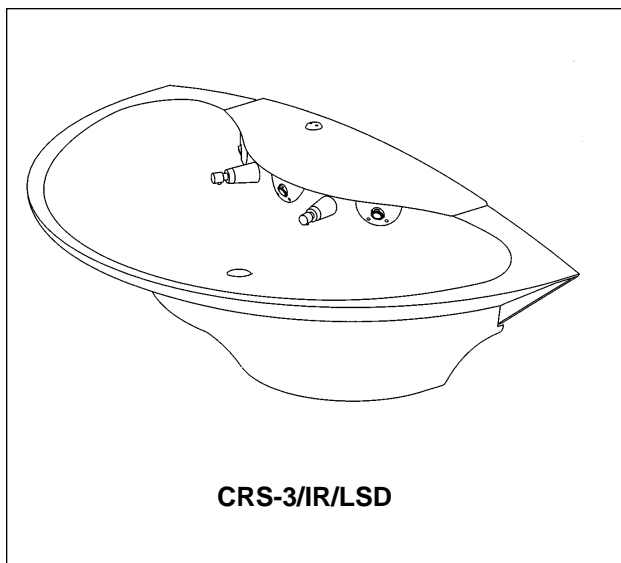


# Installation Instructions

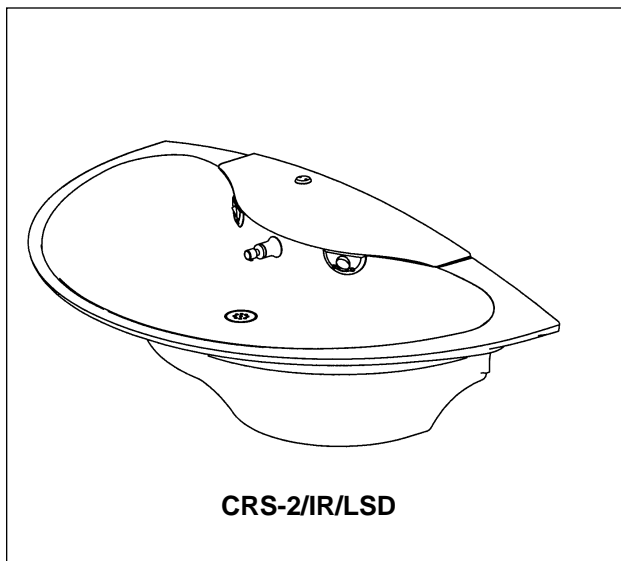
## CRS-2/IR, CRS-3/IR Express® Crescent® Lavatory System CRS-Series



Complies with Texas  
Accessibility Standards (TAS)  
for Juvenile Height applications.



CRS-3/IR/LSD



CRS-2/IR/LSD

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For soap system installation, refer to installation manual 215-1583

**NOTE: 3-station unit is shown throughout. 2-station is similar.**



### IMPORTANT

Read this entire installation manual to ensure proper installation, then file these instructions with the owner or maintenance department.

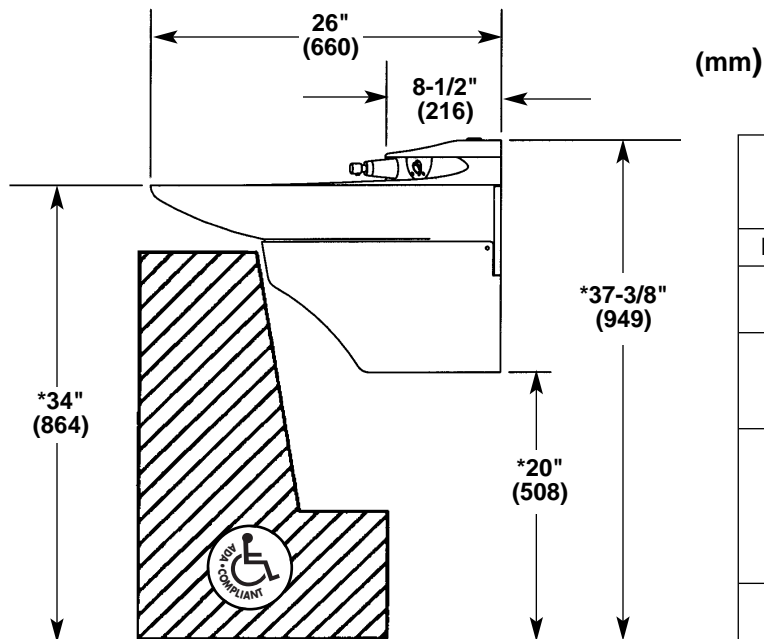
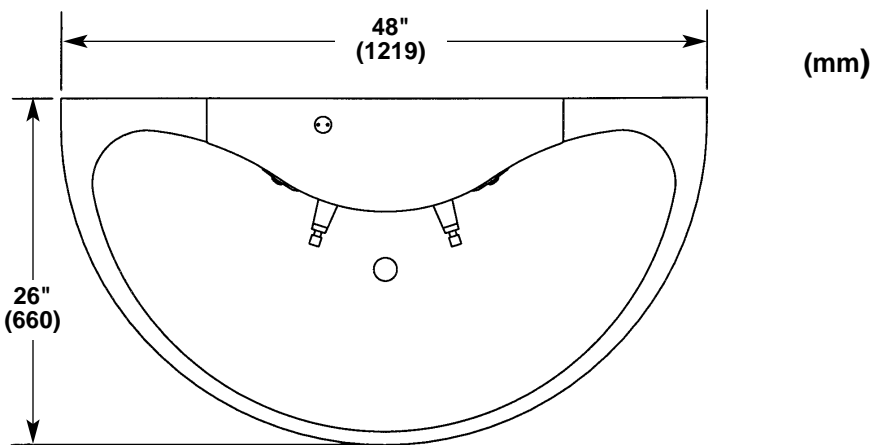
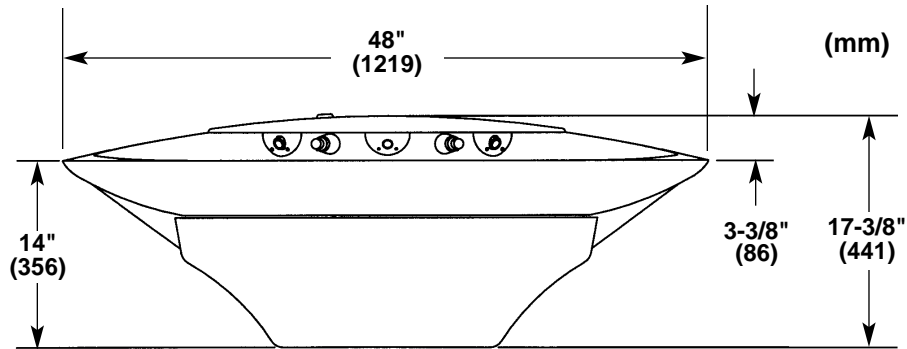
Flush all the water supply lines before making connections. Debris in supply lines will cause the valves to malfunction.

Wall anchors used must have a minimum pull-out rating of 1,000 lbs.

Product warranties may be found under "Product Information" on our web site at [www.bradleycorp.com](http://www.bradleycorp.com).



## Express® Crescent® Lavatory System Dimensions



* ADJUSTMENTS TO VERTICAL DIMENSIONS FOR VARIOUS RIM HEIGHTS		
Rim Height	Application	Adjustment
34"	Adult Height ADA, TAS Adult Height	None, as shown
32"	TAS Ages 11 thru 14 or 15, Grades 6 thru 8 or 9	Subtract 2"
30"	TAS Ages 4 thru 10 or 11, Grades: Pre-K thru 5 or 6 & Proposed Juvenile Height ADA	Subtract 4"
24"	Preschool (required by some local codes)	Subtract 10"

## Installation Instructions

### Supplies required for installation:

- (6) 3/8" wall anchors, bolts and washers to mount bowl to wall (min. pull-out force of 1,000 lbs.)
- 1/2" NPT hot and cold or tempered supply piping
- 1-1/2" drain piping and P-Trap (available from Bradley, p/n 269-1697)
- 110 VAC power source for 110/24 VAC plug-in transformer supplied
- OPTIONAL TRAP COVER: 1/4" wall anchor, bolt and washer to mount trap cover to wall
- OPTIONAL: Bradley recommends installing an electrical cut-off switch to the unit (this feature prevents accidental water delivery during regular maintenance and service)

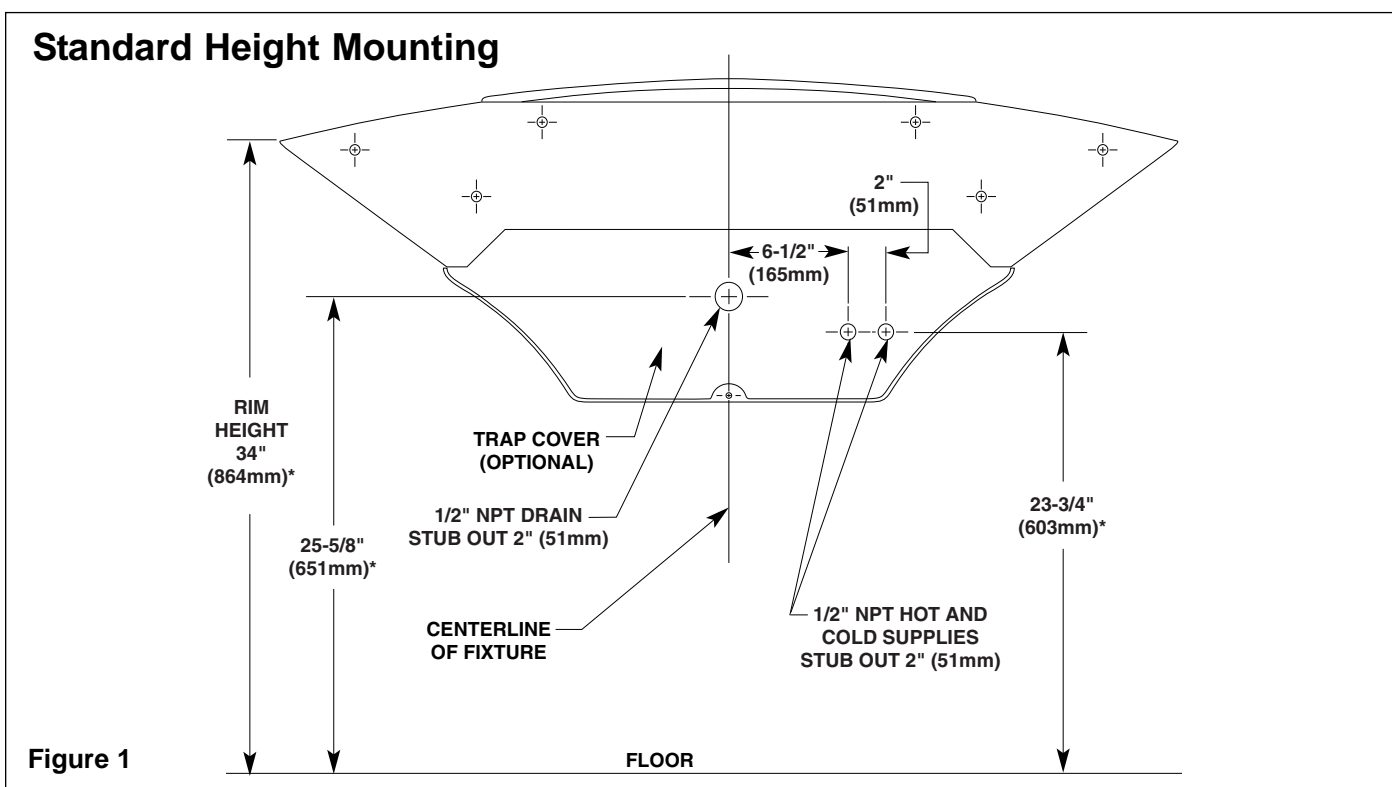
### Step 1: Rough-ins

NOTE: Refer to Figure 1 below and Figure 2 on page 4 for Express® Crescent® Lavatory System rough-ins and dimensions.

1. Rough in 1/2" NPT hot and cold supply lines and 1-1/2" NPT drain waste connection through wall at dimensions shown in Figure 1.



**IMPORTANT: Flush all the water supply lines before making connections. Debris in supply lines will cause the valves to malfunction.**



* ADJUSTMENTS TO VERTICAL DIMENSIONS FOR VARIOUS RIM HEIGHTS		
Rim Height	Application	Adjustment
34"	Adult Height ADA, TAS Adult Height TAS Adult Height	None, as shown
32"	TAS Ages 11 thru 14 or 15, Grades 6 thru 8 or 9	Subtract 2"
30"	TAS Ages 4 thru 10 or 11, Grades: Pre-K thru 5 or 6 & Proposed Juvenile Height ADA	Subtract 4"
24"	Preschool (required by some local codes)	Subtract 10"

Installation Instructions *continued . . .*

**Step 1: Rough-ins cont'd.**

2. Install a 110 volt GFI protected electrical outlet per local code at the location shown in Figure 2.
3. Install six 3/8" wall anchors with a minimum pull-out rating of 1,000 lbs. (supplied by installer) at the locations marked in Figure 2.
4. OPTIONAL TRAP COVER: Install one 1/4" wall anchor at the location marked in Figure 2.

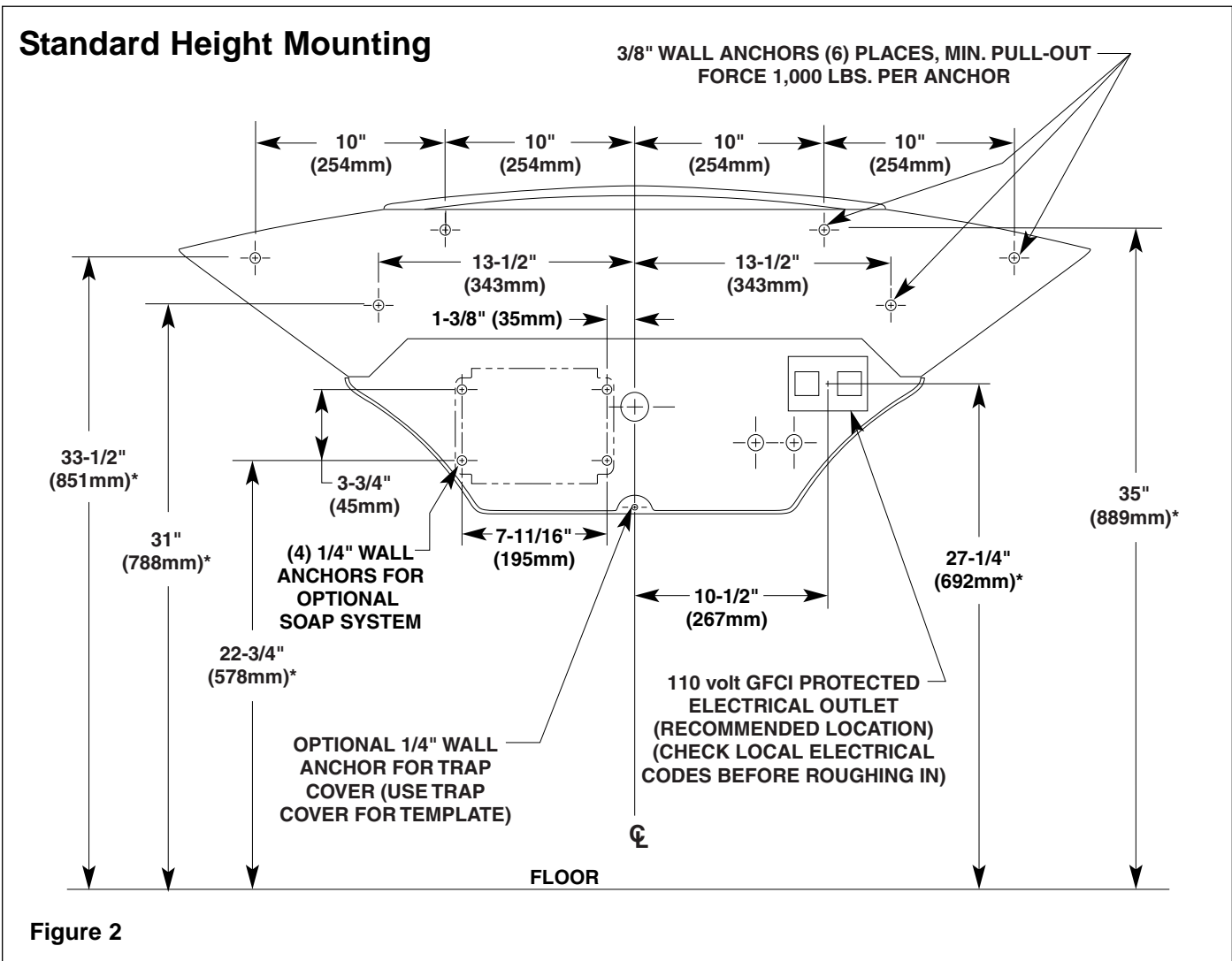


Figure 2

* ADJUSTMENTS TO VERTICAL DIMENSIONS FOR VARIOUS RIM HEIGHTS		
Rim Height	Application	Adjustment
34"	Adult Height ADA, TAS Adult Height TAS Adult Height	None, as shown
32"	TAS Ages 11 thru 14 or 15, Grades 6 thru 8 or 9	Subtract 2"
30"	TAS Ages 4 thru 10 or 11, Grades: Pre-K thru 5 or 6 & Proposed Juvenile Height ADA	Subtract 4"
24"	Preschool (required by some local codes)	Subtract 10"

## Installation Instructions *continued* . . .

### Step 3: Install wall anchors

1. Measure and mark the centerline of the lavatory system on the wall.
3. Using cardboard template 186-1311 provided, mark six mounting holes on wall.
3. Drill holes in the wall and install the six 3/8" wall anchors with a minimum pull-out rating of 1,000 lbs. (supplied by installer) at the locations shown in Figure 1 on page 3.

*NOTE: The six 3/8" anchors will be used to mount the Crescent® bowl to the wall.*

4. OPTIONAL TRAP COVER: Install the 1/4" wall anchor for the Trap Cover (supplied by installer) as shown on Figure 1. Use Trap Cover to locate.
5. OPTIONAL SOAP TANK: Install 1/4" anchors for soap tank installation (refer to soap system installation manual #215-1583 for further instructions).

### Step 4: Remove cover from bowl assembly

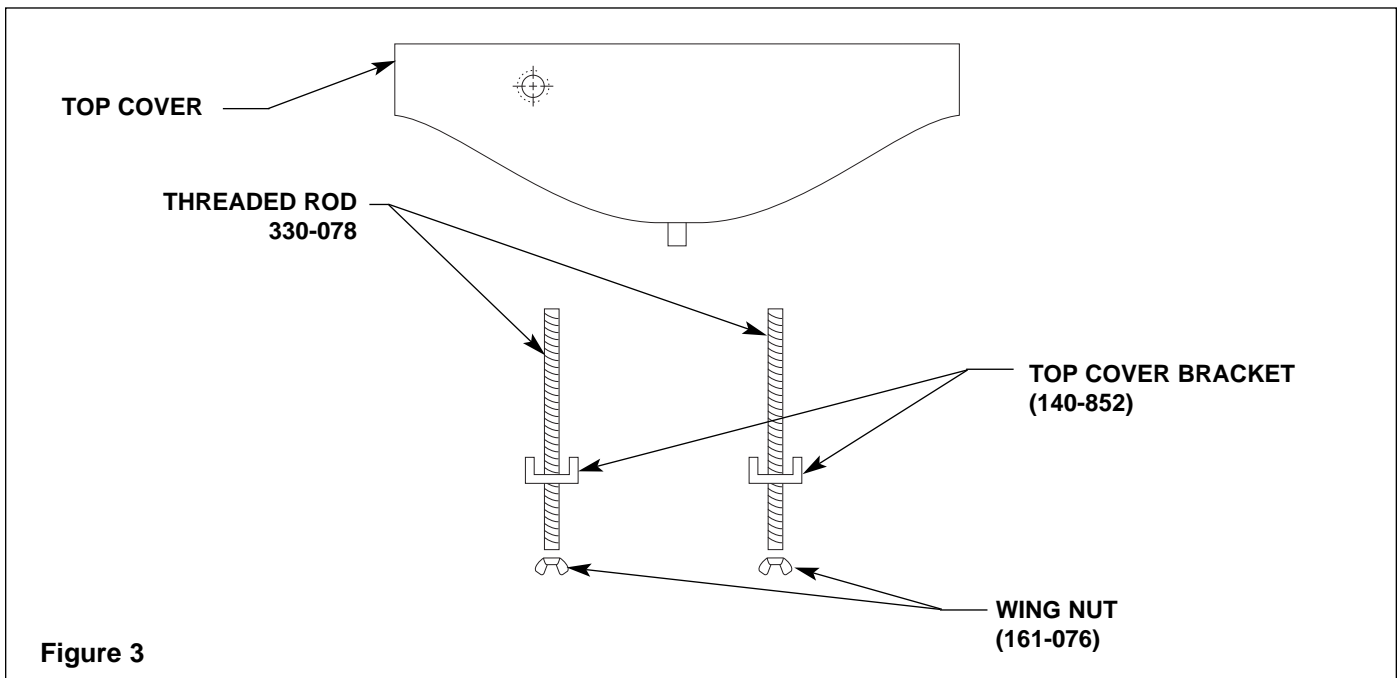
1. Unpack the bowl and cover assembly.
2. Remove the wing nuts on the two threaded rods which retain the cover (see Figure 3).
3. Remove the top cover bracket.
4. Lift the cover off and set aside.

### Step 5: Mount the bowl to the wall



**WARNING: Do not attempt to install the bowl by yourself. To prevent serious injury, install the bowl with the assistance of another person and always use appropriate lifting procedures.**

1. With someone to assist you, move the bowl assembly to the wall using appropriate lifting procedures, secure the bowl to the wall.
2. Level the bowl assembly with shims if necessary and then tighten anchors.



## Installation Instructions *continued* . . .

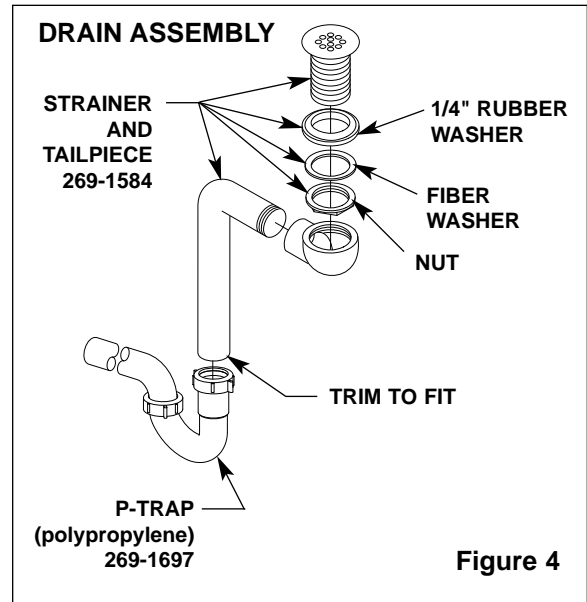
### Step 6: Install drain spud

1. Assemble the P-trap by (supplied by installer) connecting the 1-1/2" tubular pipe to the 1-1/4" tailpiece and to the 1-1/2" drain pipe stubbed out of the wall (see Figure 4).

### Step 7: Connecting Supply

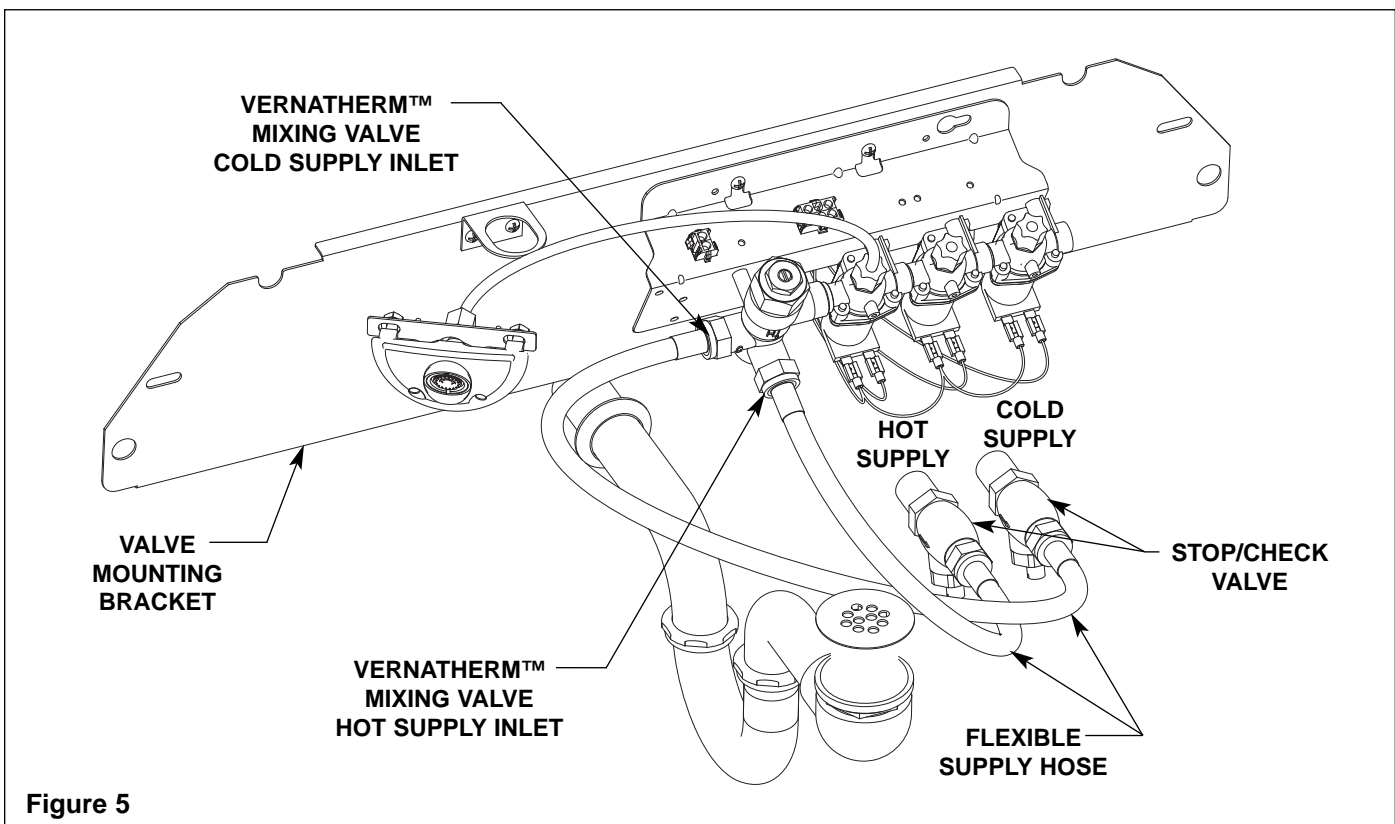
1. Connect the 1/2" NPT female end of the stop/check valves to the rough-ins.
2. Connect one end of the supply hoses to the stop/check valves.

**IMPORTANT:** The hose attached to the hot water inlet of the Vernatherm™ TMV valve must be connected to the hot water rough-in.



3. Connect the other end of the supply hoses to the Vernatherm™ TMV valve assembly.
4. OPTIONAL SINGLE-TEMPERED SUPPLY: Attach the stop/check valve to the 1/2" tempered supply line. Connect the stop/check valve to the solenoid valve with the flexible supply hose.

*NOTE: The thermostatic mixing valve requires at least 115° F water from the hot water side for proper operation. As with all lavatories, there will be a delay in obtaining warm water. If the hot water is too far away from the washfountain, a circulating pump may be required.*



## Installation Instructions *continued . . .*

### Step 8: Electrical and supply connections

*NOTE: Refer to Figure 6a below for CRS-2/IR or Figure 6b on page 8 for CRS-3/IR.*

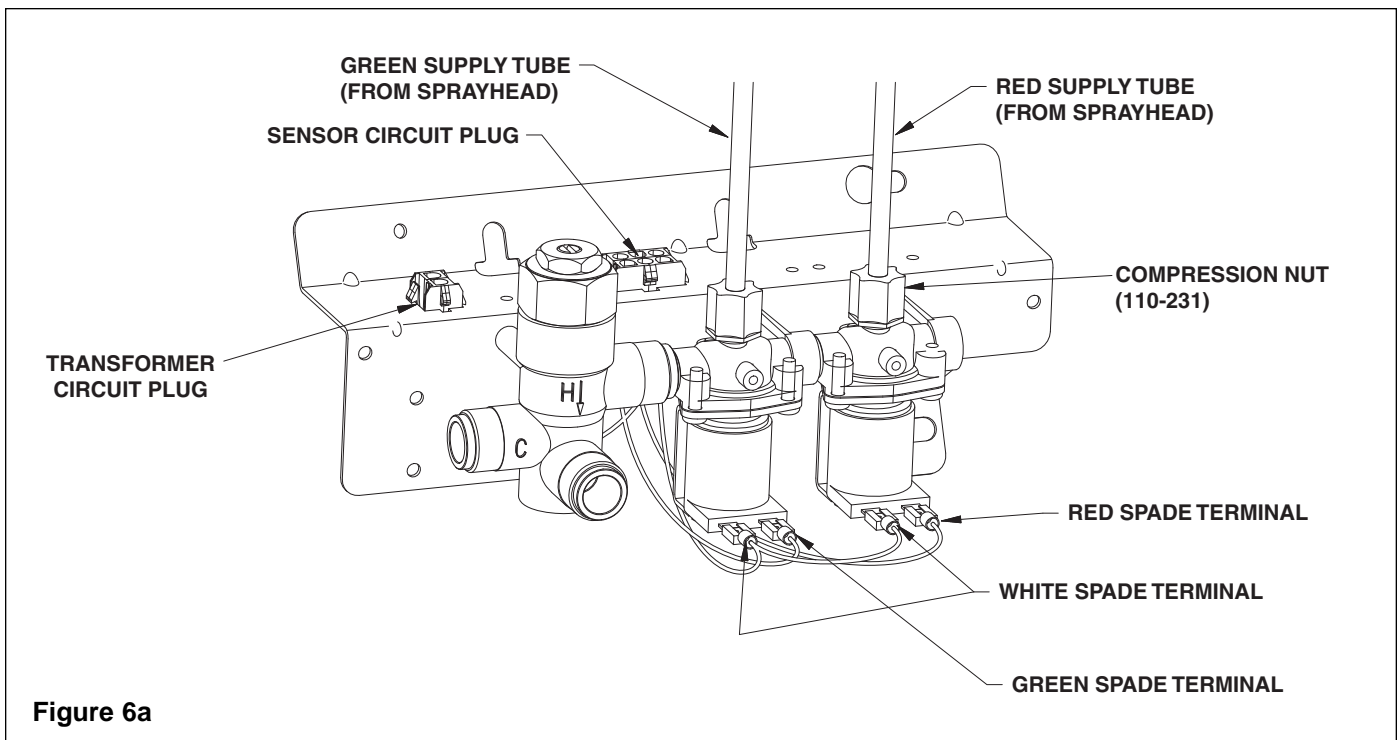
- ⚠ WARNING:** The Adaptive® Infrared control must be connected with a 24 VAC Class II transformer. Connections to 110 VAC will result in damage to the electronics and can cause personal injury.
- ⚠ CAUTION:** Connection of leads other than shown may cause permanent damage to the sensor.

*NOTE: Compliance and conformity to local codes and ordinance is the responsibility of the installer.*

*NOTE: The solenoid valves have been pre-wired.*

1. Snap the sensor circuit plug from the bowl into the solenoid circuit plug located on the valve bracket.
2. Snap the transformer circuit plug into the female transformer circuit plug located on the valve bracket.
3. Turn on the water supply to the Express® Crescent® Lavatory System and check for leaks.
4. Plug in the transformer and wait at least two minutes to allow the sensor to adapt to the environment.
5. Pass your hand in front of each station's sensor until all the air is purged from the lines and water is flowing smoothly.

*NOTE: The Vernatherm mixing valve is **NOT** factory preset. Upon installation, the temperature of this valve must be checked and adjusted to ensure delivery of a safe water temperature. **Water in excess of 110°F (43°C) may cause scalding.***



## Installation Instructions *continued* . . .

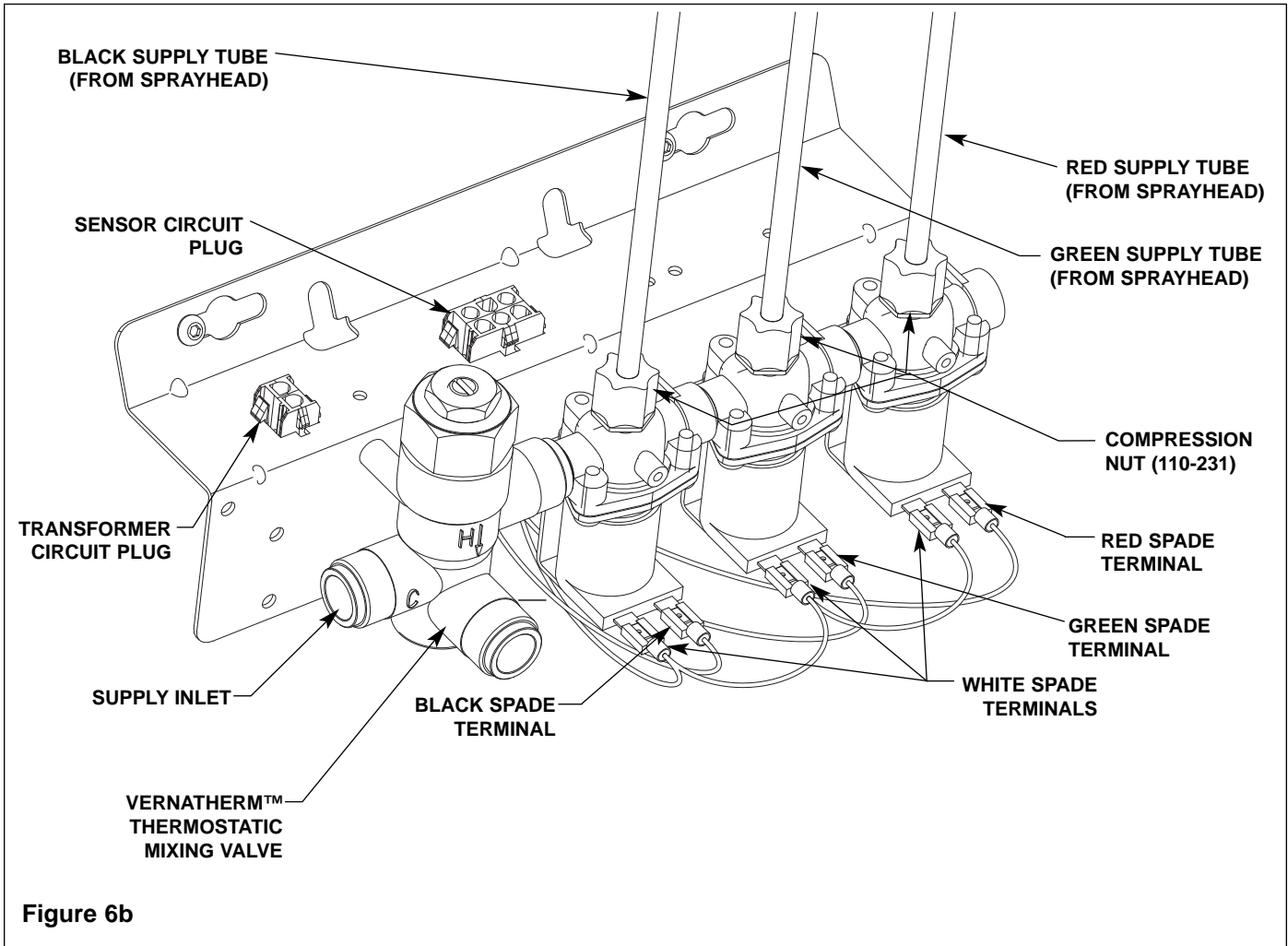


Figure 6b

## Installation Instructions *continued* . . .

### Step 8: Electrical and supply connections, cont'd.

6. Check the temperature when approximately 1.0 GPM water flow is reached and adjust if necessary (the range of the valve is 95°F–115°F (35°C–43°C). To adjust the temperature, follow the procedure below:
  - Loosen temperature locking nut with wrench.
  - Using a blade screwdriver, turn the adjustment stem **counterclockwise** to **increase** the temperature or **clockwise** to **decrease** the temperature (see Figure 7).
  - Once desired temperature is reached, tighten nut to prevent temperature change.

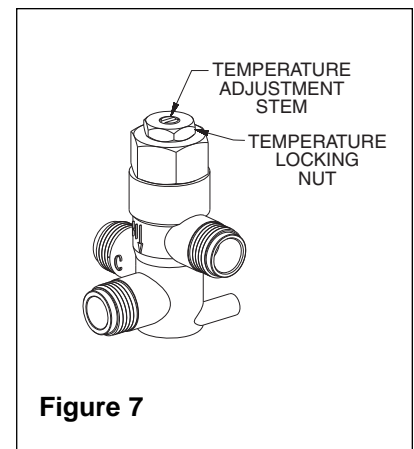


Figure 7



## Installation Instructions *continued* . . .


### Step 9: Install the Optional Soap Dispenser

*For Express® Crescent® Lavatory System units with optional soap dispensers, see 215-1583.*

### Step 10: Install the top cover

1. Carefully place the top cover on top of the lavatory system bowl.
2. Install the threaded rods into the holes on the bottom of the top cover (see Figure 3 on page 5).
3. Slide the anchor plate onto the threaded rods and secure anchor plate against bowl using the wing nuts provided.
4. OPTIONAL SOAP DISPENSER: Install soap filler assembly in mounting bracket previously installed. Tighten the optional soap filler cap nut with a spanner wrench.


## Cleaning and Maintenance Instructions

 **IMPORTANT:** Strong alkaline or acid-based chemicals and cleansers should not be used to clean the Crescent®. If these chemicals come in contact with the Terreon® surface, wipe off the surface immediately and flush with soapy water.

### Terreon® and trap cover maintenance

The bowl and top cover are made of Terreon®, a densified solid surface material composed of an acrylic modified polyester resin. Terreon® is resistant to chemicals, stains, burns and impact. Surface damage can easily be repairable with everyday cleaners or fine grit abrasives. The trap cover is made of vacuum-formed ABS plastic and will not chip, peel or flake. With regular cleaning, your Express® Crescent® will provide years of dependable service.

### Trap cover cleaning

 **IMPORTANT:** Do not use abrasive cleansers to clean the trap cover. Abrasive cleaners can mar the surface.

- **Daily cleaning:** Wipe the trap cover with a wet cloth, then rinse with water and wipe dry.
- **Weekly cleaning:** Give the trap cover a thorough cleaning with a liquid tub and tile cleaner to remove soil and maintain the glossy finish.
- **Graffiti/Vandalism:** If vandals create markings on the trap cover, Bradley recommends using Motsenbocker's LIFT OFF® to remove ink and spray paint. Remover #3 is for ink and markers, and Remover #4 is for spray paint. Motsenbocker's LIFT OFF® can be ordered through Sanitary Maintenance Service, Inc. (call 1-800-451-5523, ext. 425, or visit [www.sanitarymaintenance.com/product.htm](http://www.sanitarymaintenance.com/product.htm) for ordering information). After cleaning with LIFT OFF®, give the trap cover a final thorough cleaning with a liquid tub and tile cleaner to remove soil and maintain the glossy finish.

**MOTSENBOCKER'S  
LIFT OFF®**

### Bowl and cover cleaning

- **Daily cleaning:** Wipe the unit with a damp cloth and then wipe dry.
- **Weekly cleaning:** Wipe the surface with a damp cloth and a household liquid detergent. Stubborn stains can be removed as follows:
  1. Using a #7448 Scotch-Brite™ pad, scrub with an abrasive cleanser (such as Ajax®, Comet® or Soft Scrub®) and water.
  2. Clean thoroughly with soapy water and allow to dry.
- **Scorch marks:** Although Terreon® will not burn, a lit cigarette in contact with Terreon® could leave a scorch mark. Scorch marks can be removed with either an abrasive cleaner or by buffing with a #7448 Scotch-Brite™ pad.
- **Repair kit:** In the unlikely event your Terreon® surface becomes damaged, it can easily and inexpensively be repaired. Contact your Bradley representative to order a repair kit and be sure to specify color when ordering.

*NOTE: Use of brand names is intended only to indicate a type of cleaner. This does not constitute an endorsement, nor does the omission of any brand name cleaner imply its inadequacy. Many products named are regional in distribution and can be found in local supermarkets, department and hardware stores or through your cleaning service.*

*NOTE: It is emphasized that all products should be used in strict accordance with package instructions.*

## Solenoid Valve Troubleshooting



**CAUTION:** Turn off water supplies to unit before troubleshooting.

**Problem:** An individual operating station fails to shut off and drips.

**Cause:** There is debris trapped between the diaphragm and the valve seat.

**Solution:** Remove debris between diaphragm and the valve seat.

1. Remove the three #8 Phillips-head screws that hold the solenoid valve assembly together. Be careful not to lose the armature or spring (see Figure 8 on page 12).
2. Remove the diaphragm. Remove any particles that have been trapped between the diaphragm and the valve seat. Rinse off the diaphragm and inspect for damage. Make sure the center orifice and both small side orifices are open.
3. Reassemble in reverse order, being careful not to overtighten the Phillips-head screws or you may crack the plastic valve body. Tighten until the armature plate makes contact with the plastic body.
4. Reconnect the wiring per diagram on page 7 (for CRS-2/IR) or page 8 (for CRS-3/IR).

**Problem:** An individual operating station fails to turn on.

**Cause:** A failed coil for the valve or loose electrical connection to the terminal.

**Solution:** Test the station to determine cause.

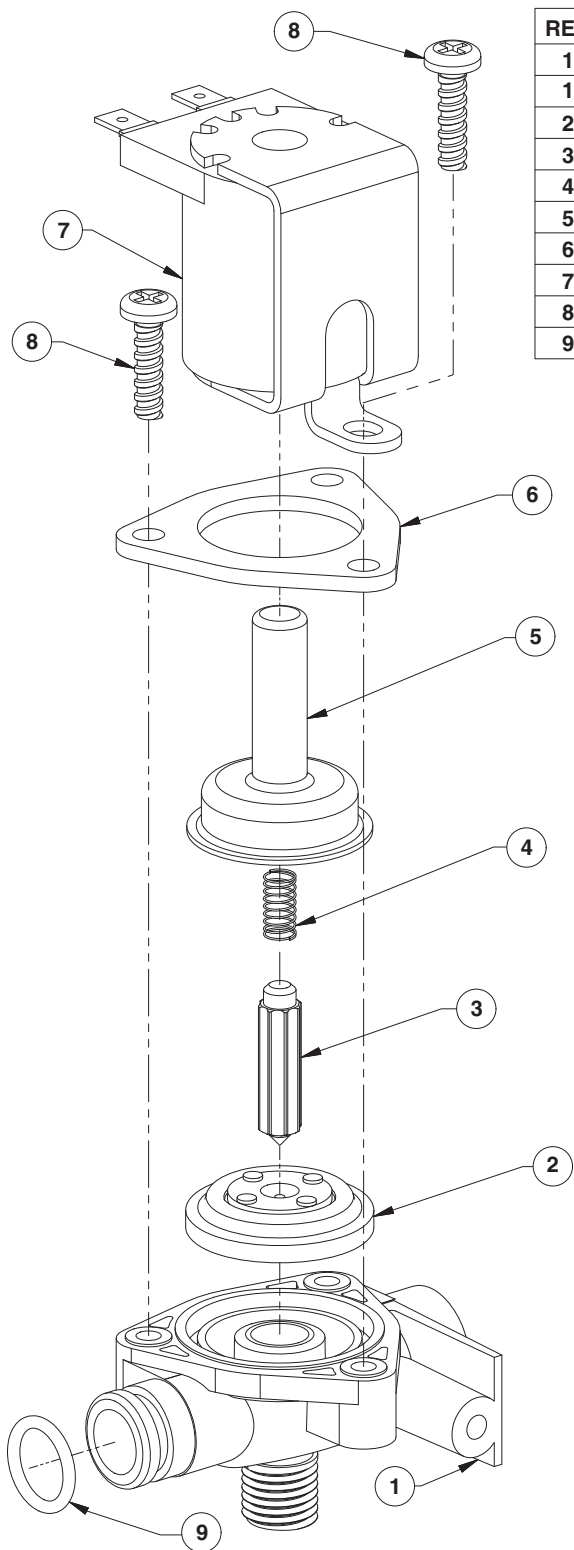
1. Disconnect the wires from the coil of an adjacent valve. Disconnect the wires from the problem valve and reconnect to the adjacent valve.
2. Turn on electrical and water supplies to the unit. Pass your hand in front of the sensor of the problem station, and the adjacent station should turn on.

If the adjacent station turns on and cycles normally, replace the coil on the problem valve.

If the adjacent valve fails to turn on, inspect the wires from the sensor cable and do the following:

- make sure there are no breaks and that the fully insulated disconnect terminals are firmly crimped in place;
- turn off the electrical and water supplies;
- reconnect to the adjacent valve and turn on the water supplies to the unit;
- pass your hand in front of the sensor. If the station still fails to turn on, replace the sensor.

## Solenoid Valve S07-067 (closed body) and S07-067A (thru body)



REF.	QTY.	PART NO.	DESCRIPTION
1	1	118-307	VALVE BODY, 1/4" CLOSED
1	1	118-307A	VALVE BODY, 1/4" THRU
2	1	269-983	DIAPHRAGM
3	1	269-577	ARMATURE
4	1	269-578	SPRING
5	1	269-1729	ARMATURE HOUSING
6	1	269-1730	CLAMP, ARMATURE HOUSING
7	1	269-579	COIL, SOLENOID VALVE
8	3	160-447	SCREW, #8 X 5/8
9	1	125-165	O-RING, #2-013

Figure 8

## 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.*

### Problem: Limited water flow

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

1. Remove and clean strainer (see Figure 9 or 10 on page 14). If strainer needs to be replaced, order Bradley part number 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 (see Figure 9 on Page 14).
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 (S01-524)

### Repair Kit S65-259

Item	Qty	Description
5	1	Thermostat
7	1	O-Ring
8	1	O-Ring

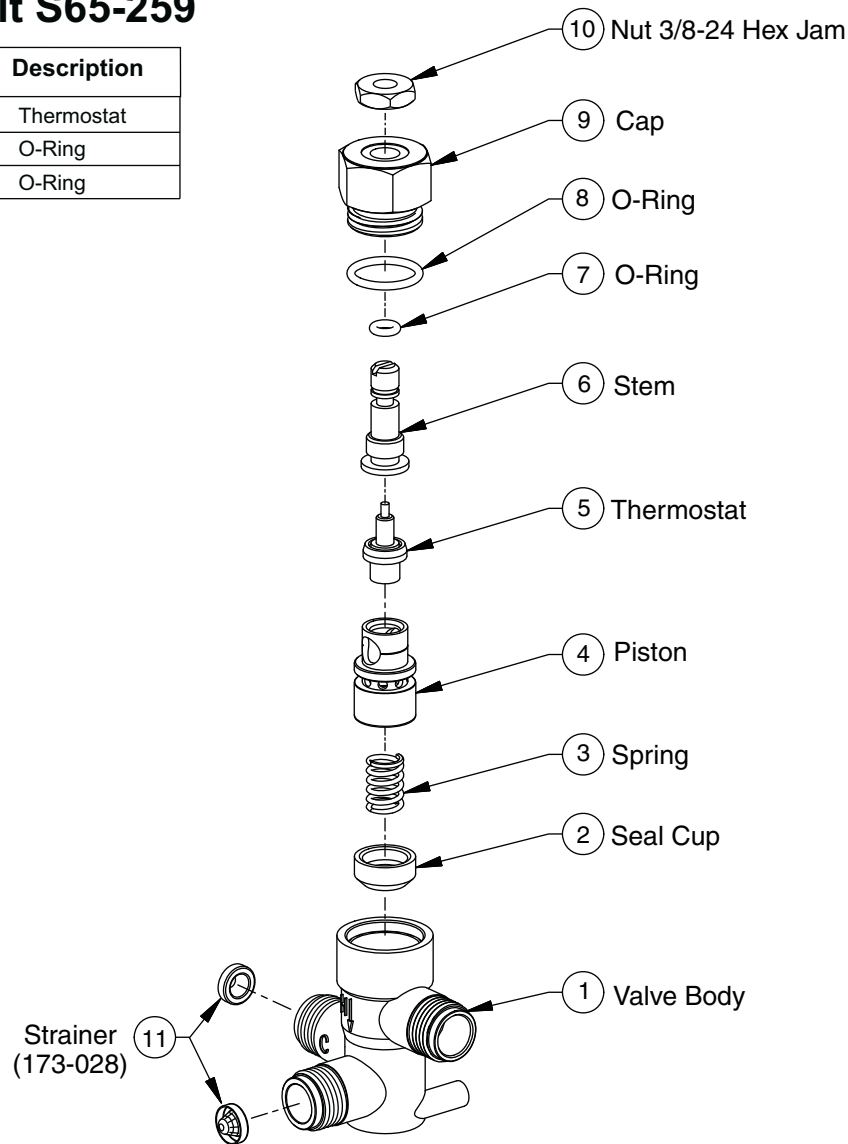
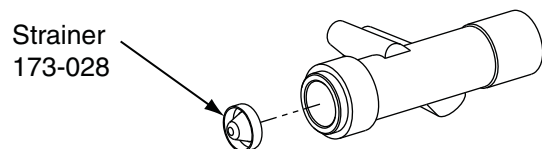


Figure 9

### Tempered Line Adapter Assembly (S39-685) Option

Figure 10



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