



Aqua-FIT®

Fulmer Series™

Sensor-Operated Lavatory Faucets for
Battery or Plug-In Installations.

Installation, Operation, Maintenance and Parts Manual

Patented and Patents Pending



Z6951-XL

Sensor-Operated Battery-Powered Lavatory Faucets

- ⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
- ⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
- ⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

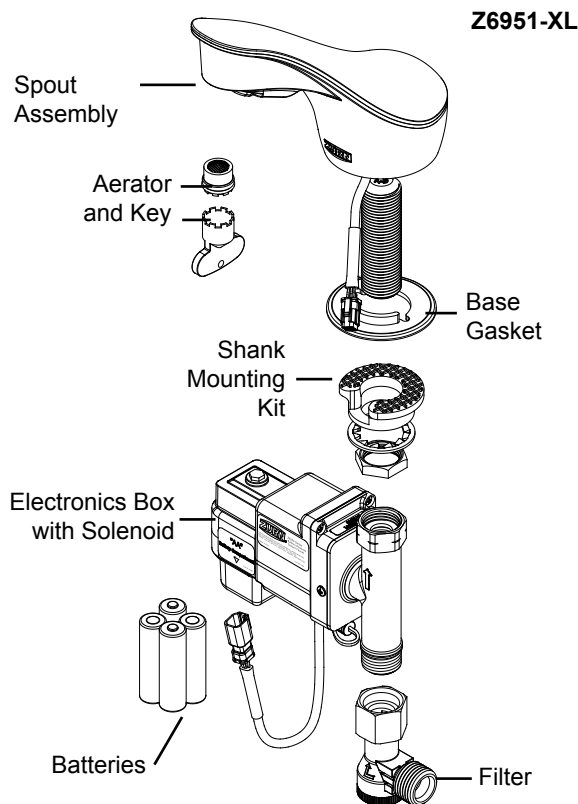
LIMITED WARRANTY

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.

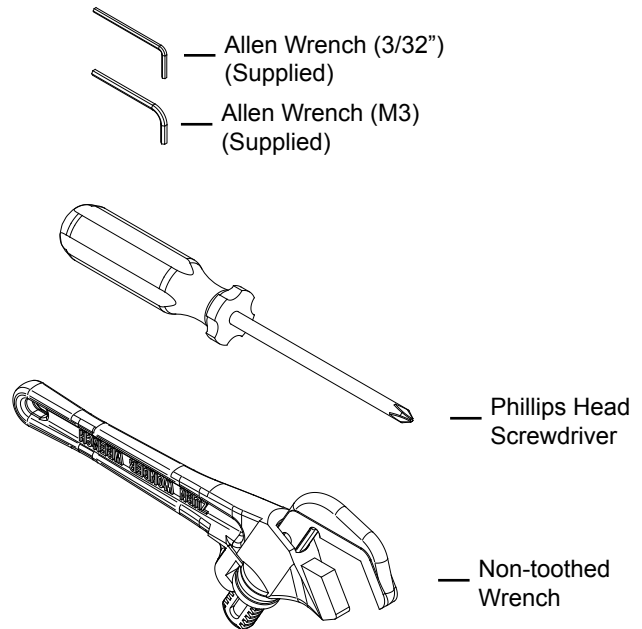
NOTICE: READ ENTIRE MANUAL PRIOR TO INSTALLING PRODUCT.

NOTE: 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.

Fulmer Faucet Package Contents



Required Tools:



Overview:

Zurn® Aqua-FIT® Series Sensor™ Faucets features 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 ensures 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
Operational Water Temperature:	33°F to 140°F (1°C to 60°C)
Aerator:	1.5 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® Faucet: the items listed below should already be installed on site.

- Lavatory/sink
- Drain Line
- Hot and cold water supply line or pre-tempered water supply line.
- Installer/Serviceur 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.

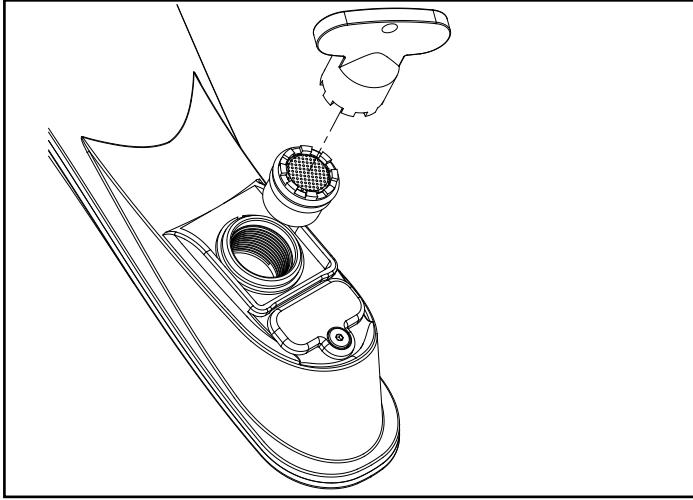
! Be sure the water supply is turned on and the sink/lavatory/basin is clear from any objects upon making the sensor to electronics connection initiating the self-calibration feature. The sink must be clear of any and all objects and water supply is turned on in order to calibrate appropriately (calibration time approx 30-60sec) (the system will perform both wet and dry calibration).

NOTE: 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

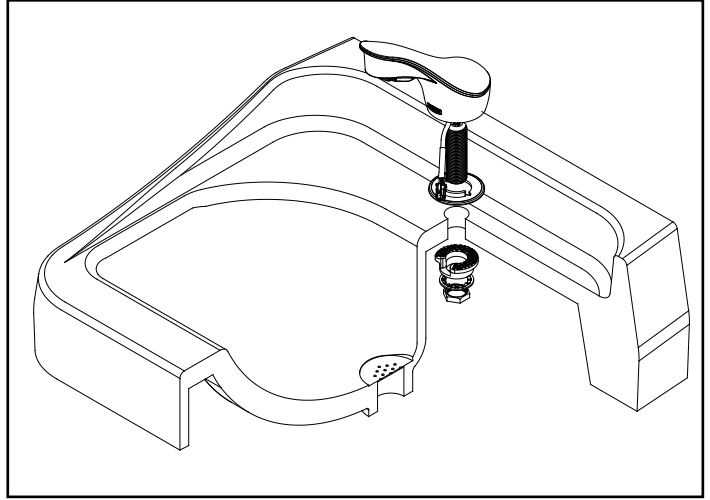
Spout Installation - Step 1

1.1. Carefully screw aerator into spout using included tool.

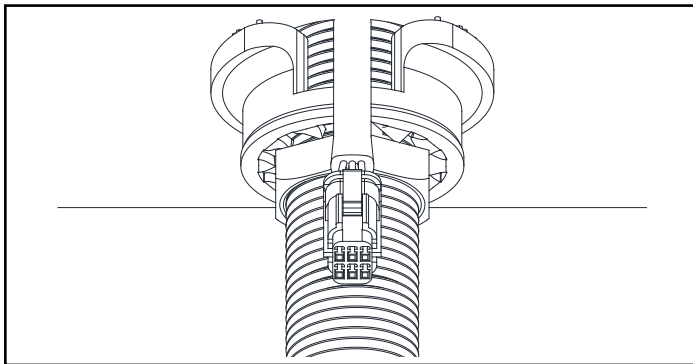
! Take care to not pinch blue o-ring



1.2. Install spout to sink using spout base gasket, plastic mounting washer, star washer and mounting nut (and cover plate for versions that are included).



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

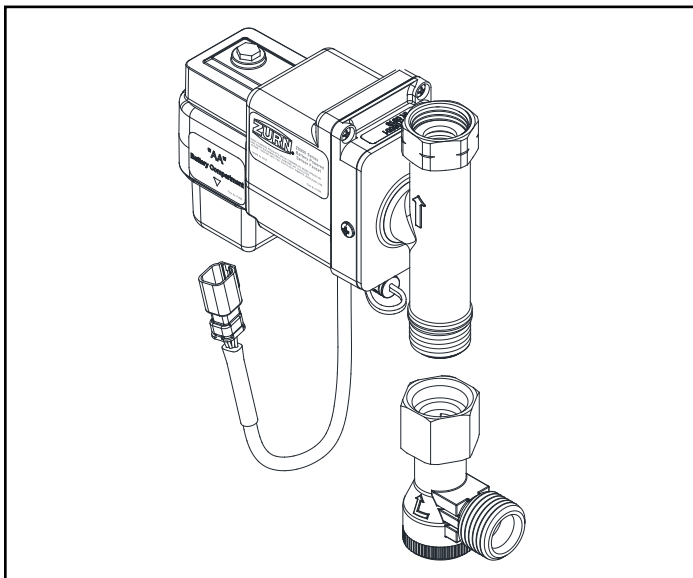


! Sensor cable should not pass through plastic mounting washer.

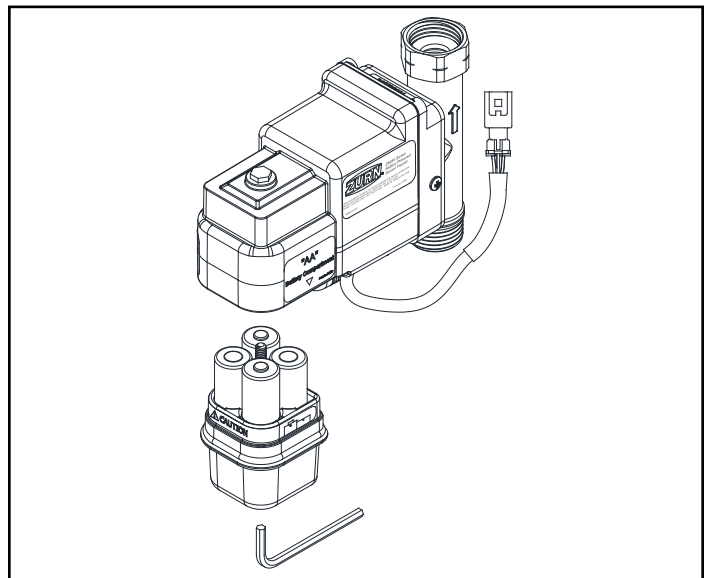
Electronics Module Installation - Step 2

2.1. Assemble the electronics module

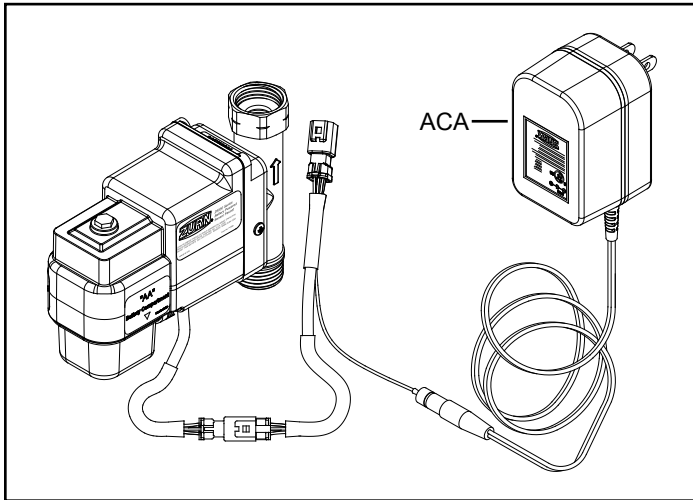
2.1a. For non-IM assembly, connect filter to bottom of electronics module.



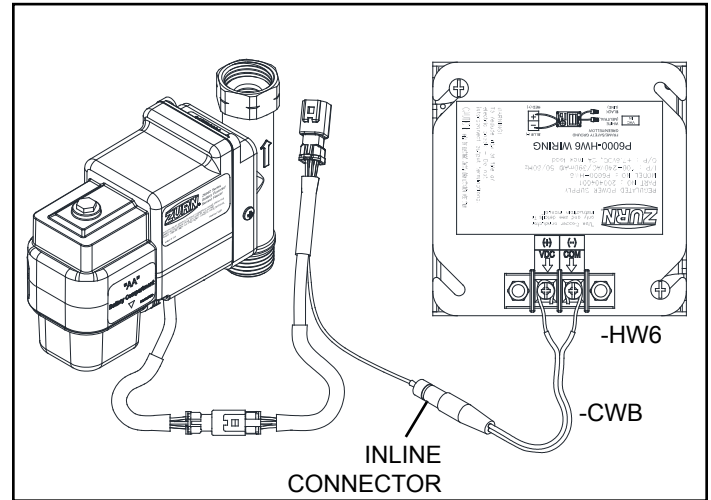
2.2. Open battery module using supplied Allen wrench and install supplied batteries in the electronics module.



2.2a. Optional ACA version: Connect supplied inline connector and AC adapter.

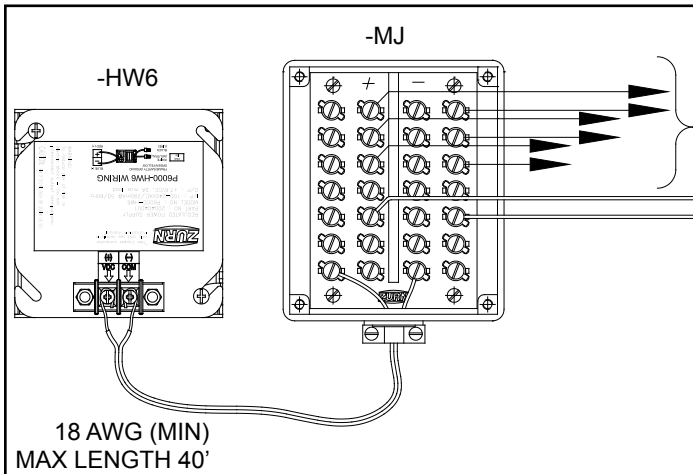


2.2b. Optional HW6 (Hardwired 6V) version: Connect supplied inline connector and hardwire adapter. When securing the CWB wires to the screw terminals on HW6 unit, the BLACK WITH DASHED MARKINGS should be connected to the Positive (+) terminal, and the SOLID BLACK wire should be connected to the Negative (-) terminal.

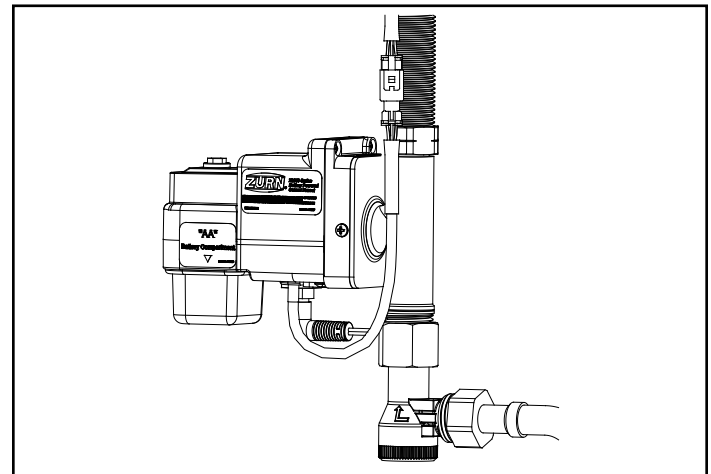


MJ unit (sold separately)

Note: Do not connect more than 8 solenoids to a single transformer



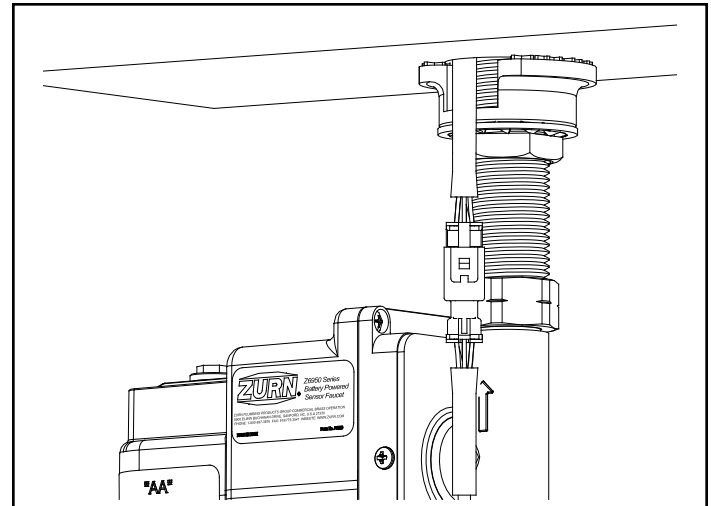
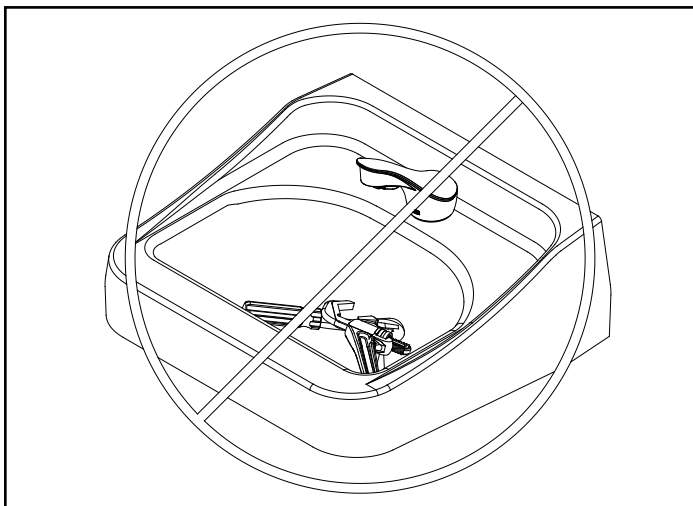
2.3. Tighten electronics module assembly to shank and connect water line(s).



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

2.5. Turn on water supply(ies). Water supply must be turned on in order for sensor to perform wet calibration step.

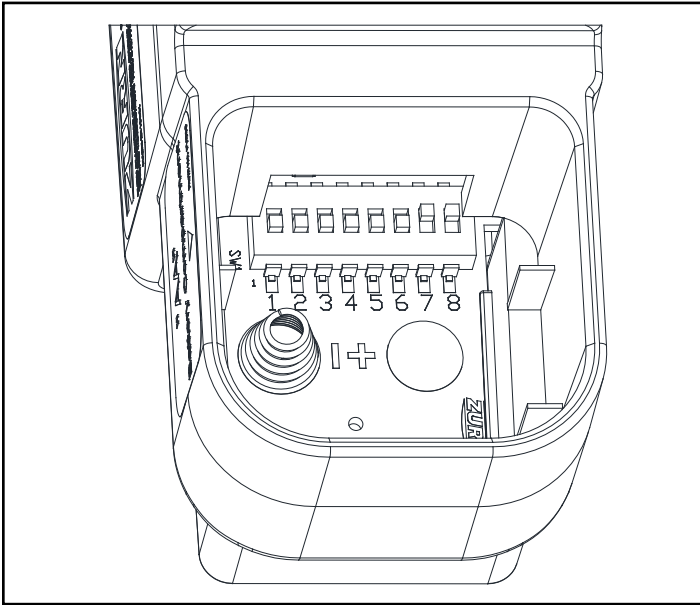
2.6. Connect solenoid cable from electronics module to sensor cable from spout.



⚠ Do not engage the sensor for 30 seconds after the connection is made. The sensor will perform automatic calibration.

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.



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 Sensing & Metering Mode flow chart above page)

Metering Mode:

When hands are detected by the sensor, water will run for 'X' seconds (standard configuration is 30 seconds) before turning off. (See Sensing & Metering Mode flow chart on following page)

Sensor Sensitivity: (Default setting: Low):

There are 4 sensitivity options, which can be selected to achieve the optimal detection performance related to the sink material, shape, & finish. The faucet sensor sensitivity is configured during pack-out but the mode can be changed upon installation to optimize the performance within the sink. Sensor sensitivity and sensor detection Modes A & B may be tried for various lighting conditions, sink materials and shape.

Switch 7 controls the sensitivity

- On (default) is normal sensitivity for most sinks providing max range.
- Off set the sensor to a lower sensitivity level for sinks that cause false activation. The detection range maybe less for all hands.

Switch 8 controls sensor mode

- On (default) enables the mode that filters the effects of flowing in the bottom of problematic sinks. Detection maybe less for some hands.
- off disable the filter mode, so detection is expanded deeper into the sink for max detection range for all hands. Some sinks may only be able to operate in this mode.

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 additional seconds to allow the sensor to tune-in the sink characteristics. Calibration includes characterizing the sink with water running into the bowl. This could be 5 to 60 seconds depending on configuration.

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.	<p>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 sink may make the unit inoperable. Do not allow direct sunlight into sink.</p> <p>If one mode does not help try one of the following: -switching 7 to Off to set the sensor to the lowest sensitivity level (detection range may be less for all hand types). -switching to alternate mode using switch 8; mode A or B depending on current configuration</p> <p>Reset sensor after dip switch changes.</p>
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.
	Check if protective film was removed from lens.	
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.	<p>Check/clean sensor lens of any debris or buildup If sunlight or IR interference is a factor, refer to page 5 "Sensor Sensitivity" and adjust faucet for Mode B operation. Also, decreasing the sensitivity setting (switch 7) may help.</p> <p>Reset sensor after dip switch changes.</p>
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 damaged, replace with new.

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

Care and Cleaning Instructions:

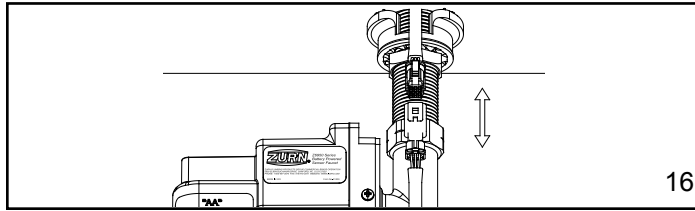
- Do not use any abrasive or chemical cleaners to clean the faucets.
- If abrasives or chemicals are used it can lead to dulling of luster, attacking of chrome plating or decorative finishes.
- ONLY use mildly warm soapy water, and then wipe the device dry with a clean/soft towel or cloth.
- Upon cleaning 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

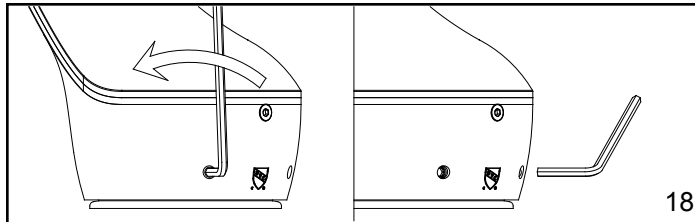
To replace spout body, you must first turn water off, then remove spout with sensor cable.

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

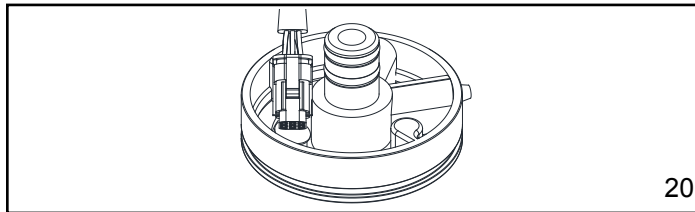
*Take care to press the locking mechanism in prior to disconnecting sensor cable. PULLING APART WITHOUT PRESSING IN THE LOCK MAY DAMAGE THE SENSOR OR CONTROLLER CABLES.



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.

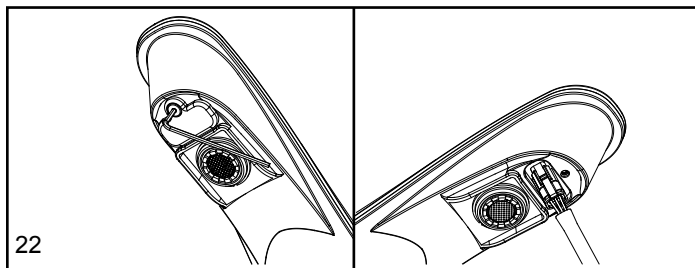


To reinstall faucet, first drop sensor cable of new spout through the front of the base. Lower spout onto base inserting base nipple into spout port.



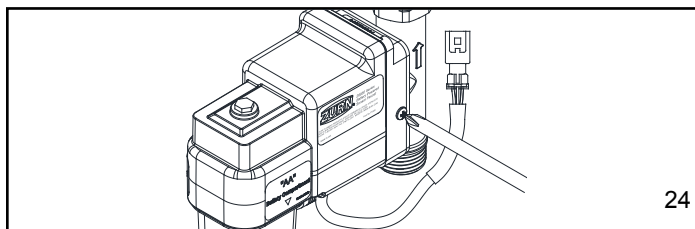
Sensor Assembly Replacement

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.



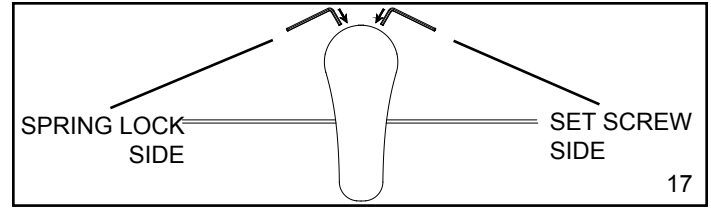
Accessing the Solenoid

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

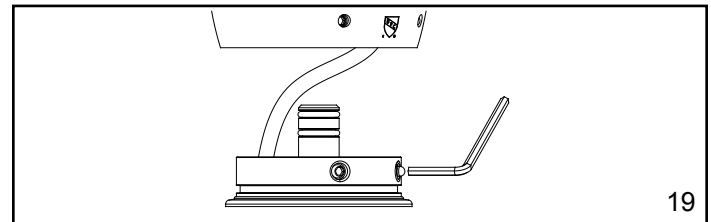


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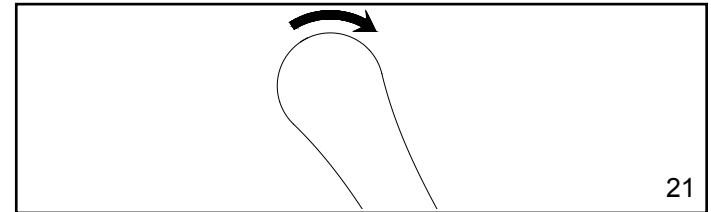
Note location of set screw and spring lock.



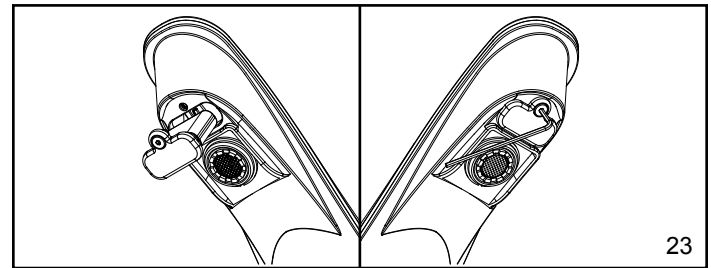
Lift spout and pull sensor cable through deck and base.



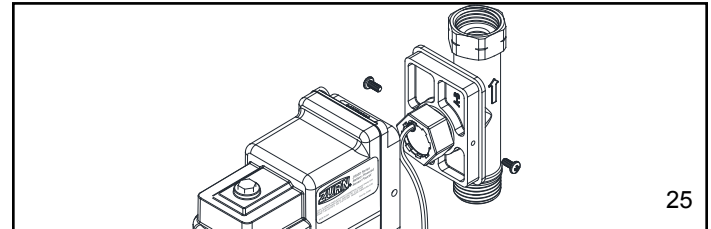
Align spout so that the ball detent is between the 2 holes. Press down and turn clockwise. Use hex wrench to back set screw out to secure spout.



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.

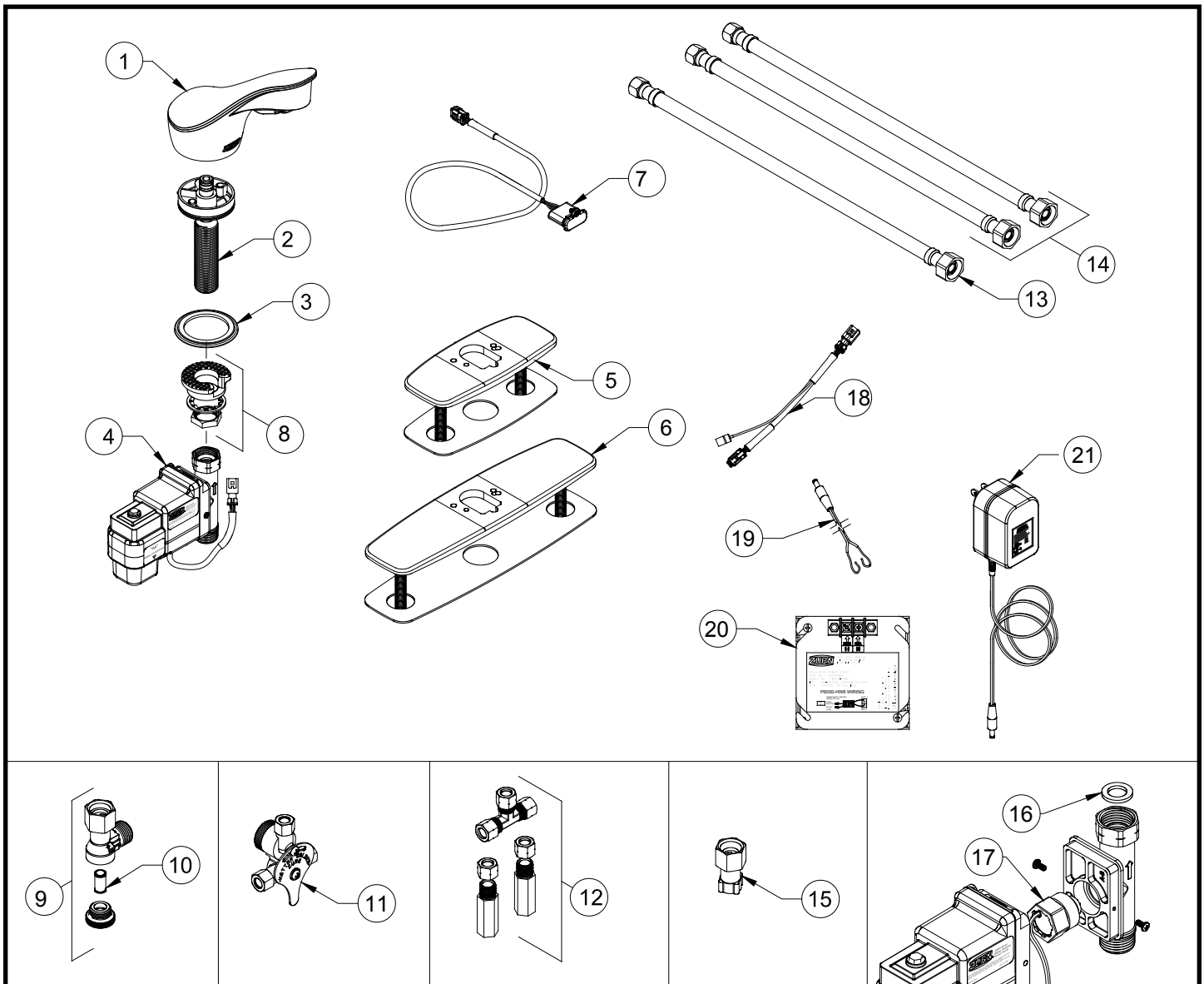


With screws removed, the electronics box can slide off and allow access to the solenoid for service.



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Z6951-XL Parts List



Description	Product No.
1 Z6951 Spout Assembly with Sensor	P6951-XL-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
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	P6950-43
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-XL
15. Composite Mixing Valve Adaptor	P6900-MV-ADAP
16. Shank Connection Gasket	P6900-SG
17. "Solenoid Rebuild Kit (Diaphragm, plunger and plunger spring)"	P6950-SRK
18. Sensor Inline Connector	P6950-XL-DC
19. -CWB Pigtail	P6900-CWB
20. -HW6 Power Supply	P6900-HW6
21. Optional Plug-in Power Converter	P6900-ACA