

### LIGATURE RESISTANT DUAL SENSOR FAUCET PATENT # US D935569S

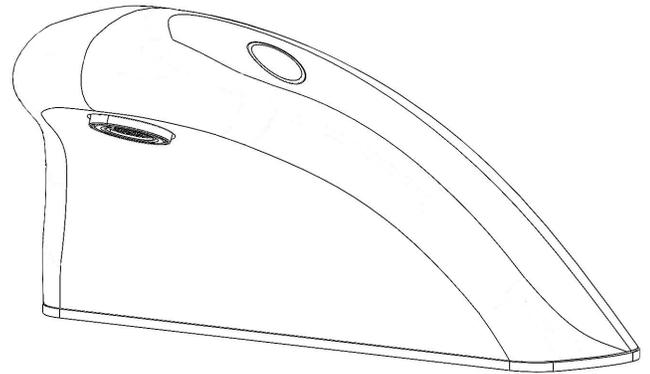
#SF500

#### Installation, Maintenance & Operation Instructions

Our Sensor Faucet line has now been updated with the introduction of our new patented #SF500 dual sensor faucet. The new model features a dual sensor module design with updated operating mechanisms, new electronics and dual solenoids to allow hot, cold or mixed hot and cold water flow.

The SF500 has a new ligature resistant profile which features an improved outlet angle, to help prevent splashing. The touchless activation is ADA compliant and helps with infection control.

The faucet is easily installed in new construction and retrofit applications and comes with standard in-line filters. Battery power is standard, but an AC adapter is optionally available. The all metal exterior has a chrome-plated finish which is optimal for long life, vandal resistance and aesthetic appearance.



#### Specifications

- Fits both a standard 4" center set and an 8" center set sink with our optional conversion kit assembly
- Electronic module, solenoid and power pack which are readily serviceable from under the counter
- Standard in-line filters, and new sensor module design
- Standard battery power is six 1.5v AA batteries (not included) or optional AC power
- Programmed vandal protection with a maximum run time of 60 seconds
- Includes a 1.2 GPM (4.5 L/min) flow rate hygienic laminar flow outlet
- Includes an under counter mechanical mixer with check valves for cross flow protection
- Inlet Supply: 3/8" compression with male threads
- Can be optionally fitted with an ASME 1070 thermostatic valve
- This faucet has an operating range of 20-80psi
- Pre-assembled for simple installation
- All metal housing designed for maximum strength and protection from abuse with a polished chrome finish

#### Certifications

- ADA compliant
- This product is tested to meet UPC · CUPC · ASME A112.18.1/CSA B125 · NSF 372 · AB 1953 California and National low-lead requirements
- Under review by NYS Office of Mental Health patient safety standards, materials and systems guidelines

## Standard Features

- The faucet comes with a rubber gasket to seat it to the sink.
- Laminar flow 1.2 GPM flow control outlet
- Under counter mixer tee with check valves and flex hose connection to the solenoid box.
- Internal battery pack holds six 1.5v AA batteries.

## Options *(see accessories on besafepro.com)*

- A/C adapter Kit (RPG-SF500-10)
- Under counter thermostatic lead-free mixing valve with check valves (RPG-SF372)
- 8" Cover plate (SF373) — converts 8" center set sink to 4" on center

## Care & Cleaning

Your new product is designed for years of trouble-free performance. Keep it looking new by cleaning it periodically with a soft cloth. The use of harsh chemicals and abrasives on any of the custom finish products may damage the finish and void the product warranty. Please be sure to only use approved cleaners.

## Waiver & Disclaimer

This waiver-disclaimer is attached to and made a part of the written contract to purchase these products for use in psychiatric and correctional facilities. Such fixtures and products are purchased to reduce the risk of self-imposed death or injury to patients or clients in such facilities, but are NOT represented as able to prevent such death or injury.

Behavioral Safety Products, LLC ("BSP") as the seller of these products has not, and will not represent or warrant to the purchaser shown in this contract ("Purchaser") that its fixtures and products will prevent death or injury in any case whatsoever.

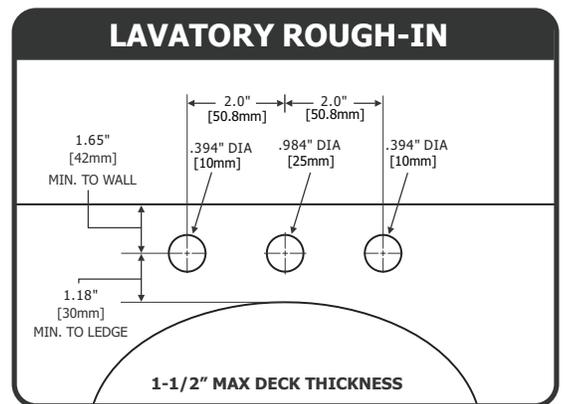
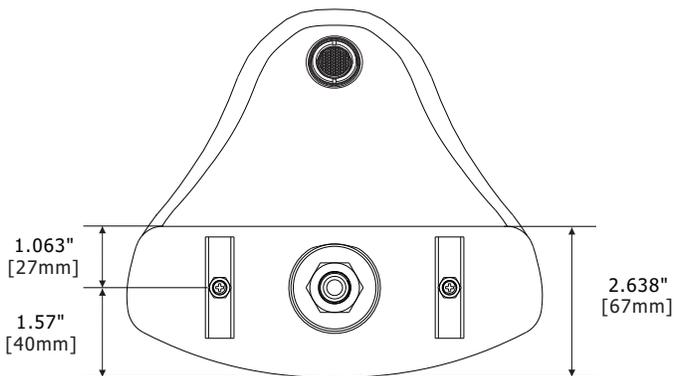
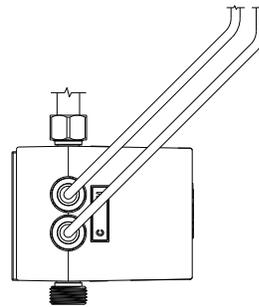
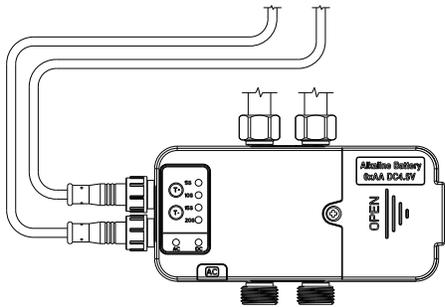
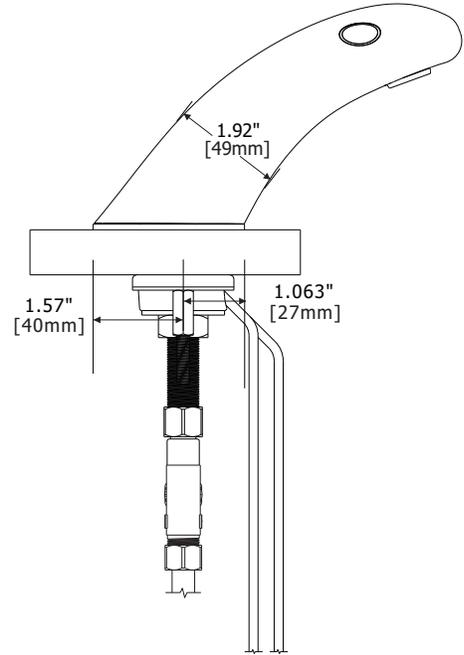
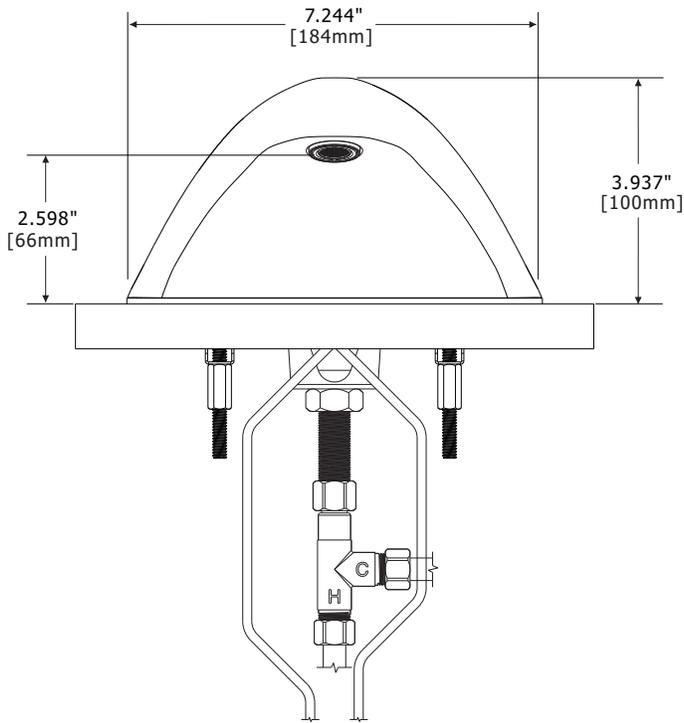
BSP makes no express or implied warranty with respect to the preventative quality of its products, but merely represents that the use of such products tends to reduce deaths and injuries by patients or clients who are subject to meticulous screening processes and diligent supervision on the part of the facility housing them.

Purchaser acknowledges the foregoing disclaimer and waives any and all claims against BSP as to express or implied warranties of fitness for any purpose whatsoever.

### IMPORTANT

- This fixture must be mounted securely to the sink per the instructions.
- All plumbing and electrical connections under the sink are not ligature resistant and should be in a separate enclosure or cabinet (not supplied).

## Rough In Dimensions



## IMPORTANT

- Be sure to read instructions thoroughly before beginning installation.
- Do not over-tighten any connections or damage may occur.

## Tools and Supplies

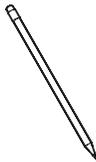
Phillips  
Screwdriver



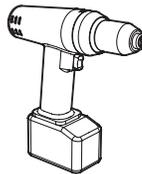
Adjustable  
Wrench



Pencil



Drill



Flat Tip  
Screwdriver



Aerator  
Wrench  
(included)

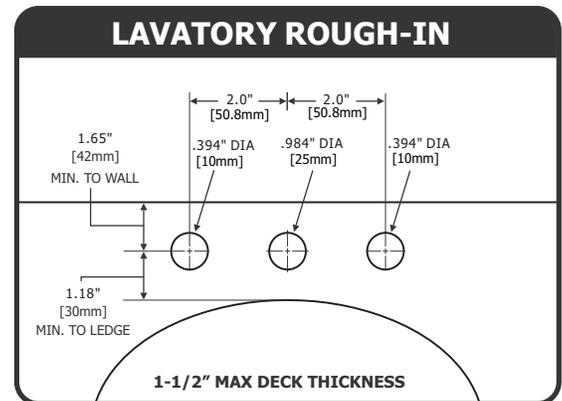


Dry Wall Anchor  
(included)

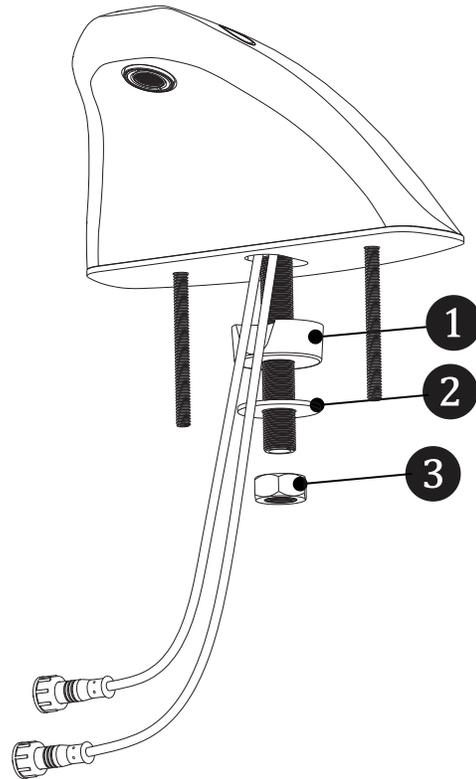


## Installation Instructions

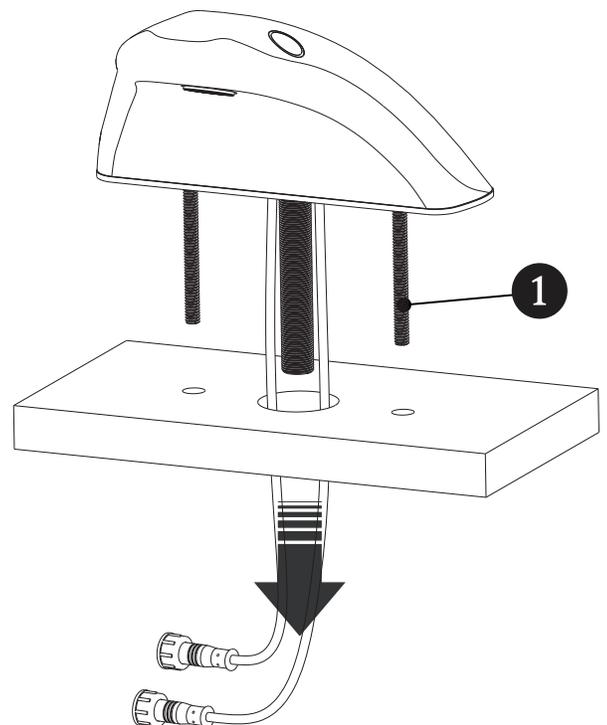
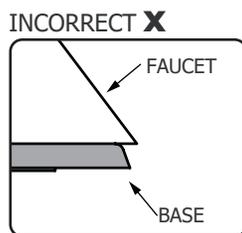
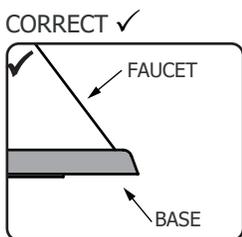
1. A sink top with a 4" [102mm] on center holes (outer hole centerline to outer hole centerline) is required for proper installation. Ensure that there is a minimum of 1.65" [42mm] from the centerline of the holes to the back wall or back of sink. Remove screws, and protective cover from valve. Set aside for future use.



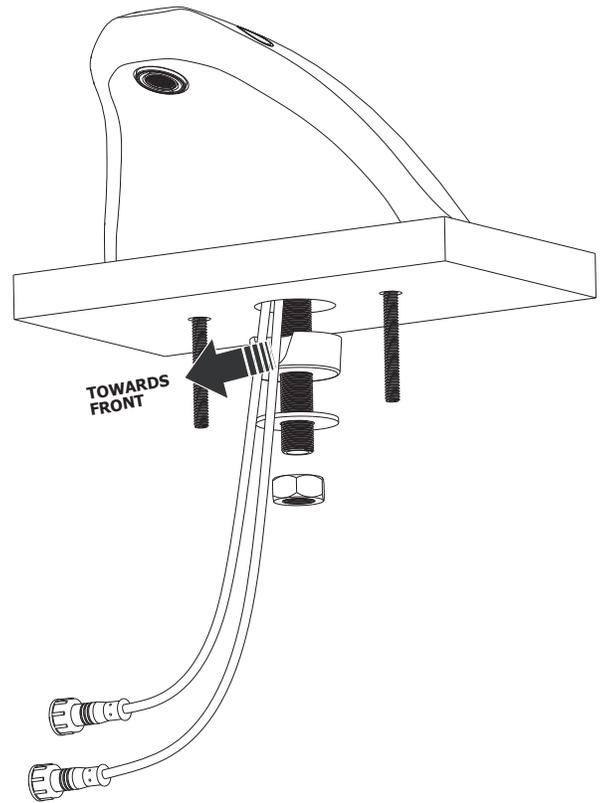
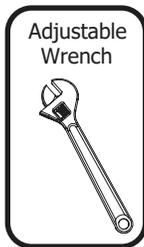
2. Loosen the mounting nut **3** and remove the metal washer **2** and rubber wire guard **1** from the faucet shank .



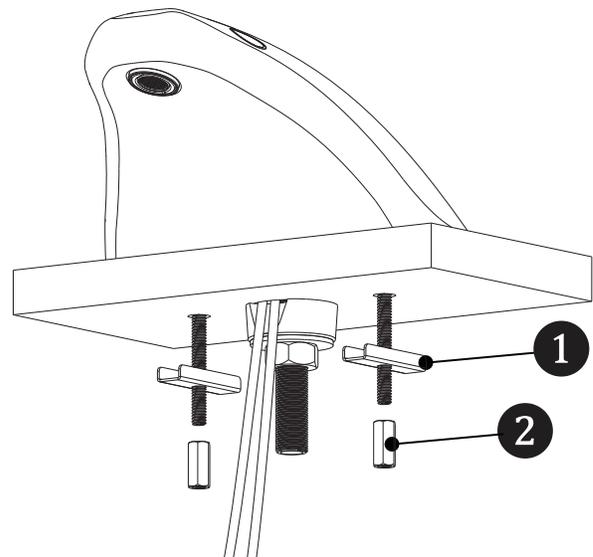
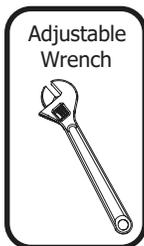
3. Insert the sensor wires, faucet shank and threaded mounting Posts **1** through the holes of the basin. Take extra precautions to avoid pinching any wires. Once the faucet is positioned, verify that the rear of faucet is properly resting on the rubber base gasket and does not overlap the rubber base gasket.



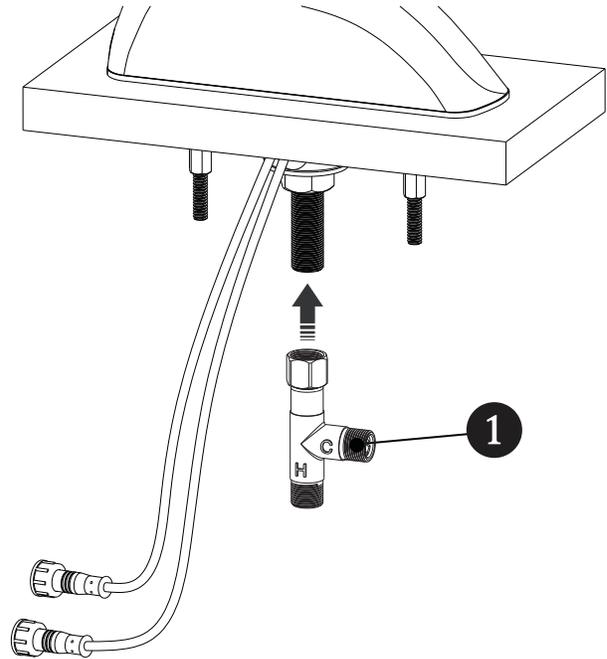
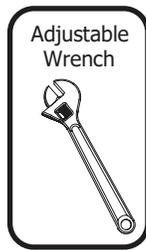
4. From beneath the sink, install the rubber wire guard (with notch facing towards front) over the shank and pass the sensor wires through the notch to prevent pinching of wires. Install the metal washer and mounting nut onto the shank. Hold the faucet in position and wrench tighten the mounting nut. Verify that sensor wires are not pinched.



5. From under the sink, install the "U" washers **1** onto the threaded mounting Posts and secure with the mounting nuts **2**. Ensure that the "U" washers are perpendicular to the wall surface for added leverage and wrench-tighten.



6. Thread the under counter water mixing valve **1** to the faucet shank. Wrench tighten connections. Take care to not over tighten or damage may occur.

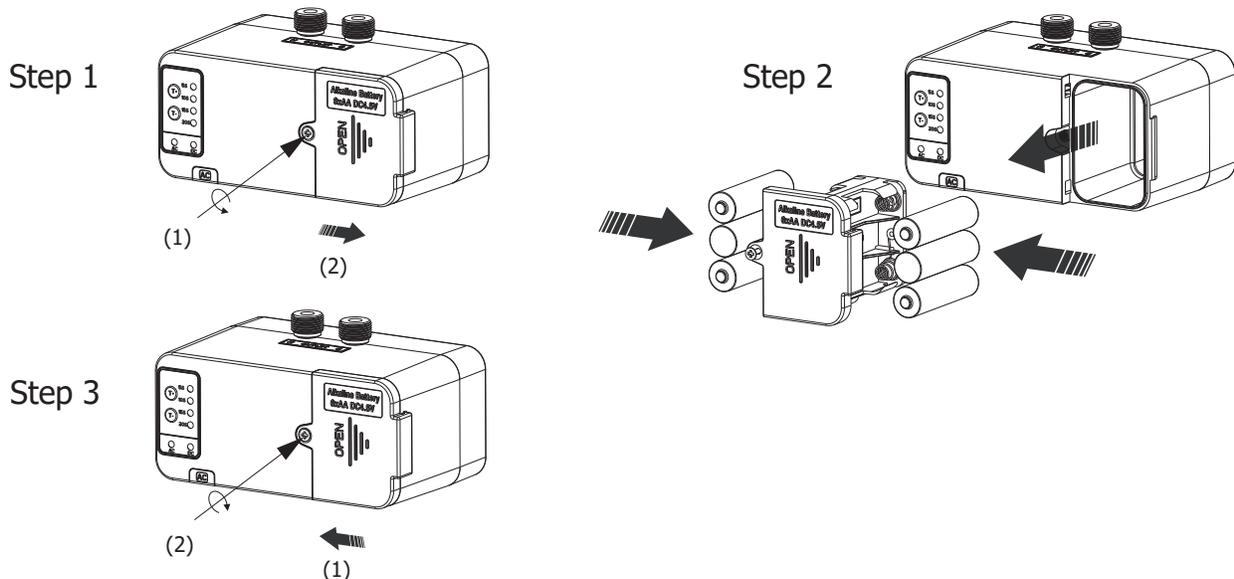


7. Install the batteries into the solenoid:

(Step 1) Loosen the battery door screw on solenoid and push the cover to the right to open the battery box.

(Step 2) Take out the battery holder and insert or replace the batteries with six (6) new alkaline 1.5v AA batteries. Ensure the position of the new batteries are aligned to the plus (+) and minus (-) symbols within the battery holder.

(Step 3) Put the battery holder back into the solenoid and push the battery box cover to the left position, then lock the cover with screw.

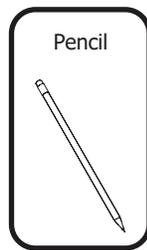
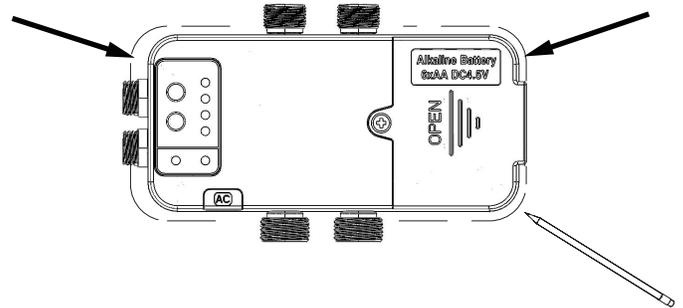


8. Place the solenoid assembly against the desired mounting surface while ensuring adequate clearance for the servicing of all hose and electrical connections.

If using the optional A/C Adapter (not supplied), consider the distance to the nearest electrical outlet.

The solenoid Assembly should be mounted so the inlet and outlet ports are aligned vertically.

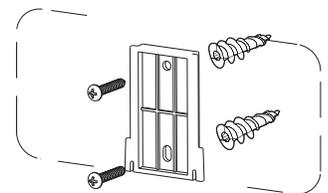
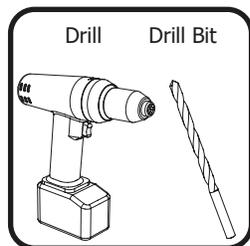
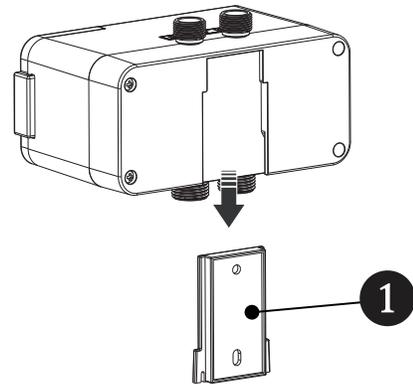
Mark the location of Solenoid Assembly on the mounting surface.



9. Remove the Mounting Bracket 1 from the solenoid assembly.

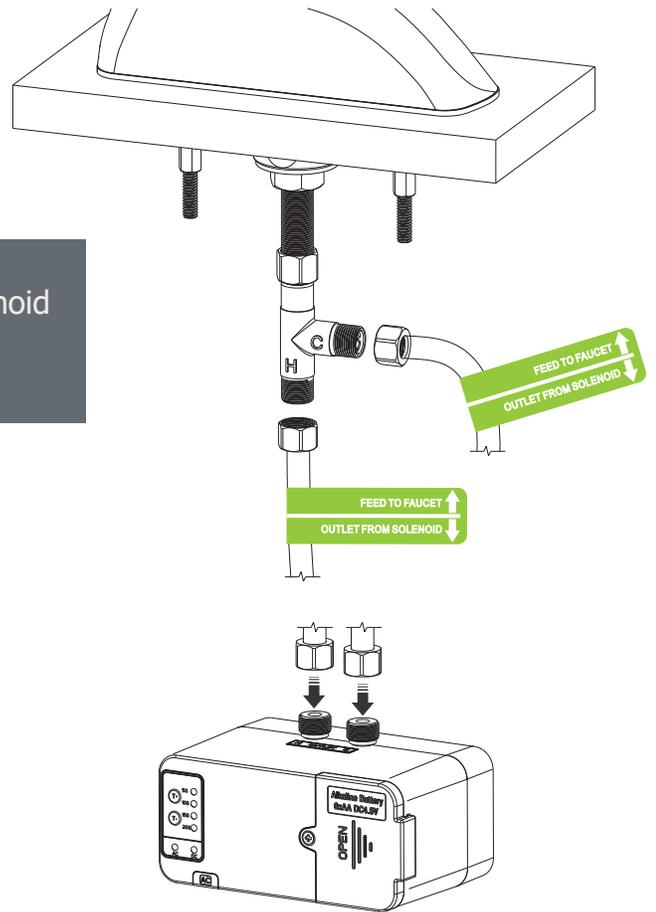
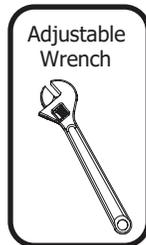
Using the previously marked location on mounting surface, align the mounting bracket vertically to the approximate centered position of the marked location, and mark the mounting holes with a pencil.

**Note:** If mounting on drywall and not into a stud, use the appropriate anchors and fasteners for application. We recommend screw in "Easy Anchor" or equivalent for drywall.

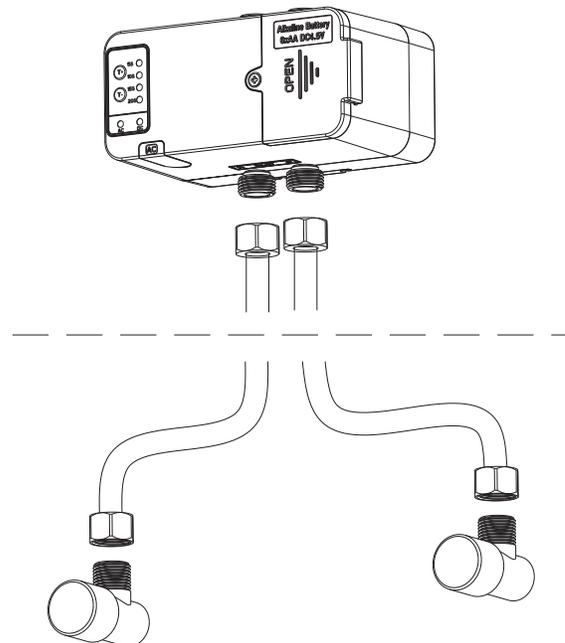
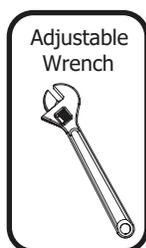


10. Connect the Under Counter Mixer (UCM) to the bottom of the faucet and then to the solenoid box outlet with the included solenoid hoses. Hold Faucet in position and wrench tighten the connection.

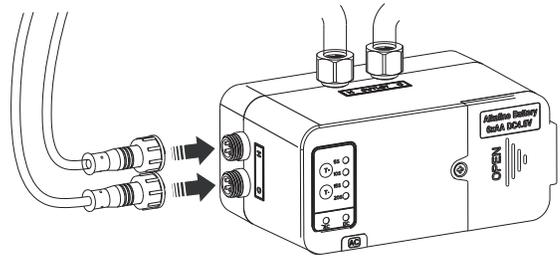
**NOTE:** The label on the hose should correspond to the markings on the UCM and the water outlet on the solenoid box. The cold water outlet should be connected to the cold water inlet, and the hot water outlet should be connected to the hot water inlet on the UCM.



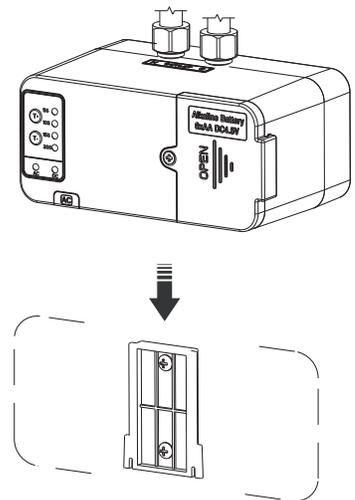
11. Make the water connections between the shut off valves and the solenoid assembly using 3/8" compression style hoses (not included). Ensure that the COLD supply hose is connected to the "C" port on the solenoid assembly, and the HOT supply hose is connected to the "H" port. Wrench-tighten the connections. Take care not to over tighten connections or damage may occur.



12. Make the electrical connections from the sensor to the solenoid assembly. Note that the hot and cold sensor wire should correspond to the "H" and "C" labels of the solenoid assembly. To further aid proper alignment, there are arrows on the connector ends.



13. After securing the hoses and electrical connections, align the solenoid assembly and slide it over the mounting bracket on the wall.



## Setting up and Using the Faucet

### LED Operation

- When the faucet is first powered up, both sensors will blink for 5 seconds to show the power is on and the connection between the sensor and solenoid is established.
- When using battery power, the red battery LED on the solenoid box will illuminate for 2 seconds when the unit is first powered up, then shut off.
- When using AC power, the green AC LED on the solenoid box will illuminate continuously.

### Instructions for Use

- Place hands within the sensing range (up to 6.75"/175mm) of the sensor, and the faucet will turn on and off automatically after the set runtime.
- The red sensor is for hot water and the blue sensor is for cold water. If both sensors are activated at the same time, warm water will come out of the faucet.
- If the faucet is activated and run multiple times in succession, the maximum run time for the faucet is 60 seconds.
- After 60 seconds of continuous running, the activation is halted and the faucet will turn off. The electronics will reset after 60 seconds of elapsed time, and the faucet will then resume operation.
- When using the faucet do not put your hands too close to the sensor, otherwise the faucet may not turn on.
- Hard water stains, dirt, or debris on the sensor may cause the water to flow continuously.

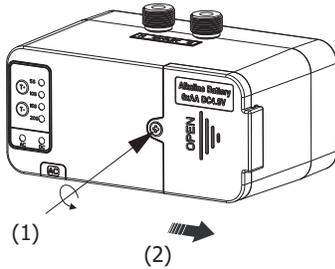
**IMPORTANT:** Sharp objects, abrasive cleaners or harsh chemicals may damage the surface finish of the faucet or the sensors, use only mild soap and water to clean the faucet.

### Setting the Runtime

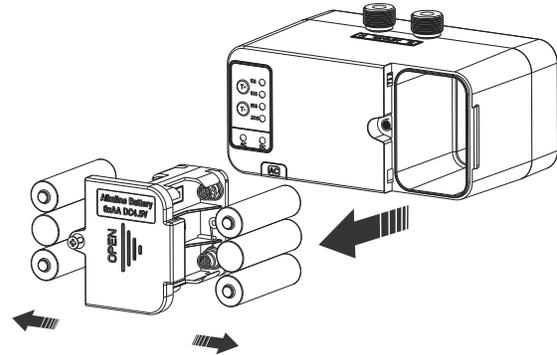
- A default run time of 5 seconds is preset at the factory. If a longer runtime is desired, press the "T+" or "T-" switch, to change the runtime. The amber LED will be illuminated showing the chosen run time.  
If the "T+" or "T-" switch is pressed again, the runtime will toggle up or down to the next time selection. The amber LED will stay lit for 5 seconds showing the time chosen, then go out.
- If the red battery LED on the solenoid box blinks continuously and the faucet does not work, it means that the batteries have low voltage and need replacement.

## Conversion to A/C Power

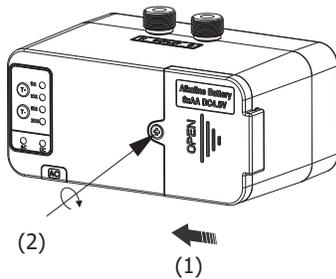
1. If you wish to change your Faucet to A/C power, remove batteries from enclosure as shown.



Step 1: Loosen the screw and push the battery box cover to the right to open.

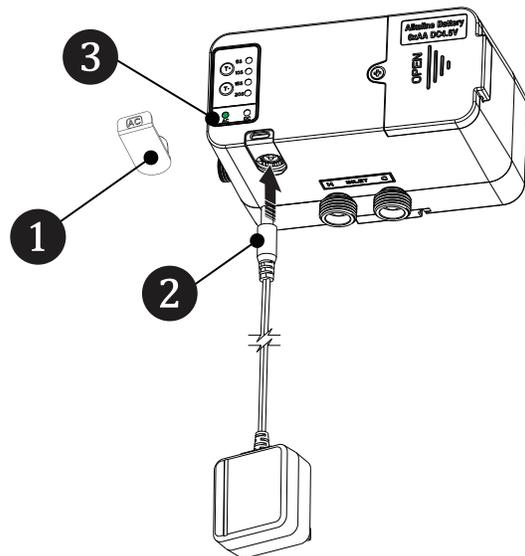


Step 2: Remove the batteries.



Step 3: Put the battery holder back into the solenoid housing and push the battery box cover to the left and then lock the cover with the screw.

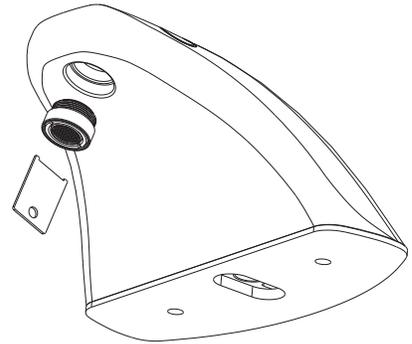
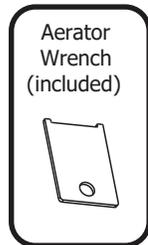
2. Open the AC adapter cover on the solenoid body **1**. (Shown separated for clarity) Connect the A/C Adapter to the solenoid body . Plug the **2** A/C Adapter into the wall outlet. The A/C light **3** will illuminate.



## Flushing and Outlet Maintenance

1. Turn on water supplies and check for leaks. Activate the sensor and allow the faucet to run for 1 minute to flush out any debris.

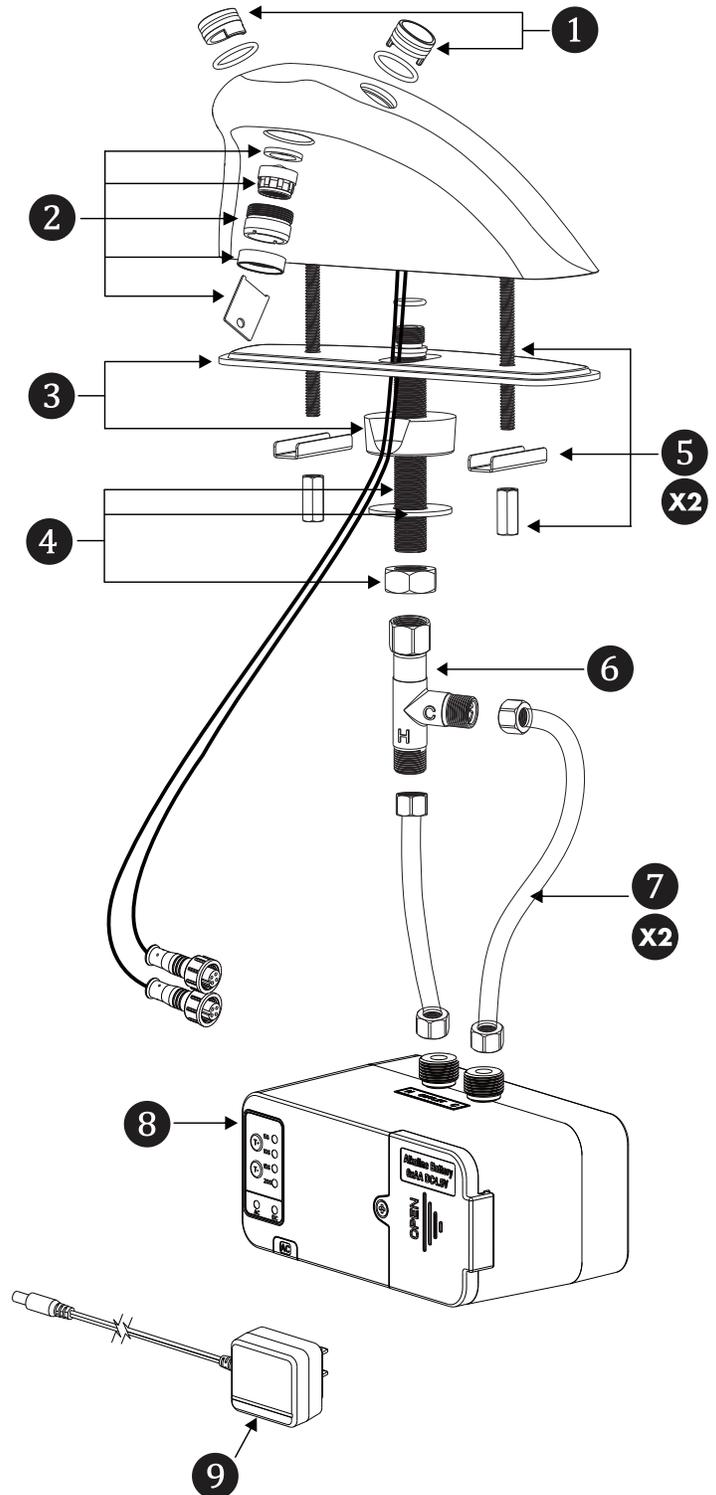
2. Remove, clean and reinstall the vandal-resistant laminar flow outlet to the faucet using the included aerator wrench.



## Repair / Replacement Parts

Item	Part No.	Description
1	RPG-SF500-4	Laser sensor module
2	RPG-SF500-12	13/16–1.2 GPM Laminar outlet repair group with wrench
3	RPG-SF500-7	Rubber parts group
4	RPG-SF500-9	Mounting hardware group
5	RPG-SF500-8	Low profile spout mounting parts
6	RPG-SF500-6	Under counter water mixing valve (UCM)
7	RPG-SF500-11	Solenoid to under counter water mixer hose
8	RPG-SF500-3	Solenoid assembly with battery pack
9	RPG-SF500-10	A/C conversion kit
10*	SF372	Thermostatic mixing valve*
11*	SF373	4" to 8" center set conversion plate*

**NOTE: ITEMS MARKED \* NOT SHOWN**



## Troubleshooting

BEFORE CALLING BEHAVIORAL SAFETY PRODUCTS FOR SERVICE, PLEASE  
RUN THROUGH THE FOLLOWING CHECKLIST:

### **If water flow from the faucet decreases**

1. Make sure the supply stops are open.
2. Check that the filter located in the water inlet of the solenoid valve is not blocked with debris. Close the stops and remove filter from the solenoid inlet. Check for debris and rinse it with clean water. Reassemble the filter, open stops, and check water flow.
3. Remove the outlet from the spout using the outlet wrench. Operate the faucet with outlet device removed. If water flow is acceptable, disassemble the outlet device and rinse components with clean water.

### **If no water flows from the faucet, and if you can hear a clicking sound of solenoid opening.**

1. Verify that the HOT and COLD wall stops are completely open.
2. If the DC light on the solenoid box blinks continuously, even when the faucet is not in use, the batteries within the solenoid box have low voltage and need replacement.
3. Verify that the in-line filter in the solenoid is not blocked by debris. Clean filter if needed.

### **If you do not hear a clicking sound of solenoid opening and no water flows**

1. If the DC light on the solenoid box blinks continuously, even when the faucet is not in use, the batteries within the solenoid box have low voltage and need replacement.
2. Unplug connections to solenoid for 2 minutes. Plug connections back in. The red light on the sensors should turn on for several seconds before becoming operational. If not, check power supplies and connections.
3. Disconnect the existing solenoid assembly and connect a new solenoid assembly. Activate the sensor and check for water flow. If the water flows, the existing solenoid assembly should be replaced.

### **If the batteries have been replaced, but the faucet still does not operate**

1. Check the battery voltage for each battery and check the polarity. Make sure all electrical connections are fully inserted.
2. If the Faucet does not operate, replace the existing solenoid assembly with one you know to be functioning.

### **If the faucet activates, but the water will not shut off**

1. Hold a hand in front of the sensor for more than 1 minute until the water flow stops. Once the water stops, remove your hand and wait 60 seconds. Then place your hand in front of the sensor and verify that it is operating properly.
2. If the faucet still does not shut off, cover the front of the sink with a towel. This will eliminate the potential of reflections activating the sensor.
3. If it is a new installation and still not working, replace the solenoid assembly.

\*If the above steps do not resolve the problem; please call Behavioral Safety Products (706-705-1500) for assistance.

## Questions and Answers

**Q. How does the faucet work?**

A. Using laser technology, the sensor emits a non-visible beam of light. When an object enters the detection area, the sensor signals the solenoid valve to open for water to flow. When reaching the set water runtime, the sensor signals the valve to close.

**Q. Is the faucet sensor beam adjustable?**

A. No, the beam is not adjustable. It has been factory set to factory specifications for these Faucets.

**Q. What about water conservation?**

A. The outlet design directly addresses water conservation. Water savings of up to 85% are not unusual. Additional energy savings are realized by conserving hot water.

**Q. Can the water temperature of the faucet be adjusted?**

A. Yes, this Faucet has a hot and cold water mechanical mixing valve. **If you need to meet ASSE 1070**, you must use our SF372 Thermostatic Mixing Valve option.

**Q. How does the faucet reduce maintenance?**

A. By elimination of on/off handles, control components are reduced and fittings stay cleaner longer. Only a light rinsing and wiping is required to restore the beauty of the Faucet. Drip stains are eliminated. Fingerprints and soap spots on sinks and fittings are avoided. Finishes last longer and wash areas stay cleaner. Germs and bacteria are not transferred as easily, making for a healthier environment.

**Q. The chrome finish on my Faucet seems to be deteriorating. What can I do to prevent this from happening?**

A. Many commercial cleaning products contain harsh chemicals and abrasives. These products should not be used on any chrome-plated plumbing products. Please use only mild soap and water to clean the Faucet. Dry immediately with a soft cloth.

**Q. Does the water shut off immediately when an object leaves the sensing area?**

A. No, but when the set water runtime is reached, the water will turn off on its own.

**Q. Is there a way to adjust the flow of water?**

A. The water supply on/off valve can be used to control the flow of water.

**Q. Is my Faucet protected from power surges?**

A. Yes, the faucet has been designed to have built-in power surge protection.

**Q. If we lose power, do I have to do something to get the Faucet to operate again?**

A. After a power outage, the faucet is automatically ready for operation as soon as the power comes back on.

**Q. If I call a plumber to come and install this faucet, will they know enough to hook it up?**

A. Yes. Our installation instructions are very easy to follow.