

IMPORTANT

All California Faucets® products are engineered to provide quality performance provided they are installed and operated properly. To fully enjoy the comfort, safety, and reliability of your new PBTS or PBS "EF" Valve, please follow the instructions below.

California Faucets reserves the right to make modification and specification changes at any time. Please visit www.calfaucets.com for most current technical data.

Standard Installation

Before installing, please check local plumbing codes to verify permissible dimensions.

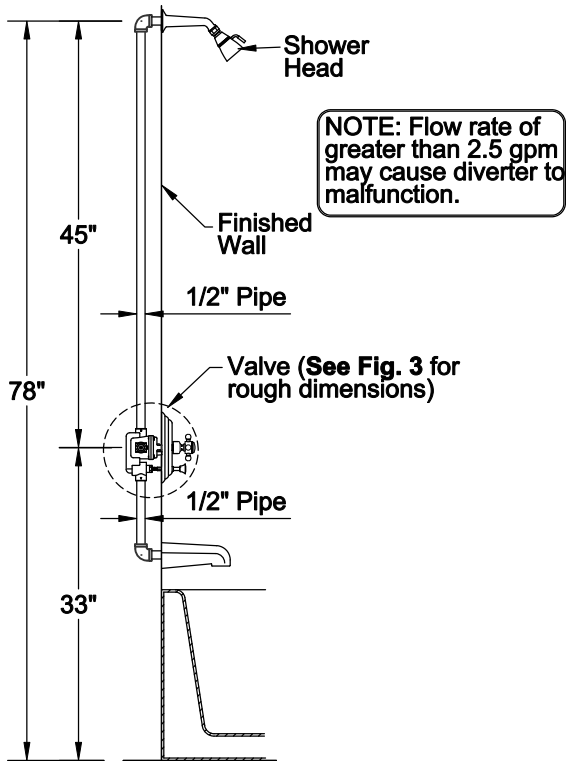


Fig. 1

Rough In Dimension

Finished wall to end of Broach = 3 1/4"
 Applies to both PBTS and PBS Valves

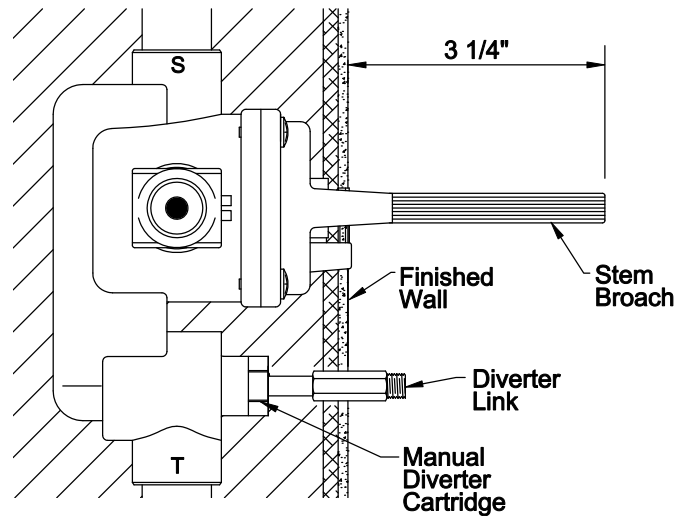


Fig. 3

PBTS Valve Shown

PBS/PBTS "EF" Flow Rate Vs. Inlet Pressure.

Operating Pressure
 Min. Operating Pressure = 20 psi
 Max. Operating Pressure = 125 psi

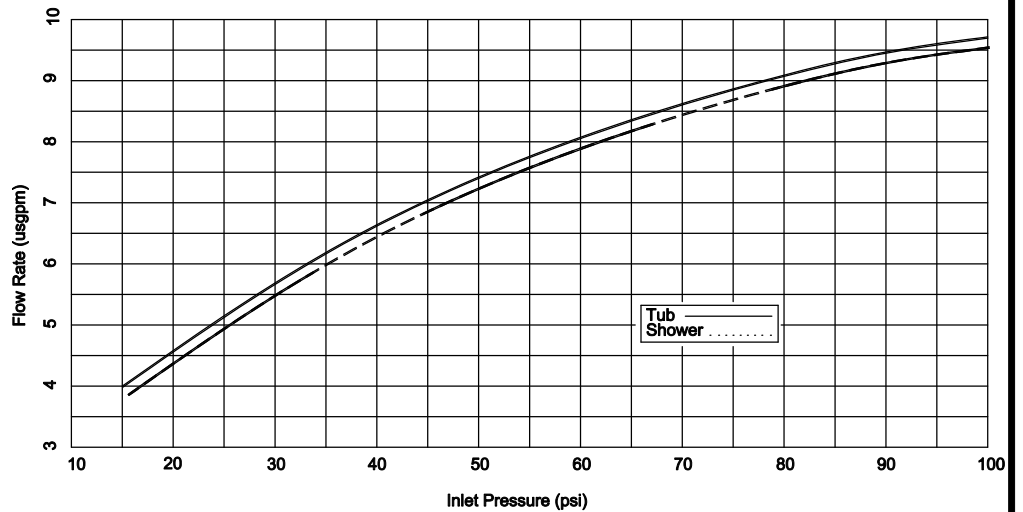


Fig. 2

Installation:

NOTE: Failure to follow these instructions may cause damage or improper operation and void the warranty!

1 ROUGH IN:

Position valve with the 1/2" shower outlet marked "S" up and the 1/2" tub outlet marked "T" down. Finished wall to tip of broach should be 3 1/4" (See Fig. 3, previous page).

Plastic installation cover must remain installed for finished wall surface measurements and as a template for plastering and/or tiling (See Fig. 4) Cut-out hole diameter around valve to be 6 1/4"

IMPORTANT NOTES:

- It is not necessary to remove the pressure balancing cartridge from the valve during normal soldering of connections.
- When soldering copper by copper connections do not use excessive heat as this may cause damage to internal seals. A propane gas torch
- is recommended. **DO NOT USE OXYGEN/ACETYLENE TORCH!** To test the pipe joints, pressurize both hot and cold lines.

2

FINISH:

- After plastering and/or tiling is complete, remove plastic installation cover and plastic diverter cover (if applicable) - See Fig. 4. Make sure stem broach (See Fig. 8) is completely in the off position. (Fully rotate clockwise)

3

Install Diverter Trim (for Tub/Shower Diverter units only) - See Fig. 5.

Screw finished diverter stem (#3) onto brass hexagonal diverter link (#2).

Screw on sleeve (#4).

Fit faceplate, screws, and diverter knob/button (#5).

4

Insert handle onto broach and secure by tightening the set screws with the supplied allen wrench.

NOTE: Some installations may require the installer to trim the stem broach for a correct fit (See Fig. 7a)

Fig. 4

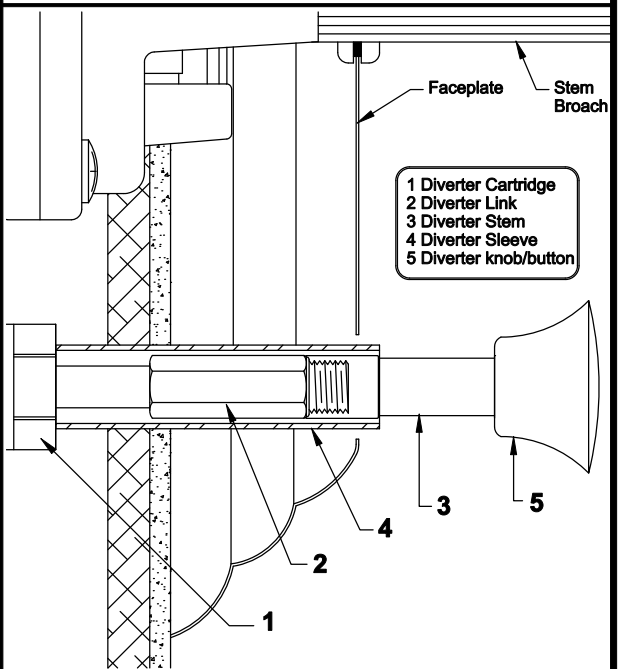


Fig. 5

Side View - Diverter Detail

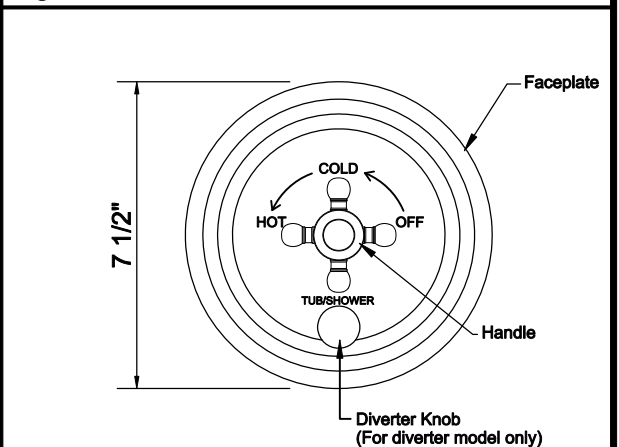


Fig. 6

Front View

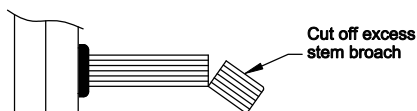
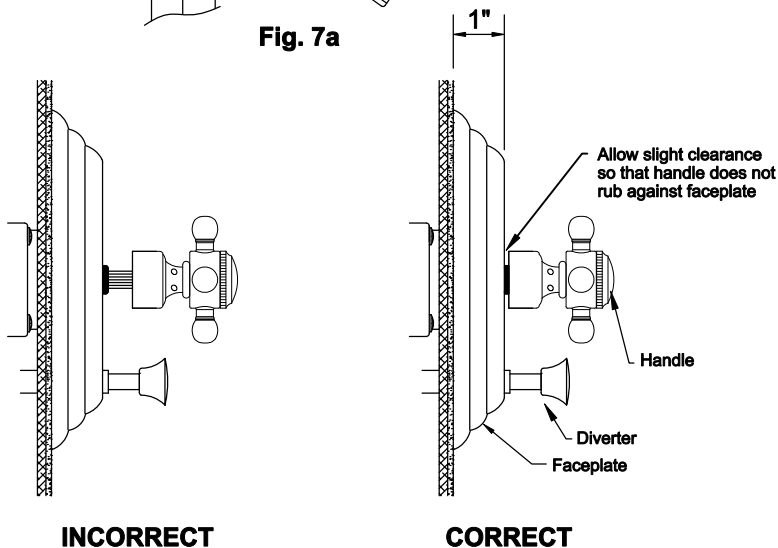


Fig. 7a



INCORRECT

CORRECT

Fig. 7

Side View

Adjusting the Temperature Limit Stop:

All *California Faucets* pressure balance valves are equipped with a Temperature Limit Stop. This device (See Fig. 8), can be adjusted to limit the maximum temperature of the water delivered by the valve. The Temperature Limit Stop is set at the factory in a neutral position. Set or adjust as follows:

- 1 Remove handle, screws, and faceplate to expose the valve in the wall.
- 2 Rotate stem broach clockwise to fully closed position (See Fig. 8).
- 3 Remove stem broach by inserting a long, narrow Phillips head screw driver into the center of the broach and unscrewing the internal screw. Lift off thin brass temperature limit stop (See Fig. 9). Rotate stem broach fully closed and make sure mechanical stop is to the right against stop post (See Fig. 8). Rotate broach counter clockwise until the desired maximum temperature is reached. Replace temperature limit stop so it rests at the left side of the stop post (See Fig. 11).
- 4 Rotate stem broach fully clockwise to close valve.
- 5 Reinstall broach and internal screw.
- 6 Test system and readjust as necessary.
- 7 Reinstall faceplate, screws and handle. (Also diverter knob if PBTS valve).

Check Insert Removal & Cleaning:

All PBS & PBTS "EF" Valves are equipped with check valves and inserts to prevent cross-flow between hot & cold water supplies.

- 1 Remove valve handle, faceplate and stem broach as described above. **Important: Make sure broach is in the off position and note the settings of the mechanical stop and the temperature limit stop (See Fig. 8).**
- 2 Using a screwdriver, turn shut-off stops - if supplied (See Fig. 4, previous page) 90° to the off position.
- 3 Remove the 4 screws from the valve cover and carefully lift off the cover and pull out "EF" cartridge.
- 4 Remove plastic check insert by pressing the top corner. This will rotate the check insert making it easy to remove.
- 5 Inspect check valve for correct function by pressing or blowing into the check valve insert on the O-ring side.
- 6 If blocked or damaged replace entire check insert assembly.
- 7 Inspect the O-ring and apply O-ring grease. Place the check insert back into the valve body, making sure that the bevelled edge of the insert is facing forward. The check insert should sit flush against the wall of the valve body when properly installed. Insert "EF" cartridge aligning ribs on hot/cold sides of cartridge to slide over both check inserts inside valve body, (make sure H to hot side / C to cold side).
- 8 Fit valve cover and 4 screws. Tighten firmly in diagonal pattern.
- 9 Rotate stem broach fully clockwise (do not apply excessive force), fit mechanical stop and temperature limit stop as above (See Fig. 8).
- 10 Open shut-off stops (if supplied).
- 11 Test system and readjust as necessary.
- 12 Reinstall faceplate, screws and handle. (Also diverter knob if PBTS valve).

"Back-to-back" or "Reversed" Hot/Cold installation:

- 1 Remove valve handle, faceplate and stem broach, (shut off service stops), and remove valve cover (See Fig. 12).
- 2 Pull the "EF" cartridge straight out of the valve body. Rotate the cartridge 180°. Place it into the valve body. Note position of hot "H" and cold "C" markings on the cartridge: "H" hot will now be on the right and "C" cold on left.
- 3 Insert "EF" cartridge, refit valve cover, mechanical and hot limit stops, broach stem, faceplate, screws and handle as above.

Closed Position

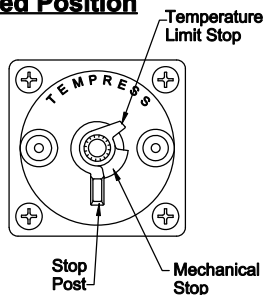


Fig. 8

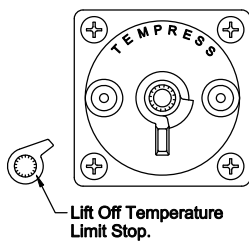
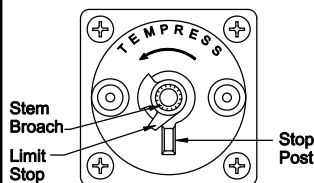


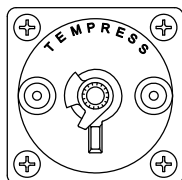
Fig. 9



Rotate stem broach of cartridge counter-clockwise to desired maximum temperature. Place Temperature Limit Stop on stem broach against stop post.

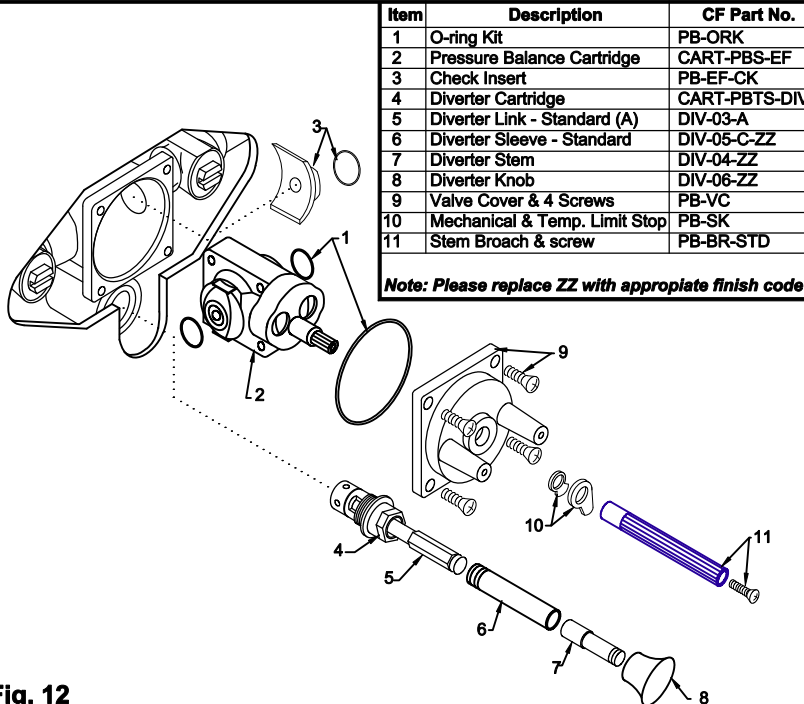
Fig. 10

On Position



Temperature Limit Stop hits stop post at highest desired temperature.

Fig. 11



Item	Description	CF Part No.
1	O-ring Kit	PB-ORK
2	Pressure Balance Cartridge	CART-PBS-EF
3	Check Insert	PB-EF-CK
4	Diverter Cartridge	CART-PBTS-DIV
5	Diverter Link - Standard (A)	DIV-03-A
6	Diverter Sleeve - Standard	DIV-05-C-ZZ
7	Diverter Stem	DIV-04-ZZ
8	Diverter Knob	DIV-06-ZZ
9	Valve Cover & 4 Screws	PB-VC
10	Mechanical & Temp. Limit Stop	PB-SK
11	Stem Broach & screw	PB-BR-STD

Note: Please replace ZZ with appropriate finish code

Sample Installation

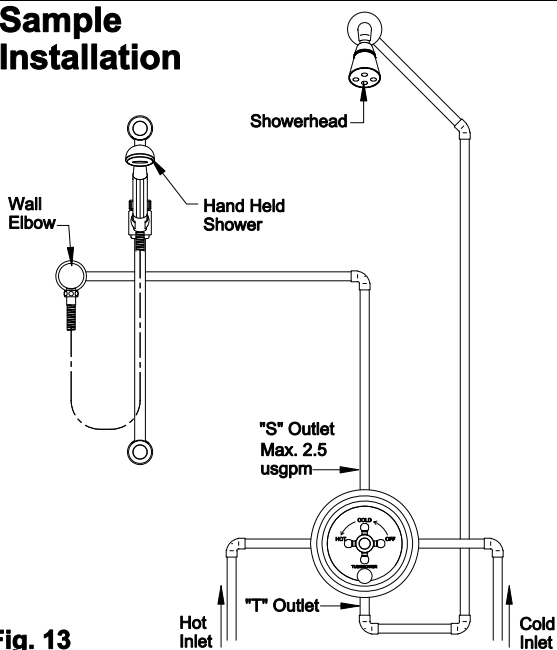


Fig. 13

Special Installation: Showerhead with Hand Held Shower

If installing the diverter valve for shower only applications, (i.e. showerhead and hand shower or showerhead and bodyspray configurations), please follow these guidelines.

- Choose which function (showerhead, handshower or bodyspray) you want the water to come out of when opening the valve. This will be the default function every time you first operate the valve. Pipe the bottom outlet marked "T" to this device.
- Pipe the top outlet marked "S" to the device you want the water to come out of when operating the valve's integrated pull-diverter.

Important: The "S" outlet must have a maximum outlet volume of no more than 2.5 US GPM in order to maintain a diverted water flow. Many showerheads, handshowers and bodysprays come equipped with a 2.5 US GPM flow restrictor already fitted, which if removed, will affect the diverter function of the valve.

Maintenance

This cartridge is designed for the minimum of maintenance in normal domestic use. If a malfunction occurs then this will probably necessitate a complete cartridge replacement. The cartridge contains no internally serviceable parts.

Troubleshooting

Malfunction	Cause	Remedy
Hot and cold reversed	Hot and cold water supplies have been connected in reverse.	Rotate "EF" cartridge as described in "Back-to-back installation".
Tub filler or shower head drips after shutting off the valve.	Water remains in the shower piping (This is normal) Incorrect setting of the mechanical stop, causing a partially opened cartridge. "EF" cartridge inlet O-rings seal or filter insert O-rings are faulty.	Allow approximately 3-5 minutes to drain column. Do not try to stop dripping by forcing handle. Reset the mechanical stop (Fig. 8-11). Check the O-rings for cuts or damage and replace if necessary.
Shower insufficiently hot.	Temperature limit stop incorrectly set.	Reset temperature limit stop (See Fig. 8-11). Check hot water temperature.
No flow of hot or cold water	Either the hot or cold side is not fully pressurized. Debris caught inside the check inserts.	Be sure service stops are both fully open and system is pressurized. Remove "EF" cartridge and flush out or remove any debris lodged inside the hot or cold check inserts.
Valve body too deep in wall.	Improper installation.	Install the extension kit.

REMEMBER: NEVER TRY TO STOP DRIPPING BY APPLYING EXCESSIVE FORCE TO THE HANDLE WHEN CLOSING THE VALVE!

IMPORTANT CLEANING NOTICE

Please refer to *Finish Care Instructions* for complete cleaning information. Wipe frequently with a soft, damp cloth.
Never use acids, harsh abrasives or detergents.