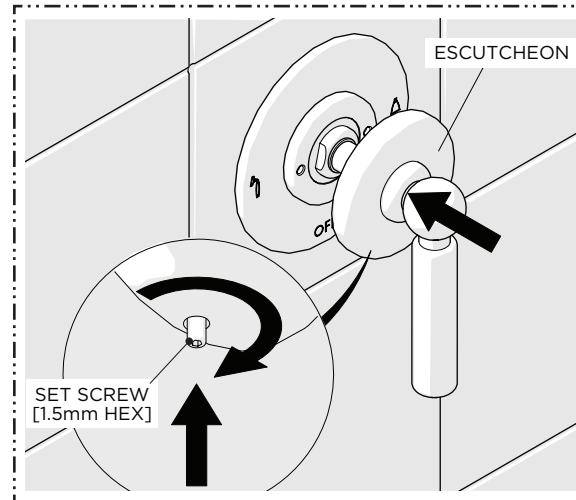


6. Firmly hold the DIVERTER PLATE against the finished wall then thread and securely tighten the TRIM CONNECTOR onto the THREADED TUBE making sure to use the O-RING provided.



7. Loosen [do NOT remove] the SET SCREW at the base of the ESCUTCHEON then CAREFULLY slide the ESCUTCHEON up the HANDLE to expose the UNION NUT

With the HANDLE in the desired orientation, thread the NUT into the TRIM CONNECTOR until snug.



8. CAREFULLY slide the ESCUTCHEON down the HANDLE to conceal the TRIM CONNECTOR, then thread the SET SCREW to secure the position of the ESCUTCHEON.