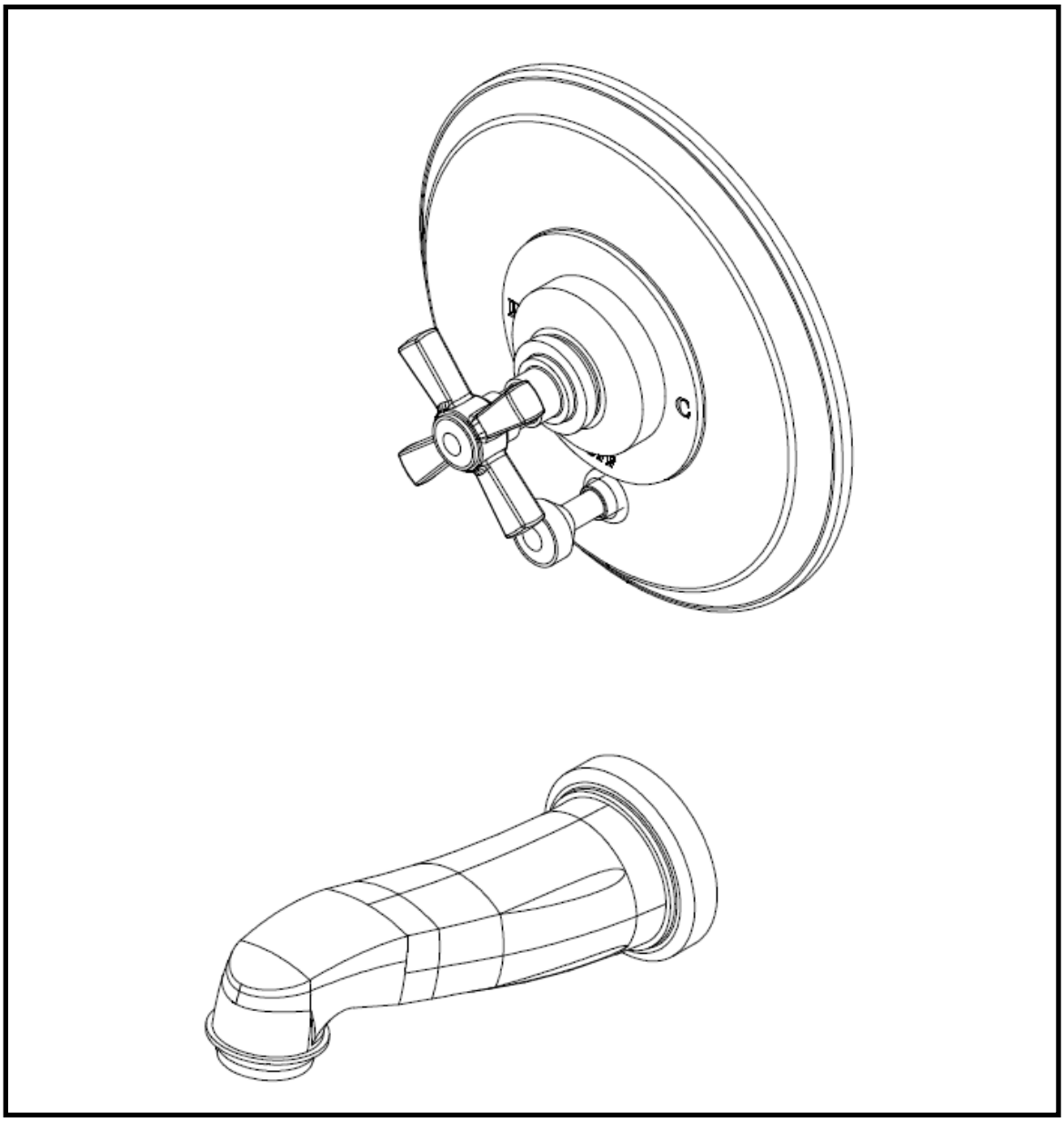
RESTORATION HARDWARE

INSTALLATION INSTRUCTIONS



MODEL: GRAFTON

RH-5120

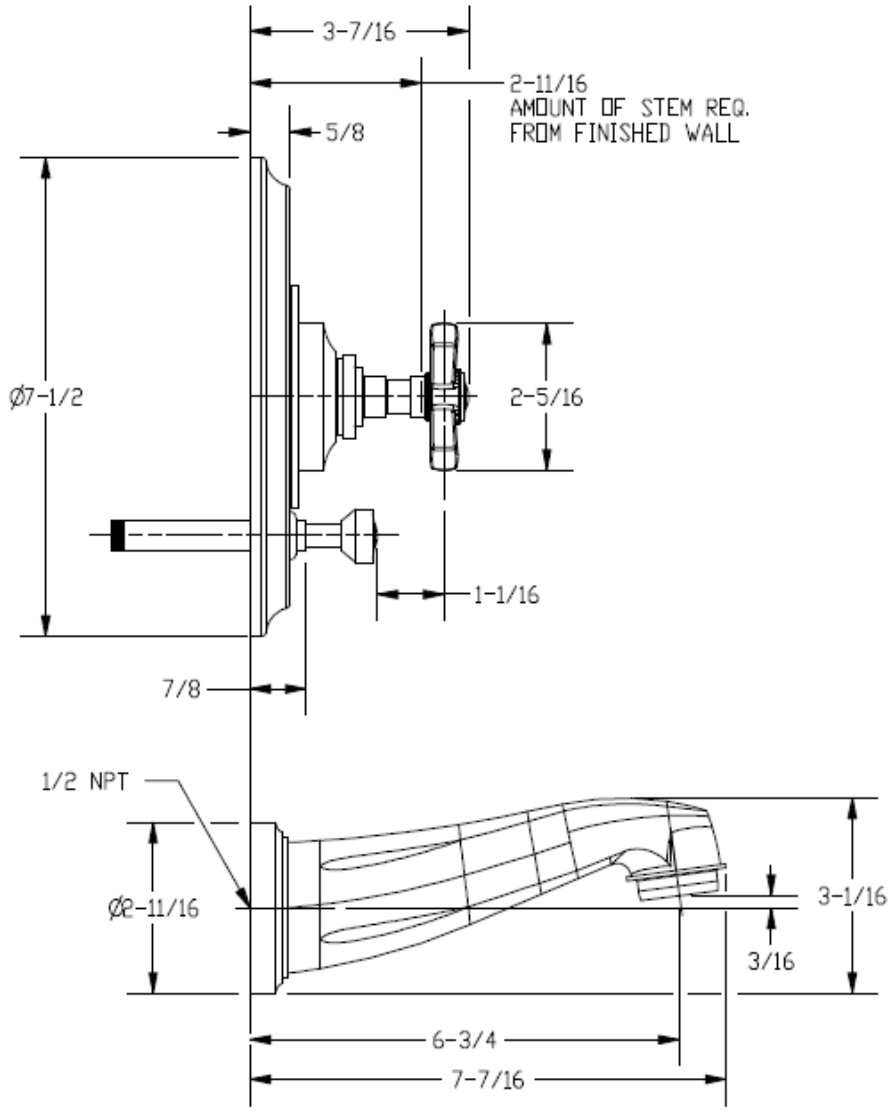
Restoration Hardware
Balance Pressure Tub /Shower Set
Specification Diagram

SPECIFICATIONS

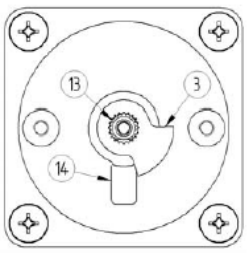
Min. Operating pressure:	20 psi [140 KPa]
Max. Operating pressure:	125 psi [860 KPa]
Max. Burst pressure:	500 psi [3450 KPa]
Max. Hot water temp.:	180°F [80°C]

Flow rate in USGPM [l/min] @ 50 psi [345 KPa]:

	Tub		Shower	
ID Diverter (Automatic):	6.5	[25]	5.3	[20]



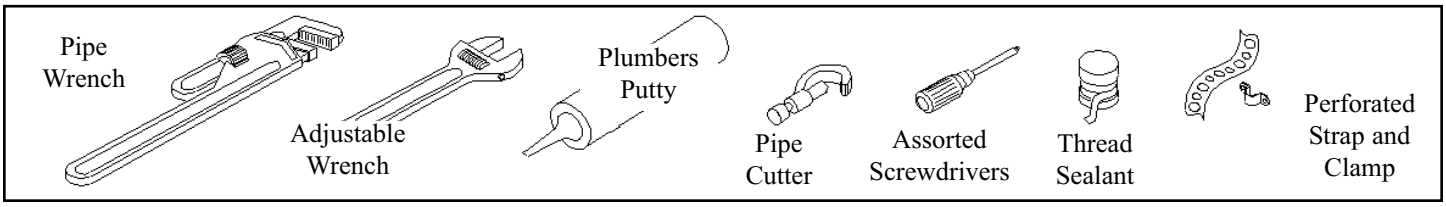
Ensure that the stop ring (3) is correctly installed, prior to finished trim installation, as follows:
- Rotate the cartridge stem (13) fully **clockwise**.
- Position the stop ring on the stem such that it rests against the stop post (14).



All Threaded Connections are $^{1}/_{2}$" NPT

Dimensions are in Inches and Approximation of a Typical Installation

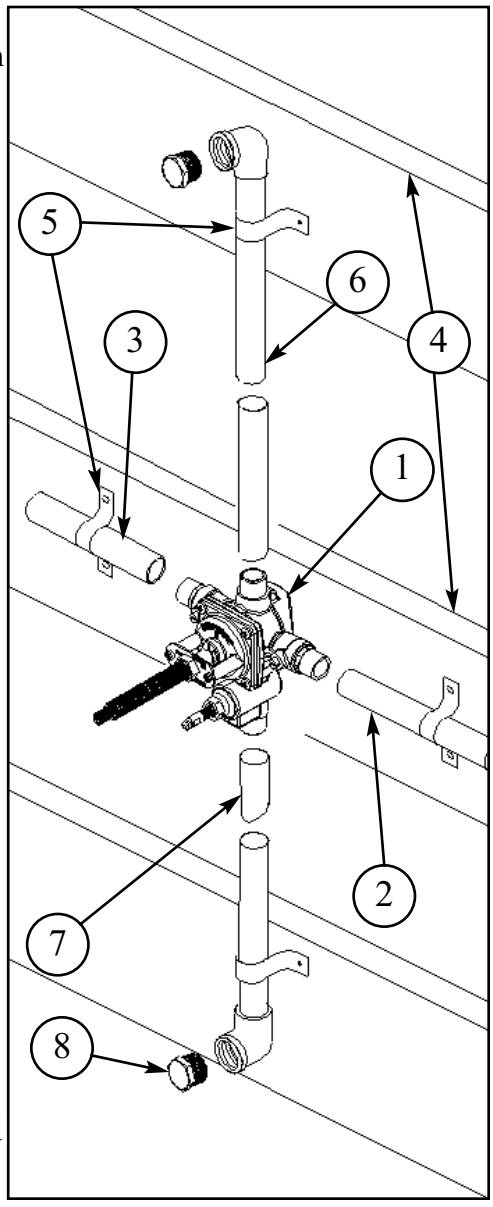
Common tools needed:



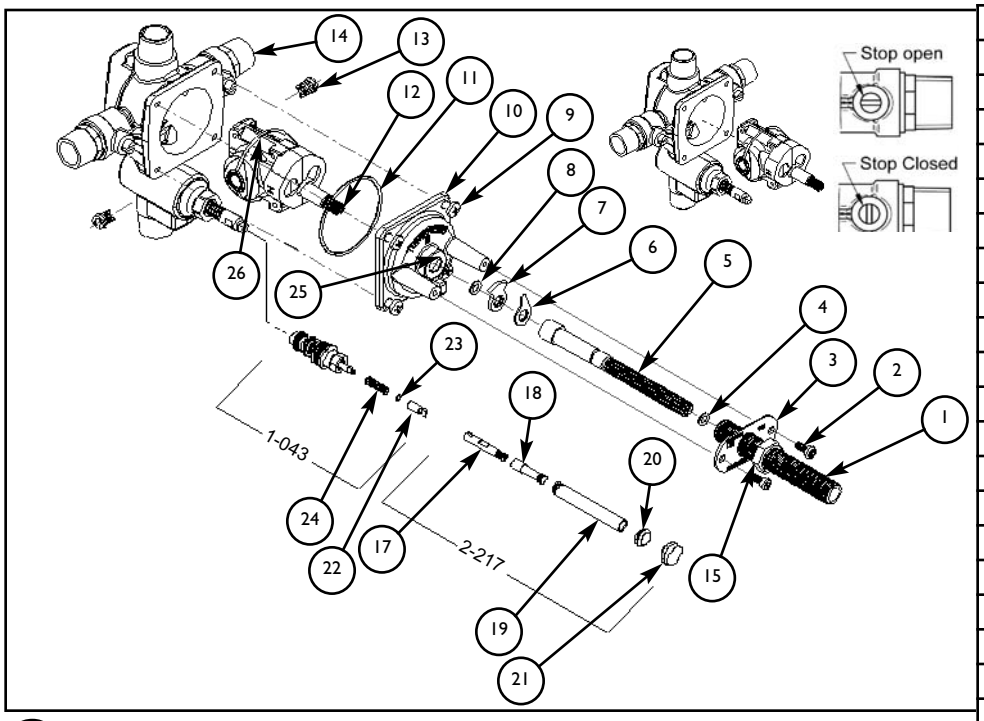
Installation Instructions

We Recommend Installation by a Licensed Plumbing Professional

1. Valve Assembly



- Position and locate VALVE (1) as shown in Figure 1and Specification Diagram on page 2.
- Connect Hot (3) & Cold (2) water supply to 1/2 NPT side inlets.
- Apply thread sealant to the supply fittings and firmly tighten into VALVE (1) inlets. Under normal soldering conditions the removal of check valves and mixing cartridge is not necessary; however, if brazing and / or induction heating is used removal is required. Whenever possible, it is best to perform all solder/brazing operations on piping prior to attachment to VALVE (1).
- VALVE (1) and / or SUPPLY (2,3) must be secured to CROSS BRACE (4) using PERFORATED STRAP (5) or equivalent.
- Apply thread sealant to SHOWER RISER (6) and attach to VALVE (1) shower outlet port.
- Secure SHOWER RISER (6) to CROSS MEMBER (4) using PERFORATED STRAP (5) or equivalent.
- Apply thread sealant to TUB SUPPLY (7) and attach to VALVE (1) tub outlet port.
- Secure TUB SUPPLY (7) to CROSS MEMBER (4) using PERFORATED STRAP (5) or equivalent.
- Apply PLUG (8) for test. Turn on both water supplies to valve and check for leaks. Note: Water pressure ***must*** be applied to both hot and cold inlet ports for proper valve operation.
- Turn on water supply and check for leaks.
- After inspection turn off water supply.



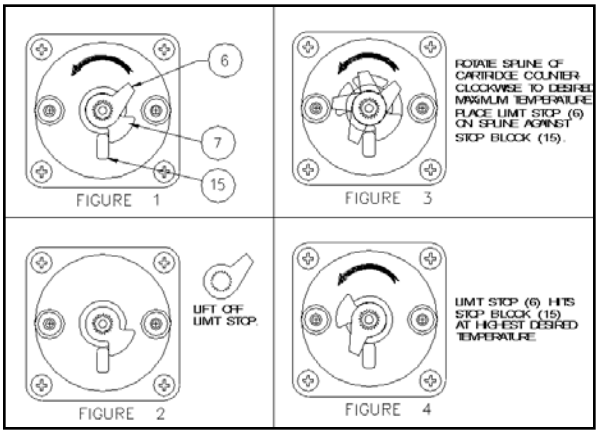
Item	Qty	Description	P.N.
1	1	All-Thread Nipple	10631
2	2	Retaining Plate Screw	92014
3	1	Retaining Plate	11459
4	1	O-ring	91099
5	1	Full Broach	10632
6	1	Limit Stop	10493
7	1	Mechanical Stop	10494
8	1	O-ring	91049
9	4	Cover Screw	10714
10	1	Valve Body Cover	-
11	1	Cover O-ring	-
12	1	Cartridge	1-207
13	2	Check Vavle	11491
14	1	Valve Body	-
15	1	Locking Nut	10259
16	1	Diverter Valve Assy	1-043
17	1	Upper Link	91065
18	1	Stem-Brass	10497
19	1	Sleeve-Brass	10496
20	1	Grommet	91033
21	1	Knob-Brass	10498
22	1	Lower Link	91101
23	1	O-ring	91100
24	1	Spring	10499

2. Setting The Temperature Limit Stop

- Remove the all-thread NIPPLE (1) and RETAINING SCREWS (2) RETAINING PLATE (3) and STEM (5) from the valve COVER (9).
- Remove the LIMIT STOP (6) see figure 2. Do not remove the MECHANICAL STOP (7). (If for any reason the MECHANICAL STOP (7) is removed refer to ***Cartridge Removal and Replace*** section below.)
- From the CLOSED position, rotate the CARTRIDGE STEM (10) counter-clockwise until the desired temperature is achieved.
- Place the LIMIT STOP (6) on the CARTRIDGE STEM (12) against the STOP BLOCK (25) located on COVER (10). Rotate the CARTRIDGE STEM (12) several times to make sure the stop is at the desired temperature setting.
- Replace the STEM (5), RETAINING PLATE (3) and RETAINING SCREWS (2) and all-thread NIPPLE (1) onto valve COVER (10). (NOTE: For stem to be fully seated into cartridge, all-thread nipple and LOCKING NUT (15) must be tightly secured against retaining plate.)
- Proceed to the VALVE TRIM INSTALLATION.

2a. Cartridge Removal And Replacement

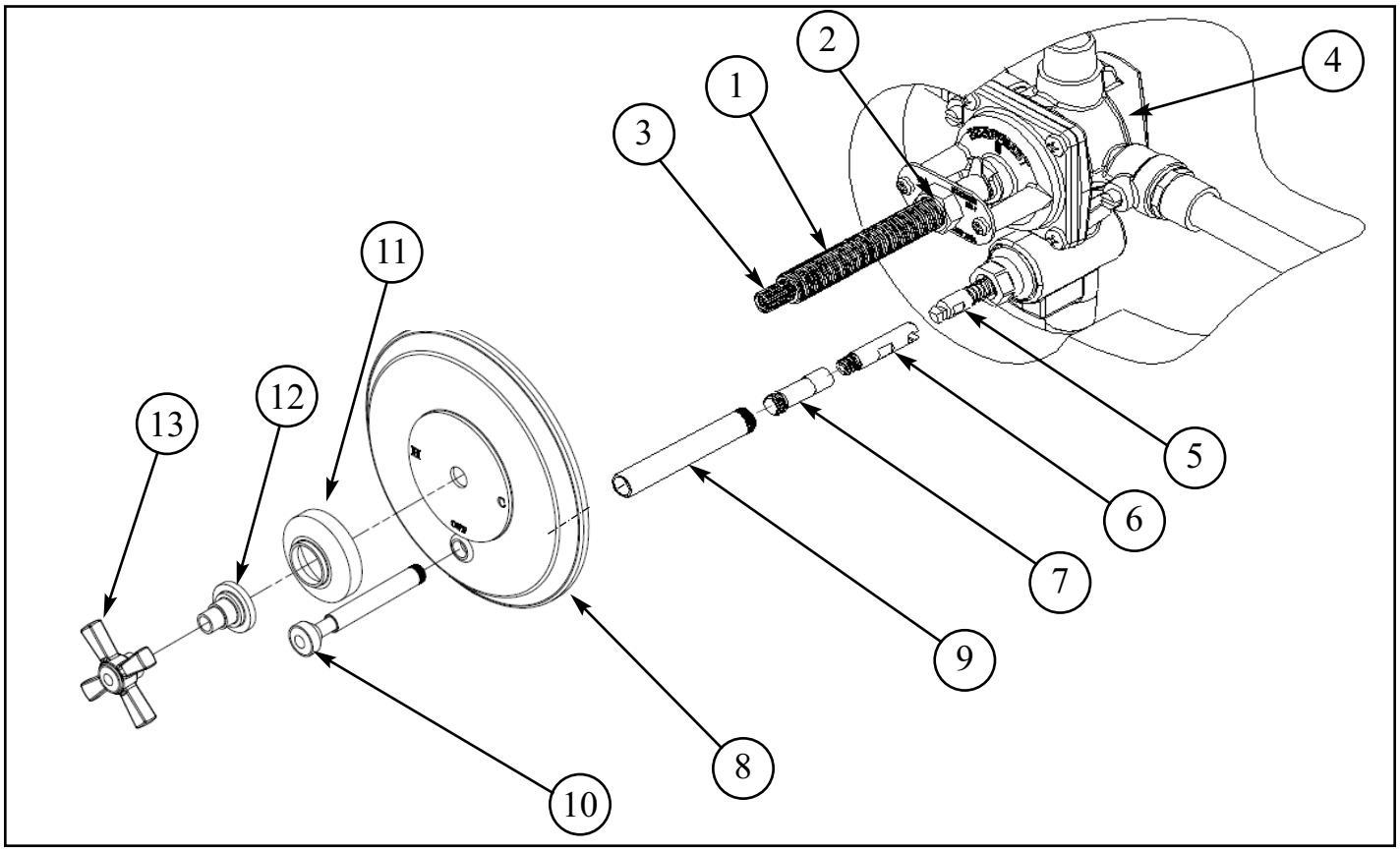
- Remove the all-thread NIPPLE (1), RETAINING SCREWS (2), RETAINING PLATE (3) and STEM (5) from the valve COVER (10).
- Remove the LIMIT STOP (6) and MECHANICAL STOP (7)
- Remove the COVER SCREWS (9), COVER (10) and cover O-RING (10).
- Carefully slide the CARTRIDGE (12) out of valve BODY (14).
- Replace CARTRIDGE (12) ensuring that the cartridge's O-RINGS (26) is lubricated with plumbers (non-petroleum) grease. The "H" and "C" on the side of the CARTRIDGE (12) indicates the cartridges proper orientation to the appropiate inlet supply line.
- Once the CARTRIDGE (12) is installed, it is very important to confirm that the cartridges front tabs are correctly locked into the BODY (13) mating slots.
- Replace the cover O-RING (11), COVER (10) and tighten COVER SCREWS (9) firmly into place.
- To set the MECHANICAL STOP (7) rotate clockwise the CARTRIDGE STEM (12) until it stops.
  Warning: <u>Do Not</u> forcefully rotate stem closed.
- Place the MECHANICAL STOP (7) onto CARTRIDGE STEM (12) as shown in figure 1.
- Replace LIMIT STOP (6) as described above in ***Setting the Temperature Limit Stop.***



3. Valve Trim Installation

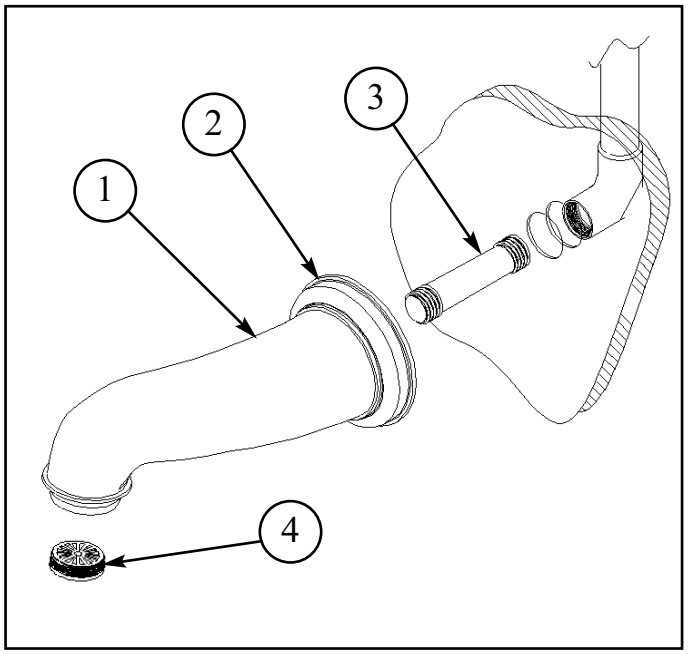
(Perform these steps after finished wall has been completed)

- The STEM (3) must be trimmed to 2 7/8” from finished wall. Remove STEM (3) by loosening NUT (2) and removing NIPPLE (1), NUT (2) and STEM (3). Trim STEM (3) to previously mentioned dimension.
- The NIPPLE (1) must be trimmed 1/2” less than STEM (3).
- Fasten STEM (3) and NIPPLE (1) onto VALVE (4). Use NUT (2) to lock NIPPLE (1) into place. Rotate STEM (3) to ensure there is not binding. If binding, loosen NIPPLE (1) until STEM (3) moves freely and does not wobble.
- Place diverter trim LINK (6) and POST (7) onto valve’s DIVERTER(5).
- Tighten diverter trim SLEEVE (9) onto DIVERTER (5).
- Align cover PLATE (8) and slide onto valve NIPPLE (1) and diverter SLEEVE (9). (Soapy water will improve sliding of rubber seal onto diverter sleeve.)
- Place ESCUTCHEON (11) and BONNET (12) onto NIPPLE (1) and firmly tighten BONNET (12) in place to secure trim onto VALVE (4).
- Secure diverter KNOB (10) onto POST (7).
- Secure HANDLE (13) into place by tightening setscrews. Note: Allow minimal spacing between HANDLE (13) and BONNET (12).



4. Tub Spout Installation

- Place base RING (2) onto bottom of SPOUT (1).
- Based on finished wall thickness select appropriate size 1/2” NPT NIPPLE (3) for SPOUT (1) installation.
  Note: NIPPLE (3) is not included.
- Apply thread sealant to both ends of NIPPLE (3) and thread into fitting inside finished wall.
- Attach SPOUT (1) to protruding NIPPLE (3) and secure into place.
- Using a thin blade screwdriver, temporarily remove stream STRAIGHTNER (4) from SPOUT (1).



5. Test Installed Tub / Shower Set

- Turn on the shower valve by rotating the handle counter-clockwise.
  Water will start to flow from the tub spout.
- Pull the diverter knob to operate the showerhead.
- Water mixing temperature to handle rotation is as follows:
  1/4 to 1/2 = warm 1/2 to 3/4 = hot
  - 0 to 1/4 = cold
  - 1/4 to 1/2 = warm
  - 1/2 to 3/4 = hot

6. Troubleshooting

* **WARNING** - Never try to stop dripping by applying extreme force or overtightening the handle.		
MALFUNCTION	**CAUSE**	**REMEDY**
Opening immediately to hot water.	Hot and cold water supplies have been connected in reverse.	Rotate cartridge. (See Page 3)
Water drips after shutting off the valve.	Residual water in valve and piping.	Allow approximately 3-8 minutes to drain.*
	Incorrect setting of the mechanical stop against the stop block causing a partially opened cartridge.	Reset the mechanical stop. (See Page 3)
	O-ring seal on the inlet of the cartridge is faulty or seat assembly is damaged.	Check the O-ring & seat for cuts or over-heating damage during installation. Replace if necessary.
Water insufficiently hot.	Adjustable handle position stop incorrectly set.	Refer to the instruction on “Setting Temperature Limit Stop”.
Valve body too deep into wall.	The measured rough in or finished wall surface is incorrect.	Reset the valve.
Diverter will not stay on during shower.	Not enough backpressure between showerhead and diverter valve.	Flow restrictor @ shower head 2.5 GPM
No or low flow of hot or cold water.	Either the hot or cold side is not fully pressurized.	Verify that all service stops for both the hot and cold are fully open and pressurized.
	Debris caught inside the inlet of the cartridge.	Remove the cartridge (See Page 3). If debris is lodged in the inlet of the cartridge or check the valve located in the cast valve body. The debris can be removed with a straightened paper clip or fine wire. Gently insert the wire and move it in a circular motion to dislodge any debris.

Care and Cleaning

The lustrous finish on your Restoration Hardware Bathware fixture should be treated with care. Improper handling or cleaning can damage the surface of any metal finish. Use a soft cloth to wipe clean. Avoid harsh abrasive cleaner. Water contains lime and other mineral deposits that will be left on the surface after the water has evaporated. You can prevent these deposits from forming by always wiping the fixture dry immediately after use.

Technical Support and Customer Service

For technical support in the installation of your Restoration Hardware Bathware fixture, please call 1-866-417-5207 weekdays between the hours of 7:00am and 4:00pm PST.

For other questions regarding your order, to order additional components of the Restoration Hardware Bathware Collection, to order replacement parts, or to address warranty issues, please contact Restoration Hardware Customer Service at 1-877-747-4671.