

Installation Instructions

Aerada™ 900 Series Futura Faucet

**With Battery (BIR) Infrared
Control**

S53-284 4" Centerset/Centershank

S53-289 Centerset/Centershank w/Plate

Table of Contents

Pre-Installation Information	2
900 Series (BIR) Parts List	3
Faucet Mounting Hole Diagram	4
Centershank Installation Instructions	5
4" Center Set Installation Instructions	6
Water Supply Connections	7
Activation Range Adjustment	8
Battery Box Maintenance	8
Troubleshooting for 900 Series (BIR)	9
Vernatherm™ Mixing Valve	10–11

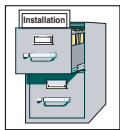


Supplies Required for Installation:

- Tempered/cold supply piping and fittings to braided hose (1/2" NPT)
- Pipe fittings as required
- Pipe sealant
- Six (6) "AA" alkaline batteries for battery valve box (batteries not included)
- OPTIONAL: Thermostatic mixing valve with stop-check strainer valves (available from Bradley)



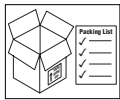
IMPORTANT!



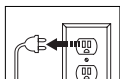
Read this entire installation manual to ensure proper installation, then file this manual with the owner or maintenance department. Compliance and conformity to local codes and ordinances is the responsibility of the installer.



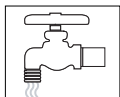
Pressurized plumbing fixtures must be installed in accordance with manufacturer's recommendations. The supply piping to these devices must be securely anchored to the building structure to prevent unnecessary movement of the installed device when operated by the user. Use extreme caution when installing the device to prevent damage to the exposed significant surface.



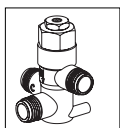
Separate parts from packaging and make sure all parts are accounted for before discarding any packaging material. If any parts are missing, do not begin installation until you obtain the missing parts.



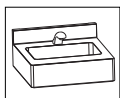
To avoid personal injury and/or damage to the faucet, turn OFF electrical power to the outlet before beginning installation.



Flush water supply lines before making connections. DO NOT use pipe dope on any faucet or supply connections. Possible solenoid contamination could occur which will void any warranty. Teflon tape is the recommended sealant.



The incoming water supply can be tempered or cold. An optional Bradley Vernatherm™ thermostatic mixing valve delivers tempered water at a temperature no greater than 105°F. The 1100 series faucet operates at a flowing water pressure of 20–100 PSI. A vandal-resistant .5 GPM flow restrictor ensures a constant flow rate at all pressures.



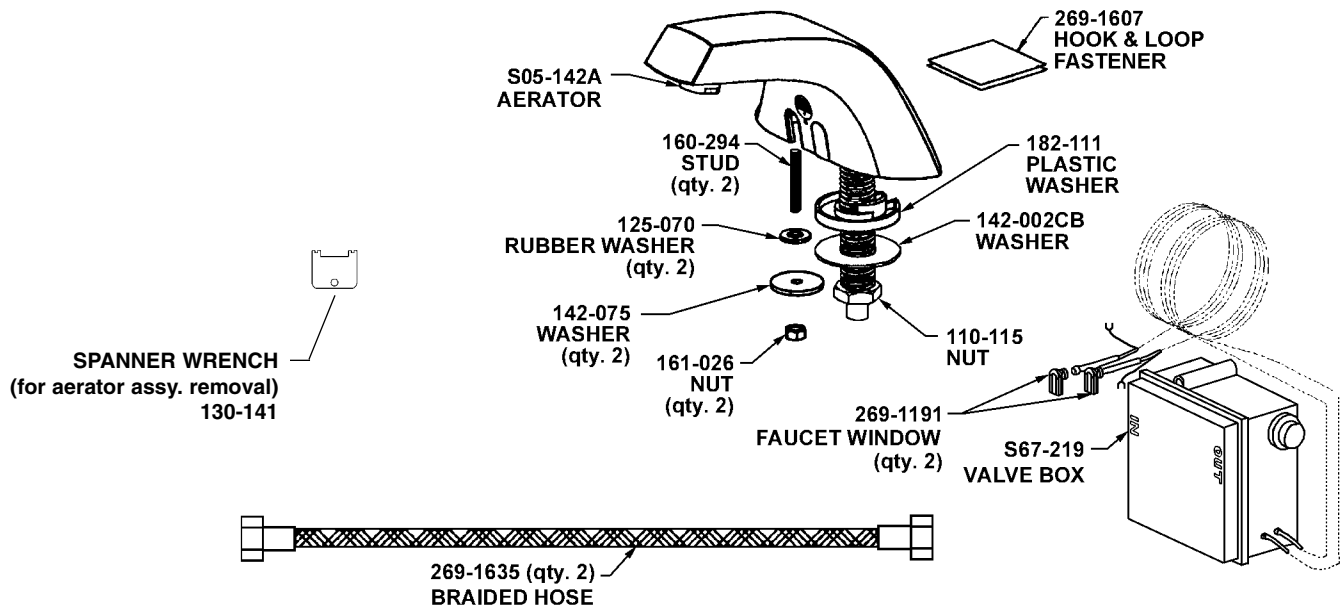
When the faucet is mounted on a fixture with a stainless steel bowl, it is recommended that the bowl have a satin finish rather than a mirrored or highly-polished finish.



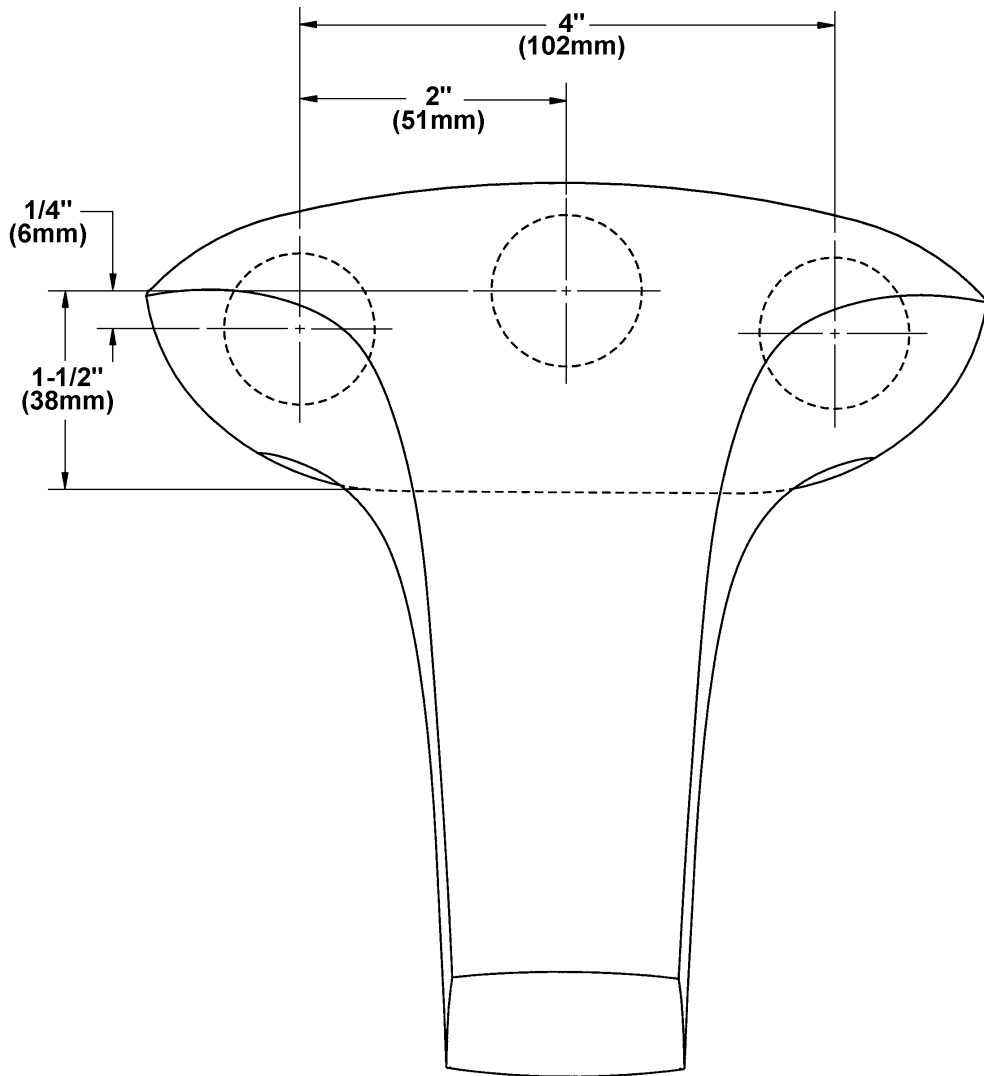
Product warranties may be found under "Product Information" on our web site at www.bradleycorp.com.

Components for Aerada™ 900 Series Futura (BIR)

Separate all parts from packaging and check each part with the drawing below. Make sure all parts are accounted for before discarding any packaging material. If any required parts are missing, do not attempt to install your Bradley faucet until you obtain the missing parts.



Futura 900/BIR Faucet Mounting Hole Diagram



Installation Instructions

NOTE: Flush the water supply line before beginning installation. It is recommended that the faucet be mounted with 4" centerset for the greatest vandal resistance. For 4" centerset mounting, refer to the instructions on page 6.

Centershank faucet mounting

NOTE: If using a pre-drilled countertop or china lav bowl, proceed to #3. For countertops without holes, refer to the mounting diagram on page 4 for hole locations.

1. Measure and mark the location of the middle hole center on the countertop.
2. Drill one 1-1/8" diameter hole in the location marked in #3 (see Figure 1a).
3. Attach one-half of the hook-and-loop fastener to the valve box and the other half to the wall or the underside of the countertop.

NOTE: Position the hook-and-loop fastener on the countertop or wall so that, when secured, the valve box will be located within 12" of the faucet shank (sensor leads must reach faucet lenses when installed).

4. Attach the valve box to the wall or the bottom side of the countertop using the hook-and-loop fastener.
5. Bring the two sensor leads up through the center hole of the countertop and install the leads into the two lenses. Install the lenses into the faucet.
6. Place the two rubber washers into the pockets in the bottom of the faucet body.
7. Gently insert the faucet shank through the center hole in the countertop.

NOTE: Take care not to pinch the sensor wires.

8. Install the white plastic washer onto the shank from beneath the countertop, followed by the 7/8" I.D. washer and nut. The sensor lead wires should align with the slot in the washer (see Figure 2a). Secure the faucet to the countertop by tightening the nut.

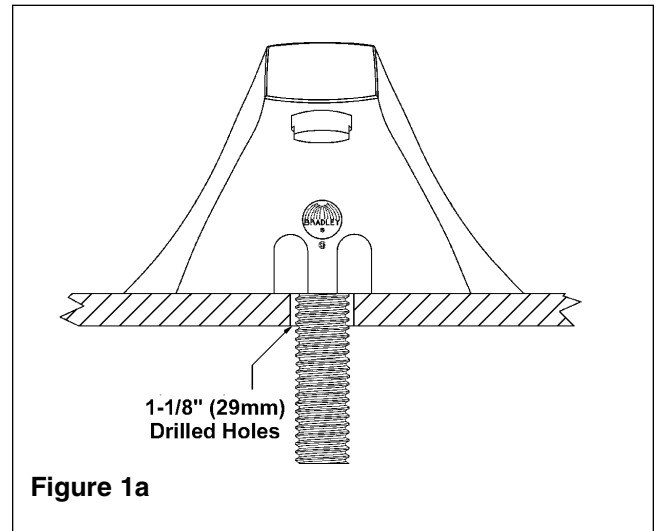


Figure 1a

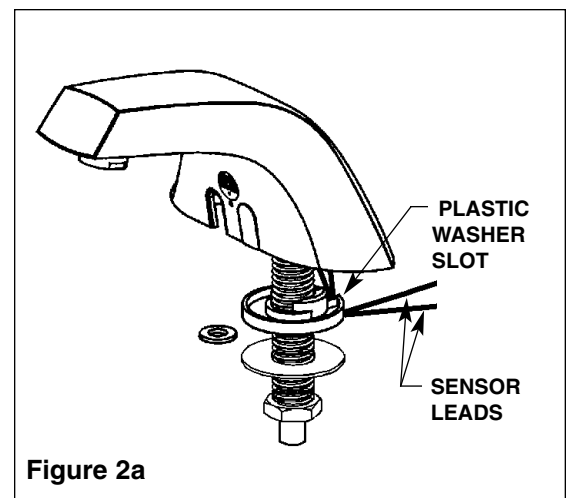


Figure 2a

Installation Instructions

NOTE: Flush the water supply line before beginning installation. For centershank mounting, refer to the instructions on page 5.

4" Centerset faucet mounting

NOTE: If using a pre-drilled countertop or china lav bowl, proceed to #3. For countertops without holes, refer to the mounting diagram on page 4 for hole locations.

1. Measure and mark the location of the three hole centers on the countertop.
2. Drill three 1-1/8" diameter holes in the locations marked in #3 (see Figure 1b).
3. Attach one-half of the hook-and-loop fastener to the valve box and the other half to the wall or the underside of the countertop.

NOTE: Position the hook-and-loop fastener on the countertop or wall so that, when secured, the valve box will be located within 12" of the faucet shank (sensor leads must reach faucet lenses when installed).

4. Attach the valve box to the wall or the bottom side of the countertop using the hook-and-loop fastener.
5. Bring the two sensor leads up through the center hole of the countertop and install the leads into the two lenses. Install the lenses into the faucet.
6. Thread the 1/4"-20 studs into the bottom of the faucet body. The rubber washers are not required and may be discarded.
7. Gently insert the faucet shank through the center hole in the countertop.

NOTE: Take care not to pinch the sensor wires.

8. Install the white plastic washer onto the shank from beneath the countertop, followed by the 7/8" I.D. washer and nut. The sensor lead wires should align with the slot in the washer (see Figure 2b).
9. Install the large slotted washers and 1/4"-20 nuts onto the studs (see Figure 2b). Secure the faucet to the countertop by tightening the shank nut. Tighten the remaining two stud nuts.

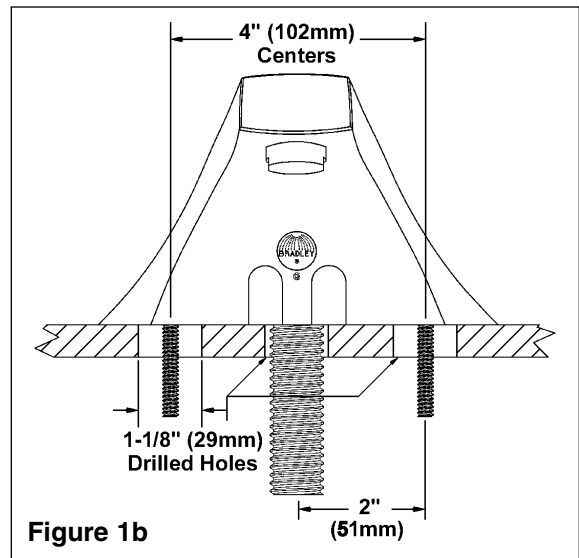


Figure 1b

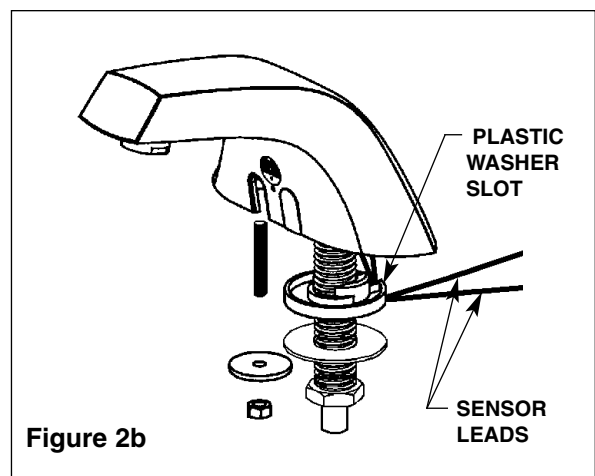


Figure 2b

Installation Instructions *continued . . .*

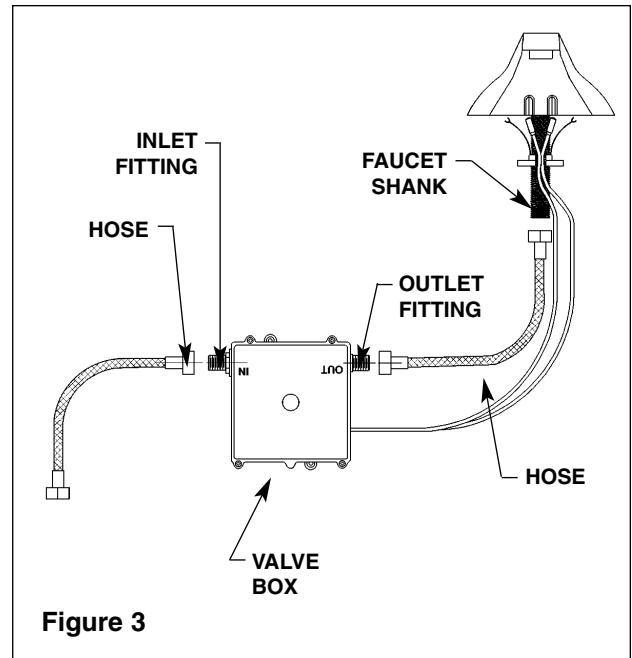
Step 3: Connect water supply

1. Connect one end of one of the braided hoses to the end of the faucet shank (see Figure 3).
2. Connect the other end of the braided hose to the valve box's outlet fitting (see Figure 3).
3. Connect one end of the second braided hose to the valve box's inlet fitting (see Figure 3).
4. Connect the remaining end of the second braided hose to the tempered or cold water inlet or optional Vernatherm™ mixing valve.
5. Remove the Phillips-head screw from the valve box cover and remove the cover.
6. Apply water pressure and check for leaks.
7. Make sure the faucet is in the proper position and the basin is clear of any obstructions. Install six (6) "AA" Alkaline batteries (not included), observing proper polarity. The valve will open and close.



IMPORTANT: Wait for 5 seconds before testing the unit (this allows the sensors to adapt to site conditions).

8. Test the range with your hand. The faucet should activate when your hand is positioned under the sprayhead. The range is set to approximately 5" by the manufacturer. If range adjustment is required, follow the procedures outlined in Step 4 on page 8. If no adjustment is required, replace the valve box cover and tighten the screw.



Installation Instructions *continued* . . .

Step 4: Activation Range Adjustment

NOTE: Complete only if range adjustment is required.

NOTE: The range is factory preset at approximately six inches.

To adjust the activation range, follow the procedure outlined below:

1. Open the box cover per Step 3, procedure #5.
2. Locate the activation adjustment knob (see Figure 5).

IMPORTANT: Maximum rotation is only 3/4 of a turn.



NOTE: The label on the activation adjustment indicates the direction to increase (+) and decrease (-) the range.

3. Make the adjustment with a small slotted screwdriver.
 - Set the range to “minimum” (-).
 - Remove all objects from the basin
 - Reset the sensor by removing one battery, waiting ten seconds and then reinstalling the battery.
 - Slowly turn the adjustment to increase (+) the activation range. If the sensor activates, back the adjustment off by 1/8 turn.
4. Once the range is adjusted, reset the sensor again by removing one battery, waiting ten seconds and then reinstalling the battery.
5. Wait five seconds for the sensor to adapt, then test the range. If the range is okay, then replace the valve box cover and tighten the screws.

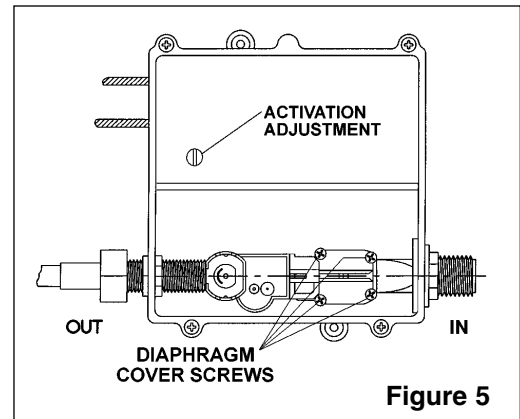


Figure 5

Battery Box Maintenance

To clean the battery box, refer to Figures 5–6 and follow the procedure outlined below:

1. Turn water off, open the valve box (remove the four screws and lid).
2. Lift the battery holder out (leave wires connected). Remove one battery.
3. Remove the four screws holding the diaphragm in place.

NOTE: Make note of the orientation of the diaphragm before removing (the flat side on the center plastic part must face the inlet).

4. Remove the diaphragm.
5. Rinse the diaphragm in clean water, then replace the diaphragm (in the proper orientation) and secure with screws.
6. Reinsert the battery in the holder and replace the holder in the battery box.
7. Turn the water supply on and check the valve for proper open/close cycle and water flow.
8. Replace the valve box lid.

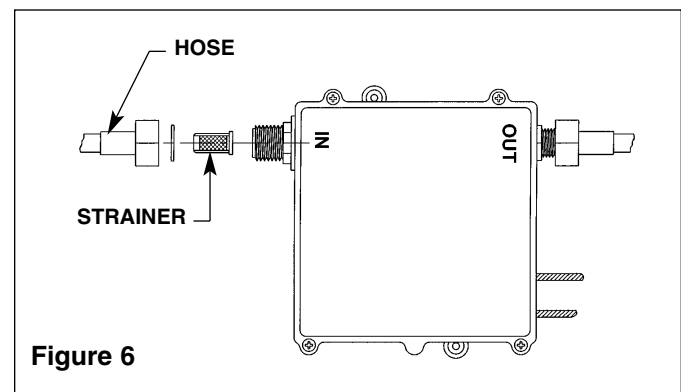


Figure 6

Troubleshooting for Aerada™ 900 Series Futura (BIR)

PROBLEM	CAUSE AND SOLUTION
No water flow	<p>Valve does not go through its initial open/close cycle (i.e. nothing happens)</p> <ol style="list-style-type: none"> 1. Check the batteries. <ul style="list-style-type: none"> • Open the valve box (remove the four screws and lid). Lift the battery holder out (leave wires connected). Test and replace batteries if necessary. Make sure batteries are installed correctly. 2. Check water supply and make sure stops are open and all strainers are clean (refer to Figure 4 on page 7 for check valve diagram). 3. Check for loose or broken wires. If batteries have been removed, reinstall them. (The valve needs batteries to open and to close. Removing the batteries while water is flowing will not stop the flow). <p>Valve goes through its initial open/close cycle, but no water flows (open and close clicks are heard from the valve)</p> <ol style="list-style-type: none"> 1. Check water supply and make sure stops are open and all strainers are clean (refer to Figure 4 on page 7 for check valve diagram). 2. Check for debris in battery valve box (refer to <i>Battery Box Maintenance</i> on page 8). <p>Valve goes through its initial open/close cycle (water flows for a moment)</p> <ol style="list-style-type: none"> 1. Check adjustment range (see <i>Activation Range Adjustment</i> on page 8). 2. Make sure sensor windows and eyes are clean.
Water runs continuously	<p>Various causes</p> <ol style="list-style-type: none"> 1. Check for debris in battery valve box (refer to <i>Battery Box Maintenance</i> on page 8). 2. Check the batteries. <ul style="list-style-type: none"> • Open the valve box (remove the four screws and lid). Lift the battery holder out (leave wires connected). Test and replace batteries if necessary. Make sure batteries are installed correctly. 3. Check water supply and make sure stops are open and all strainers are clean (refer to Figure 4 on page 7 for check valve diagram). 4. Check for loose or broken wires. If batteries have been removed, reinstall them. (The valve needs batteries to open and to close. Removing the batteries while water is flowing will not stop the flow).
Water continues to run (times out)	<p>Valve goes through its initial open/close cycle (water flows for a moment)</p> <ol style="list-style-type: none"> 1. Check adjustment range (see <i>Activation Range Adjustment</i> on page 8).
Water drips continuously	<p>Valve may be clogged</p> <ol style="list-style-type: none"> 1. Check for debris in battery valve box (refer to <i>Battery Box Maintenance</i> on page 8).
Water dribbles when activated	<p>Mixing valve and/or stops may be clogged or incorrectly installed</p> <ol style="list-style-type: none"> 1. Make sure water supply stops are fully open (mixing valve shuts water off if it does not have both hot and cold water pressure). 2. Check and clean the strainers. 3. Check the strainer to make sure the valve box is inserted correctly (if reversed, it blocks the water flow) Refer to Figure 6 on page 8 for correct filter orientation.
Water is too hot	<p>Mixing valve and/or stops may be clogged or incorrectly installed</p> <ol style="list-style-type: none"> 1. Check supply connections to mixing valve (“hot” connected to side painted red). 2. Check to make sure strainers are clean and stop valves are open. 3. Check the Vernatherm mixing valve (refer to <i>Vernatherm Maintenance</i> on page 10).
Short battery life	<p>Incorrect battery orientation</p> <ol style="list-style-type: none"> 1. Check to make sure battery orientation is correct (if any one battery is installed incorrectly, the valve will operate properly but battery life is reduced substantially).

Vernatherm™ Thermostatic Mixing Valve Troubleshooting

NOTE: Before attempting to troubleshoot the valve or disassemble the components, check for the following conditions:

- *If stop/check valves are used, make sure that they are fully open*
- *Make sure that the hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop/check valves*
- *check the hot water heater output to make sure that it is at least 20° F above the set temperature.*

Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

NOTE: Refer to the Vernatherm™ parts list on page 11 when troubleshooting the valve.

Problem: Limited water flow

Cause: Dirt and debris have built up in the valve or strainer.

1. Remove and clean strainer. If strainer needs to be replaced, order Bradley part no. 173-028.
2. Check the piston for smooth movement.

To check the valve's piston for free and smooth movement, follow the procedures outlined below:

1. Remove the valve's cap and thermostat.
2. Push down on the piston with your finger (the piston should move freely). If the movement is not as it should be, the piston needs to be cleaned. Follow the method outlined below for cleaning the piston and valve body:
 - Remove the thermostat.
 - Lift the piston out with a needle-nose pliers and remove the spring.
 - Any cleaner suitable for brass and stainless steel may be used (if cleaning with suitable cleaner is not sufficient to remove debris, a 400-grit sandpaper may be used to polish and hone the piston and valve body).
 - Snap spring into piston (will detent) and reassemble into the valve body. Retest the piston.
3. If, after a thorough cleaning, the piston does not move freely, the piston must be replaced. Contact your Bradley representative and ask for Repair Kit (part number S65-259).

Problem: External leaks in the system

Cause: O-rings have been damaged.

Solution: Replace O-rings where necessary. For replacement of the O-rings, contact your Bradley representative and ask for Repair Kit (part number S65-259).

Problem: Improper water temperature or temperature fluctuation

Cause: Thermostat is slowly failing or not working at all.

Solution: Check the thermostat for proper operation.

1. At room temperature (80° F or less) remove cap and thermostat.
2. Place thermostat into container with 115° F water. The pushrod should pop out of the thermostat approximately 1/10".
3. If thermostat pushrod does not pop out, the thermostat must be replaced. Contact your Bradley representative and ask for Repair Kit (part number S65-259).

Cause: Valve temperature is not properly set.

Solution: Adjust the temperature. Using a blade screwdriver, turn the adjustment stem **counterclockwise** to **increase** the temperature or **clockwise** to **decrease** the temperature.

Vernatherm™ Thermostatic Mixing Valve S59-4004XS

Repair Kit S65-259

Item	Qty	Description
2	1	Spring
3	1	Piston
4	1	Thermostat
6	1	O-Ring
7	1	O-Ring

