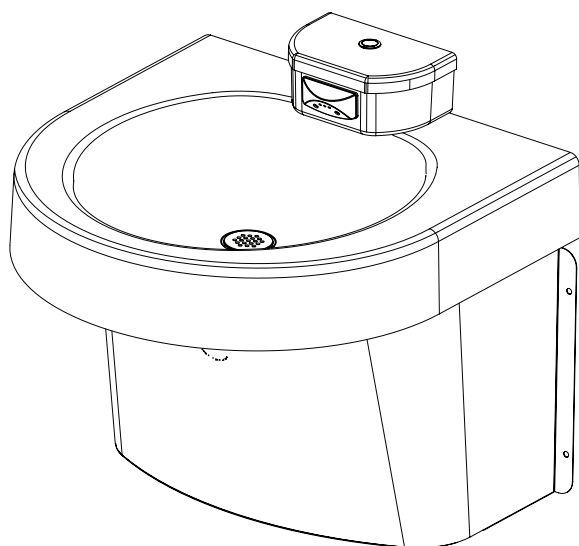
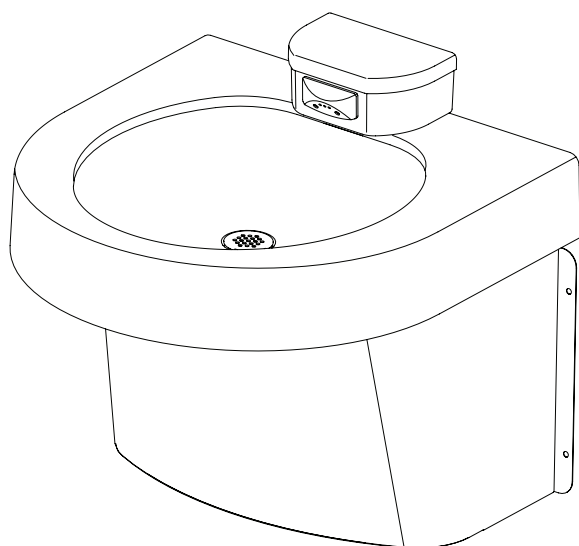


# Installation

## HSL1

**Ligature Resistant Single-Station Lavatory  
with Infrared, TouchTime or Battery Infrared**



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## WARNING

Make sure that all water supply lines have been flushed and then completely turned off before beginning installation. Debris in supply lines can cause valves to malfunction.

Turn OFF electrical power to the electrical outlets, then unplug all electrical units prior to installation. Electrical power **MUST** remain off until installation is complete.

Installer's hardware must be appropriate for wall construction. Wall anchors must have a minimum pull-out rating of 1,000 pounds.

## IMPORTANT

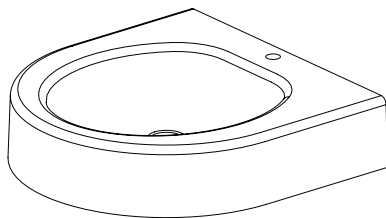
Read this entire installation manual to ensure proper installation. When finished with the installation, file this manual with the owner or maintenance department. Compliance and conformity to local codes and ordinances is the responsibility of the installer. Product warranties may be found under "Products" on our Web site at [www.bradleycorp.com](http://www.bradleycorp.com).

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.

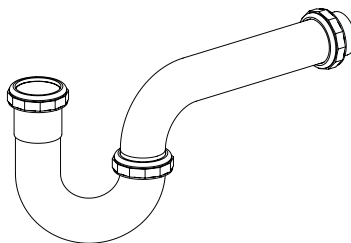
## Supplies Required

- 1/2" nominal copper tubing for hot and cold supplies
- 1-1/2" NPT drain piping
- 110-volt GFCI protected electrical outlet for 110–12 VDC plug-in transformer (for infrared and TouchTime)
- Six-volt lithium battery (for battery infrared)
- Six 1/4" wall anchors (used with optional surface-mounted bracket only) or in-wall carrier by others such as Josam model 17100-202 or equivalent
- Two #10 x 1-1/2" long screws and anchors (for battery infrared with surface-mounted bracket only)
- FOR STAINLESS STEEL OR HIGH IMPACT POLYMER TRAP COVER: #10 wall anchors, tamper resistant button screws with security pin and washers suitable for wall construction. (4) required for stainless steel trap cover. (6) required for polymer trap cover.
- OPTIONAL: 240/208-volt or 277-volt electrical hook-up for electric tankless water heater
- Security sealant, if required

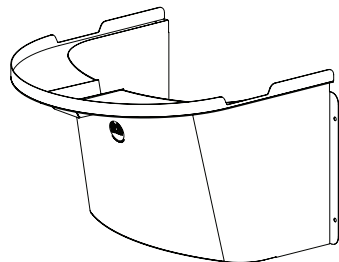
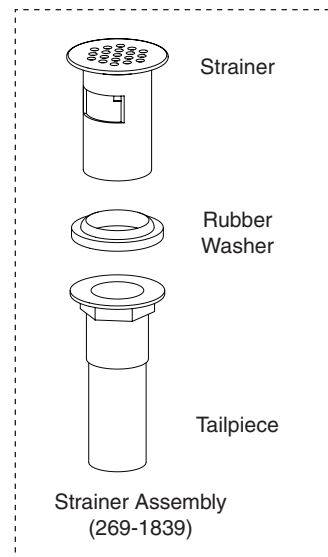
## HSL1 – Components



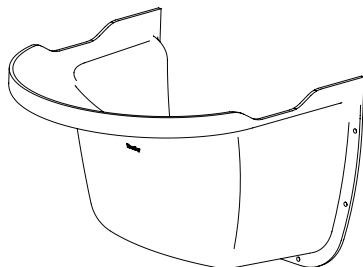
HSL1-BOWL-ONLY (call your Bradley Representative for part number)



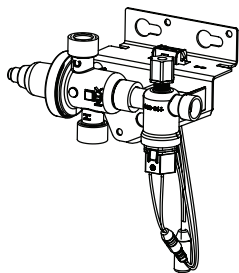
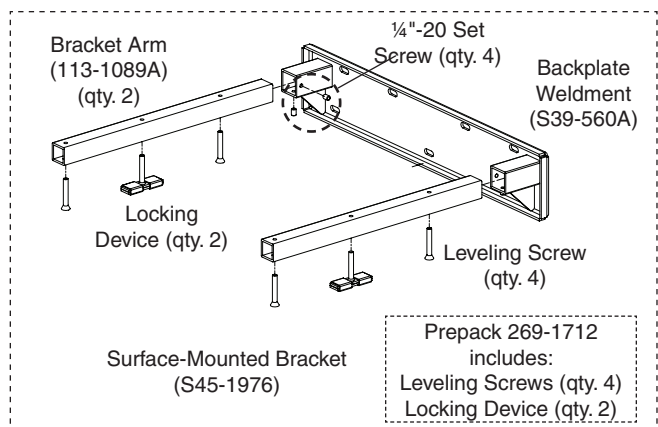
Standard PVC P-Trap (269-1697)  
Optional Chrome-Plated Brass P-trap (S29-094)



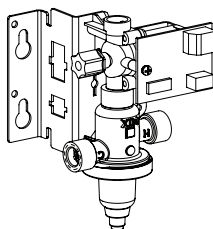
Stainless Steel Trap Cover  
(S39-803)



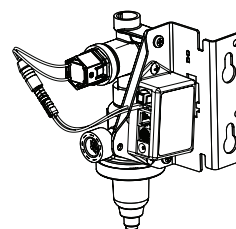
High Impact Polymer Trap Cover  
Gray (186-1874)  
Putty (186-1874A)  
Coal (186-1874B)



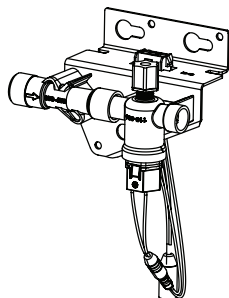
Navigator Mixing Valve  
for Infrared Activation  
(S45-3693)



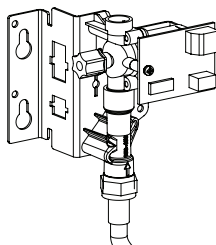
Navigator Mixing Valve for BIR3 Activation  
(S08-1431TMA)



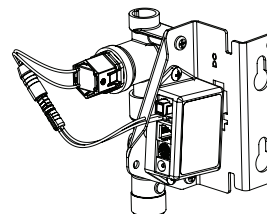
Navigator Mixing Valve  
for TouchTime Activation  
(S08-2411TMA)



Tempered Line  
for Infrared Activation  
(S45-3692)



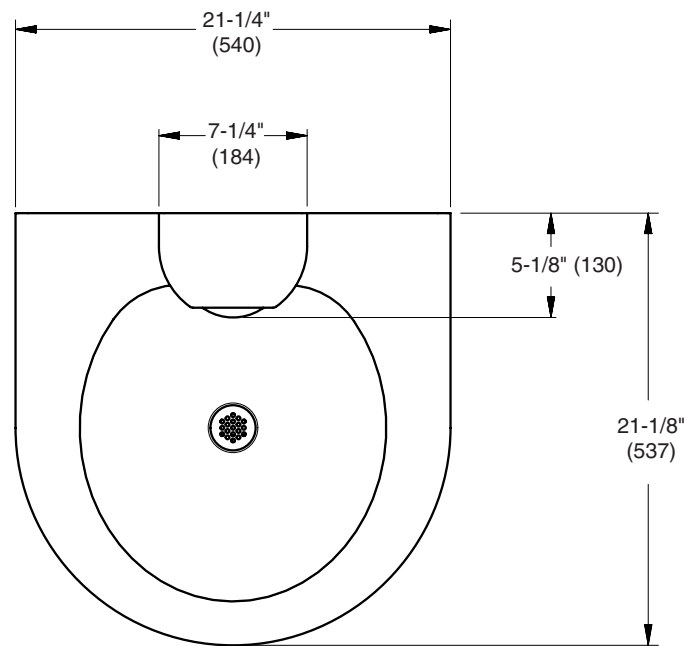
Tempered Line for BIR3 Activation  
(S08-1431TL)



Tempered Line  
for TouchTime Activation  
(S08-2411TL)

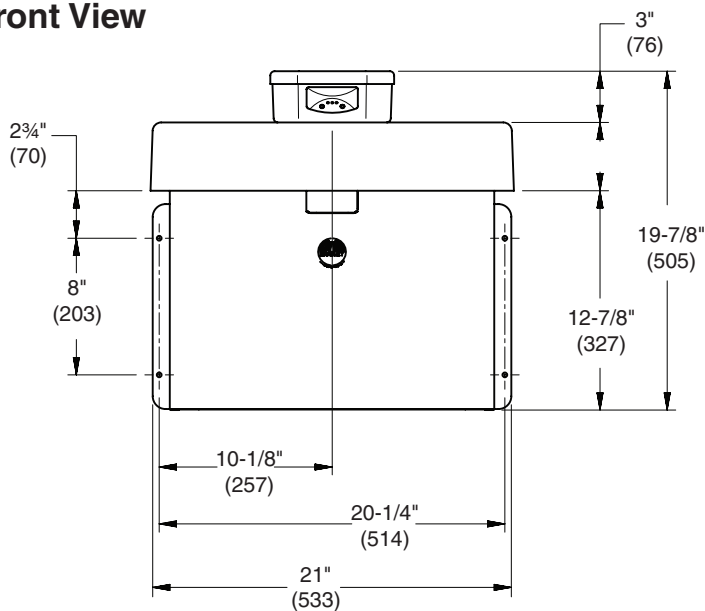
# HSL1 – Dimensions

## Top View

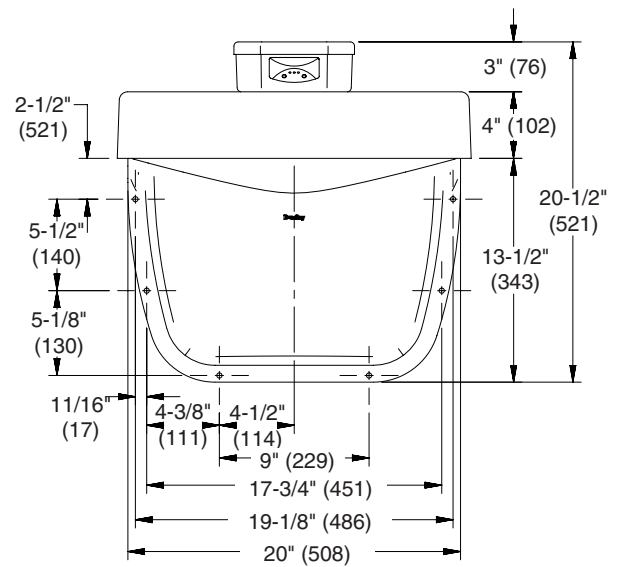


(mm)

## Front View



HSL1 with Optional Stainless Steel Trap Cover

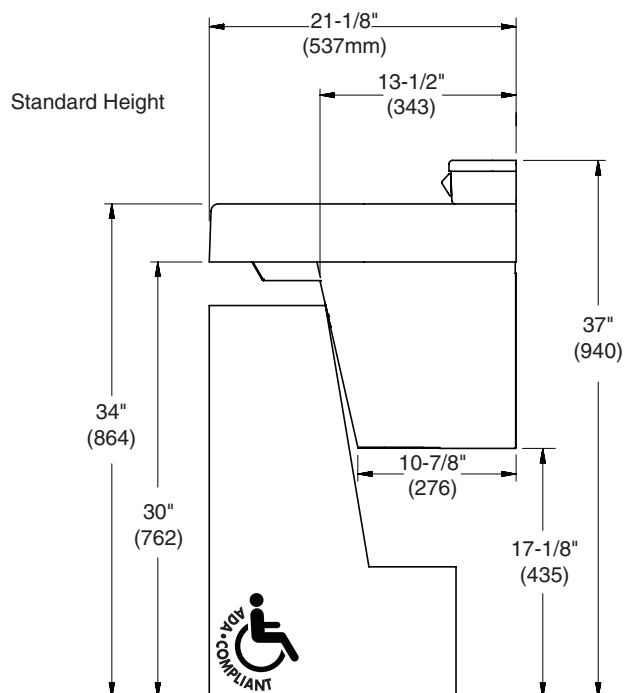


HSL1 with Optional Polymer Trap Cover

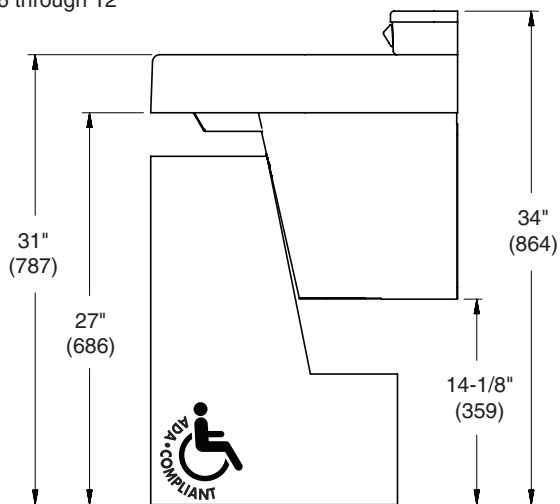
# HSL1 – Dimensions

(mm)

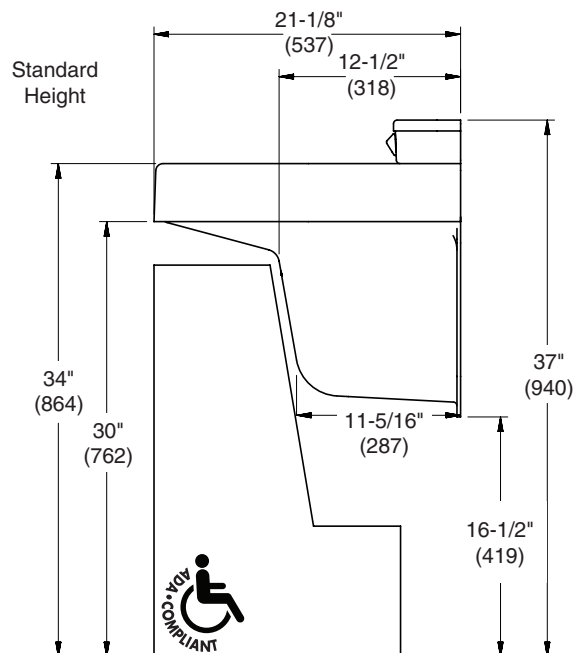
## Side View - Stainless Steel Trap Cover



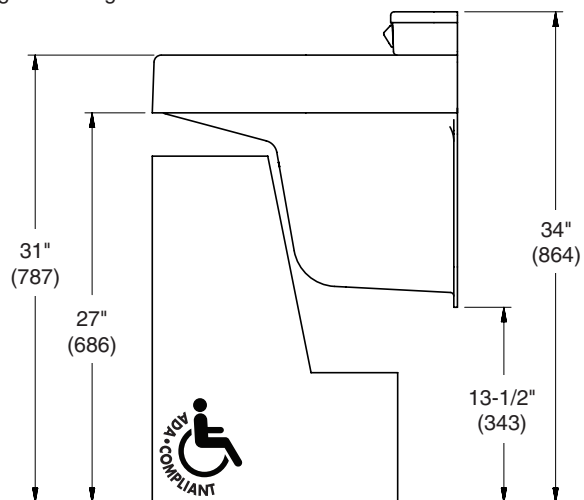
Juvenile Height:  
Ages 6 through 12



## Side View - Polymer Trap Cover



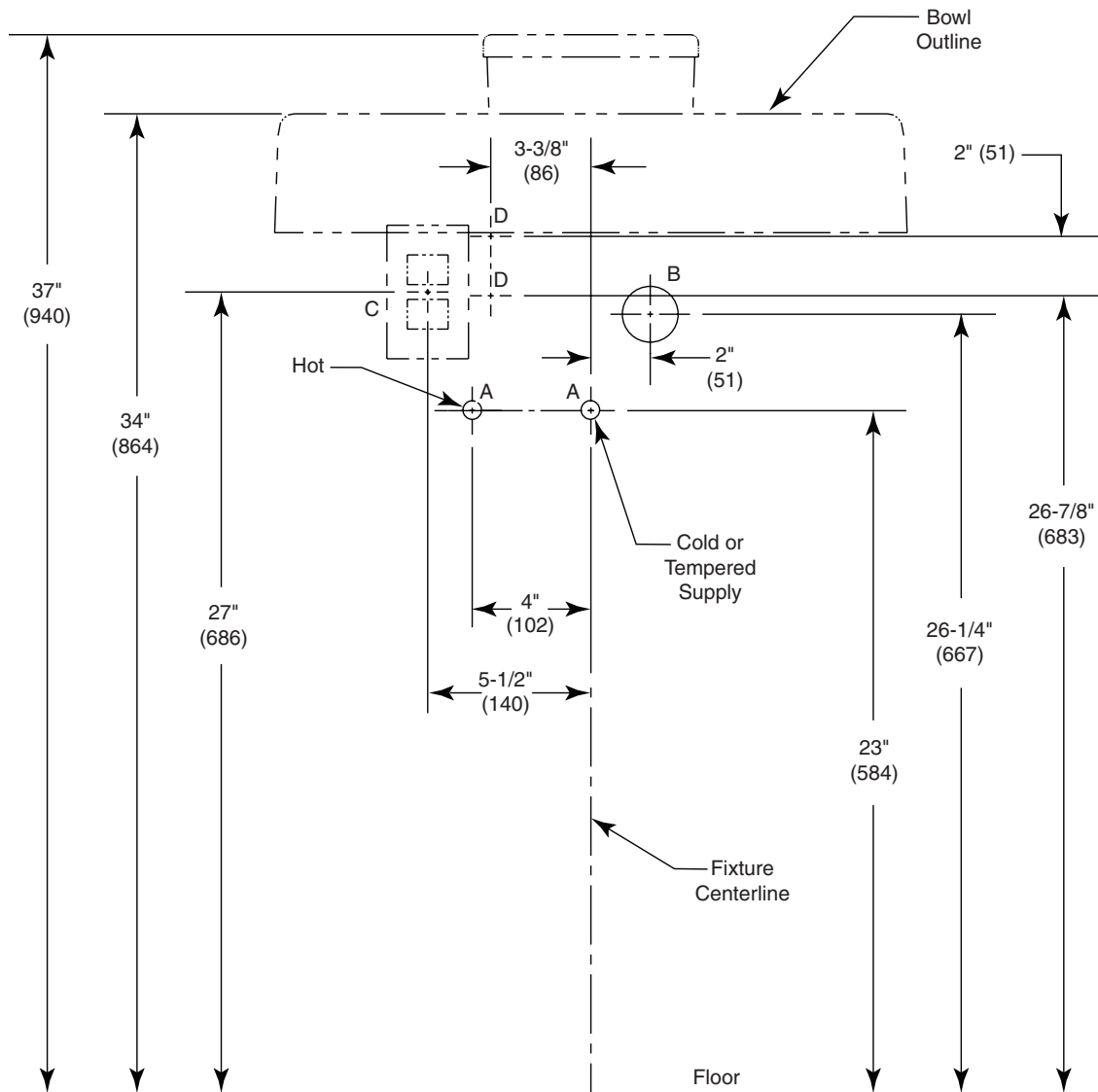
Juvenile Height:  
Ages 6 through 12



# 1 Rough-Ins

**⚠ WARNING** After installation, all joints require security sealant (by installer) to eliminate gaps (if present) between wall, trap cover and fixture.

(mm)



Rim Height	Vertical Height Adjustments A – E	Fixture Style
34"	None	Standard Height
31"	Subtract 3"	Juvenile Height

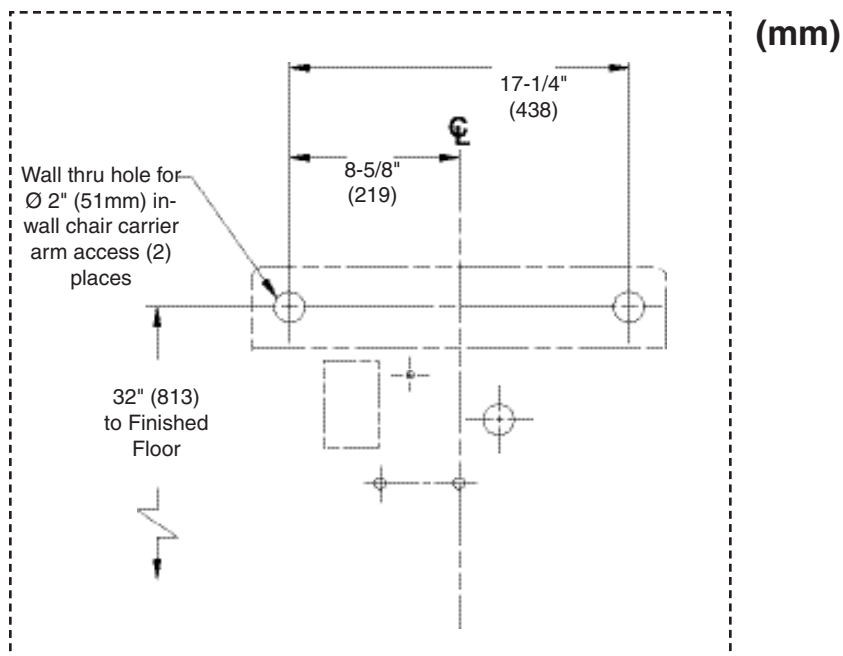
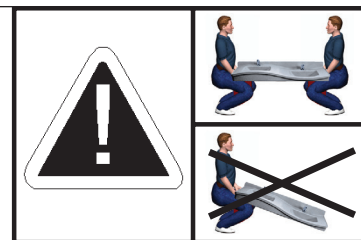
Code	Description	Qty.
A	½" Nominal Copper Tubing for Hot/Cold Supplies, Stub-Out 2" from Wall	2
B	1½" NPT Drain, Stub-Out 2" from Wall	1
C	110V GFCI Protected Electrical Outlet. IR Only	1
D	#10 Fasteners/Wall Anchors, Optional	2

## 2a Bowl Mounting with In-Wall Carrier



Before beginning bowl mounting, install an in-wall carrier (supplied by installer) to the wall following the manufacturer's instructions (ex. Josam 17100-202 or equivalent).

For standard height carrier mounting, do not exceed the recommended 32" distance from the floor.



**B**

Secure the bowl to the in-wall carrier from beneath the bowl by tightening down the locking device on each in-wall carrier arm.

**C**

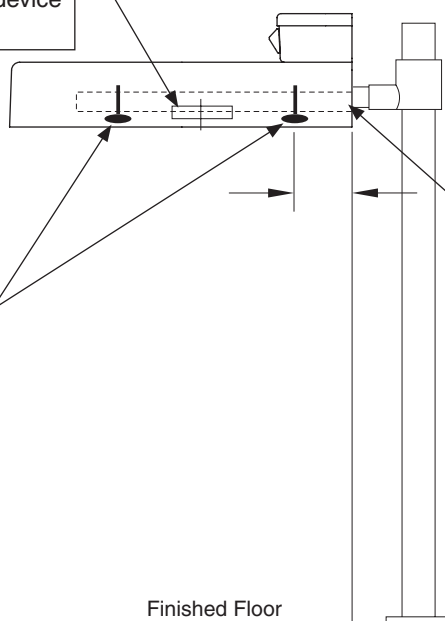
Adjust the two leveling screws from beneath the bowl on each in-wall carrier arm to level the bowl, if necessary.

Refer to the in-wall carrier instructions for additional mounting information.

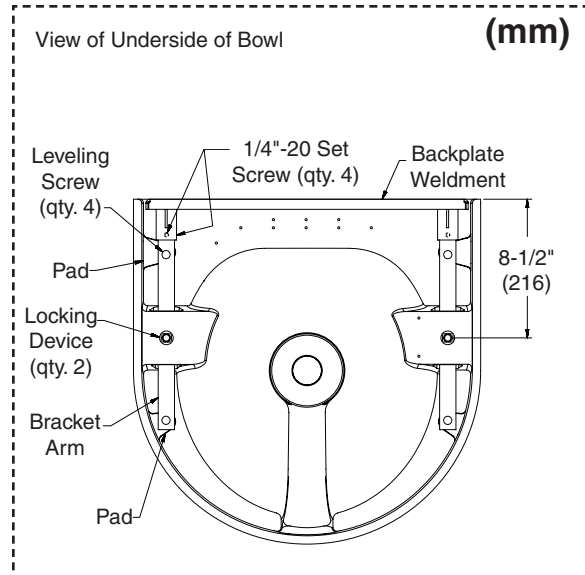
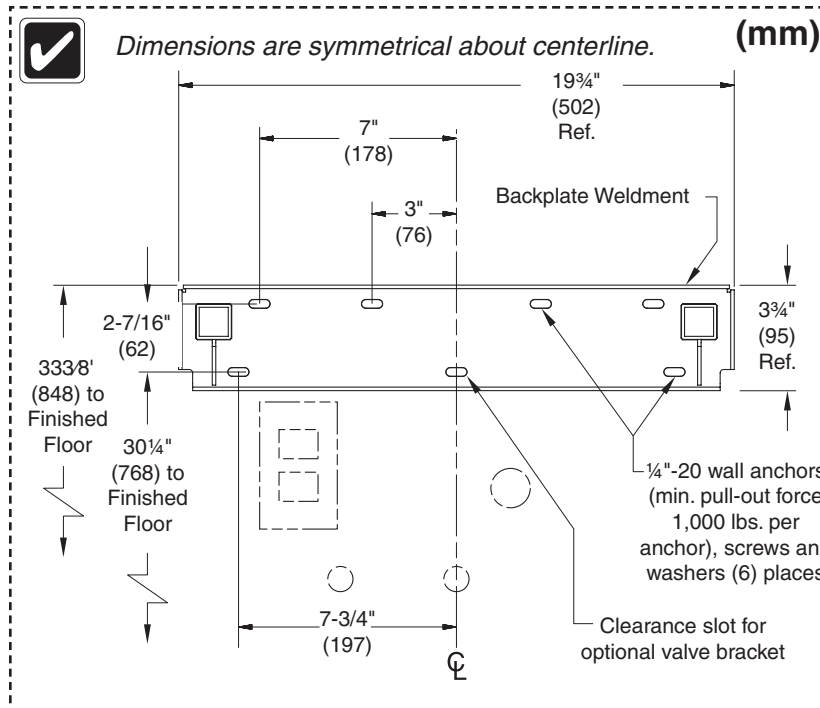
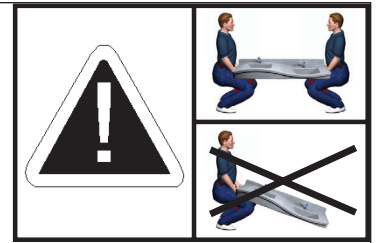
**A**

Slide the bowl onto the in-wall carrier so the back of the bowl and sprayhead are tight up against the finished wall. If the bowl and sprayhead cannot be fitted tightly to finished wall, pick-proof sealant can be used to fill the gap.

The bowl should be in far enough so that the holes in the underside of the bowl pads are aligned with the screws on the in-wall carrier arm (ref. 3¼" dim. from wall to leveling screw).

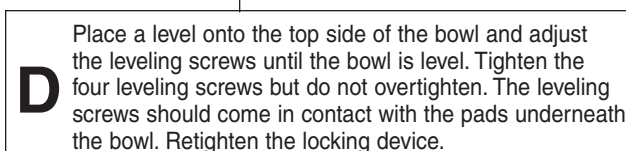
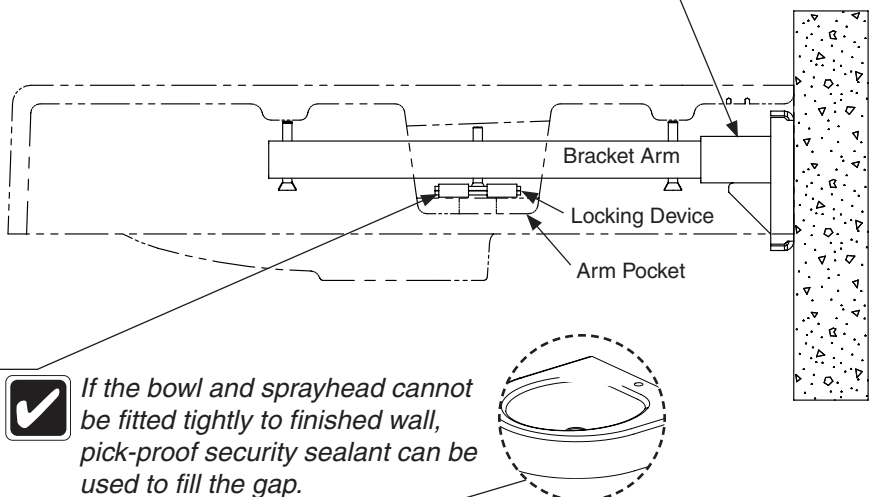
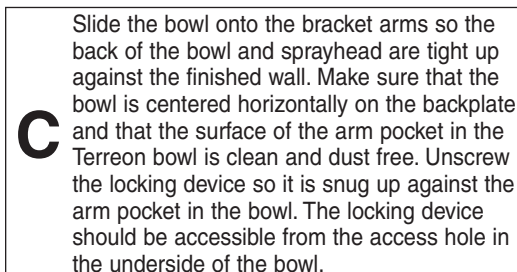
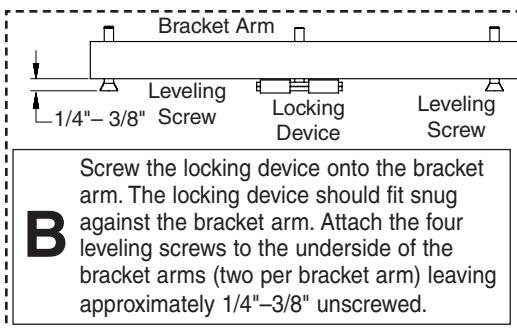
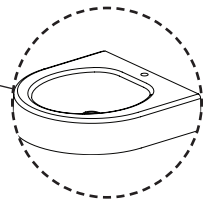


## 2b Bowl Mounting with Backplate Weldment



**A**

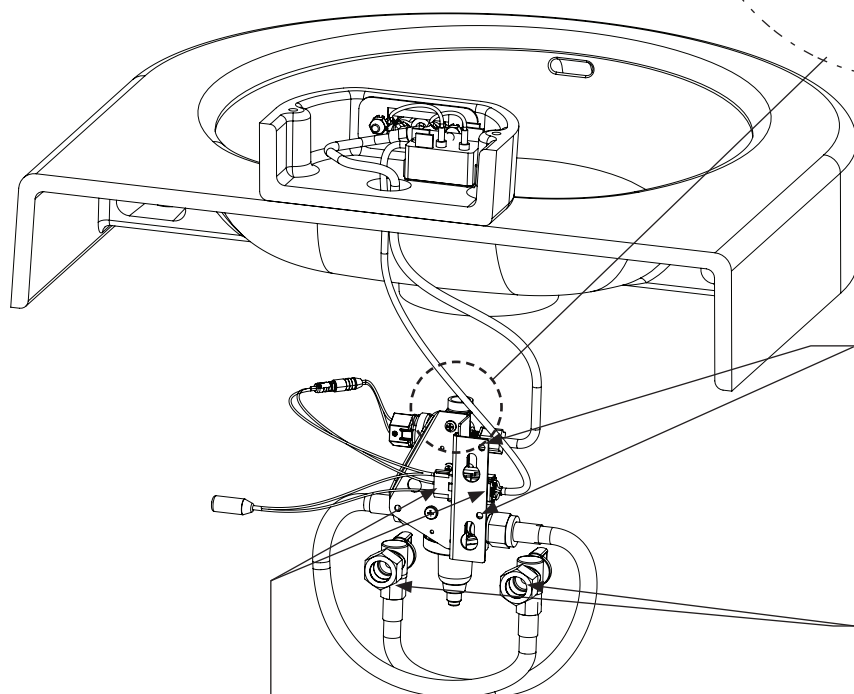
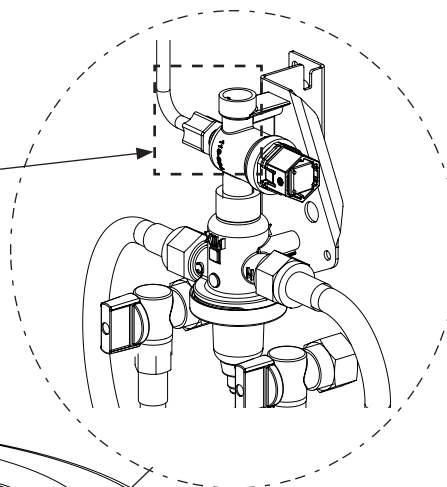
Slide the bracket arms into the collars on the backplate weldment. The locking device on the bracket arm should be located 8 1/2" from the base of the backplate weldment. Install four 1/4"-20 set screws into the backplate collar (two set screws per collar) and tighten the set screws.





### 3a Electronic Valve Installation - Adaptive Infrared

**C** Loosen the compression nut. Push the sprayhead supply tube firmly into the tube connector until it is fully seated. Retighten the compression nut (hand-tight and then two full turns with a wrench). Install four 1/4"-20 set screws into the backplate collar (two set screws per collar) and tighten the set screws.

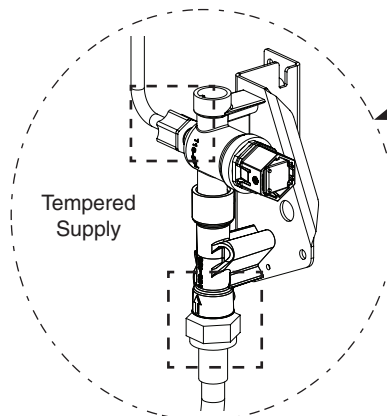


**E** Mount the valve bracket to the wall (using the two mounting holes on the bracket with two #10 screws and anchors provided by the installer).

**A** Attach the stops to the hot and cold water wall stub-outs.

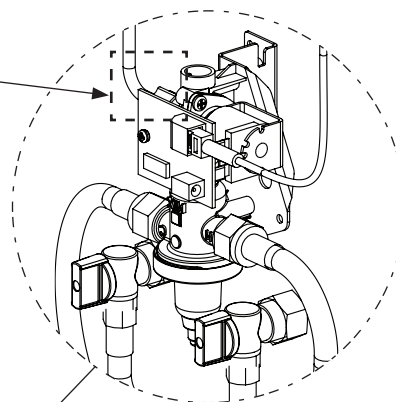
**D** Attach the male connector from the sensor module to the female connector of the harness. Attach male end from cartridge to female end of harness. Attach male end of power jack from harness into female end of power adapter.

**B** Attach the swivel end of the flexible hoses to the stop valves. Attach the other end of the hoses to the mixing valve, one on the hot side and one on the cold side. Tempered supply is similar but has only one stop valve and hose.



### 3b Electronic Valve Installation - Battery Infrared

**E** Loosen the compression nut. Push the sprayhead supply tube firmly into the tube connector until it is fully seated. Retighten the compression nut (hand-tight and then two full turns with a wrench).

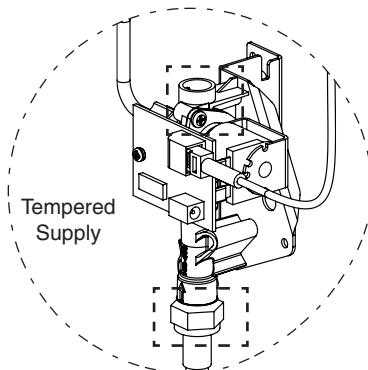


**F** Mount the valve bracket to the wall (using the two mounting holes on the bracket with two #10 screws and anchors provided by the installer).

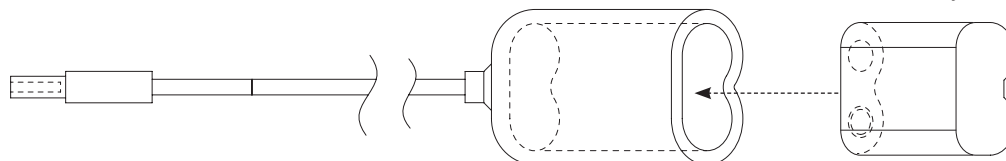
**A** Attach the stops to the hot and cold water wall stub-outs.

**B** Attach the swivel end of the flexible hoses to the stop valves. Attach the other end of the hoses to the mixing valve, one on the hot side and one on the cold side.  
Tempered supply is similar but has only one stop valve and hose.

**C** Snap the sensor plug from the sprayhead into the valve's circuit board.



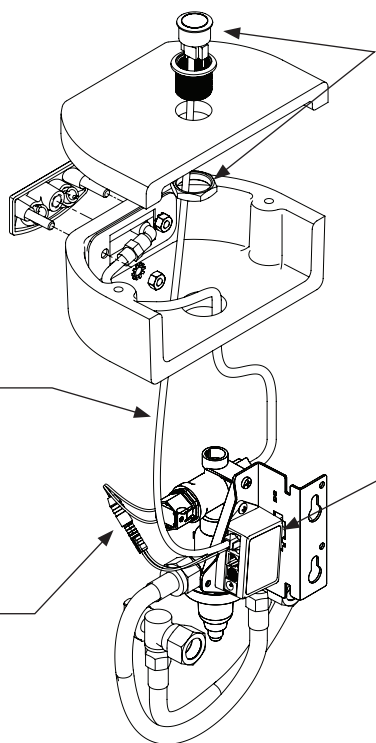
**D** Snap the battery cable plug into the female circuit board plug. Mount the battery holder in a convenient location using the hook-and-loop fastener provided.



### 3c Electronic Valve Installation - TouchTime



*Mechanical pushbutton shown, piezo similar.*



**A**

Mount the mechanical switch into adapter (153-490). Then insert adaptor through cover hole. Attach collar nut (110-093) onto the adapter on the underside of the cover. The plastic nut that comes with the switch is not used.



*Piezo switch (S83-369) mounts the same as mechanical switch but uses a different adapter (153-491).*

**B**

Connect the male end of the TouchTime button connector into the female port of the TouchTime Module.

**C**

Connect the female end of the TouchTime button connector into the male end of the connector from the valve cartridge.

**B**

Mount the TouchTime module to bracket using two 6-32 screws.

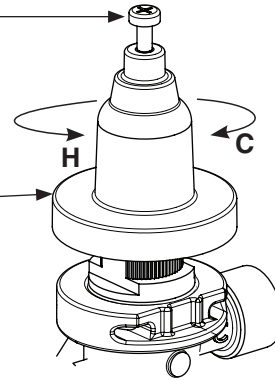
## 4 Adjust temperature with Water Running



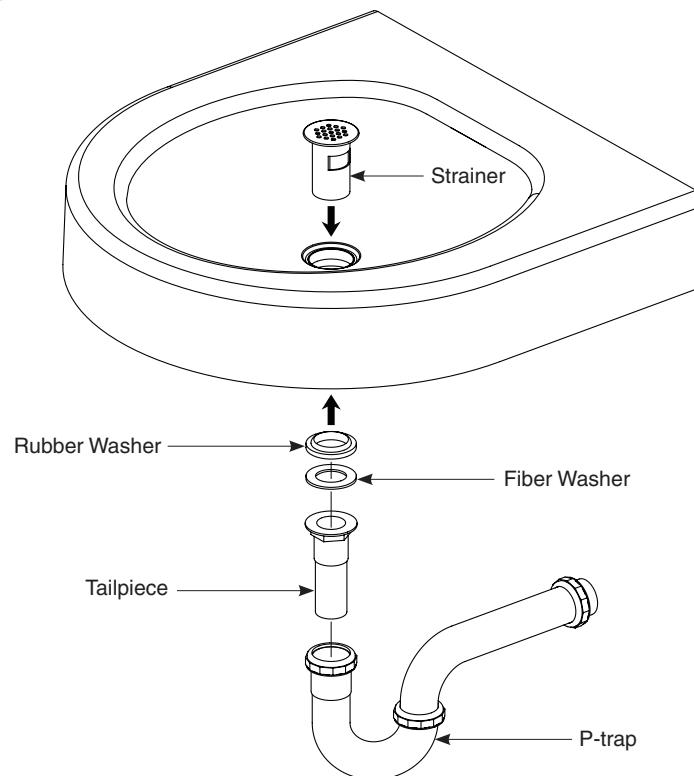
*This valve is NOT factory preset. Upon installation, the temperature of this valve must be checked and adjusted to ensure delivery of a safe water temperature. Water in excess of 110°F (43°C) may cause scalding.*

**A** Loosen Cap Screw about 1/4" (4-6 turns) and lift up cover (do not remove).

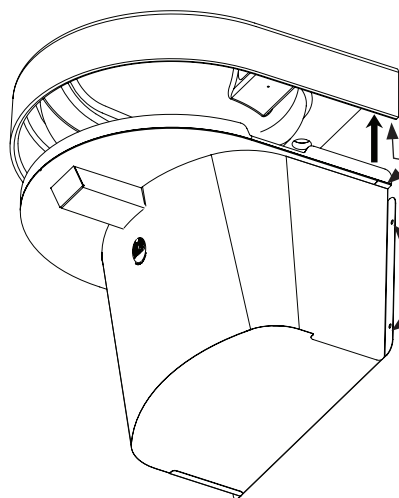
**B** Using cover, turn cartridge gently until desired water temperature is reached. Do not turn past stops as this may damage unit. Push cover down and tighten screw.



## 5 Drain Assembly



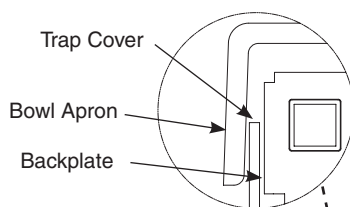
## 6a Stainless Steel Trap Cover



**A** Push trap cover up until top profile bottoms out on the underside of the bowl and the trap cover flange is fully concealed by the bowl apron. Then mark the hole locations for mounting.

**B** Secure the trap cover to the wall in four places with #10 wall anchors, washers and tamper resistant button screws with security pin or wall construction.

## 6b Stainless Steel Trap Cover



**A** Position the trap cover so it fits directly between the backplate and the bowl apron. Push trap cover up until top profile bottoms out on the underside of the bowl.

**B** Secure the trap cover to the wall in six places with #10 wall anchors, washers and tamper resistant button screws with security pin suitable for wall construction.

## Cleaning and Maintenance for Terreon®

**Material Description:** Terreon is a densified solid surface material composed of polyester resin and is resistant to chemicals, stains, burns and impact. Surface damage can be easily repaired with everyday cleansers or fine grit abrasives.

**Routine Cleaning:** Clean daily or as often as conditions require using a standard commercial or household cleaner such as Formula 409® or Windex®.

**Stubborn Stains:** Remove tough stains with Ajax®, Comet®, or Soft-Scrub® and a green Scotch-Brite® pad or lightly sand in a circular motion with 240 grit wet/dry sandpaper. The finish can be renewed with a maroon Scotch-Brite pad.

## Special Situations for Terreon Material

**Scratches:** Remove scratches with a green Scotch-Brite pad. The finish can then be renewed with a maroon Scotch-Brite pad, followed by a white Scotch-Brite pad or 30-micron sandpaper.

**Hard Water Deposits:** Remove hard water deposits with a mild solution of vinegar and water. Always rinse the unit thoroughly after cleaning.

**Restoring the surface:** Use Hope's® Solid Surface cleaner and polish to refresh and protect the Terreon Solid Surface material. Bradley recommends additional care and maintenance for the darker colored Terreon. For complete instructions on this additional maintenance, visit [bradleycorp.com](http://bradleycorp.com).

**NOTICE!** *Do not use strong acid or alkaline chemicals and cleansers to clean Terreon. If these chemicals come in contact with the surface, wipe them off immediately and rinse with soapy water. Avoid contact with harsh chemicals such as paint remover, bleach, acetone, etc. Avoid contact with hot pans and objects.*

**Repair Kits:** Terreon repair kits are available. Contact your Bradley representative or distributor for part numbers and pricing. Repair kits are made to order and have a shelf life of 30 days.



*Terreon® is a unique, cast solid surface material. Aggregate flow and distribution as well as shades of color can vary from product to product creating natural characteristics.*

## Cleaning and Maintenance for Stainless Steel

**Material Description:** Stainless steel is extremely durable, and maintenance is simple and inexpensive. Proper care, particularly under corrosive conditions, is essential. Always start with the simplest solution and work your way toward the more complicated.

**Routine cleaning:** Daily or as often as needed use a solution of warm water and soap, detergent, or ammonia. Apply the cleaning solution per the manufacturer's instructions and always use a soft cloth or sponge to avoid damaging the finish.

**Stubborn Stains:** To remove stains from stainless steel use a stainless steel cleaner and polish such as Ball® stainless steel cleaner or a soft abrasive. Always follow the manufacturer's instructions and apply in the same direction as the polish lines.

**NOTICE!** *Never use ordinary steel wool or steel brushes on stainless steel. Always use stainless steel wool or stainless steel brushes.*

**Fingerprints and Smears:** To remove fingerprints or smears use a high quality stainless steel cleaner and polish in accordance with the manufacturer's instructions. Many of these products leave a protective coating that helps prevent future smears and fingerprints.

**Grease and Oil:** To remove grease and oil use a quality commercial detergent or caustic cleaner. Apply in accordance to the manufacturer's instructions and in the direction of the polish lines.

**Precautions:** Avoid prolonged contact with chlorides (bleaches, salts), bromides (sanitizing agents), thiocyanates (pesticides, photography chemicals, and some foods), and iodides on stainless steel equipment, especially if acid conditions exist.

**NOTICE!** *Do not permit salty solutions to evaporate and dry on stainless steel.*

The appearance of rust streaks on stainless steel leads to the belief that the stainless steel is rusting. Look for the actual source of the rust in some iron or steel particles which may be touching, but not actually a part of the stainless steel structure.

**NOTICE!** *Strongly acidic or caustic cleaners may attack the steel causing a reddish film to appear. The use of these cleaners should be avoided.*

## Adaptive Infrared Repair Parts



*Do not apply power unless all connections are made.*

Sprayhead Assembly  
(S05-178)

Backplate  
(140-748)

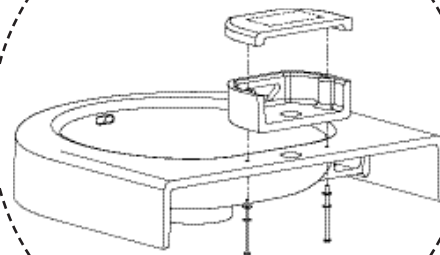
1/4" Lockwasher  
(142-002BS)

1/4"-20 Nut  
(161-026)

1/4" Supply Tubing  
(R68-600011)

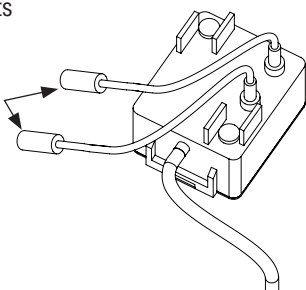
HSL1 Sprayhead Body (call your Bradley Representative for part number)

Remove sprayhead cover to access repair parts



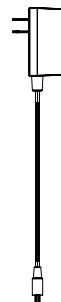
Sensor Parts

Lead Sensor Eye

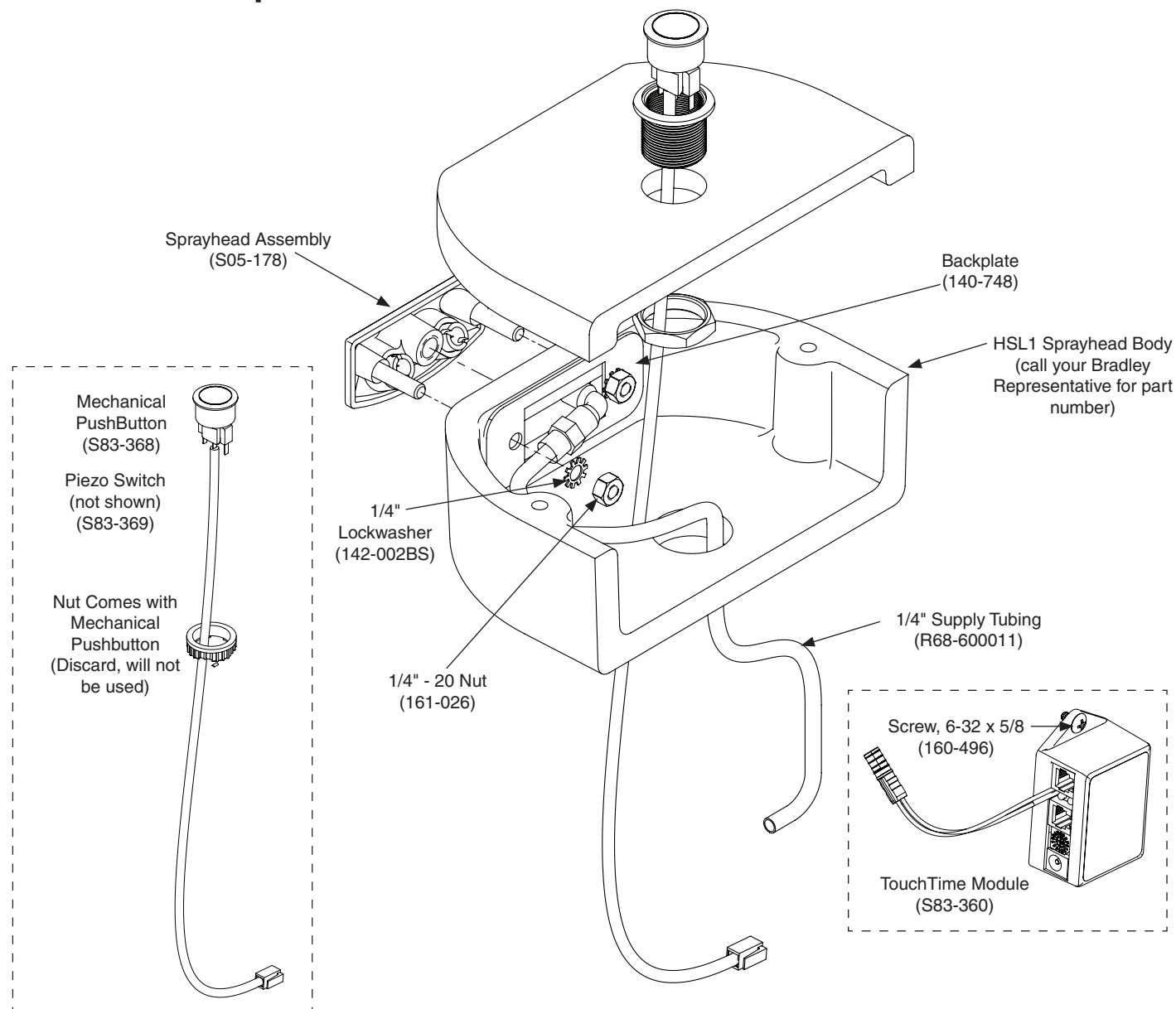


Sensor  
(269-1608-DC)  
Hook-and-Loop  
(P10-569)

Power Adapter  
(261-147A)



## TouchTime Repair Parts

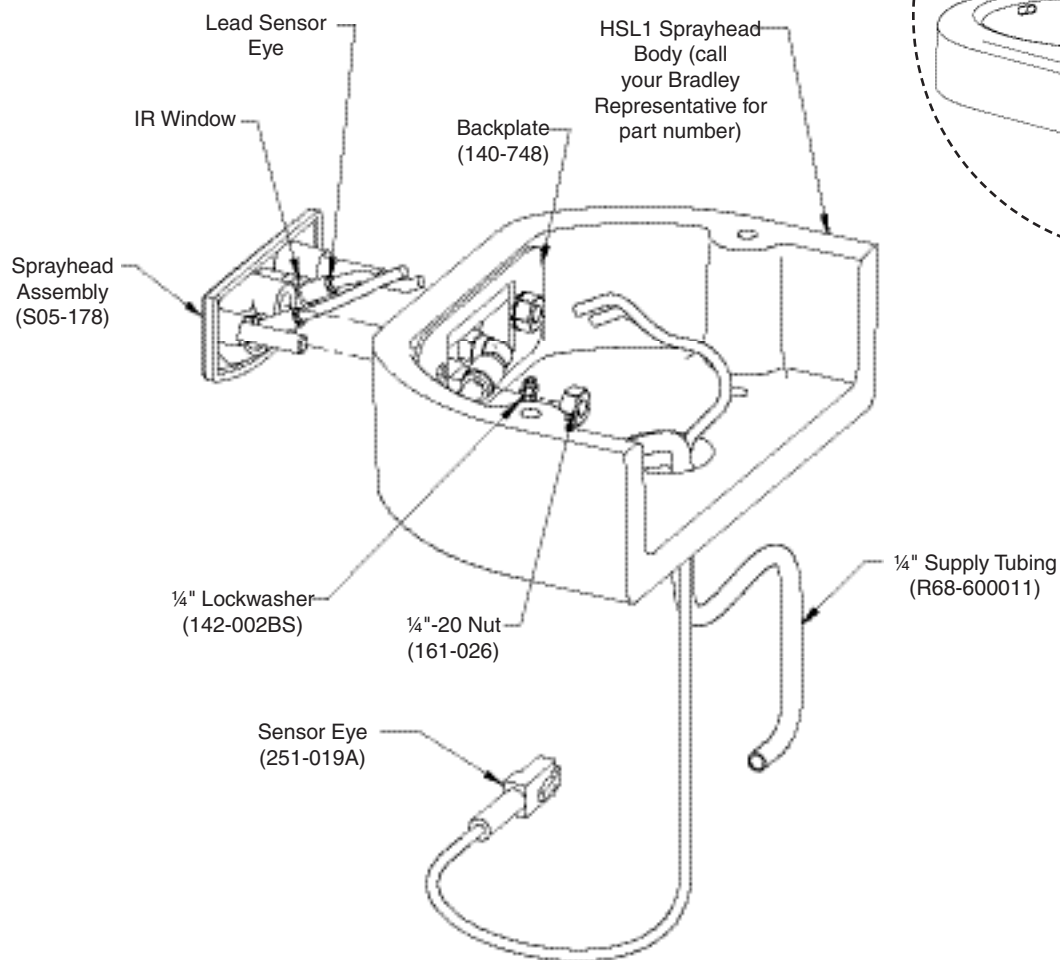


## TouchTime Troubleshooting

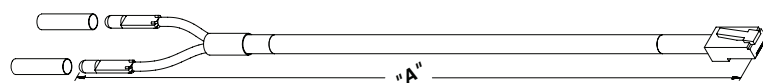
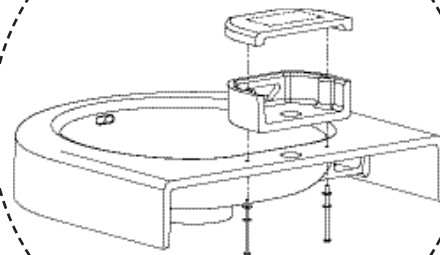
Problem	Cause	Solution
Water fails to flow when pushbutton is pressed or piezo switch is activated.	Plug in adapter is bad.	Plug the adapter into an adjacent touchtime module. If water does not flow when that pushbutton is pressed, replace the adapter.  Measure output voltage of adapter using a multimeter. Voltage should be 12V $\pm$ 10%. If adapter output is not 12V, replace the plug in adapter.
	TouchTime module is bad.	On the touchtime module, switch the selector switch to position 1. The green light should cycle on for 1 second and off for 1 second continuously. If this does not happen, replace the TouchTime module.
	Solenoid is bad.	The solenoid valve should open and close at the same rate. If not, see Troubleshoot the Solenoid section and/or replace the solenoid cartridge.
	Pushbutton is bad.	Plug the pushbutton into either connector on the TouchTime module and set the selector switch to position 4. The green LED should illuminate for 4 seconds when the pushbutton is pressed and released. If this does not happen, replace the pushbutton.



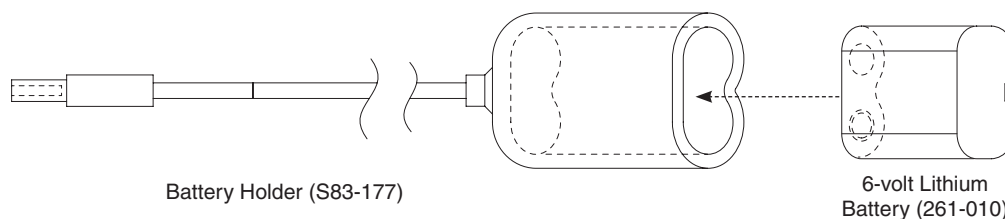
## Battery Infrared Repair Parts



Remove sprayhead cover to access repair parts



Sensor Eyes  
Length of "A" = 36" (251-019A)

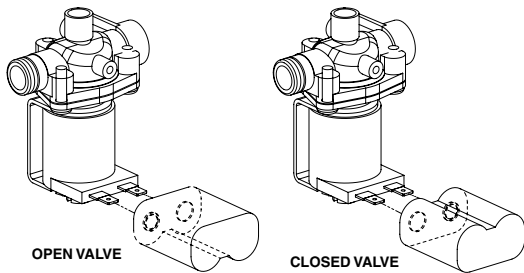


Prepack BIR3 Parts  
(S45-2083)

## Troubleshooting – Battery Infrared Components

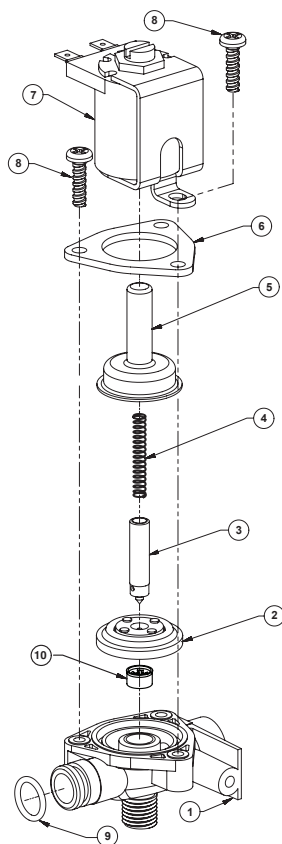
**NOTICE!** Turn off water supplies to the unit before troubleshooting.

Problem	Cause	Solution
An individual operating station fails to shut off and drips.	Debris is trapped between the diaphragm and the valve seat.	<p>Remove debris between diaphragm and the valve seat.</p> <ol style="list-style-type: none"> <li>1. Disconnect the plug from the battery to the circuit board of the problem valve.</li> <li>2. Remove the three #8 Phillips-head screws that hold the solenoid valve assembly together. Be careful not to lose the armature or spring.</li> <li>3. 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.</li> <li>4. Reassemble in reverse order (do not overtighten the Phillips-head screws or the plastic valve body may crack). Tighten until the armature plate makes contact with the plastic body.</li> <li>5. Reconnect the battery plug. Turn on water supplies to the unit.</li> </ol>
An individual operating station fails to turn on or off.	A dead or faulty battery.	<p>Test the station to determine the cause and replace battery if required.</p> <ol style="list-style-type: none"> <li>1. Disconnect the sensor cable from the circuit board of the problem valve. Disconnect the sensor cable from the circuit board of an adjacent working valve.</li> <li>2. Connect the battery plug from the adjacent working valve to the problem valve. Wait for ten seconds. Activate the problem station's sensor ten times. The station should turn on.</li> </ol> <p>If the adjacent station turns on, and cycles normally, replace the battery.</p>
	Faulty sensor eyes.	<p>Test the station to determine the cause and replace sensor eyes if required.</p> <ol style="list-style-type: none"> <li>1. Disconnect the plug from the battery to the circuit board of the problem valve. Disconnect the plug from the battery to the circuit board of an adjacent valve.</li> <li>2. Connect the sensor cable from the adjacent working valve to the problem valve. Activate the problem station's sensor. The station should turn on.</li> </ol> <p>If the adjacent station turns on, and cycles normally, replace the sensor eyes.</p>
	Faulty solenoid valve.	<p>Test the station to determine the cause and replace solenoid valve if required.</p> <ol style="list-style-type: none"> <li>1. Remove the screw, circuit board and standoff from the problem valve. Remove the battery holder.</li> <li>2. With a good working battery, briefly contact the solenoid valve directly with the battery. The contact should cause the valve to open. With the battery holder removed, briefly contact the solenoid valve with the battery in the position shown. This should cause the valve to close. If the valve does not operate when directly contacted with a good battery, and the solenoid valve has already been cleaned as outlined at the beginning of this troubleshooting section, replace the solenoid valve.</li> </ol> <p>If problems persist:</p> <p>Pass your hand in front of the problem station, while at the same time looking to see if the indicator light on the circuit board flashes (the indicator light is located near the hole in the circuit board where the standoff is mounted). If it does not flash, and the battery and sensor eyes have already been tested as outlined above, the problem may be with the circuit board. Make a note of the numbers printed on the circuit board, then contact your Bradley representative for assistance.</p>



## Solenoid Valve S07-073 (Closed Body Battery Infrared)

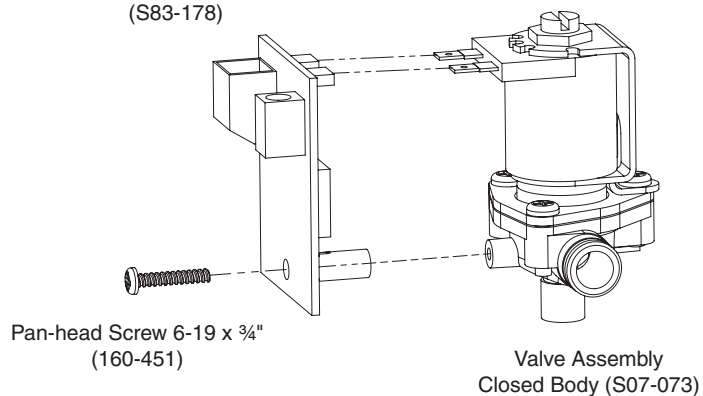
**NOTICE!** Turn off water supplies to the unit before troubleshooting.



Item	Qty.	Part No.	Description
1	1	118-307	Valve Body, 1/4" Closed
2	1	269-983	Diaphragm
3	1	192-017	Armature
4	1	135-093	Spring
5	1	269-1729	Armature Housing
6	1	269-1730	Clamp, Armature Housing
7	1	269-1731	Coil, Solenoid Valve
8	3	160-447	Screw, #8 x 5/8"
9	1	125-165	O-ring, #2-013
10	1	125-160	Flow Restrictor, .5 GPM

Solenoid Valve with Circuit Board Closed  
Body (S07-083)

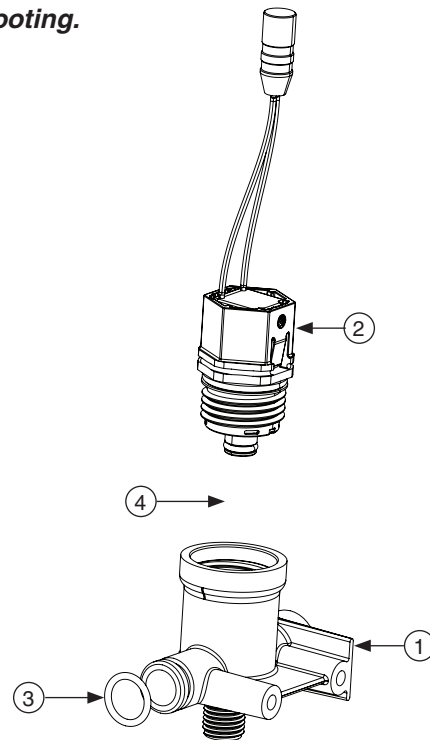
Circuit Board with Standoff  
(S83-178)



## Troubleshooting – Solenoid Valve S07-068-DC (closed body DC)

**NOTICE!** Turn off water supplies to the unit before troubleshooting.

Ref.	Part No.	Description
1	118-334	Valve Body
2	S27-352	Cartridge
3	125-165	O-Ring, #2-013
4*	125-160	Flow Restrictor, .5 GPM



Problem	Cause	Solution
An individual operating station fails to shut off and drips.	Internal cartridge failure.	Replace S27-352 cartridge.
An individual operating station fails to turn on.	A failed cartridge for the valve or loose electrical connection to the terminal.	<p>Test the station to determine the cause.</p> <ol style="list-style-type: none"> <li>1. Disconnect the wires from the cartridge of an adjacent valve. Disconnect the wires from the problem valve and reconnect to the adjacent valve.</li> <li>2. Turn on electrical and water supplies to the unit. Pass your hand in front of the sensor of the problem station (IR) or press pushbutton/activate piezo switch (TT), and the adjacent station should turn on.</li> </ol> <p>If the adjacent station turns on and cycles normally, replace the cartridge on the problem valve.</p> <p>If the adjacent valve fails to turn on, inspect the wires from the sensor cable and do the following:</p> <ul style="list-style-type: none"> <li>• make sure there are no breaks and that the fully insulated disconnect terminals are firmly crimped in place;</li> <li>• turn off the electrical and water supplies;</li> <li>• reconnect to the adjacent valve and turn on the water supplies to the unit;</li> <li>• pass your hand in front of the sensor (IR) and/or activate the pushbutton/piezo switch (TT). If the station still fails to turn on, replace the sensor (IR) or the pushbutton/piezo switch (TT).</li> </ul>

## Thermostatic Mixing Valve Troubleshooting

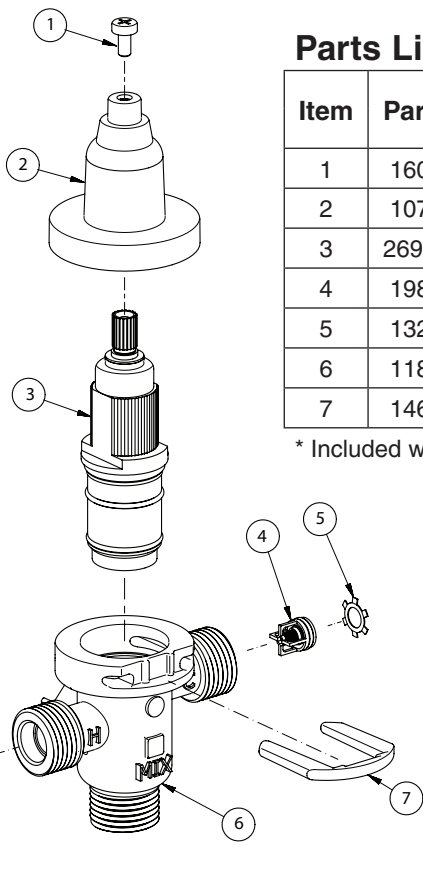
Before attempting to troubleshoot the valve or disassemble the components, check for the following conditions:

- If stop 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 valves.
- Check the hot water heater output to make sure that it is at least 10° 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	Cause	Solution
External leaks.	Damaged cartridge or O-rings.	Replace cartridge with part number 269-1927
Improper water temperature or temperature fluctuation.	Hot water supply is not 10° above desired set point.	Increase hot water supply temperature
	Valve temperature is not properly set.	Adjust the temperature as shown on page 10, step 4.
Limited water flow.	Dirt and debris have built up in the valve or strainer.	<ol style="list-style-type: none"> <li>1. Check to make sure both hot and cold supplies are connected to the Navigator mixing valve and that they have water flow.</li> <li>2. Remove cover and U-clip. Remove the cartridge and clean the strainer. It is not required to grease cartridge, however if desired, use silicone grease only. Do not use grease on check valves.</li> </ol>



### Parts List

Item	Part No.	Description	Quantity		
			S59-4000	S59-4000A	S59-4000BY
1	160-463	Cap Screw	1	1	1
2	107-582	Cover	1	1	1
3	269-1927	Thermostatic Cartridge	1	1	1
4	198-014	Check Valve*	2	2	2
5	132-051	Retaining Ring*	2	2	2
6	118-319	Valve Body	1	1	1
7	146-079	U-Clip	1	1	1

\* Included with Prepack S65-326

### Tempered Line Adapter Option Part no. S39-804

(replaces S59-4000 if tempered line is used)

