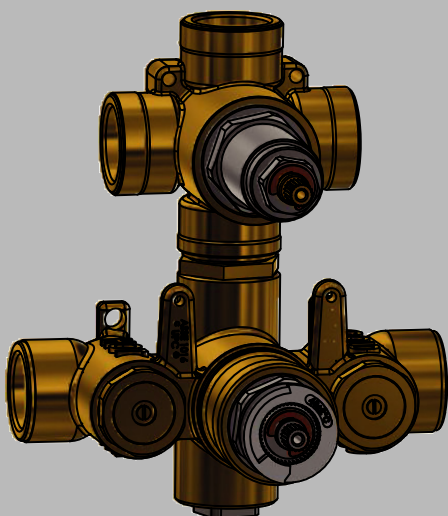




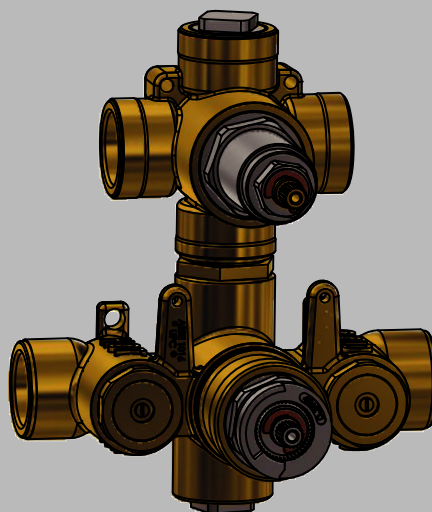
# Installation Manual

## 3/4" Thermostatic Valve With 2 or 3 Output Diverter



**TVH.4301F**

**3 OUTPUT**



**TVH.4420F**

**2 OUTPUT**

### **BEFORE YOU BEGIN**

- You must observe all local plumbing laws and codes.
- Do not install this valve if it does not meet local plumbing codes.
- Shut off the main water supply.

## TABLE OF CONTENTS

• Operating Specifications . . . . .	1
• Valve Installation And Tolerance	
• Cut-Out Dimensions . . . . .	1
• <b>Rough In Specification</b> . . . . .	2
• Connecting The Supply & Output Lines . . . . .	3
• Finished Tile Position . . . . .	5
• Using The Supply Stops . . . . .	6
• Flushing The Valve . . . . .	6
• Installing The Trim . . . . .	7
• Replacing The Thermostatic Cartridge . . . . .	11
• Replacing Diverter Cartridge . . . . .	11
• Replacing Supply Stops . . . . .	12
• Installing The Extension Kit . . . . .	13

## NOTICE TO HOMEOWNER

- We recommend that this product is installed by a qualified professional plumber.
- Please check this product immediately to ensure that it has not been damaged and is complete. Before installation, please make sure this product is the correct model and you have all the parts required for installation and use.
- Please flush the water system to ensure that no metal swarf, solder, and other impurities can enter the product.
- Turn off water supply before commencing work.
- Please read these instructions carefully and retain for future reference.

## OPERATING SPECIFICATIONS

### WATER TEMPERATURE



This product is to be used with water at a temperature range of 40°F - 120°F ONLY!

### WATER PRESSURE



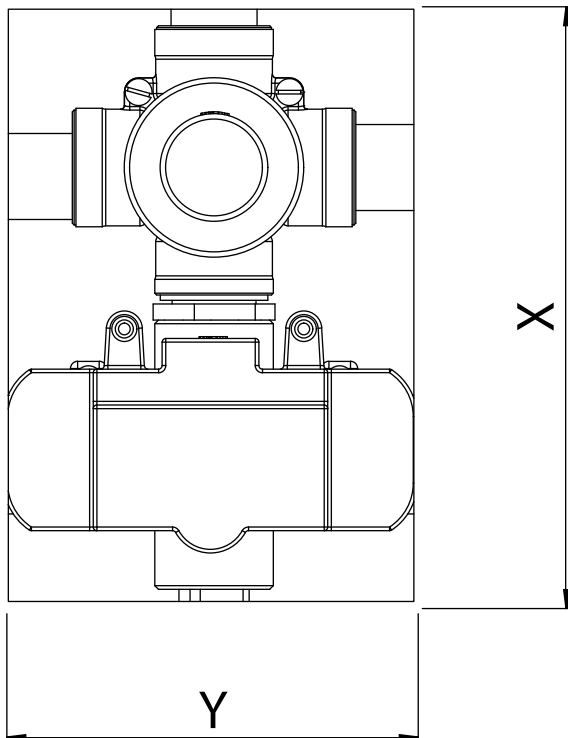
This product is to be used with a water pressure range of 15 PSI to 80 PSI ONLY

If water pressure is greater than 80 PSI install a pressure reducing valve (PRV)

This valve meets or exceeds ANSI A112.18.1 and ASSE 1016

This valve is certified by IAPMO

## CUT OUT DIMENSIONS



Isenberg's TVH Series valves comes with a black pre-attached mud-guard. This mud-guard is not to be removed or discarded. Its purpose is to guide the installation professional on the proper cut-out dimensions of the drywall.

Wall Cut Out Dimensions  
From **Center Point** of Valve:

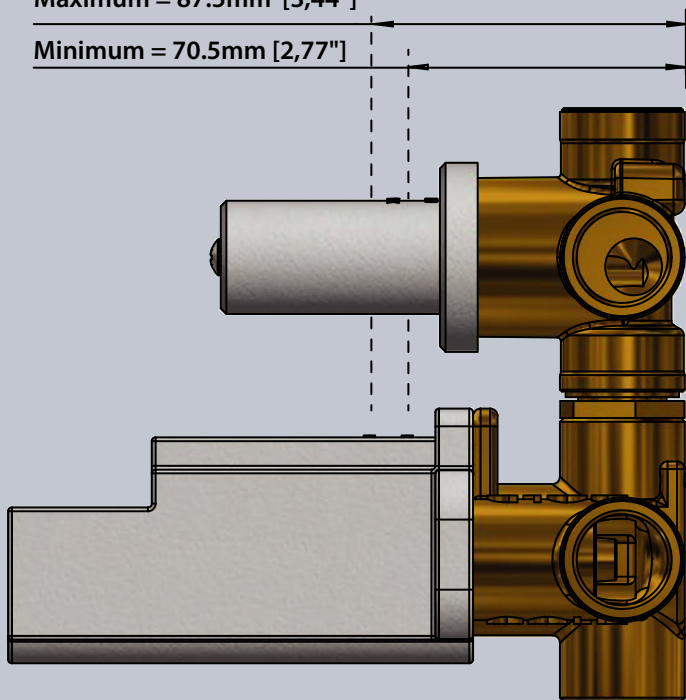
X = 165mm / 6.49"

Y = 113mm / 4.44"

**ROUGH IN SPECIFICATION**

Maximum = 87.5mm [3,44"]

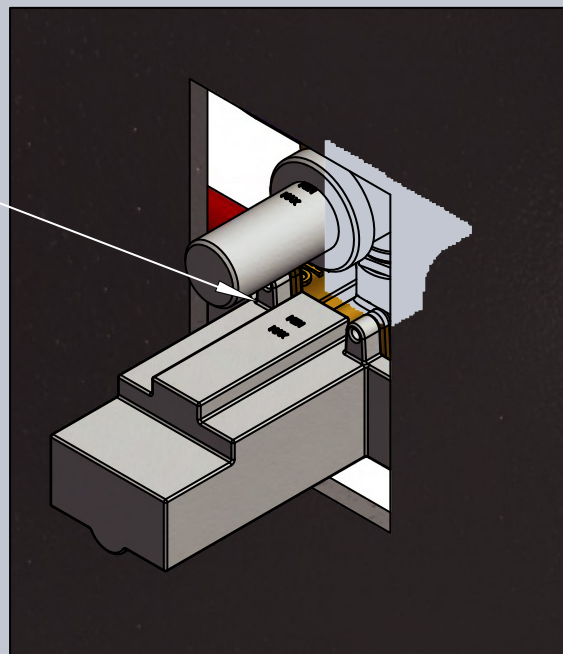
Minimum = 70.5mm [2,77"]



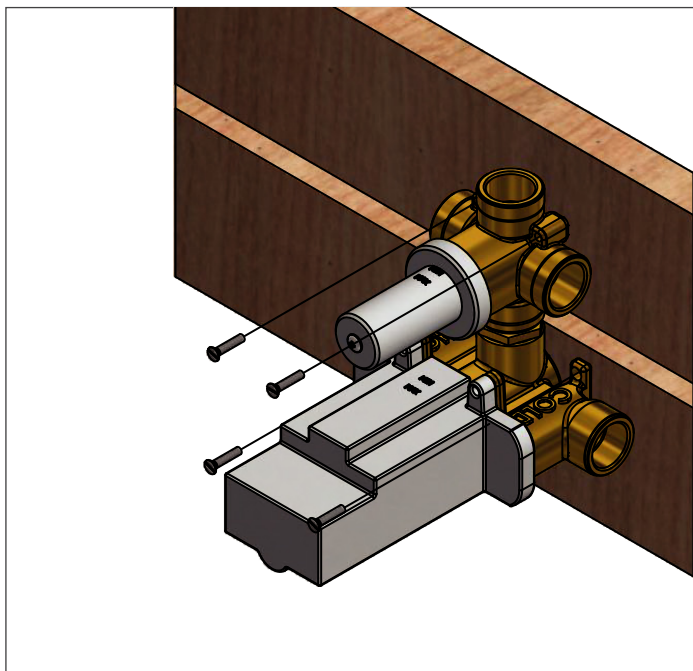
The distance between back of the valve to the finished tile surface should be between 2.77" and 3.44" inches.

Finished tile should fall between Min & Max.

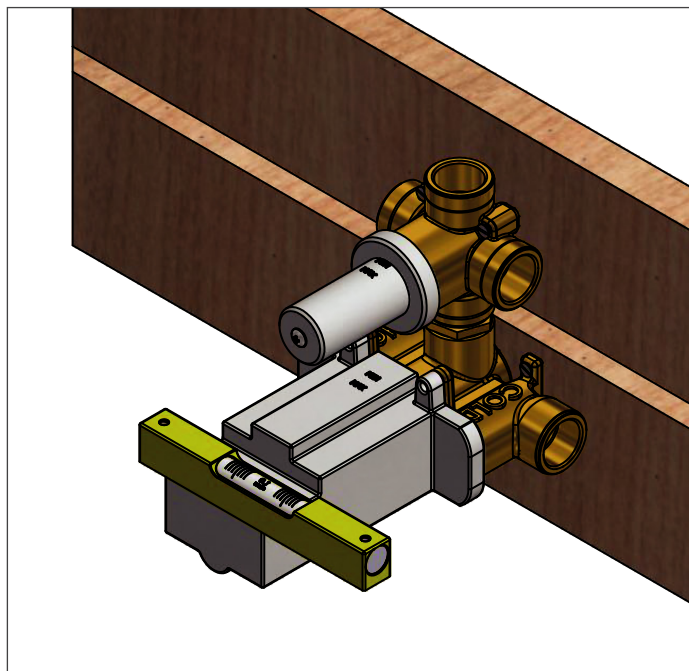
If valve is installed too deep into the wall, extensions are available.



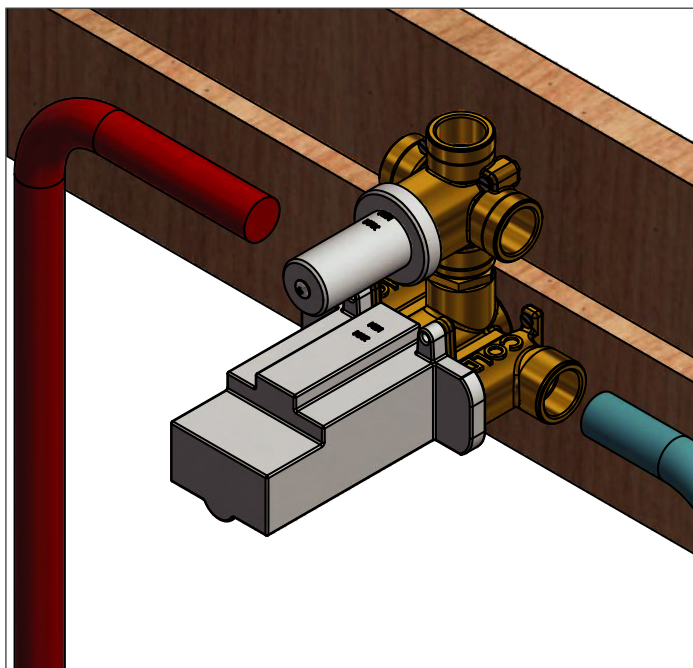
CONNECTING THE SUPPLY & OUTPUT LINES



Fix Valve on wooden plank

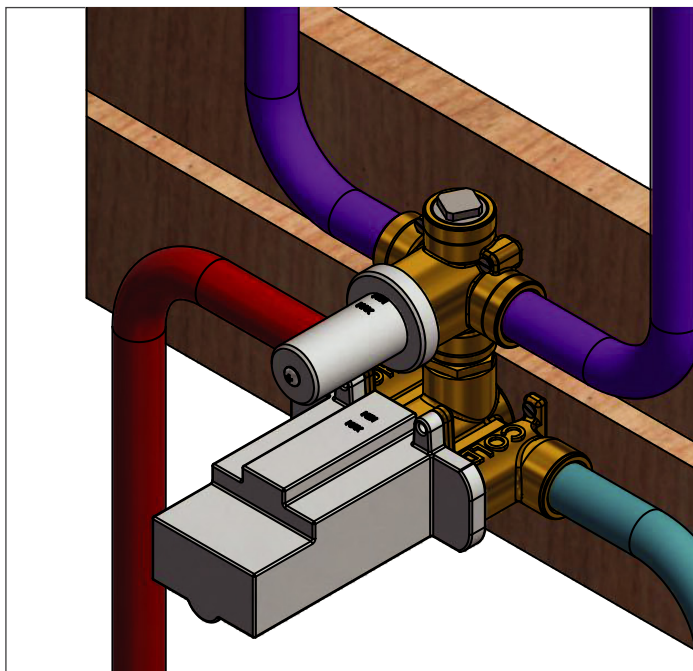


Level Valve



Attach Hot/Cold Lines

**CONNECTING THE SUPPLY & OUTPUT LINES**

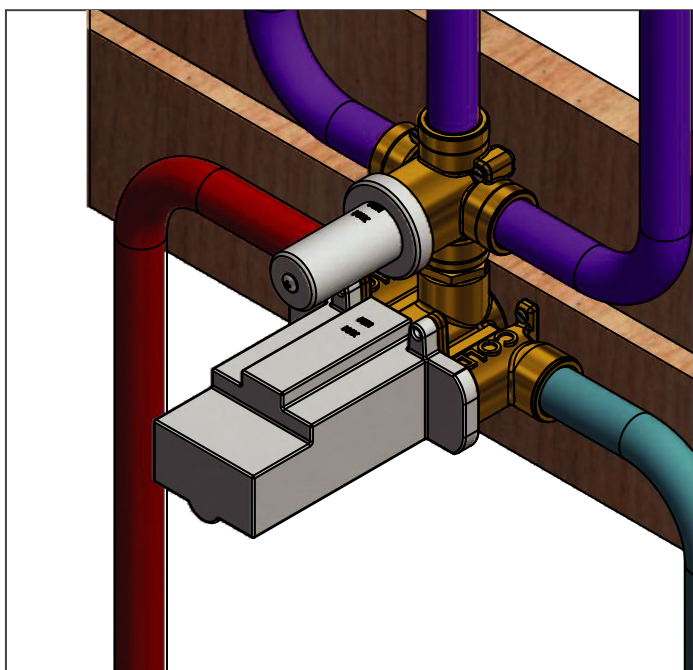


**TWO OUTPUT CONFIGURATION**

VALVE: TVH.4420F

Connect the two output supply lines as seen on the left.

**Do not connect any other way.**

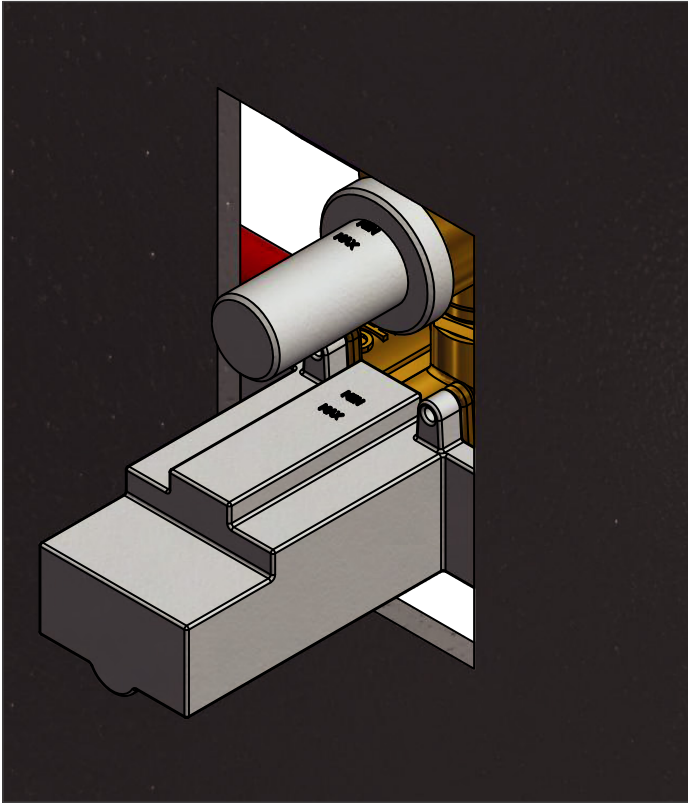


**THREE OUTPUT CONFIGURATION**

VALVE: TVH.4301F

Connect the three output supply lines as seen on the left.

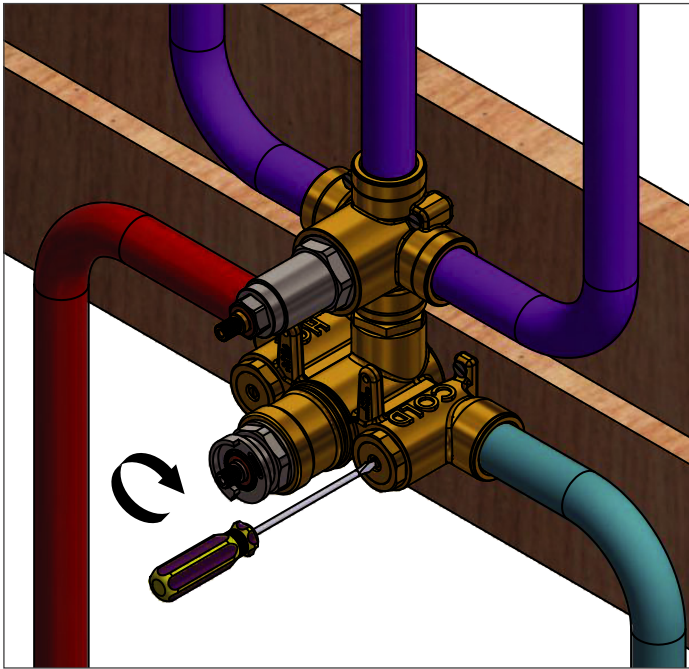
**FINISHED TILE POSITION**



Install Drywall and Tile. Ensure finished tile surface is between the min and max marks on the mud guards.



## USING THE SUPPLY STOPS



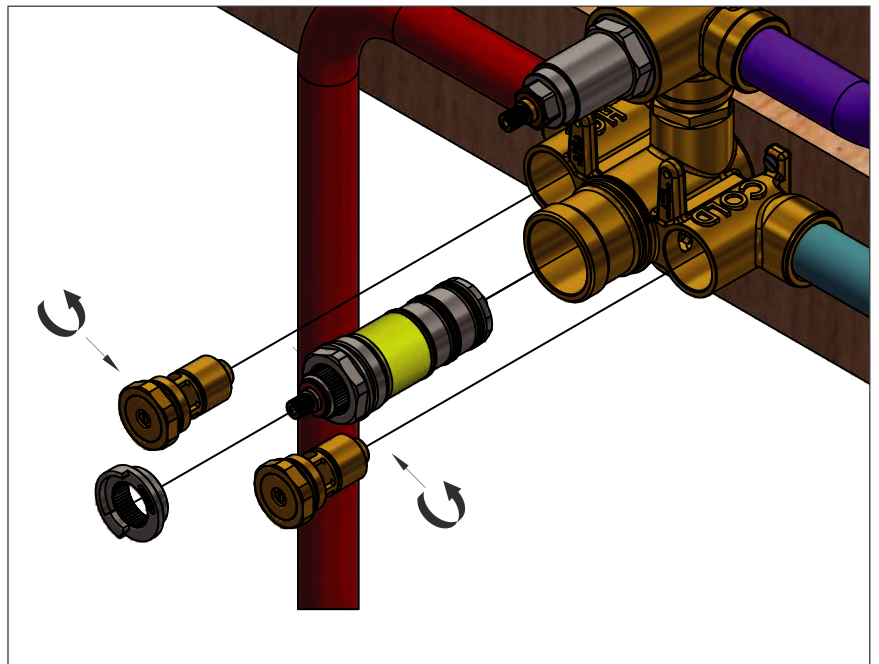
Turn Clock-wise 5 times to stop water flow.

[ Three output valve version shower here ]

## FLUSHING THE VALVE

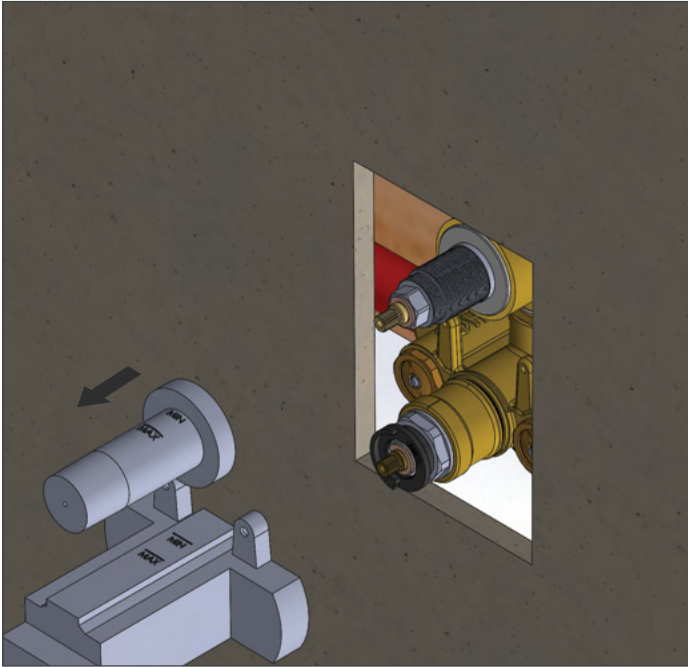
In order to clear dirt in the lines - you must flush the valve before the wall is closed and water is turned on for the first time.

- 1) Remove the 2 supply stops by turning with a spanner
- 2) Remove thermostatic cartridge by turning with a spanner
- 3) Turn on water supply and let water flow removing any dirt in the lines.

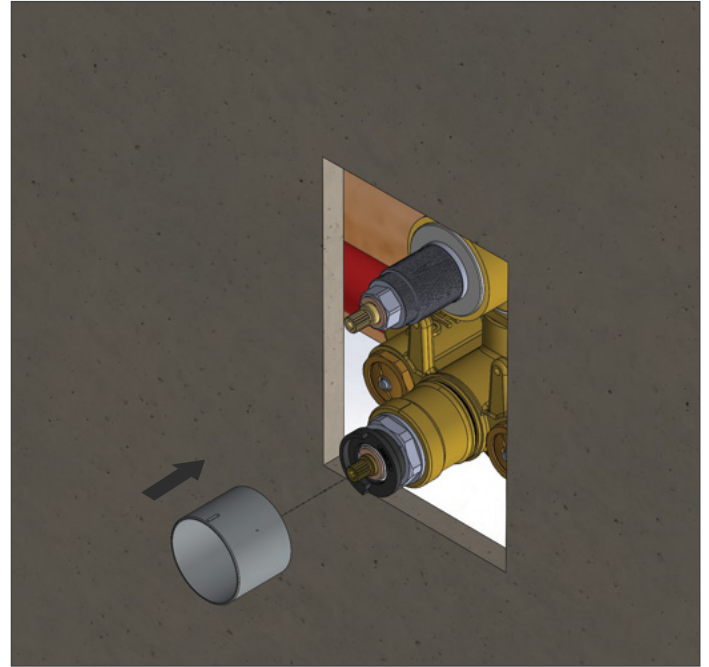




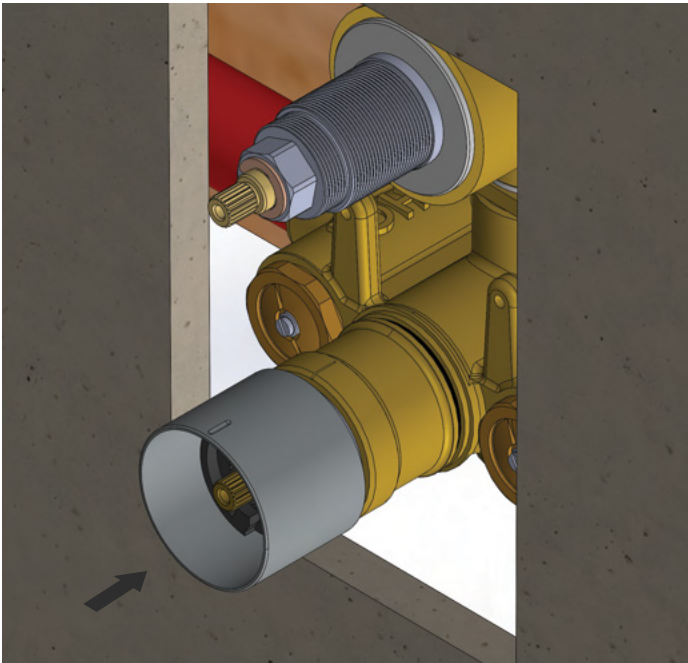
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



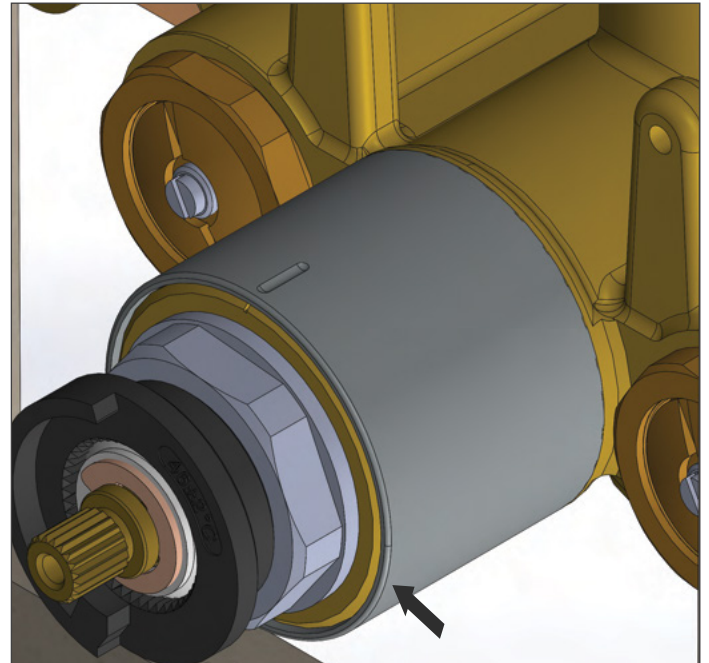
Remove mud guards



Install 42mm ring

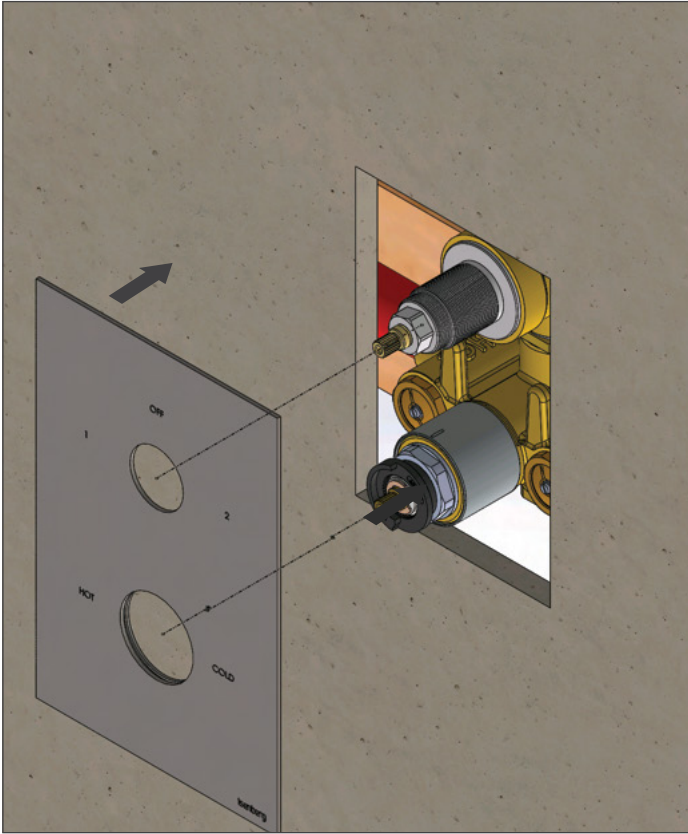


A hard push may be required

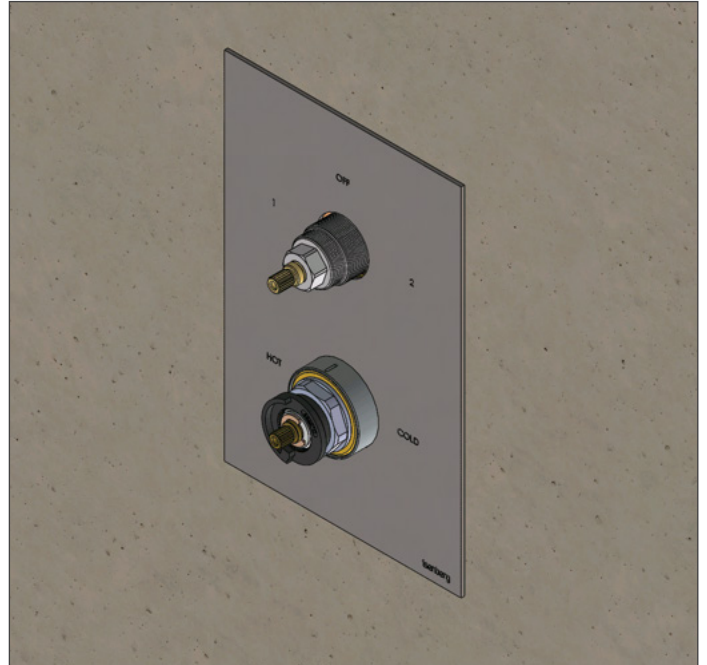


The 42mm ring must be flush. Otherwise the handle will not fit properly

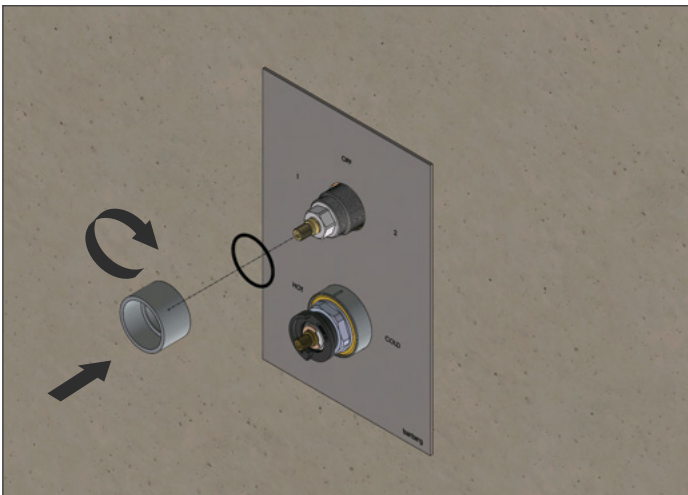
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



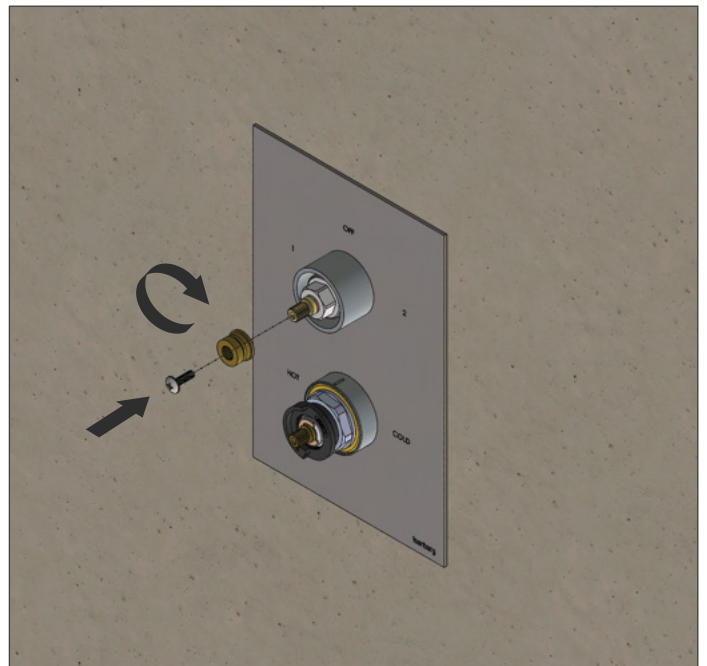
Insert trim plate



Align Trim plate till it is straight

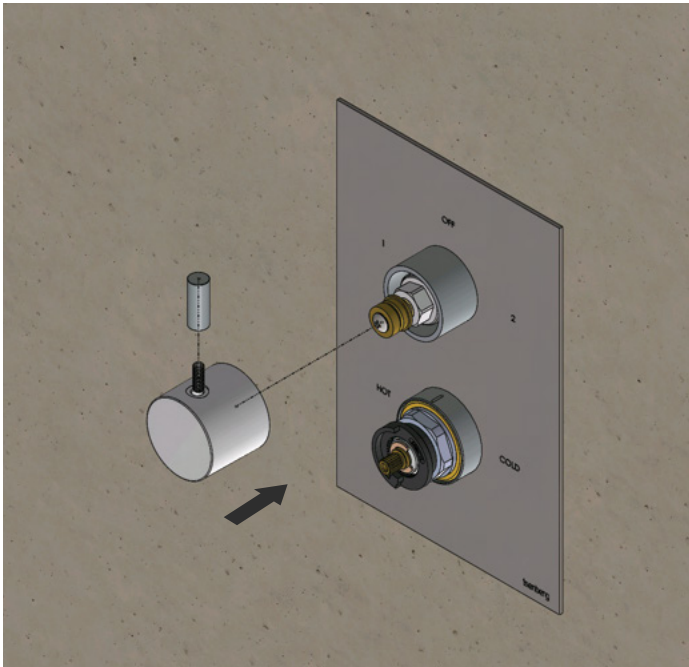


Insert adaptor base and tighten

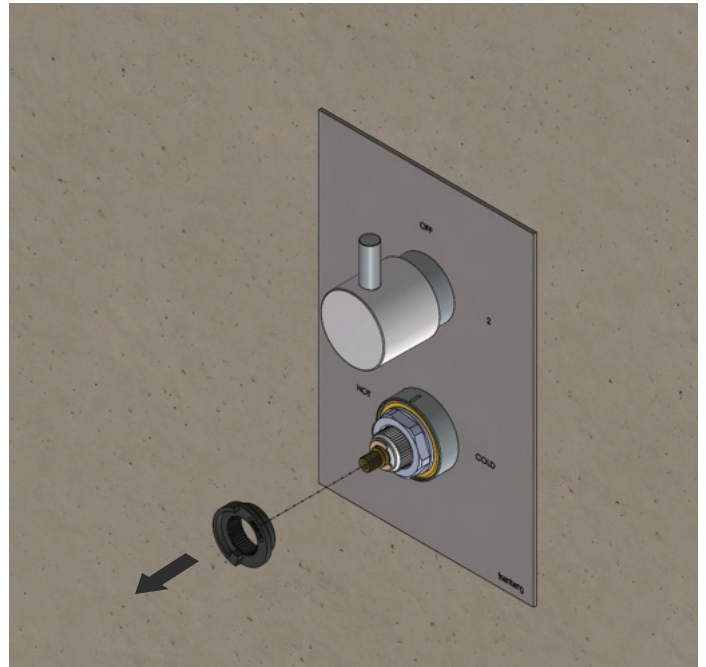


Insert centering knob & screws

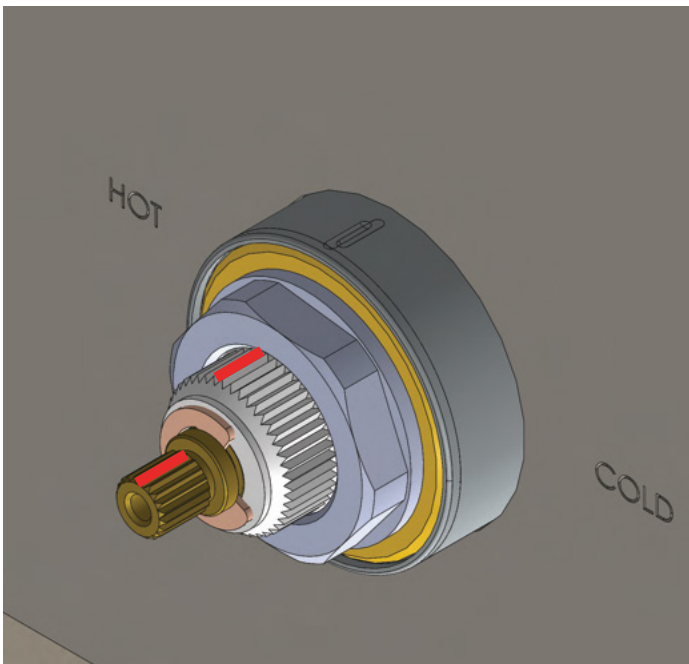
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



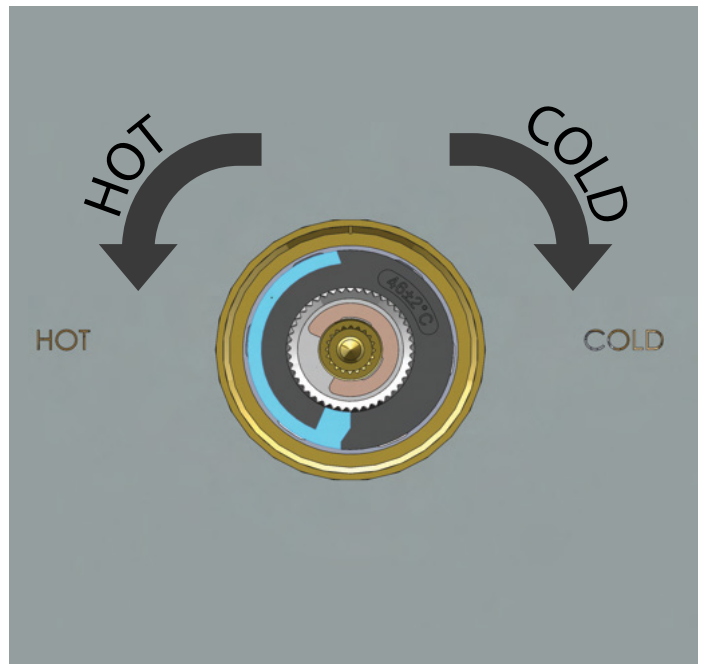
Insert diverter handle. Tighten hex screw & insert cover button. Make sure the diverter is set to the "OFF" marking before your begin



Remove anti-scald temperature ring



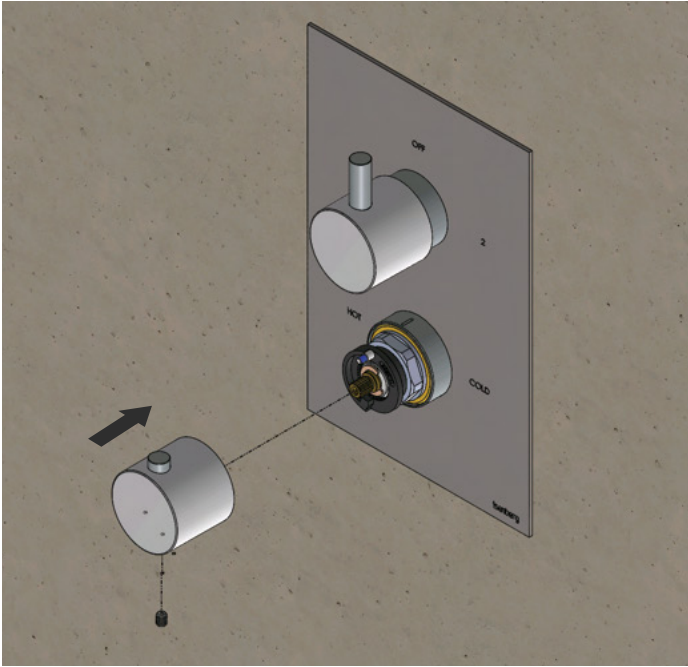
Calibrate cartridge before inserting temperature handle. Red marks must align.



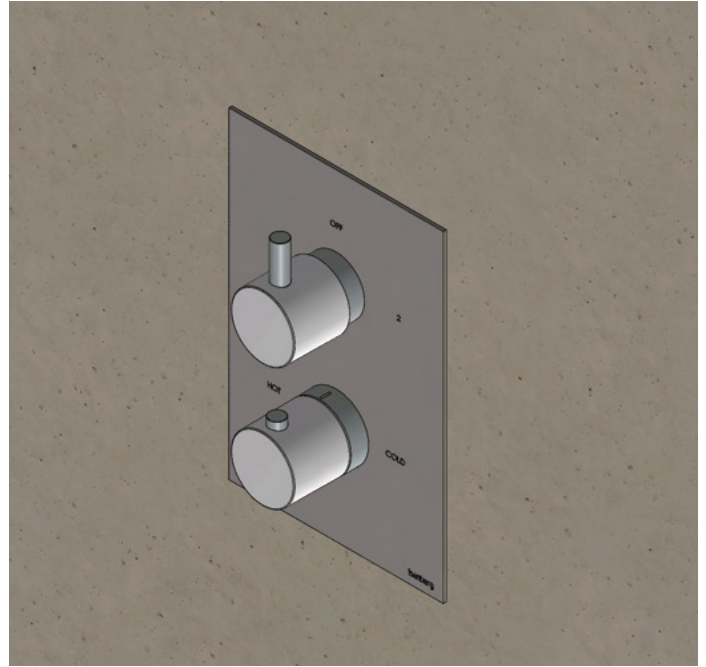
Correctly re-insert anti-scald temperature ring in the right position. To decrease maximum temperature, remove handle and rotate the anti-scald ring clockwise. To increase maximum temperature rotate the anti - scald ring counter-clockwise.



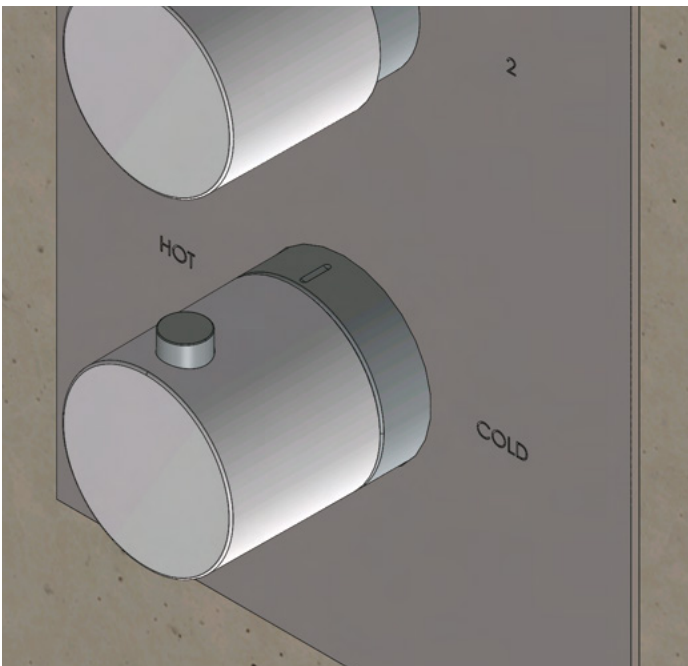
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



Insert temperature handle. Tighten hex screw & insert cover button

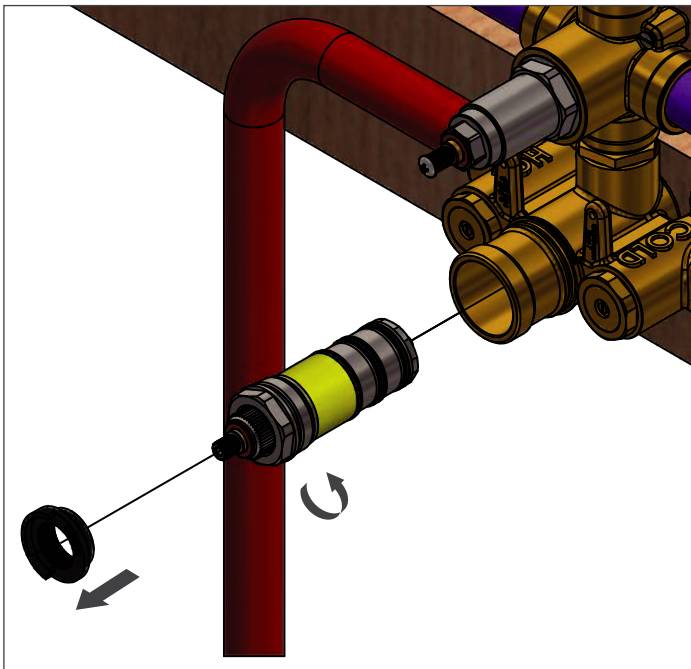


This photo shows a completely installed trim



The button on the temperature handle is an anti scald feature. In order to rotate the handle further to "HOT" the button must be pressed

## REPLACING THE THERMOSTATIC CARTRIDGE



1. Remove Anti-Scald Ring

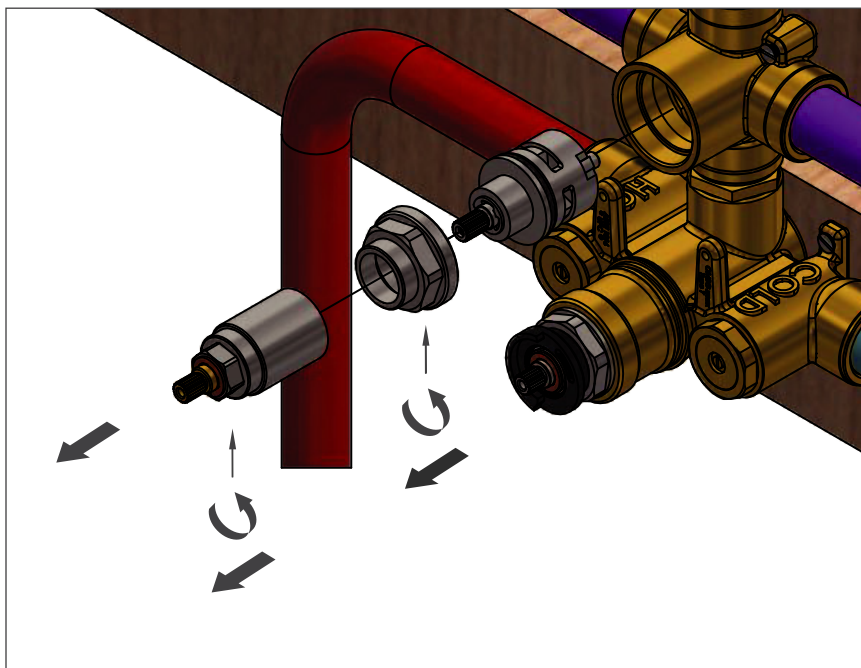
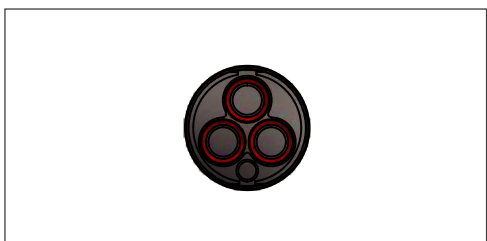
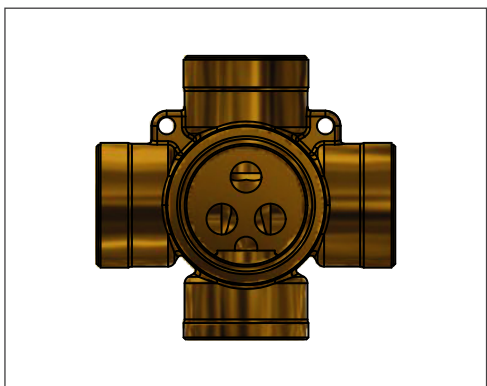
2. The temperature cartridge can be removed easily in one operation by using a spanner.

1. Remove Threaded Rod using a spanner

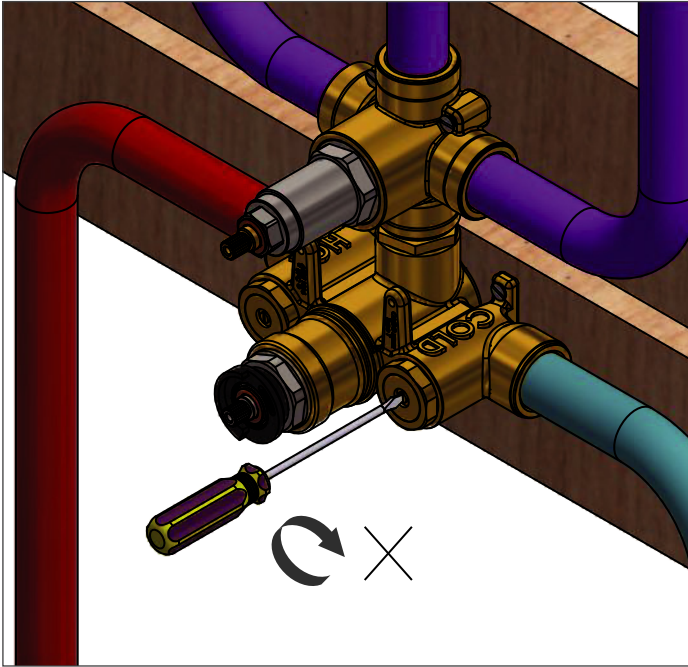
2. Remove diverter flange

3. Remove cartridge by turning with a spanner and pulling out with a pair of pliers.

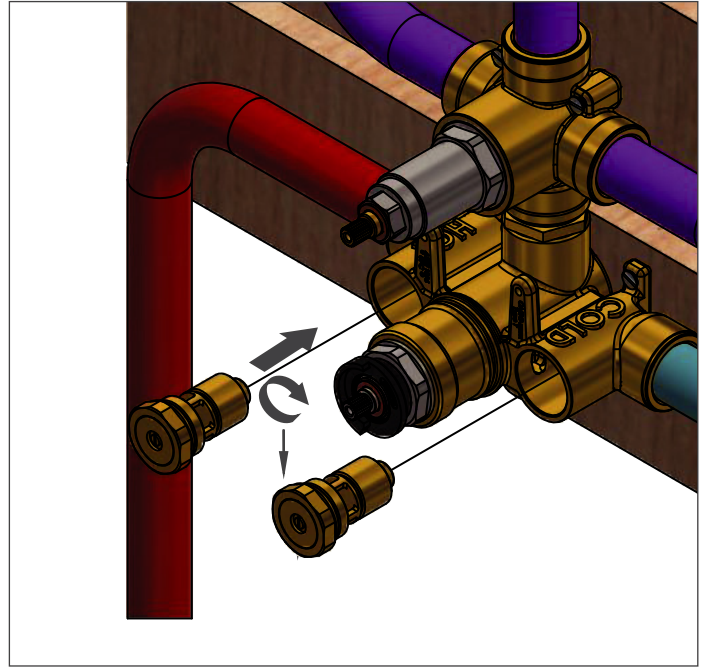
## REPLACING THE DIVERTER CARTRIDGE



## REPLACING THE SUPPLY STOPS



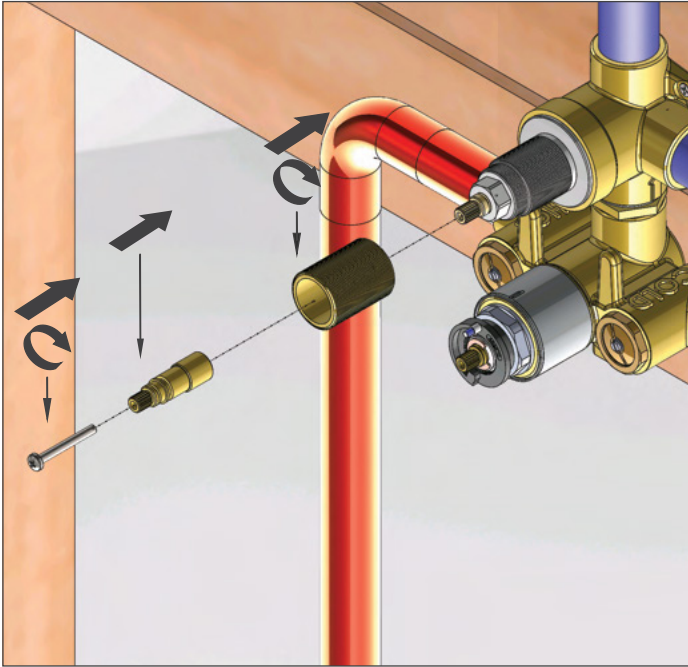
In order to remove the supply stops do not twist the screw in the middle of the supply stop



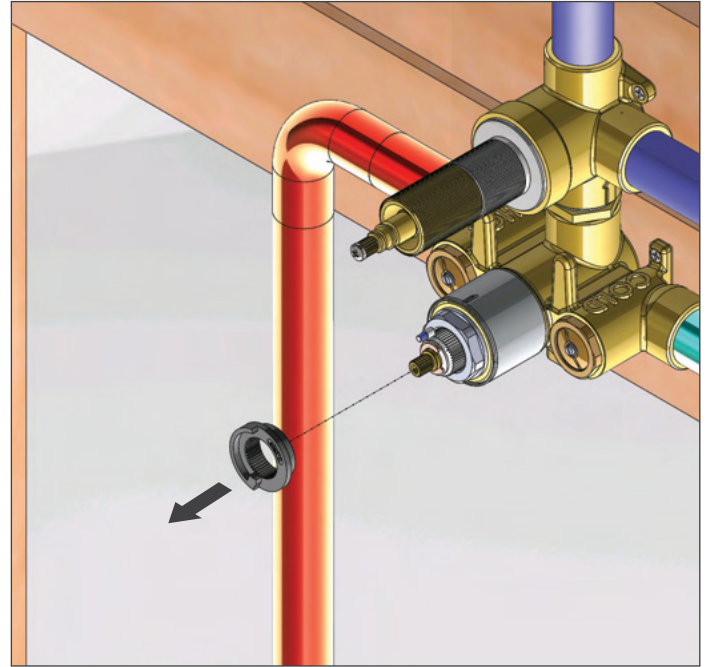
Use a spanner to twist in the shown position and remove supply stop



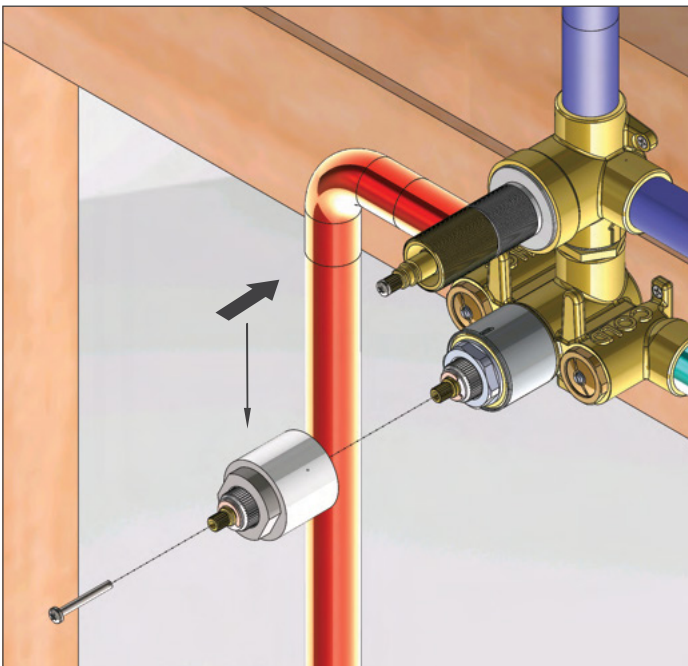
**INSTALLING EXTENSIONS TO THE VALVE - OPTIONAL - ACTUAL VALVE MAY VARY**



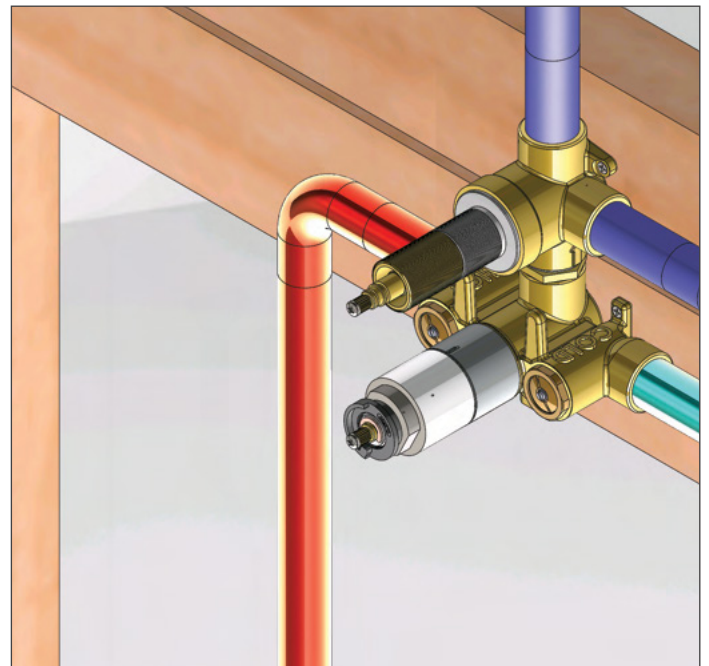
Install diverter extension kit - 3 Pieces as shown above



Remove anti scald temperature ring



Install temperature extension piece as shown above. Tighten Screw



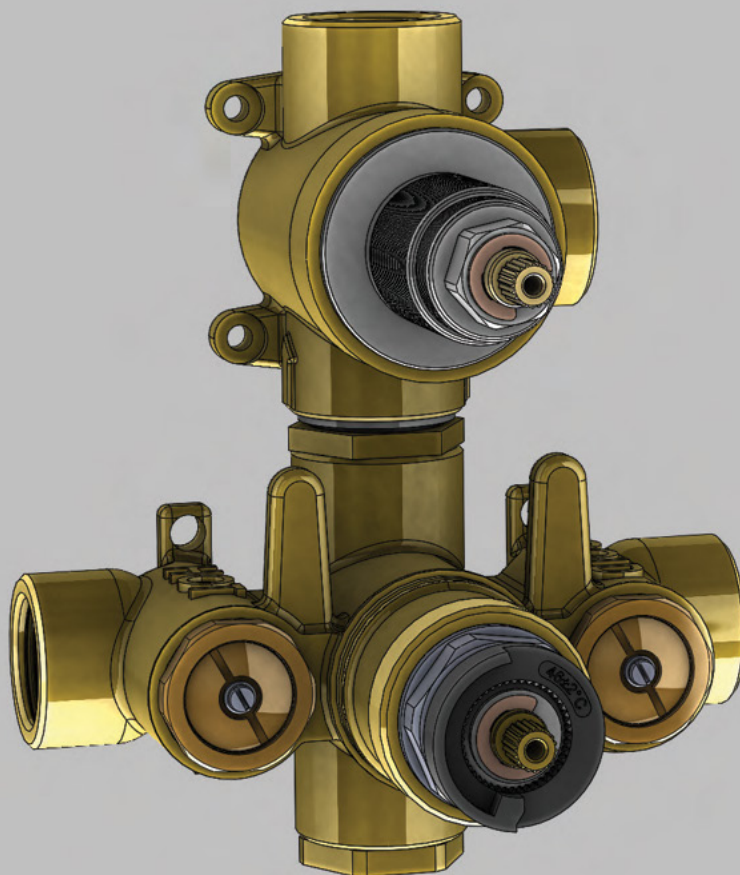
**USE THE FOLLOWING  
INSTALLATION MANUAL  
FOR THE TVH.4420 VALVE**



# Installation Manual - TVH.4420

## 3/4" Thermostatic Valve With 2-Output Diverter

**Use With Trims Ending in \*4420 / \*4421 / \*4422**



### BEFORE YOU BEGIN

- You must observe all local plumbing laws and codes.
- Do not install this valve if it does not meet local plumbing codes.
- Shut off the main water supply.

## TABLE OF CONTENTS


• Operating Specifications . . . . .	1
• Valve Installation And Tolerance	
• Cut-Out Dimensions . . . . .	1
• <b>Rough In Specification</b> . . . . .	2
• Connecting The Supply & Output Lines . . . . .	3
• Trim Markings / Water Output . . . . .	4
• Using The Supply Stops . . . . .	5
• Flushing The Valve . . . . .	5
• Installing The Trim . . . . .	6
• Replacing The Thermostatic Cartridge . . . . .	10
• Replacing Diverter Cartridge . . . . .	10
• Replacing Supply Stops . . . . .	11
• Installing The Extension Kit . . . . .	12
• Cartridge Maintenance . . . . .	13

## NOTICE TO HOMEOWNER

- We recommend that this product is installed by a qualified professional plumber.
- Please check this product immediately to ensure that it has not been damaged and is complete. Before installation, please make sure this product is the correct model and you have all the parts required for installation and use.
- Please flush the water system to ensure that no metal swarf, solder, and other impurities can enter the product.
- Turn off water supply before commencing work.
- Please read these instructions carefully and retain for future reference.

## OPERATING SPECIFICATIONS

### WATER TEMPERATURE

 This product is to be used with water at a temperature range of 40°F - 120°F ONLY!

### WATER PRESSURE



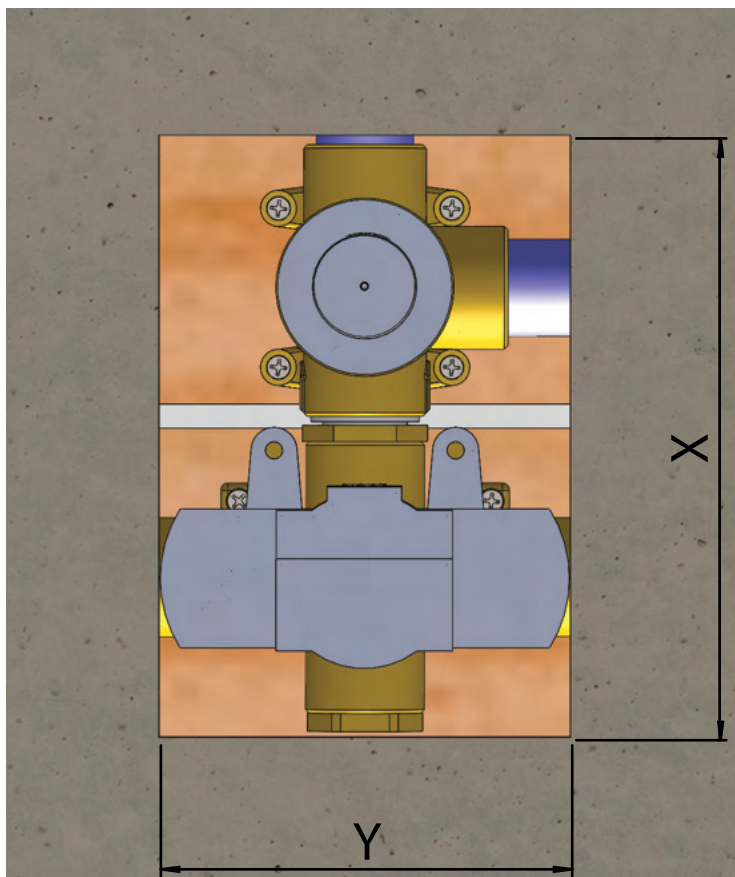
This product is to be used with a water pressure range of 15 PSI to 80 PSI ONLY

If water pressure is greater than 80 PSI install a pressure reducing valve (PRV)

This valve meets or exceeds ANSI A112.18.1 and ASSE 1016

This valve is certified by IAPMO

## CUT OUT DIMENSIONS



Isenberg's TVH Series valves comes with a black pre-attached mud-guard. This mud-guard is not to be removed or discarded. Its purpose is to guide the installation professional on the proper cut-out dimensions of the drywall.

Wall Cut Out Dimensions  
From **Center Point** of Valve:

**TVH.4420**

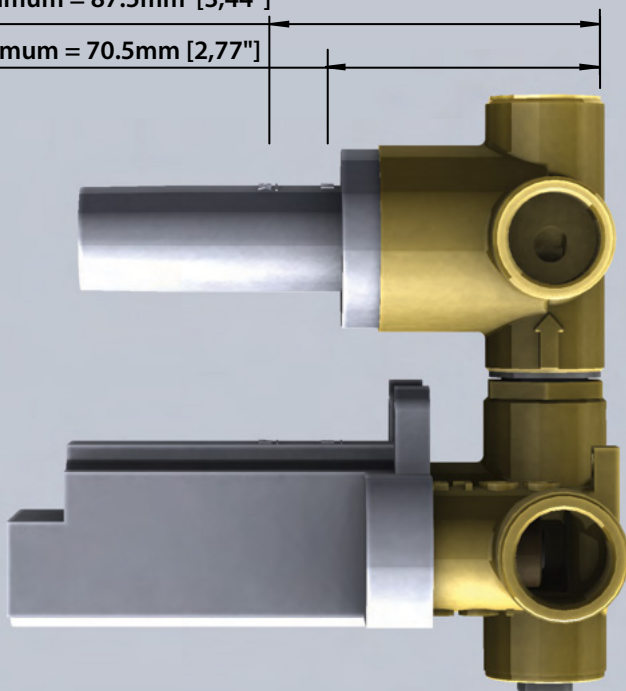
X = 165mm / 6.49"

Y = 113mm / 4.44"

**ROUGH IN SPECIFICATION**

Maximum = 87.5mm [3,44"]

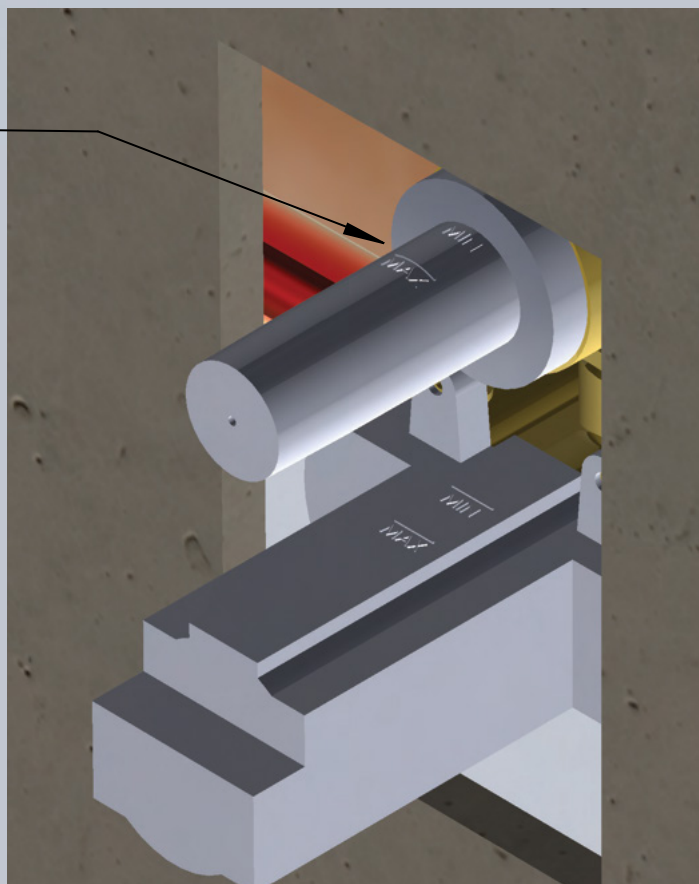
Minimum = 70.5mm [2,77"]



The distance between back of the valve to the finished tile surface should be between 2.77" and 3.44" inches.

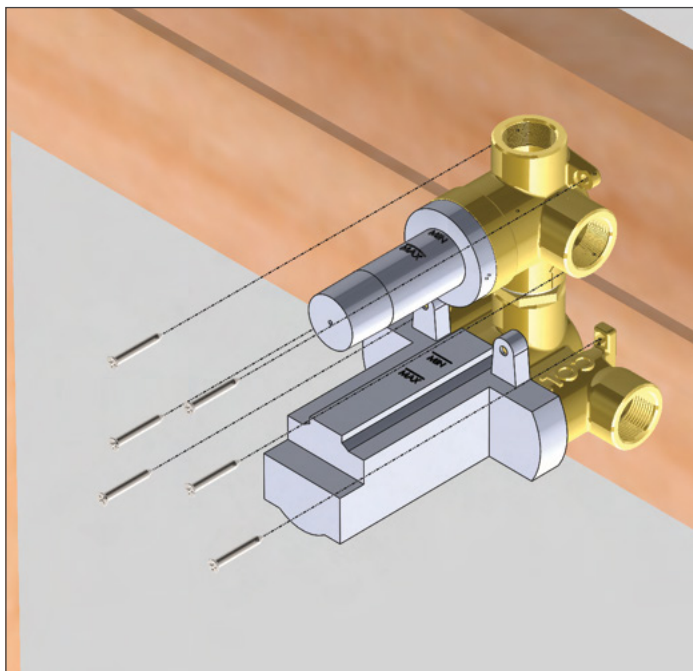
Finished tile should fall between Min & Max.

If valve is installed too deep into the wall, extensions are available.

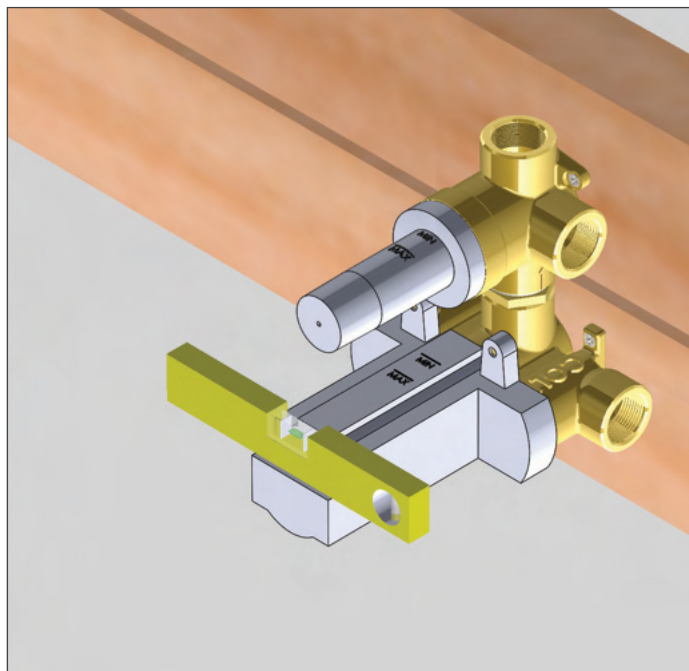




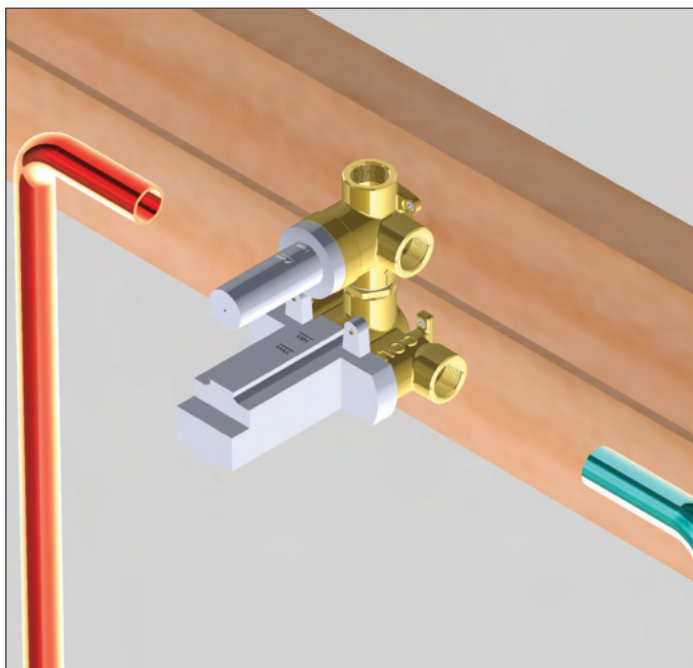
**CONNECTING THE SUPPLY & OUTPUT LINES**



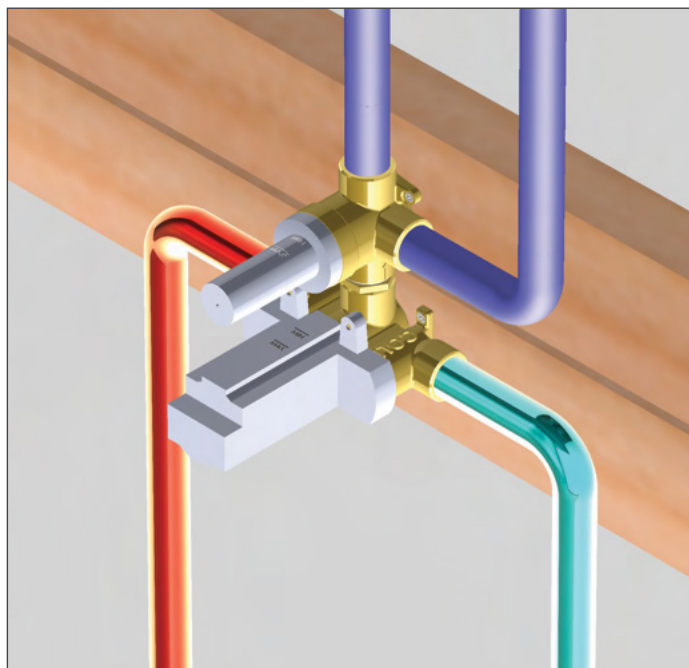
Fix Valve on wooden plank



Level Valve

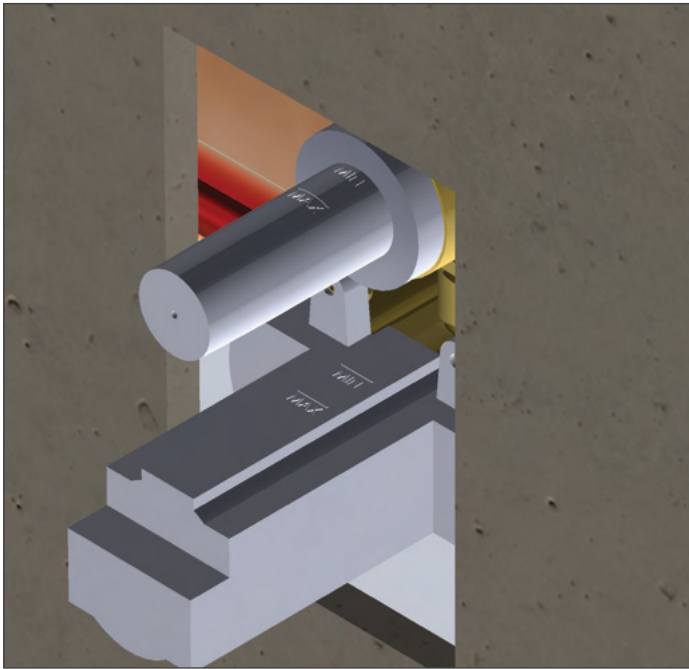


Attach Hot/Cold Lines



Attach Output Lines

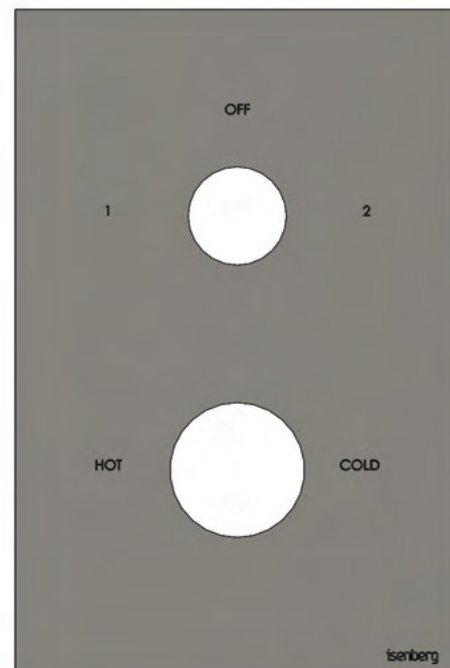
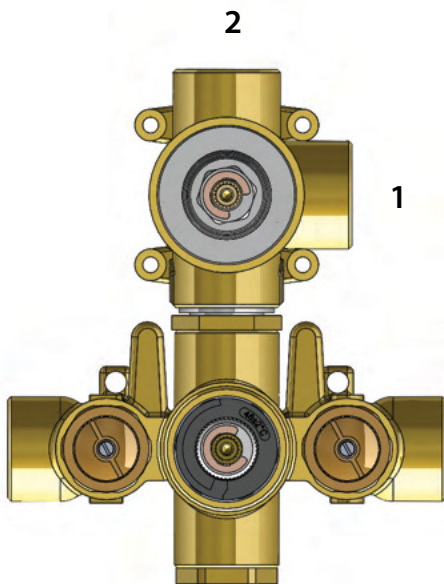
## FINISHED TILE POSITION



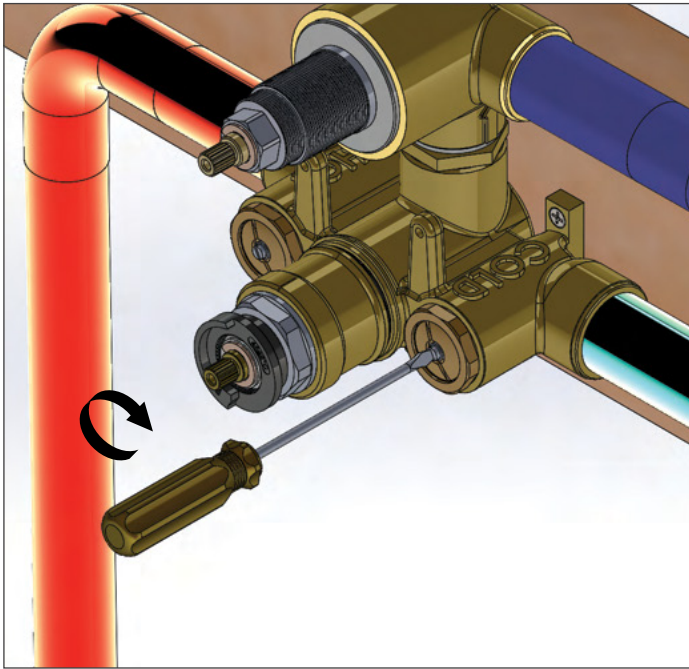
Install Drywall and Tile. Ensure finished tile surface is between the min and max marks on the mud guards.

## TRIM MARKINGS / WATER OUTPUT

The below diagram shows the markings on the trim plate and the outputs on the valve. This will help the installation professional to connect the appropriate accessories to the valve output ports



## USING THE SUPPLY STOPS

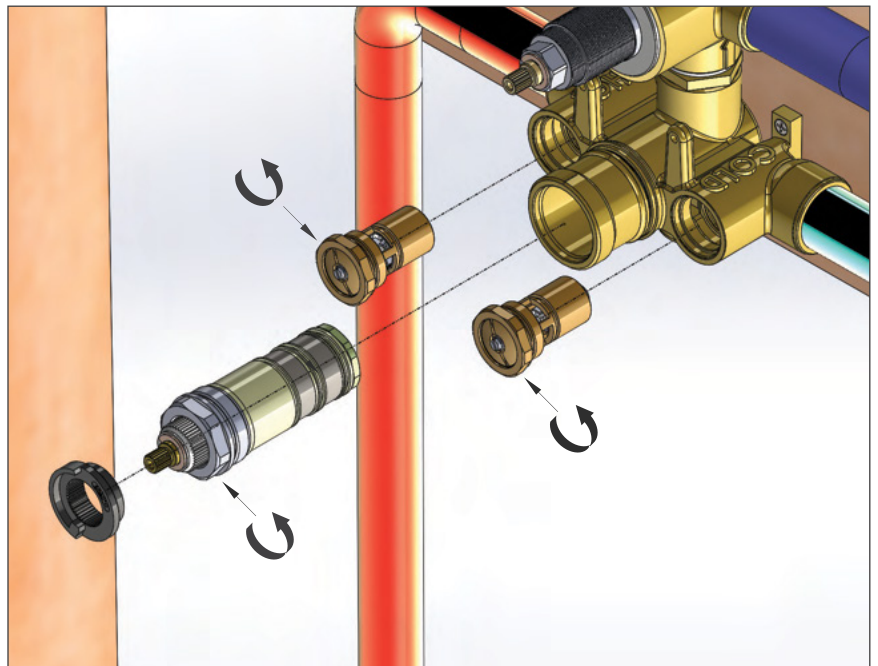


Turn Clock-wise 7 times to stop water flow.

## FLUSHING THE VALVE

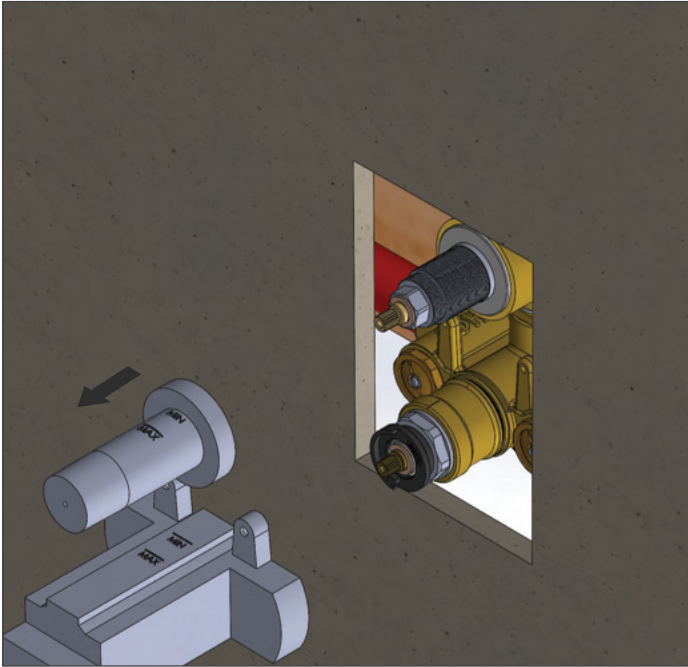
In order to clear dirt in the lines - you must flush the valve before the wall is closed and water is turned on for the first time.

- 1) Remove the 2 supply stops by turning with a spanner
- 2) Remove thermostatic cartridge by turning with a spanner
- 3) Turn on water supply and let water flow removing any dirt in the lines.

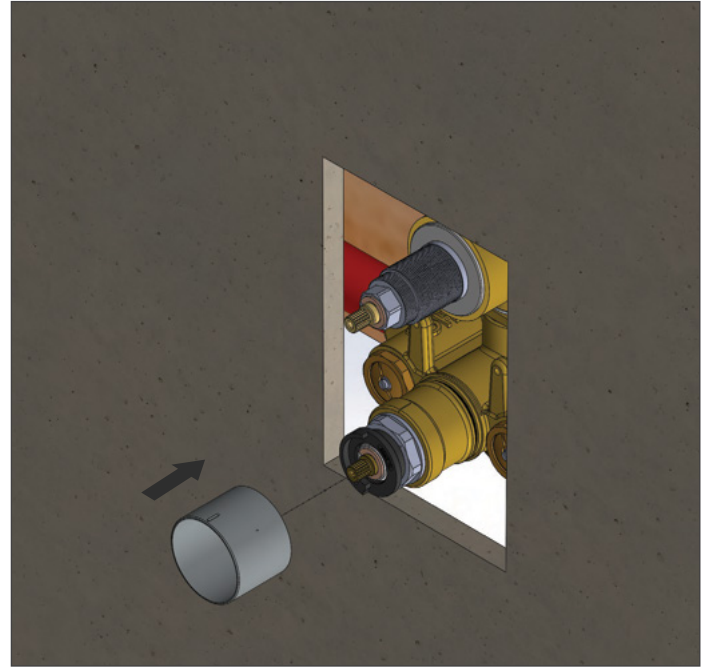




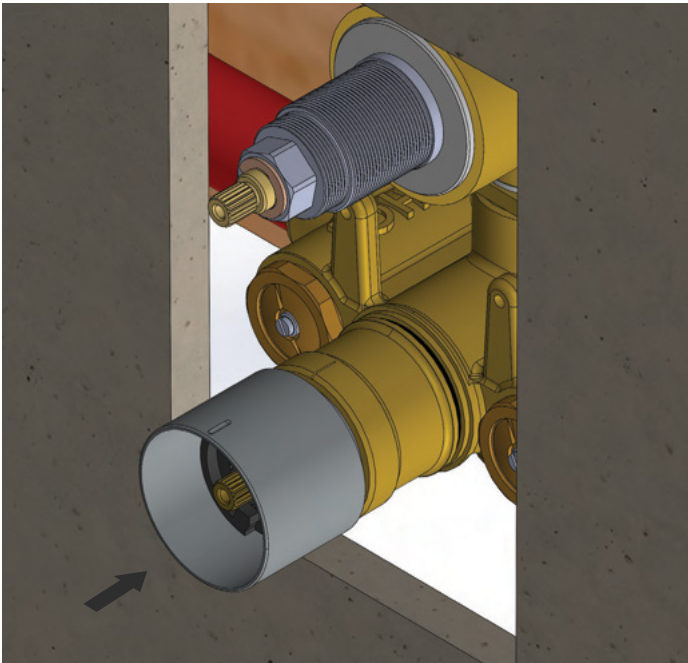
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



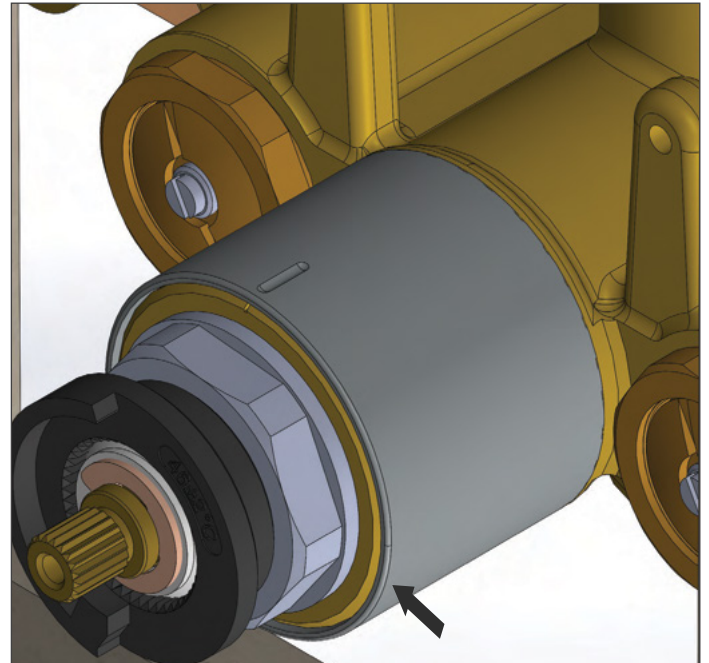
Remove mud guards



Install 42mm ring

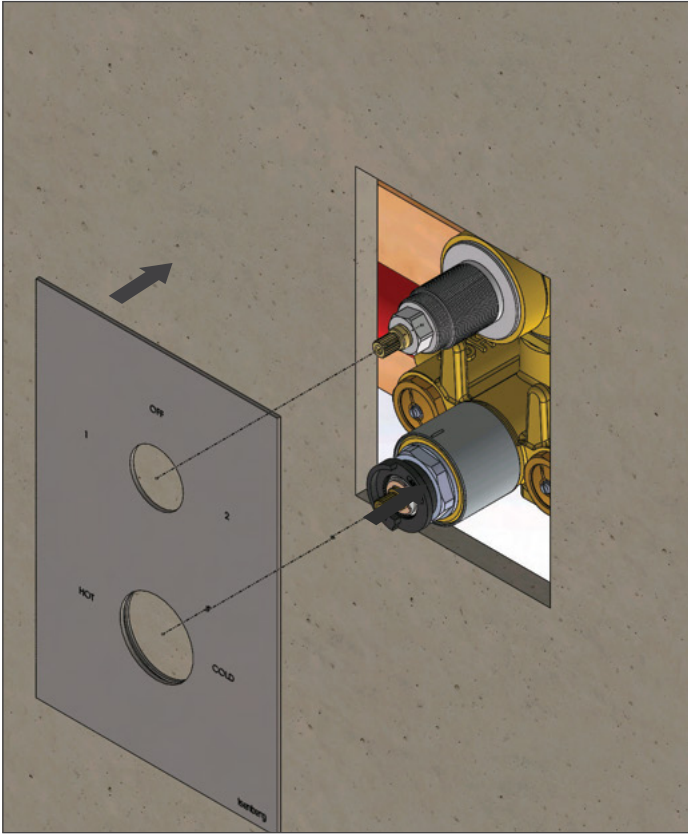


A hard push may be required

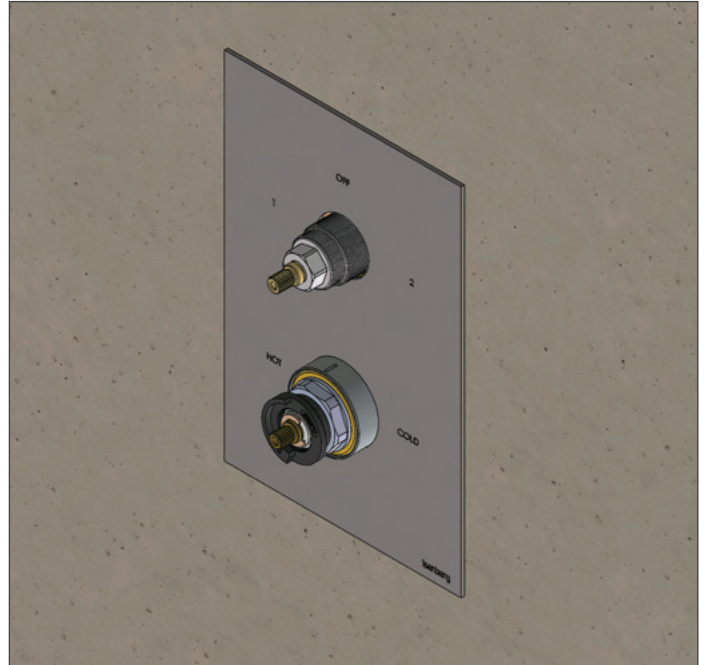


The 42mm ring must be flush. Otherwise the handle will not fit properly

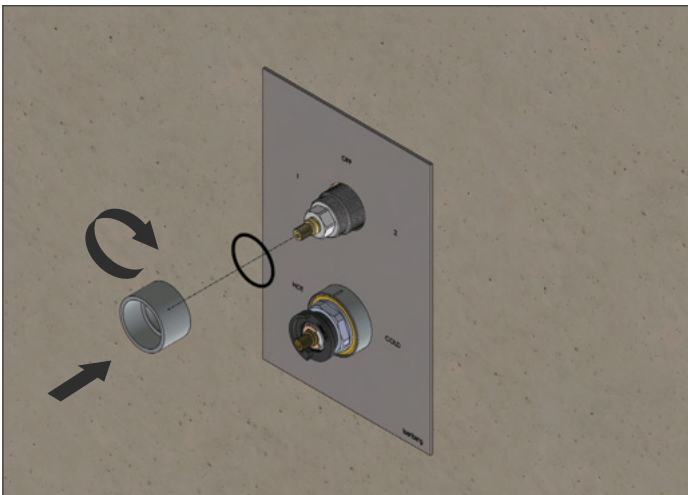
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



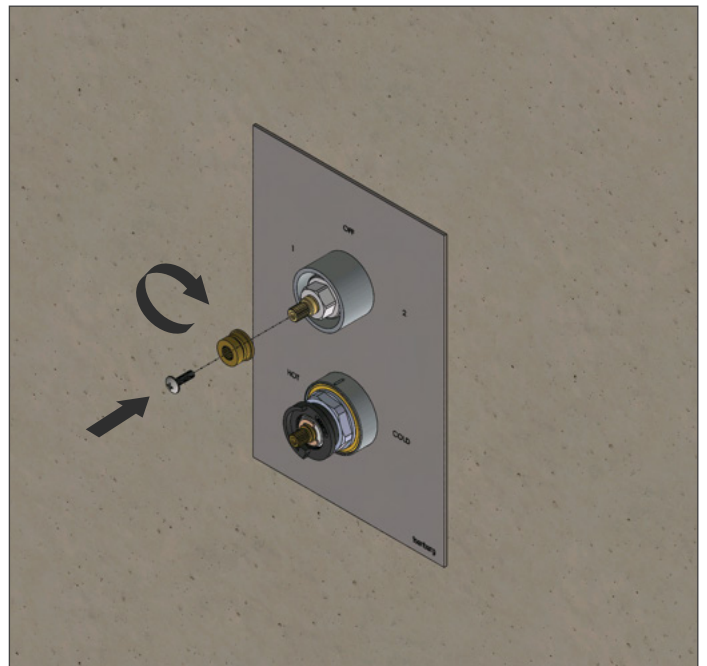
Insert trim plate



Align Trim plate till it is straight

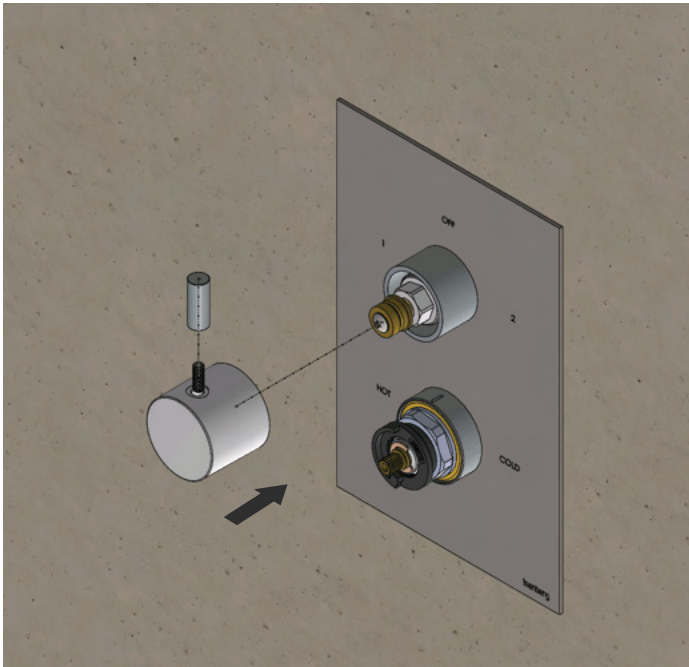


Insert adaptor base and tighten

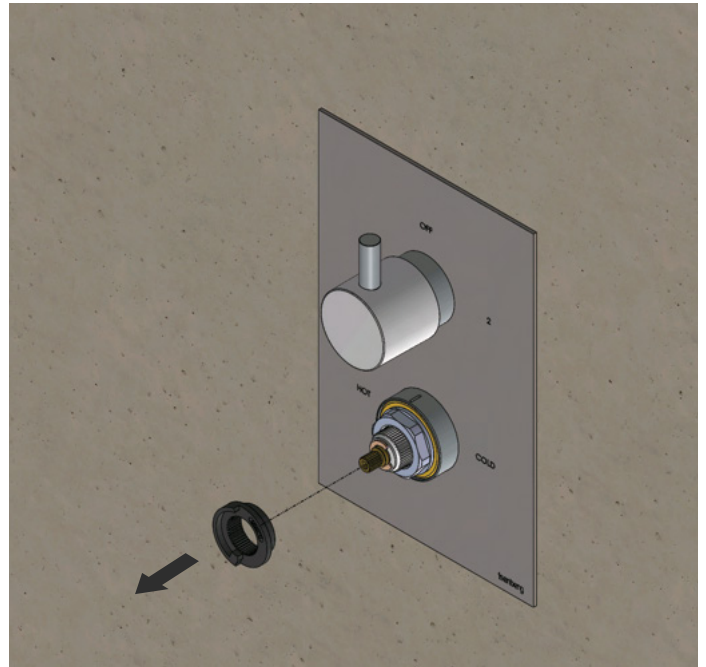


Insert centering knob & screws

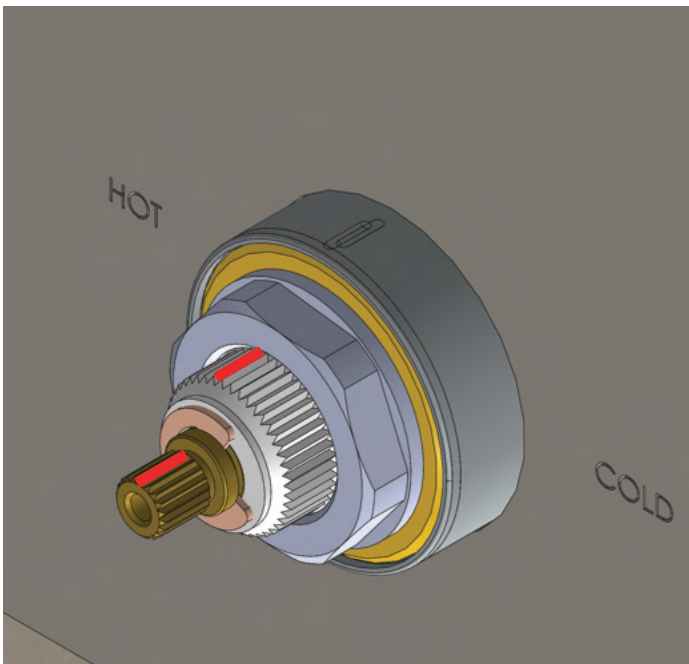
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



Insert diverter handle. Tighten hex screw & insert cover button. Make sure the diverter is set to the "OFF" marking before your begin



Remove anti-scald temperature ring



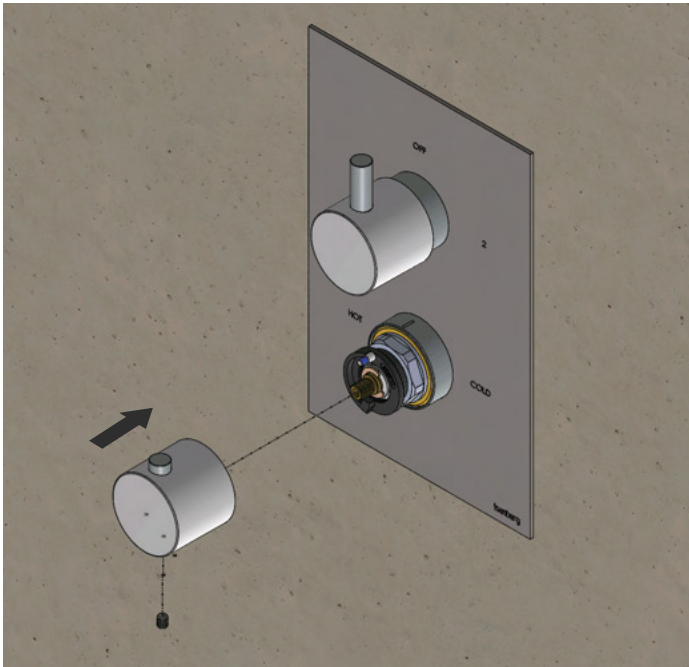
Calibrate cartridge before inserting temperature handle. Red marks must align.



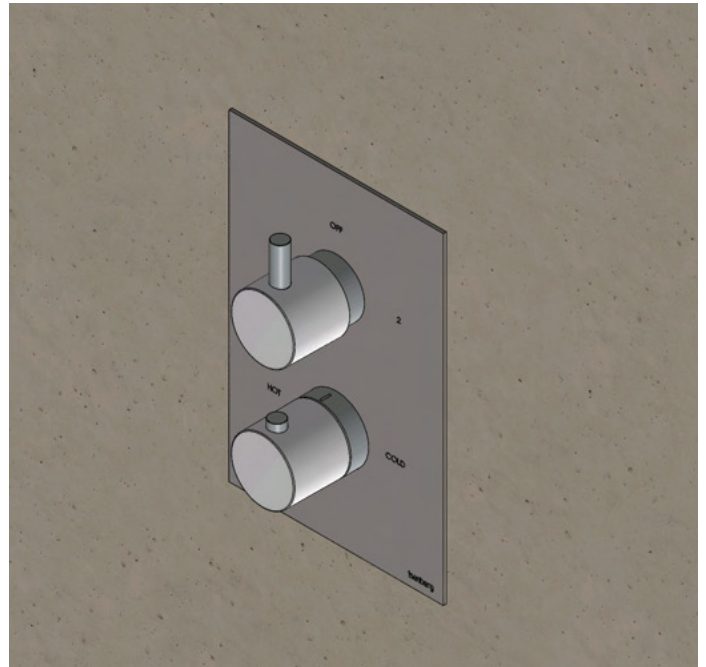
Correctly re-insert anti-scald temperature ring in the right position



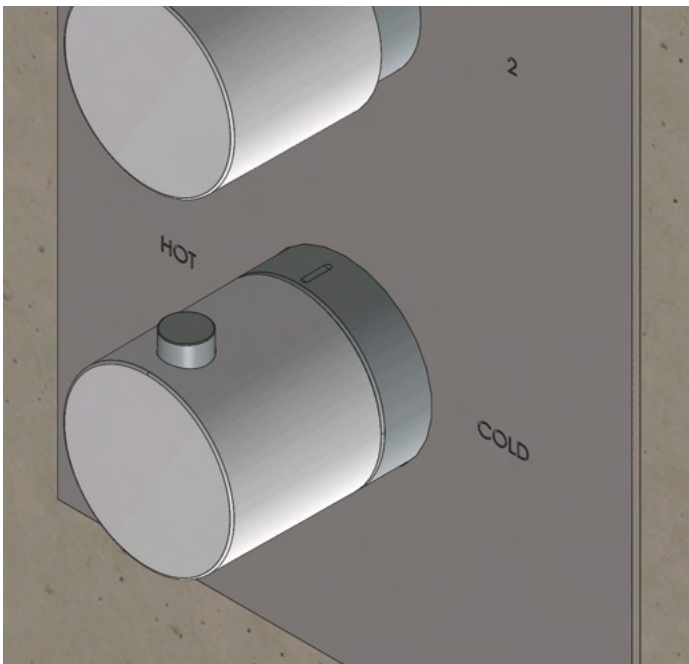
**INSTALLING THE TRIM - TRIM PLATE SIZE AND SHAPE MAY VARY - ILLUSTRATION ONLY**



Insert temperature handle. Tighten hex screw & insert cover button

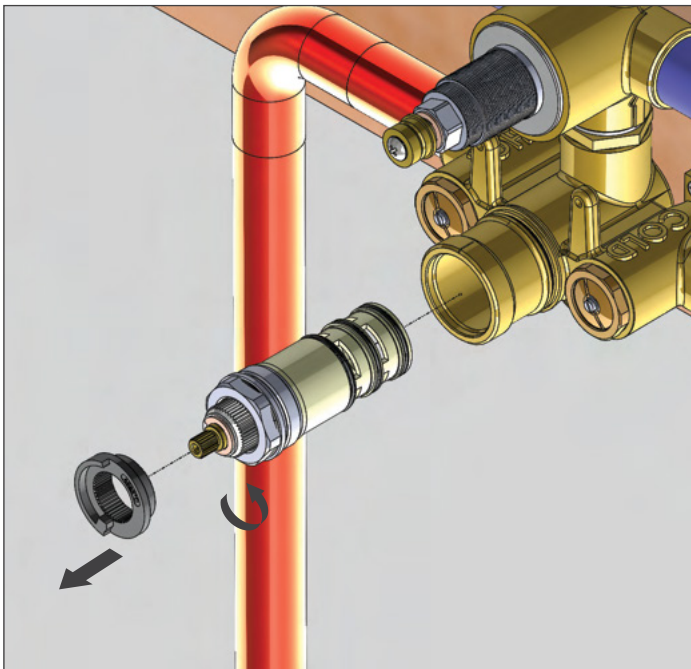


This photo shows a completely installed trim



The button on the temperature handle is an anti scald feature. In order to rotate the handle further to "HOT" the button must be pressed

## REPLACING THE THERMOSTATIC CARTRIDGE



1. Remove Anti-Scald Ring

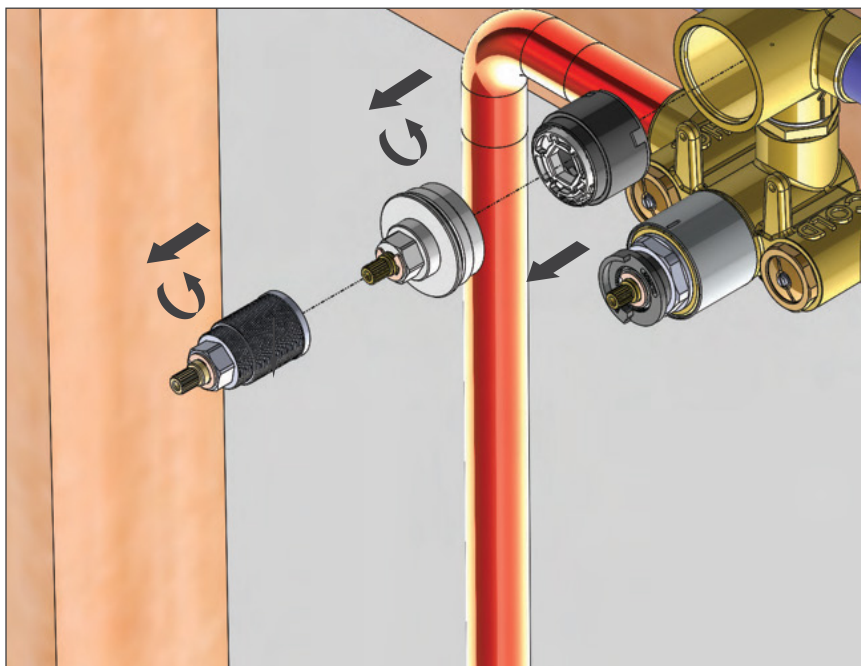
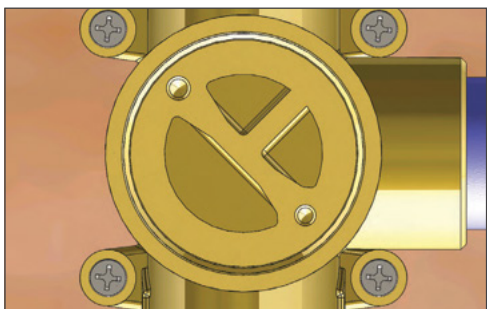
2. The temperature cartridge can be removed easily in one operation by using a spanner.

1. Remove Threaded Rod using a spanner

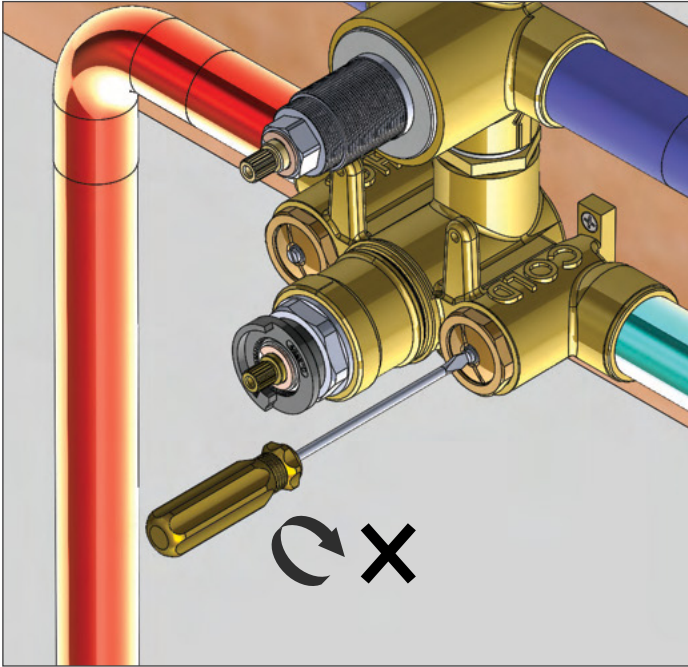
2. Remove diverter flange

3. Remove cartridge by turning with a spanner and pulling out with a pair of pliers.

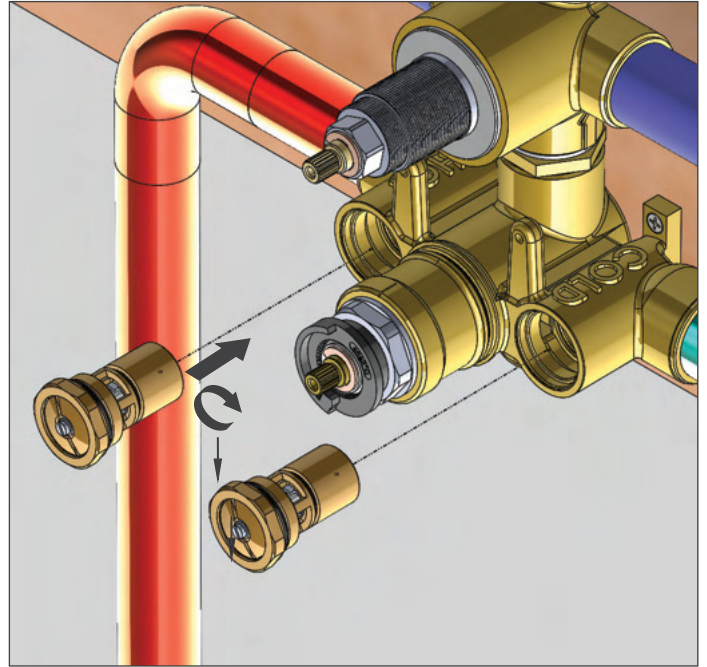
## REPLACING THE DIVERTER CARTRIDGE



## REPLACING THE SUPPLY STOPS



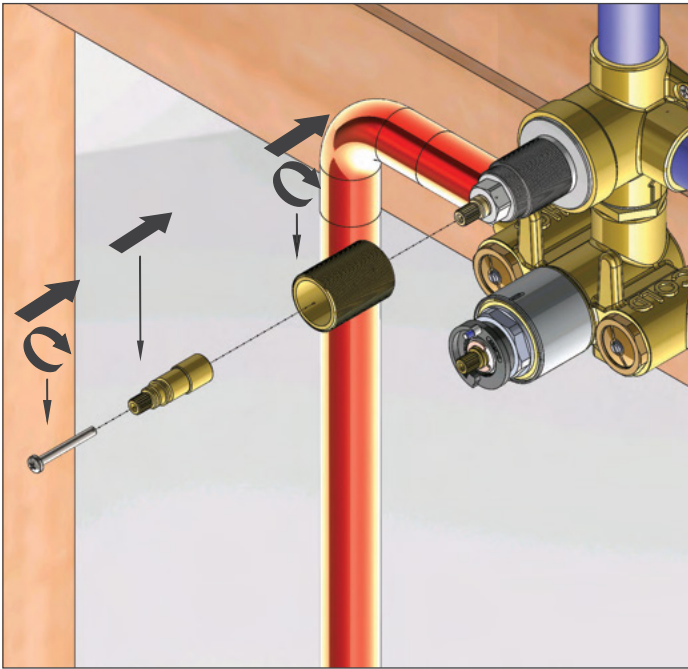
In order to remove the supply stops do not twist the screw in the middle of the supply stop



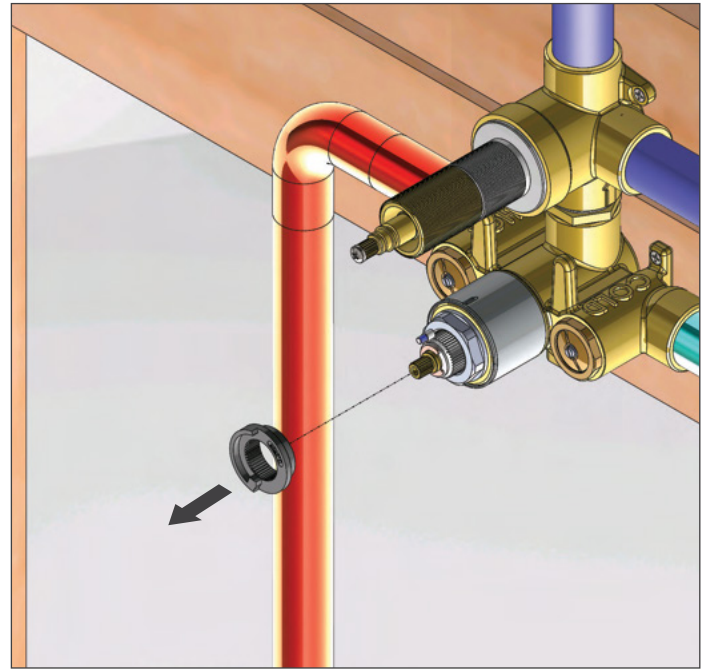
Use a spanner to twist in the shown position and remove supply stop



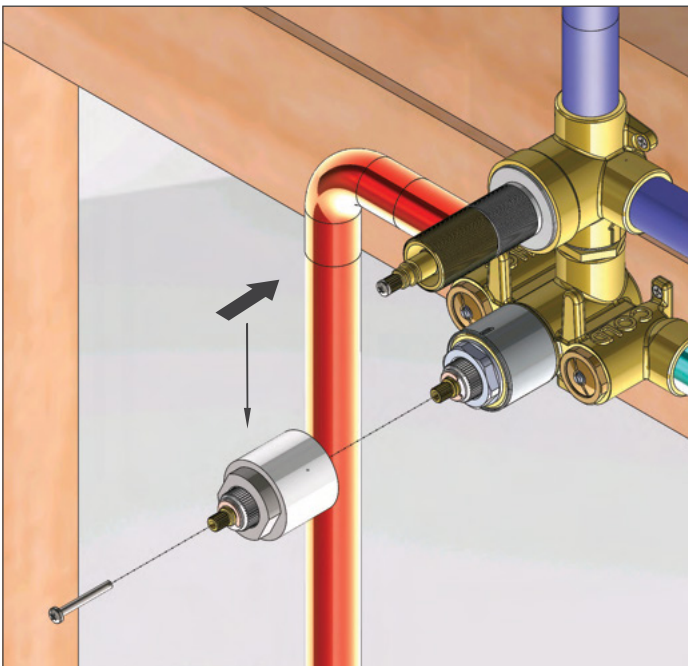
**INSTALLING EXTENSIONS TO THE VALVE - OPTIONAL**



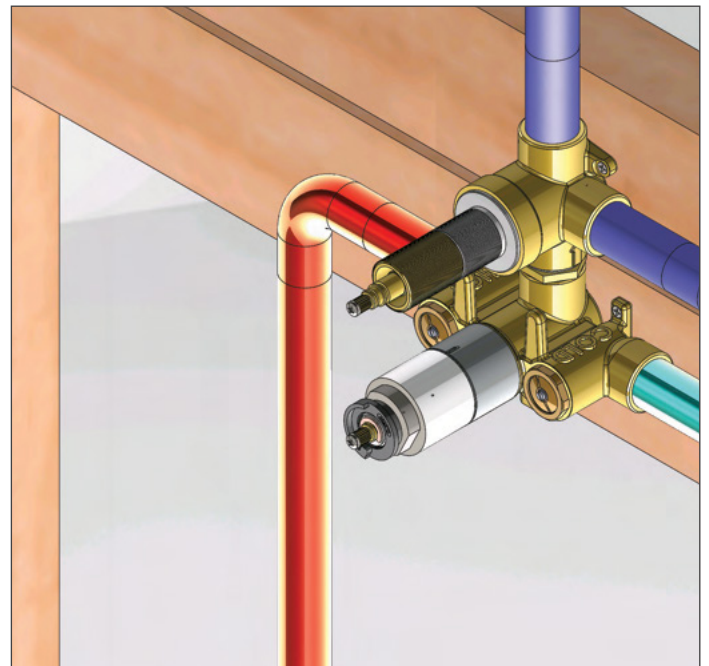
Install diverter extension kit - 3 Pieces as shown above



Remove anti scald temperature ring

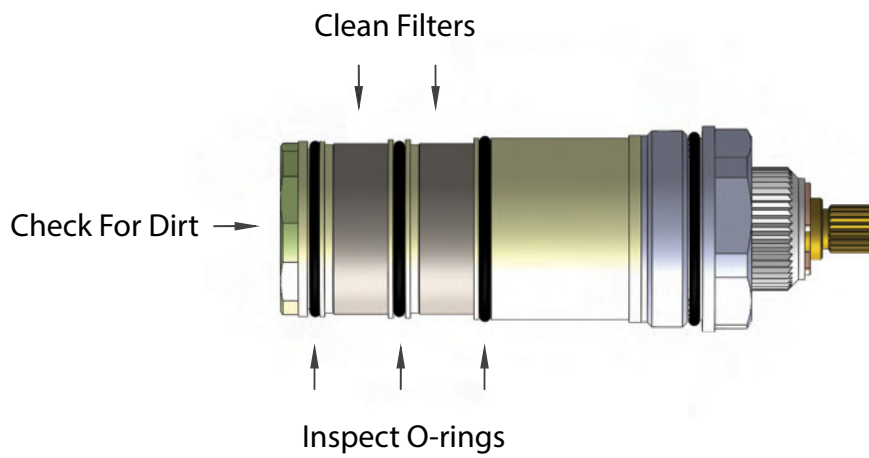


Install temperature extension piece as shown above. Tighten Screw



## CARTRIDGE CLEANING & MAINTENANCE

### Thermostatic Cartridge:



### Diverter Cartridge:

