



# Aqua-FIT® Fulmer Series™

Sensor-Operated Lavatory Faucets  
for Battery-Powered or Plug-in Installations

Installation, Operation, Maintenance, and Parts Manual



**Z6951-XL**

**NOTICE:** Read entire manual prior to installing product.

**NOTICE:** The information in this manual is subject to change at any time without notice. Installations may be performed at different times of construction by different individuals. For this reason, these instructions should be left on-site with the facility or maintenance manager.

## LIMITED WARRANTY

All goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of three years from the date of purchase. Decorative finishes warranted for one year. We will replace at no costs goods that prove defective provided we are notified in writing of such defect and the goods are returned to us prepaid at Sanford, NC, with evidence that they have been properly maintained and used in accordance with instructions. We shall not be responsible for any labor charges or any loss, injury or damages whatsoever, including incidental or consequential damages. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in connection therewith. Where permitted by law, the implied warranty of merchantability is expressly excluded. If the products sold hereunder are "consumer products," the implied warranty of merchantability is limited to a period of three years and shall be limited solely to the replacement of the defective goods. All weights stated in our catalogs and lists are approximate and are not guaranteed.

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Patent [zurn.com/patents](http://zurn.com/patents)

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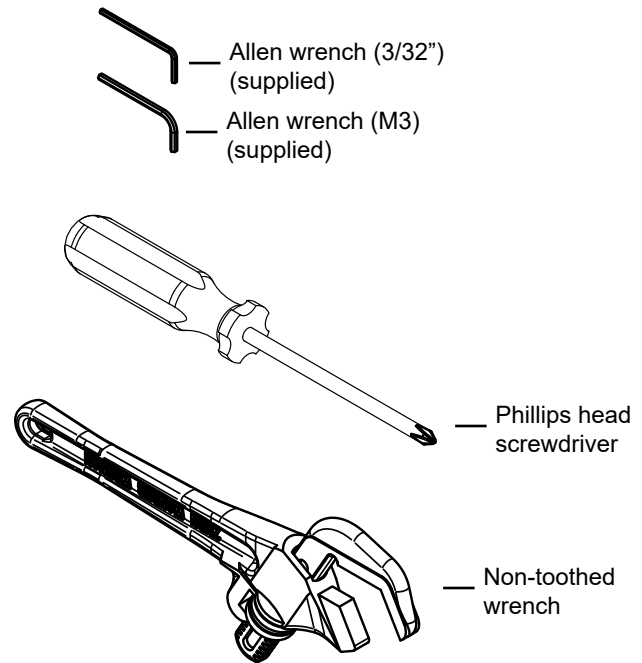
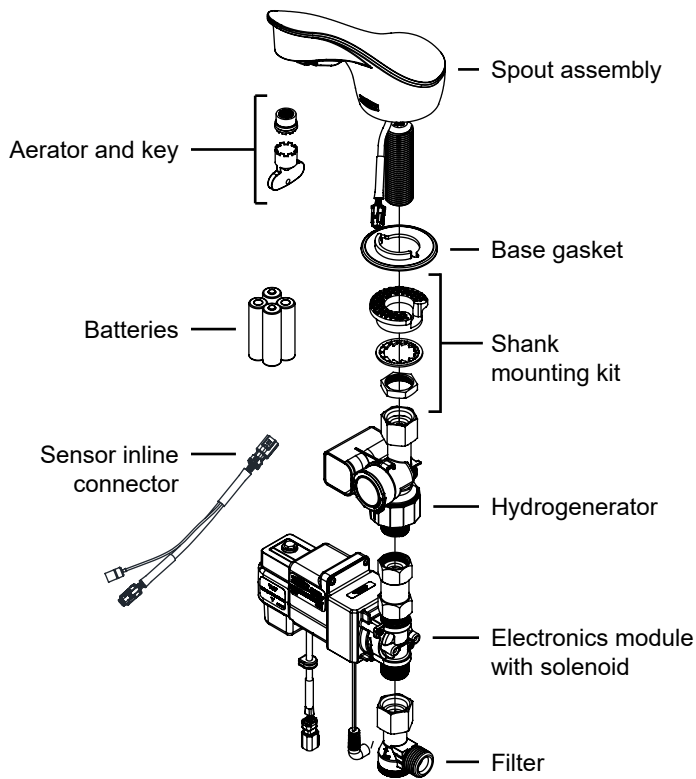
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by **ZURN ELKAY** Water Solutions

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# Package Contents

## Required Tools



## Overview

Zurn Aqua-FIT® Fulmer Series™ faucets feature multiple spout designs in a standard polished chrome finish with one-piece, heavy-duty, cast brass spouts and advanced electronic components and feature sets. Sophisticated automatic user detection and self-calibration ensure that the user does not need to touch the faucet and helps deliver optimum water savings.

## Specifications

Voltage:	6 VDC series [4 "AA" (alkaline or lithium) and/or external power option]
Sensor range:	Self-calibrated, dependent upon sink depth and finish
Operating water pressure:	10-125 psi
Operating water temperature:	33°F to 140°F (1°C to 60°C)
Aerator:	0.5 gpm, vandal-resistant (standard)

## Important Safety Information

- Installer is responsible for ensuring the product is installed and conforms to all plumbing codes and ordinances.
- Do not convert or modify this Zurn product yourself. All warranties will be voided.
- Water supply lines must be sized according to building designer in order to provide adequate water supply for each fixture.
- Flush all water lines prior to making connections.

## Prior to Installation

Before installing your Zurn® Aqua-FIT® Fulmer Series™ faucet, the items listed below should already be installed on site.

- Lavatory/sink/basin
- Drain line
- Hot and cold water supply lines or pre-tempered water supply line
- Installer/Service should not use pipe dope or teflon/thread sealant anywhere on this product, most notably threads and connection points.
- Care shall be taken when installing this product to prevent marring of any exposed or decorative surfaces.

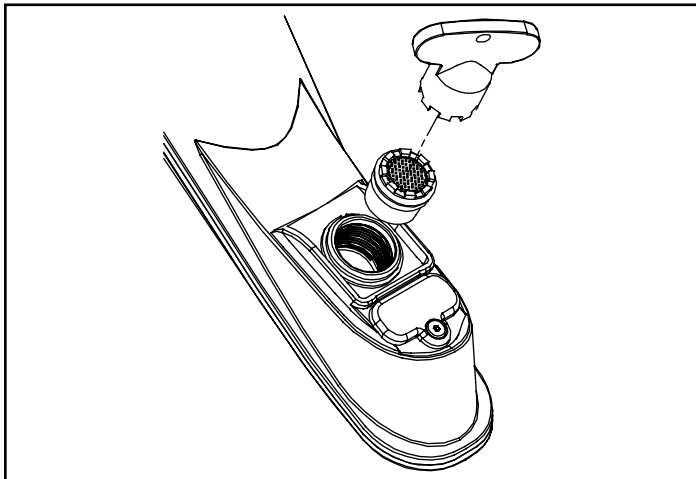
⚠ Be sure the lavatory/sink/basin is clear from any objects upon making the sensor-to-electronics connection, initiating the self-calibration feature. The sink must be clear of any and all objects in order to calibrate appropriately. (Calibration time up to 1 min.)

# Spout Installation Instructions

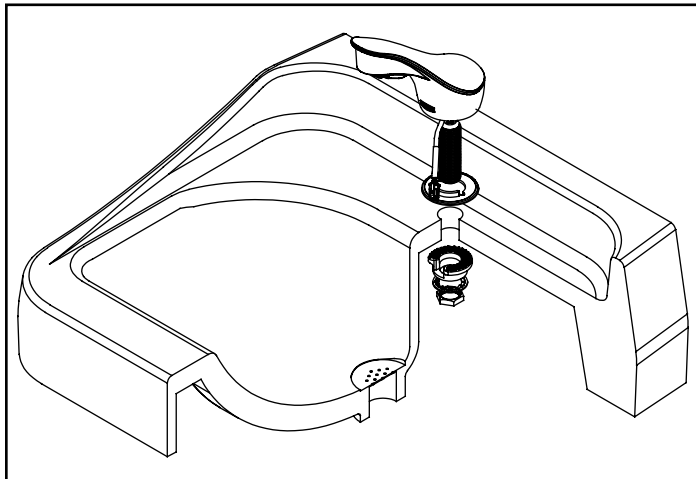
**NOTICE:** Before installation, turn off water supplies to existing faucet and remove faucet if replacing an existing device. Clean the faucet basin and clear away debris. Flush all supply lines before connecting the faucet. Failure to do so may result in debris clogging the inlets and/or internal control and mixing valve.

1. Carefully screw aerator into spout using included tool.

⚠ *Take care to not pinch blue o-ring. It may help to wet the o-ring.*

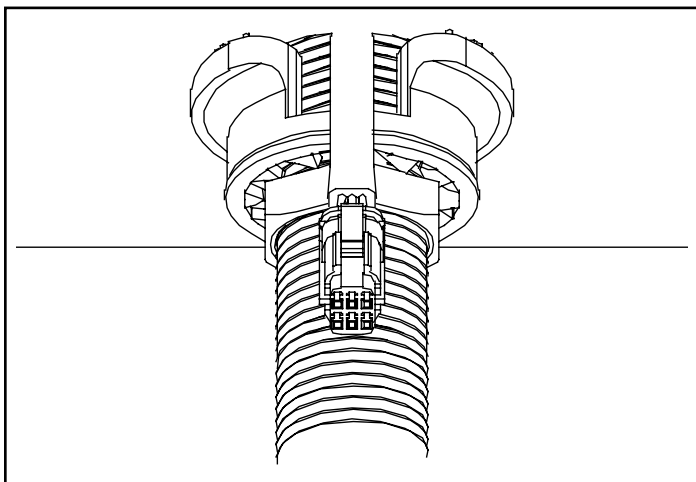


2. Install spout to sink using spout base gasket, plastic mounting washer, star washer, mounting nut (and cover plate for versions with which it is included).



3. Ensure that slot in plastic washer is facing forward.

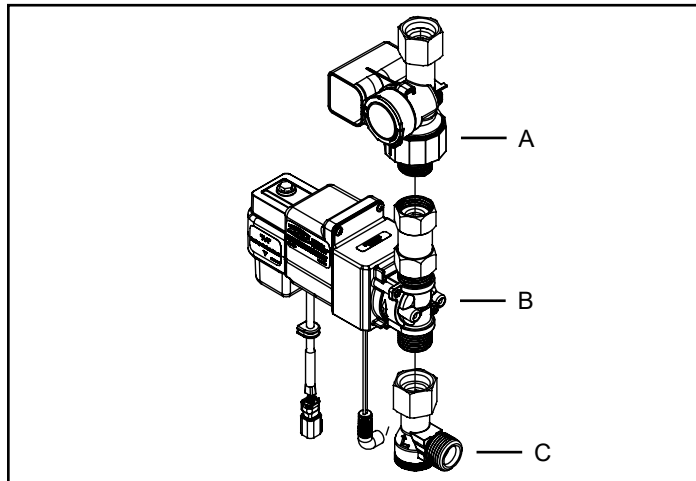
⚠ *Sensor cable should not pass through plastic mounting washer.*



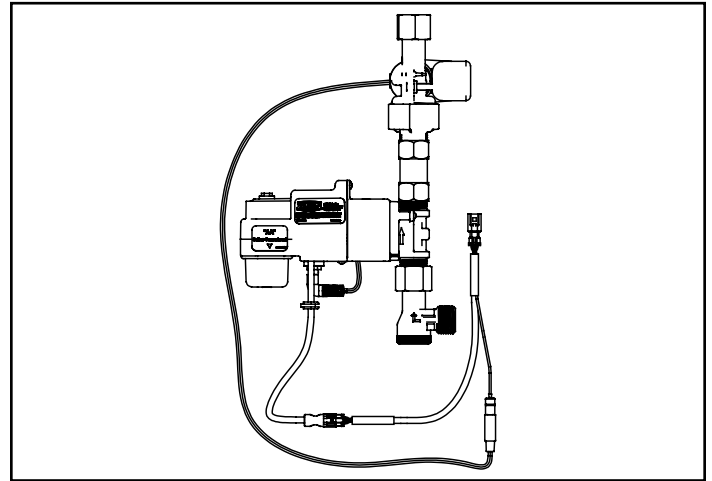
# Electronics Module Installation Instructions

1. Connect hydrogenerator (A) downstream of electronics module (B); connect the electronics module (B) downstream of filter (C).

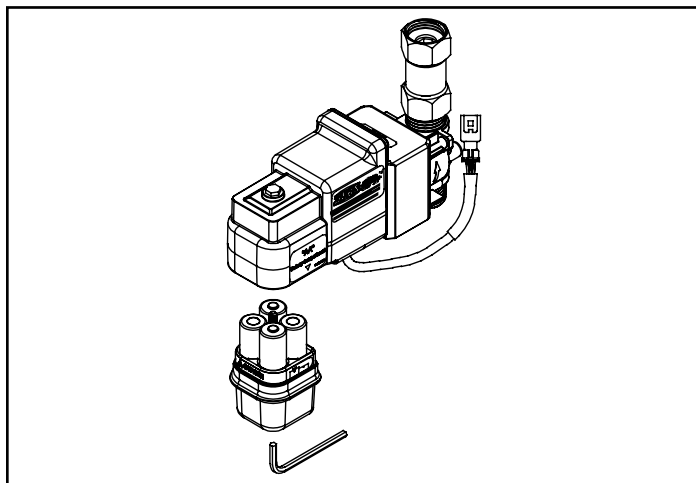
⚠ Do not connect the electronic module to spout.



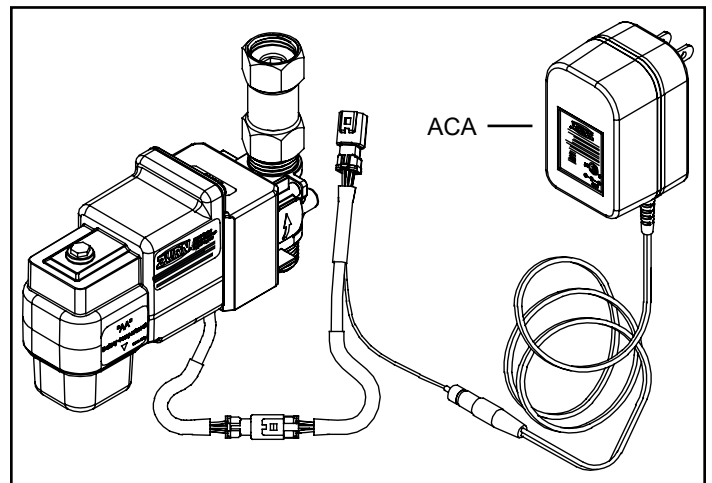
2. For battery-powered version, connect sensor inline connector to electronics module and hydrogenerator.



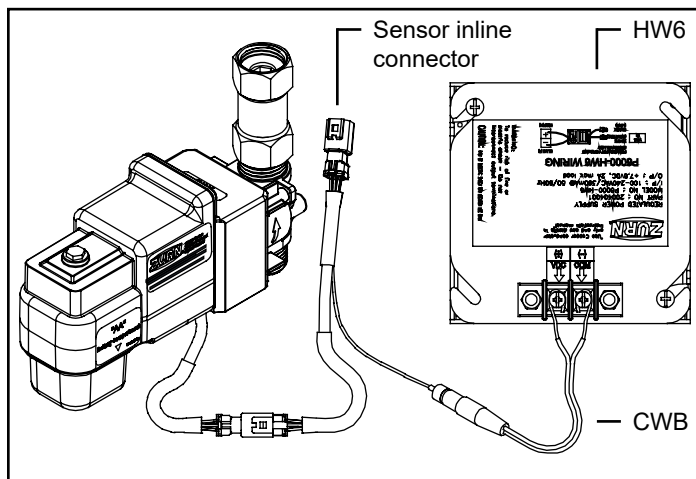
3. Open battery module using supplied Allen wrench and install supplied batteries in the electronics module.



3a. Optional ACA version: Connect sensor inline connector and AC adapter.

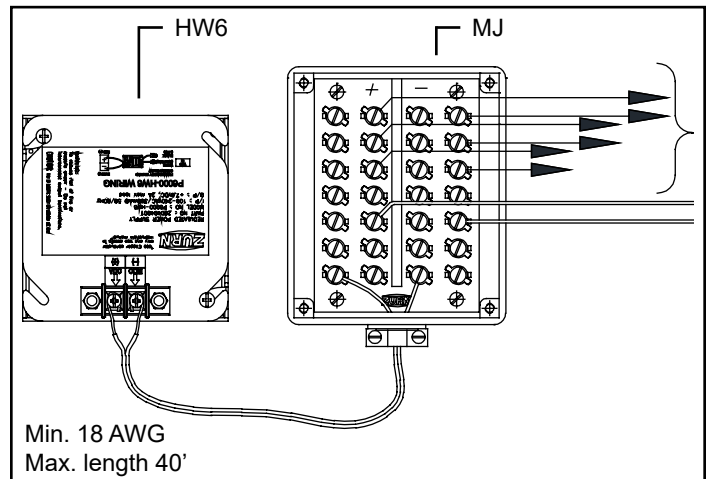


3b. Optional HW6 version: Connect sensor inline connector and hardwire adapter. When securing the CWB wires to the screw terminals on HW6 unit, the black wire with dashed markings should be connected to the positive (+) terminal, and the solid black wire should be connected to the negative (-) terminal.

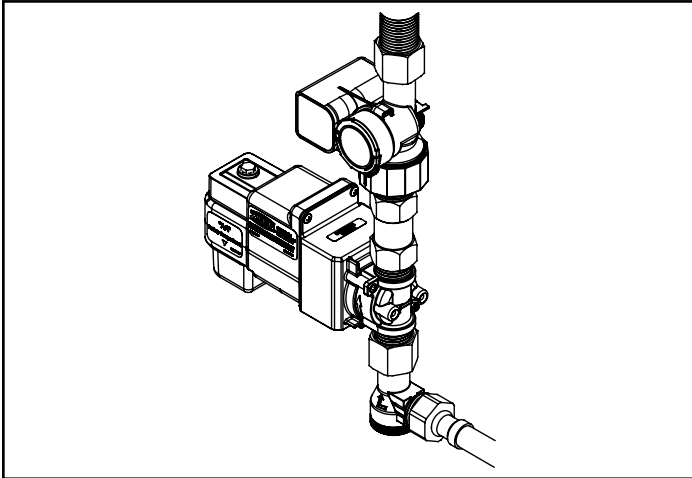


3c. Optional MJ version:

⚠ Do not connect more than 8 solenoids to a single transformer.

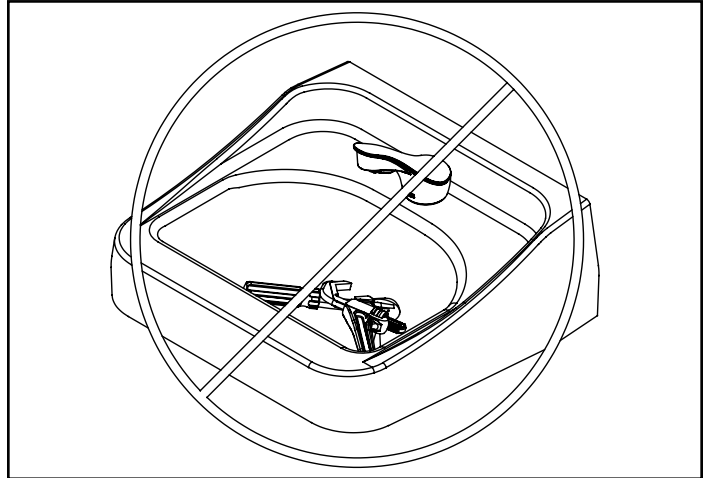


4. Tighten electronics module assembly (for battery-powered versions, with the hydrogenerator) to shank and connect water line(s).



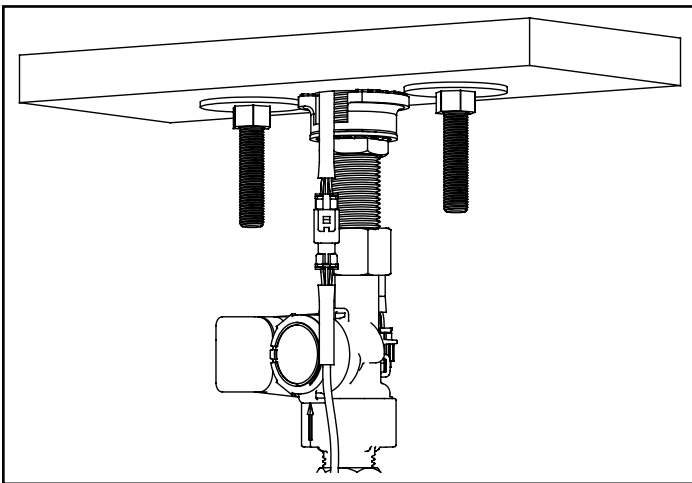
5. Turn on water supply(ies).

6. Ensure that sink is clear of tools/debris and is in normal operating condition.



7. Connect the sensor inline connector (or, for the ACA, HW6, and MJ versions, the solenoid cable from the electronics module) to the sensor cable from the spout.

*⚠ After the connection is made, do not engage the sensor until its self-calibration is complete. The sensor's self-calibration is complete once the faucet stops flowing water. The sensor's self calibration can take up to one (1) minute after the connection is made.*

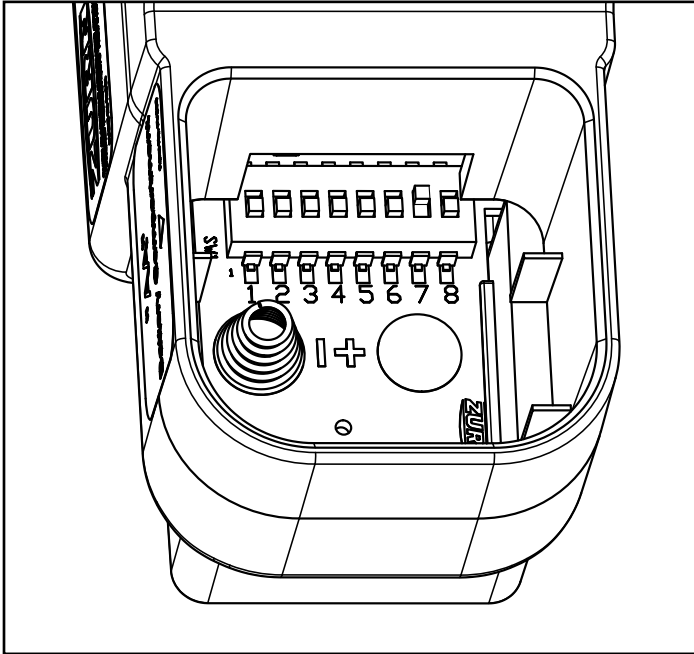


## Adjustable modes and features selection:

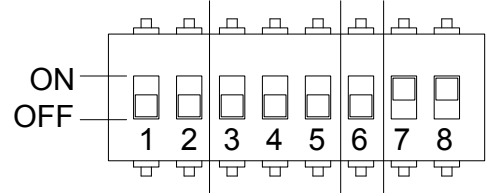
To adjust features from default configuration, you must remove the battery tray. Once battery tray is removed you will see the switches.

Before adjusting switches when electronics box is first installed or when replacing dead battery:

1. Temporarily install battery tray with fresh batteries installed and hold in place for 30 seconds.
2. Remove battery tray and set switches
3. Re-install battery tray



All switches shown in default mode.



Switch Position:	1	2	3	4	5	6	7	8
<u>Purge (Hours)</u>								
Disable:	Off	Off						
12:	On	Off						
24:	Off	On						
48:	On	On						
<u>Time (Seconds)</u>								
30:			Off	Off	Off			
5:			On	Off	Off			
10:			Off	On	Off			
15:			On	On	Off			
60:			Off	Off	On			
Less Time-out:			On	Off	On			
<u>Mode Select</u>								
Sensing Mode:						Off		
Metering Mode:						On		
<u>Sensor Sensitivity</u>								
Low:							Off	
Normal:							On	
Mode A:								Off
Mode B:								On

### Purge Features:

The purge switches can be configured for 4 modes of operation: Disabled (standard configuration), 12 hour, 24 hours, or 48 hours. Purge water flow duration is 2 minutes. Note: Purge activation occurs every switch selected time (0, 12, 24, or 48 hours) after last activation.

### Flow Time:

There are 6 optional time configurations: 30 seconds (standard), 5s, 10s, 15s, 60s, & "Less Time-out". The "Less Time-out" option actually ceases water flow (turns off) after 20 minutes to limit chance of water damage in the event a sink drain becomes blocked.

### Sensing Mode (DEFAULT):

During this mode the valve will shut off after hands are removed. If hands are not removed the time out delay will turn off the faucet (ex: standard configuration is 30 seconds) (See Switch Position Diagram shown above)

### Metering Mode:

When hands are detected by the sensor, water will run for 'X' seconds (standard configuration is 30 seconds) before turning off. (See Switch Position Diagram shown above)

### Sensor Sensitivity: (Default setting: Low):

The 4 sensor sensitivity options are used for varied sink and environmental conditions. The factory default setting should be ideal for most general applications. However, sensor performance can be optimized to adjust for unusual sink finish, material, shape, or unusually bright or dark lighting conditions.

NOTE: After a configuration switch change has been made, disconnect sensor cable from electronics box, wait 30 seconds, then reconnect sensor cable and wait 30 seconds to allow the sensor to tune-in the sink characteristics.

## TROUBLESHOOTING GUIDE:

POTENTIAL SITUATIONS	POSSIBLE CAUSES	SUGGESTED SOLUTION TIPS
Faucet is non-responsive	Battery voltage low or no power	Change out batteries or verify power provided by HW6 or ACA
	Sensor and electronic connector cable has bent or broken pins	Check to see if pins are missing, bent, or broken. If yes, then the electronic box needs replaced
	Sensor lens could have surface damage, scratches, or deposit build ups	Inspect the sensor lens underneath the spout tip. May require cleaning with a damp cloth or sensor replacement
	Sensor lens could be obstructed by environmental factors such as high reflective surfaces or bright lighting conditions	If this is the case, then adjust the dip switch settings for sensor sensitivity per the diagram on previous page (switches 7 and 8). Direct sunlight into bowl may make the unit inoperable. Do not allow direct sunlight into bowl
Faucet does not activate after initial installation	Sensor may not have had enough time to calibrate prior to a user or target trying to initiate activation	Disconnect the sensor and electronic box cables and wait for 30 seconds. Reconnect the cables, but allow for another 30 seconds before placing hands or a target within the sensor range. You should hear a click of the solenoid once calibration is complete.
Water does not stop	Electronics box cable connector has bent pins that are shorted	Check to see if pins are missing, bent, or broken. If yes, then the electronic box needs replaced.
Ghost Activation	Sensor lens could be obstructed or environmental factors such as high reflective surfaces and/or bright sunlight conditions	"Check/clean sensor lens of any debris or buildup If sunlight or IR interference is a factor, refer to page 7 "Sensor Sensitivity" and adjust faucet for Mode B operation."
Sensor faucet is leaking underneath the sink or counter	Mounting hardware is not tightened sufficiently (faucet shank, electronic box, supply hoses, etc)	Check and ensure the nuts and joints are tight and secure from the supply stop all the way to the faucet shank.
	Missing the washer located in the solenoid box nut where it assembles to the faucet shank.	Make sure the water supply stops are shut off. Check to ensure the washer is installed or damaged. If not, install washer. If a washer is installed replace with new.

For further assistance with troubleshooting visit <http://www.zurn.com>

### Care and Cleaning Instructions:

- Do not use any abrasive or chemical cleaners to clean the faucets.
- If abrasives or chemicals are used it can lead to dulling of luster, attacking of chrome plating or decorative finishes.
- ONLY use mildly warm soapy water, and then wipe the device dry with a clean/soft towel or cloth.
- Upon cleaning other areas of the restroom be sure the sensor lenses are protected from other cleaning chemicals/solvents to prevent potential damages to the sensor and/or electronics.

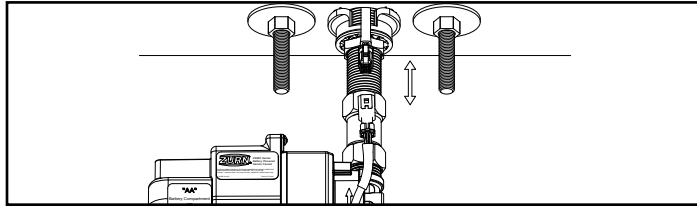


## Spout Replacement

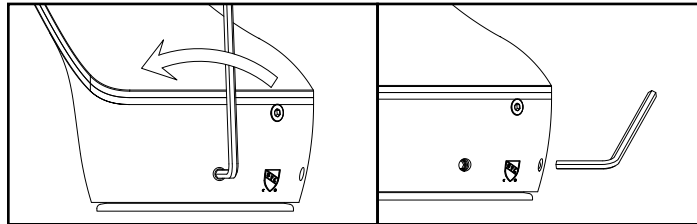
To replace spout body, you must first turn water off, then remove spout with sensor cable.

Before removing the spout, disconnect the sensor cable below the deck so that the cable head can be pulled up through the deck.

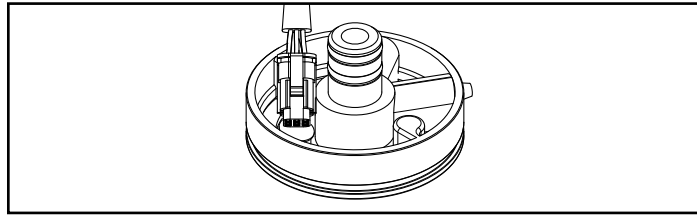
\*Take care to press the locking mechanism in prior to disconnecting sensor cable. PULLING APART WITHOUT PRESSING IN THE LOCK MAY DAMAGE THE SENSOR OR CONTROLLER CABLES.



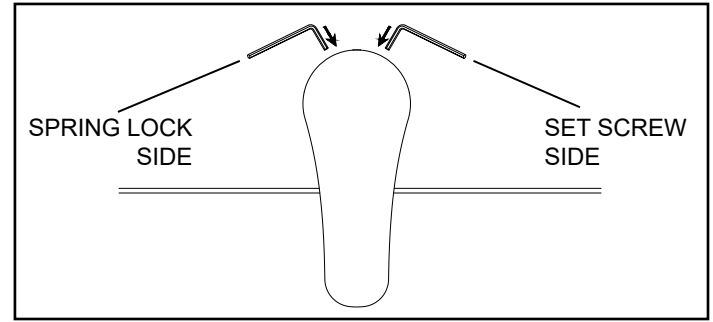
Use supplied 3/32" hex wrench to loosen set screw. Screw will retract into the base to eliminate loss. Using the same hex wrench, depress the ball detent to release spout from base.



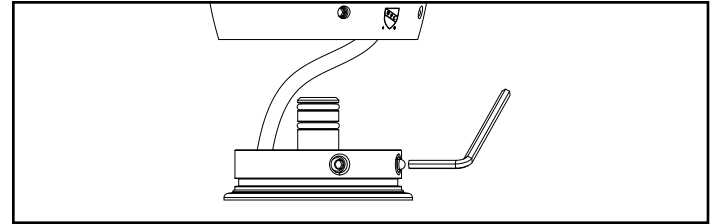
To reinstall faucet, first drop sensor cable of new spout through the front of the base. Lower spout onto base inserting base nipple into spout port.



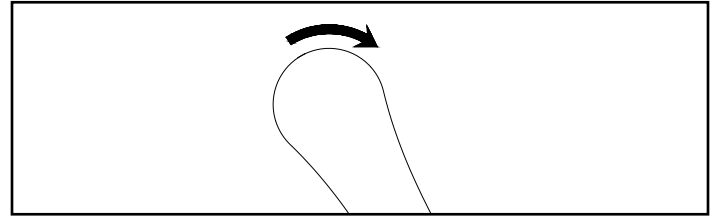
Note location of set screw and spring lock.



Lift spout and pull sensor cable through deck and base.

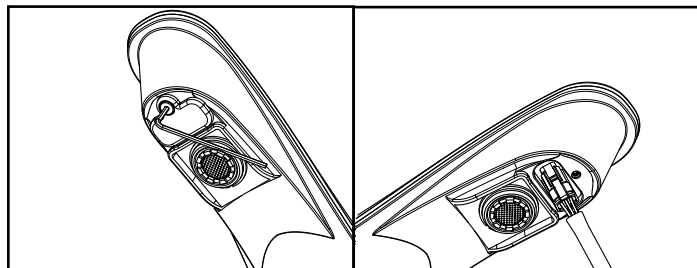


Align spout so that the ball detent is between the 2 holes. Press down and turn clockwise. Use hex wrench to back set screw out to secure spout.

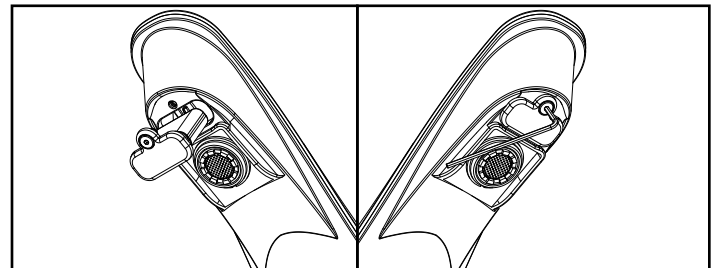


## Sensor Assembly Replacement

With spout disengaged, sensor assembly can now be removed by loosening the center screw with supplied M3 Allen wrench. With assembly removed, you can now install new assembly and reassemble your spout.

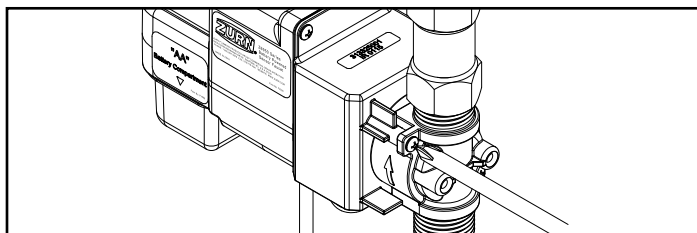


Loosening screw will cause sensor assembly to back out of spout body. It may be necessary to push cable from connector end to aid in sensor assembly removal. Firmly press into pocket and tighten screw. Sensor connector may need to be turned horizontally when first inserting into the spout.

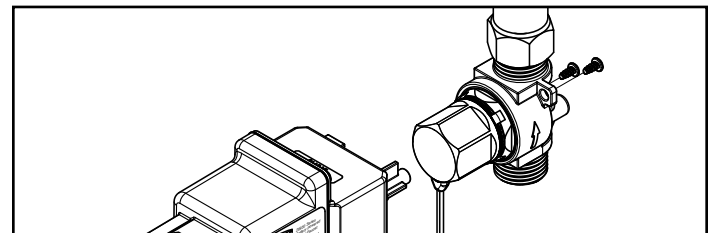


## Accessing the Solenoid

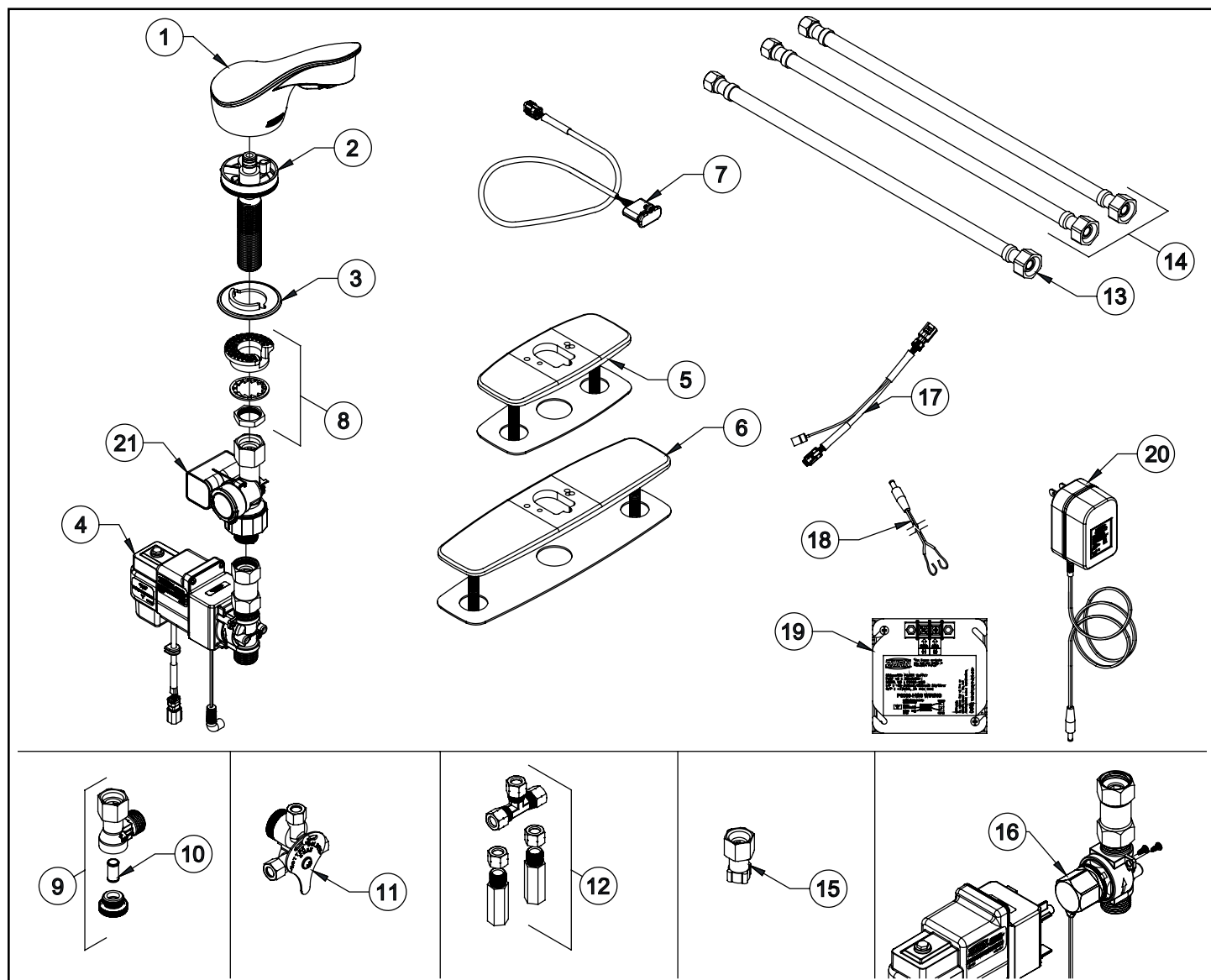
To service solenoid use Phillips head screw driver to remove the screws on both sides of the electronics box.



With screws removed, the electronics box can slide off and allow access to the solenoid for service.



# Parts List



Description	Product No.
1. Z6951 Spout Assembly with Sensor	P6951-XL-S-1
2. Spout shank base for Z6950/Z6955-XL	P6950-XL-B
3. Z6950 Spout base gasket	P6950-XL-42
4. Electronics Box with Solenoid	P6950-XL-B-L-V2
5. 4" Cast Cover Plate w/Gasket	P6950-CP4
6. 8" Cast Cover Plate w/Gasket	P6950-CP8
7. Z6950 Sensor Assembly	P6950-XL-EL
8. Mounting Kit	P6900-43
9. Filter Kit	P6900-120BC
10. Filter Screen	P6900-MV-7

Description	Product No.
11. Mixing Valve w/Filter	P6900-XL-MV
12. Mixing Tee w/Filters and Back Checks	P6900-XL-MT
13. Single Stainless Supply Hose (XL)	P6900-SSH
14. Stainless Supply Hoses (XL)	P6900-SH
15. Composite Mixing Valve Adaptor	P6900-MV-ADAP
16. "Solenoid Rebuild Kit (Diaphragm, plunger and plunger spring)"	P6950-SRK-V2
17. Sensor Inline Connector	P6950-XL-DC
18. -CWB Pigtail	P6900-CWB
19. Optional Plug-in Power Converter	P6900-ACA
20. -HW6 Power Supply	P6900-HW6
21. Hydrogenerator Assembly	P6900-HYD

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