



# Aqua-FIT®

## Serio Series™

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

### Installation, Operation, Maintenance, and Parts Manual

Patented and Patents Pending



**Z6950-XL-S**



**Z6955-XL-S**



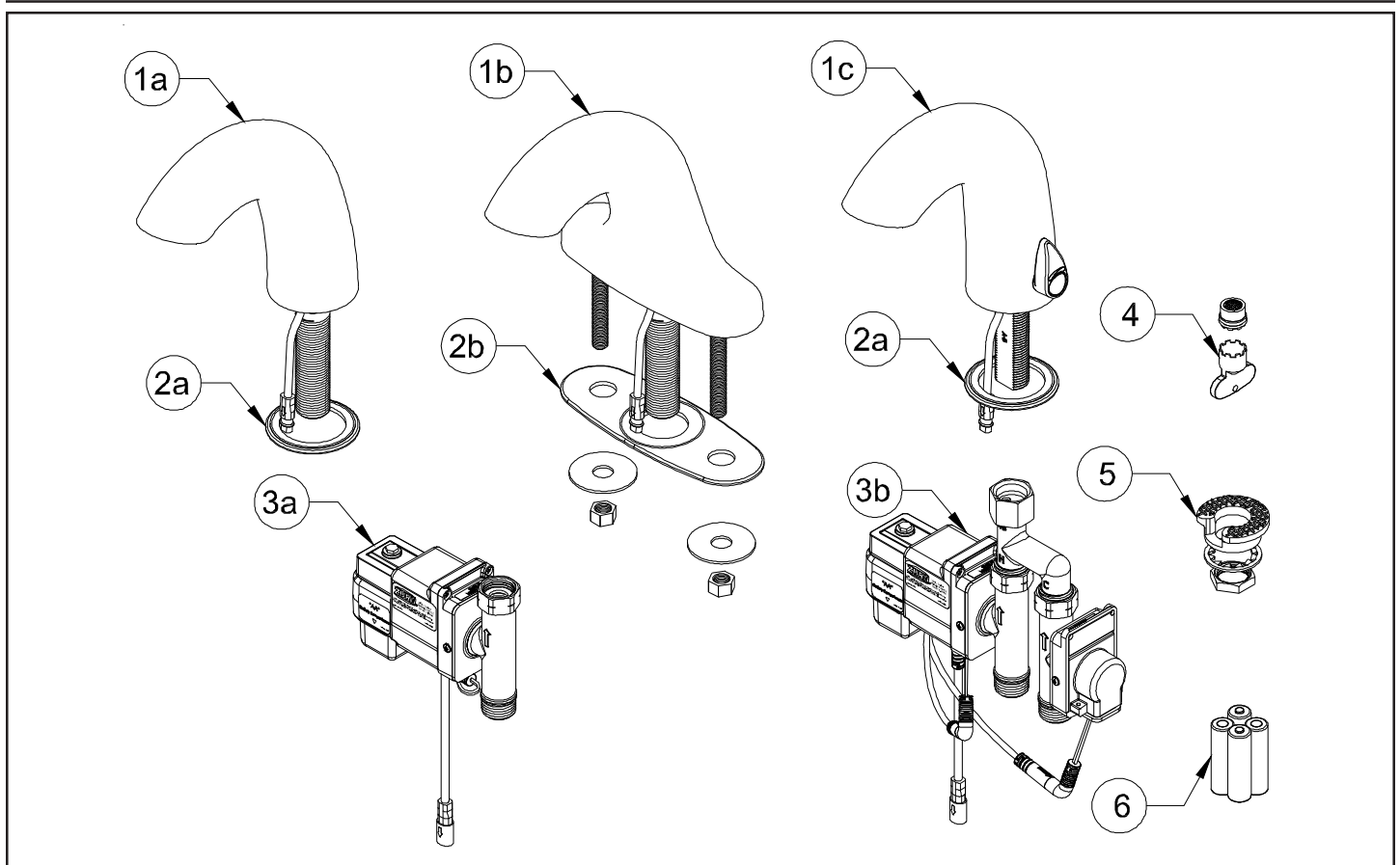
**Z6950-XL-IM-S**

### Sensor-Operated Battery-Powered Lavatory Faucets

#### 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.

# Serio Series™ Faucets



1a.	Z6950 Spout Assembly
1b.	Z6955 Spout Assembly
1c.	Z6950-IM Spout Assembly
2a.	Z6950 Spout base gasket
2b.	Z6955 Spout base gasket

3a.	Electronics Box with Solenoid - Z6950/55-XL
3b.	Electronics Box with Solenoid - Z6950-XL-IM
4.	Aerator and Key
5.	Mounting Kit
6.	Batteries

## SPECIFICATION

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)

## OPERATION

- 1.) Invisible light rays are continually emitted from the faucet sensor.
- 2.) When the user's hands come into range of the sensor's detection zone, the beam is reflected back to the sensor's receiver, and activates the solenoid valve.
- 3.) After the user removes their hands, the absence of the reflected light closes the valve. The circuit automatically resets for the next user.
- 4.) If an object remains in view continuously, the faucet will automatically shut off. The faucet will remain off until the object is removed. After the object is removed, the faucet functions normally.

## IMPORTANT:

- All plumbing is to be installed in accordance with applicable codes and regulations.
  - Water supply lines must be sized to provide an adequate volume of water to each fixture.
  - Flush all water lines prior to valve installation to ensure proper operation. Particulates in the water can block small orifices within the valve which may result in continuous running.
  - The use of toothed tools during installation or service of the faucet or its components may lead to premature failure.
- FAUCET SENSOR COMMENCES AUTO RANGE CALIBRATION FOR 30 SECONDS UPON CONNECTING SENSOR TO ELECTRONICS BOX. ENSURE FAUCET AND SINK BASIN HAVE BEEN INSTALLED, AND AREA IS IN THE FINAL OPERATING CONDITIONS BEFORE CONNECTING SENSOR TO THE ELECTRONIC BOX.**

## Prior to Installation:

Before installing your Zurn® Aqua-FIT® Faucet: the items listed below should already be installed on site.

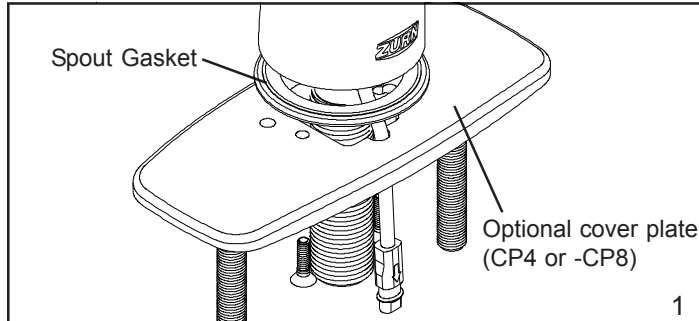
- Lavatory/sink
- Drain Line
- Hot and cold water supply line or pre-tempered water supply line.

If you are replacing an existing faucet or Aqua-FIT® shells, turn off water supply and remove the old faucet. Clean lavatory rim around the mounting area for the new sensor faucet.

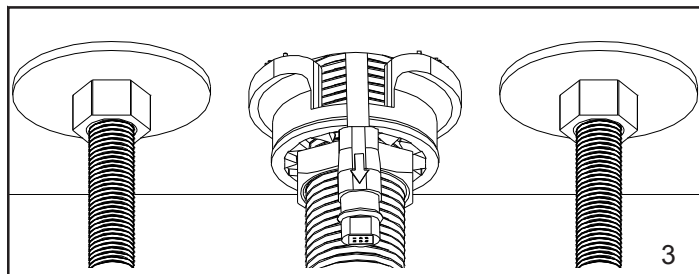
## CARE AND CLEANING INSTRUCTIONS:

**DO NOT** use abrasive or chemical cleaners to clean faucets as they will dull the luster and attack the chrome or special decorative finishes. Use only mild soap and water, then wipe dry with a clean cloth or towel. While cleaning the bathroom tile and floor, the faucet and electronics should be protected from splattering of water, cleaner, acids and cleaning fluids that can damage the sensor faucet.

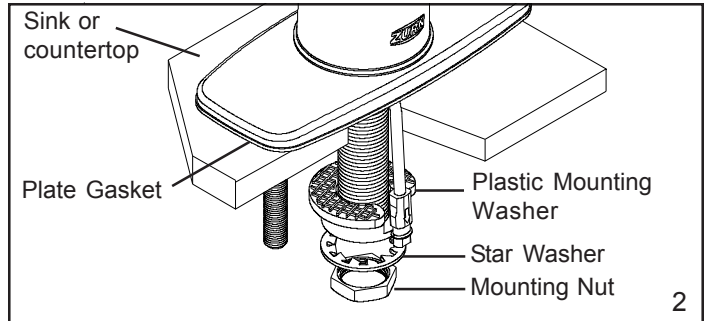
## Step 1. - Spout Installation



1.1) Pass sensor connector cable and shank through gasket. Align gasket with faucet bottom and press firmly together.  
NOTE: For faucets with -CP4 or -CP8 suffix, pass sensor connector and shank through cover plate and fasten to the faucet with the provided screws.

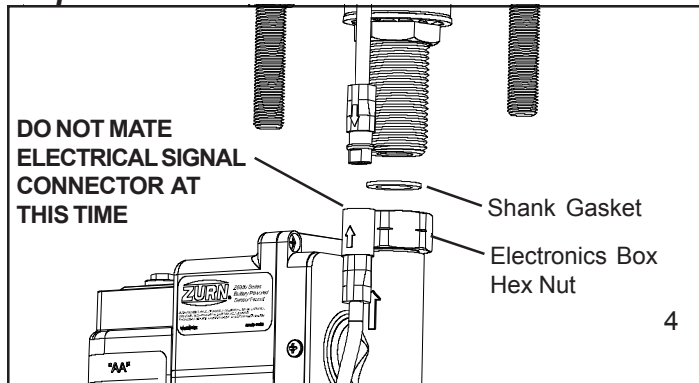


1.3) Ensure that slot in plastic washer is facing forward. **The sensor cable must pass through slot in plastic mounting washer.** NOTE: Do not pinch or damage the sensor cable during tightening of the nut.

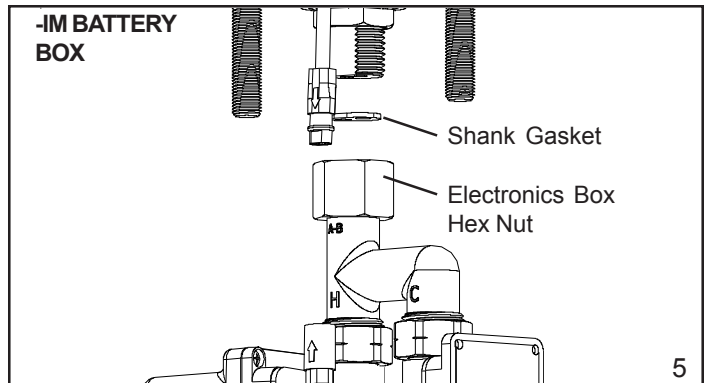


1.2) Pass the sensor connector wire and shank through cover plate gasket (if cover plate option is incorporated) and through the hole in the sink and/or countertop. Orient black plastic mounting washer with the slot facing up. Place mounting washer and star washer over shank and secure the entire assembly to the lavatory with the mounting nut.

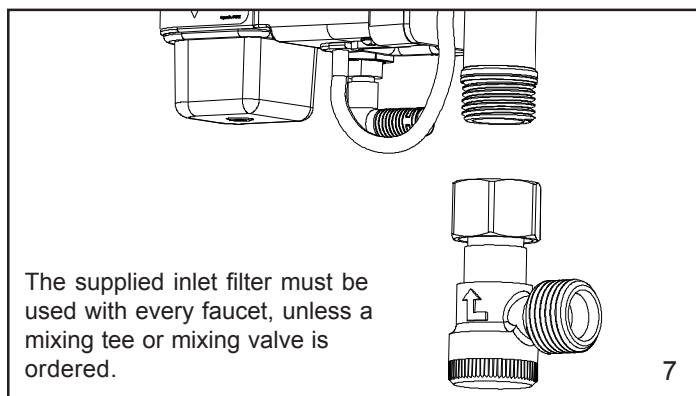
## Step 2.- Electronics Module Installation



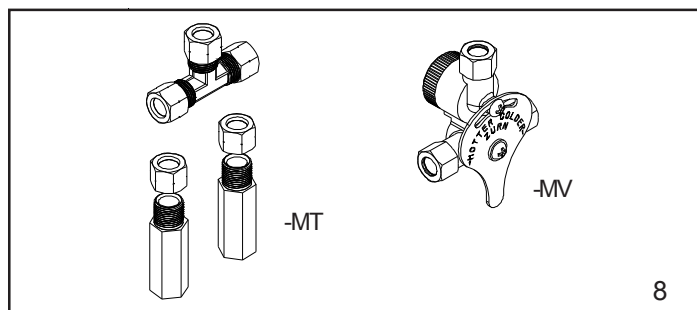
2.1) Attach electronics module to the shank using the hex nut and gasket provided. Orient the electronics in a convenient location and tighten hex nut. **DO NOT USE THREAD SEALANT.**



### Step 3.- Filter or Mixing Tee or Mixing Valve Installation



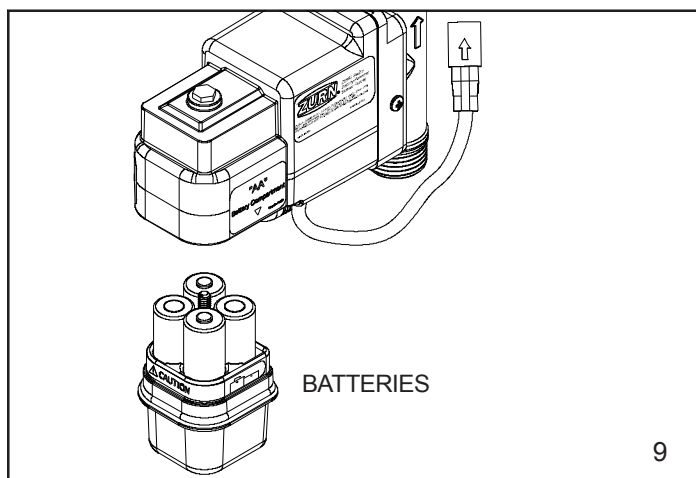
3.1) The inlet filter is attached directly to the electronic module's water inlet. Tempered water is then supplied to the filter using a standard 3/8" x 1/2" ball riser (supplied by others.)



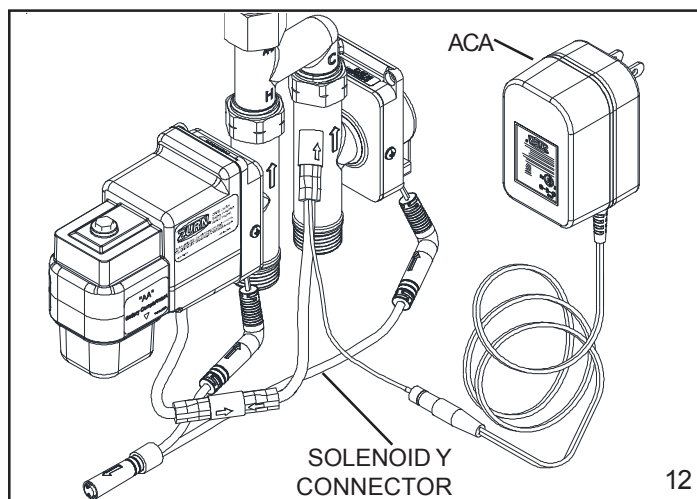
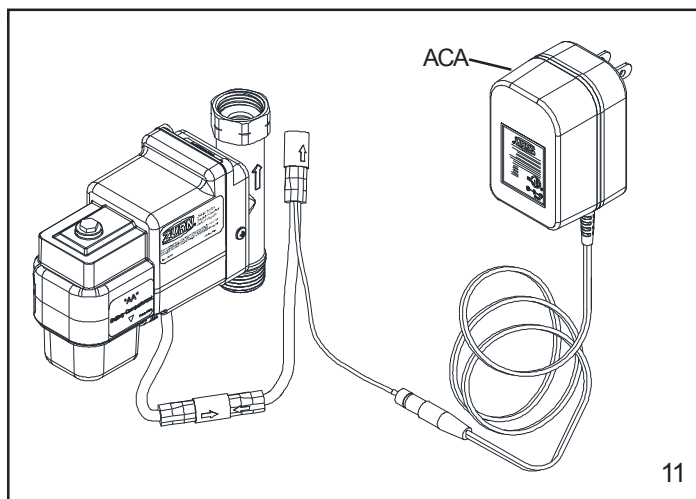
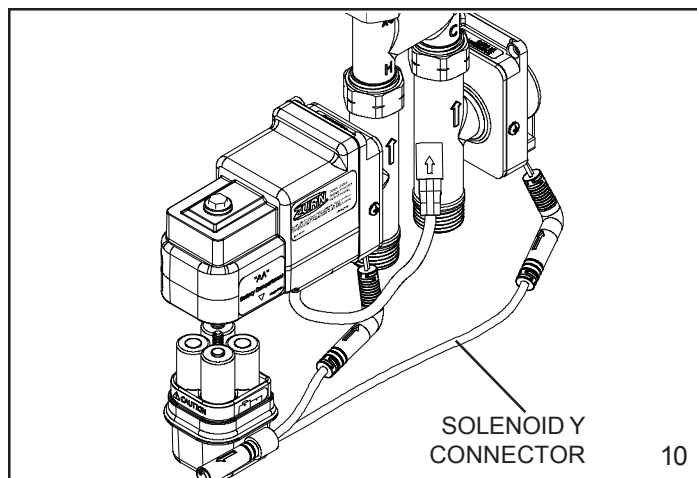
3.2) The optional mixing tee assembly (-MT) or mixing valve (-MV) have integral filters and back checks. These take the place of the standard inlet filter when ordered. The mixing tee or mixing valve outlet attaches to the electronics module with a 3/8" x 1/2" ball riser (supplied by others). Hot and cold water is then supplied to the appropriate 3/8" compression inlets.

### Step 4.- Connect Power

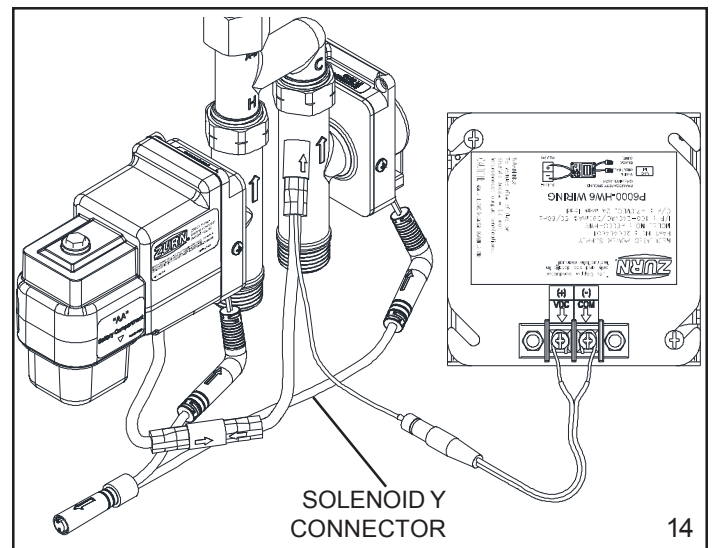
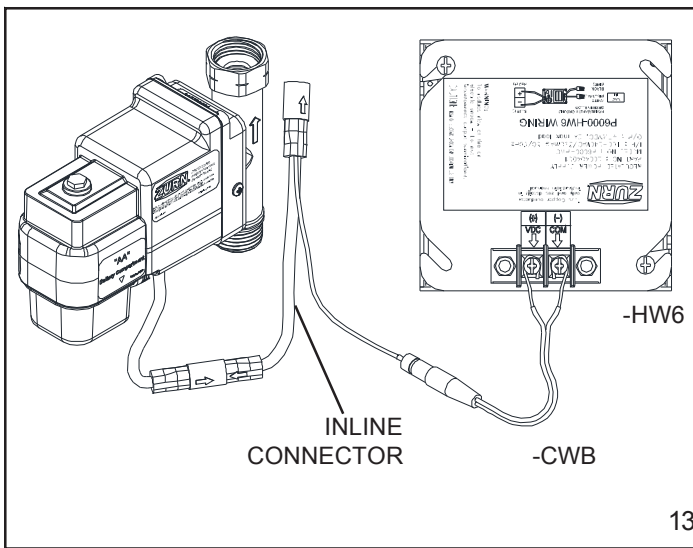
(Choose from the following: battery only, external ACA, P6000-HW6 with CWB, and/or External power with battery pack)



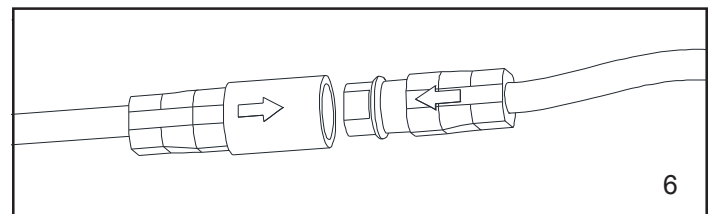
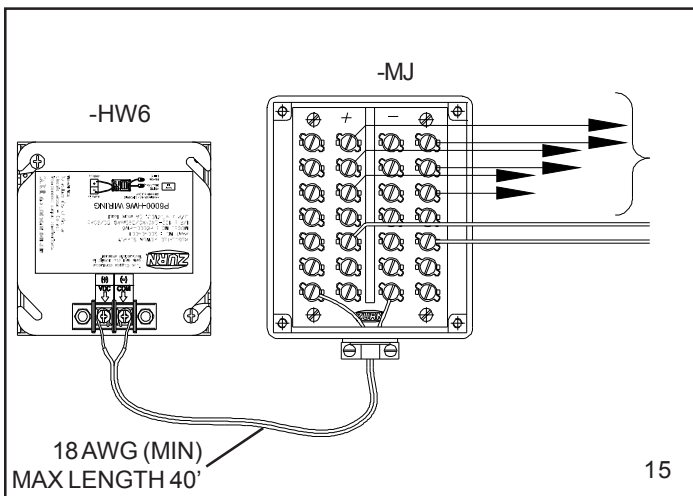
**4.1) Battery Installation:** Loosen the battery cover screw with the supplied allen wrench. Remove the cover and install the batteries as indicated on the battery case. Replace the battery cover and secure. When installing an IM model, make certain that the supplied solenoid Y connector is connected so that both solenoids will receive power.



**4.2) ACA (Alternating Current Adaptor) Plug-In Installation:** When using the -ACA plug-in power supply, attach provided inline connector between sensor and electronics box to allow ACA connection. When installing an IM model, make certain that the supplied solenoid Y connector is connected so that both solenoids will receive power.



**4.3) HW6 (Hardwired 6V) Installation:** When using the -HW6 power supply, attach provided inline connector between sensor and electronics box to allow hardwired connection. When installing an IM model, make certain that the supplied solenoid Y connector is connected so that both solenoids will receive power.



2.3) Ensure that arrows are aligned for each connector and fully mate.

**\*NOTE: FAUCET SENSOR COMMENCES AUTO RANGE CALIBRATION FOR 30 SECONDS UPON CONNECTING SENSOR TO ELECTRONICS BOX. ENSURE FAUCET AND SINK BASIN HAVE BEEN INSTALLED, AND AREA IS IN THE FINAL OPERATING CONDITION BEFORE CONNECTING SENSOR TO THE ELECTRONICS BOX.**

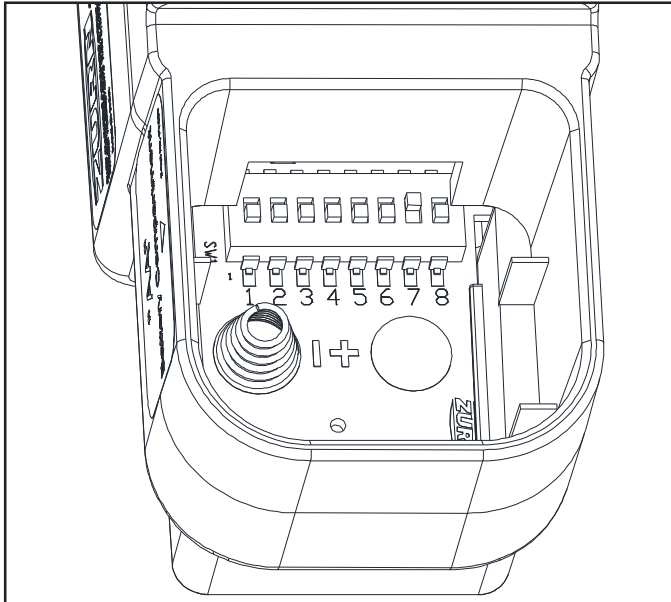
Note: If connecting more than one spout it is recommended that the -MJ (Multi Junction) is used.

## Adjustable modes and features selection:

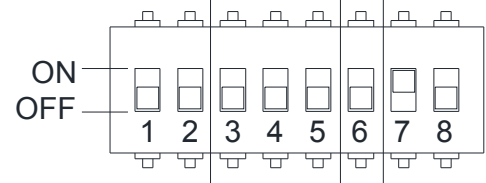
To adjust features from default configuration, you must remove the battery tray. Once battery tray is removed you will see the switches.

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
<b>Purge (Hours)</b>								
Disable:	Off	Off						
12:	On	Off						
24:	Off	On						
48:	On	On						
<b>Time (Seconds)</b>								
30:			Off	Off	Off			
5:			On	Off	Off			
10:			Off	On	Off			
15:			On	On	Off			
60:			Off	Off	On			
20 Minutes:			On	Off	On			
<b>Mode Select</b>								
Sensing Mode:						Off		
Metering Mode:						On		
<b>Sensor Sensitivity</b>								
High:							Off	Off
Low:							On	Off
Mode A:							Off	On
Mode B:							On	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 or No 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 on following 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)

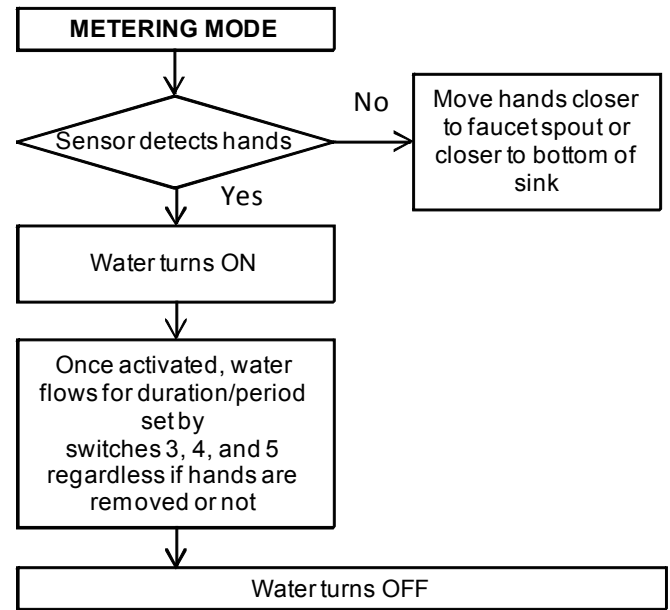
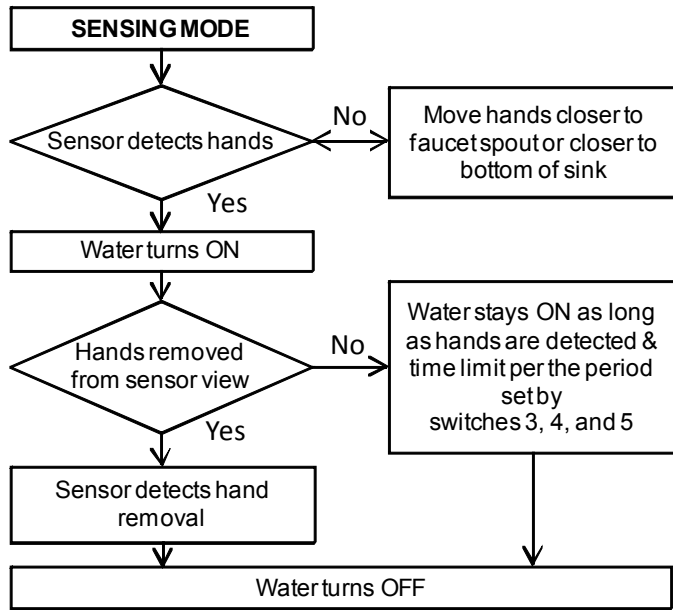
### **Sensor Sensitivity:** (Default setting: Low):

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 Modes A & B may be tried for difficult sink materials and shape.

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.



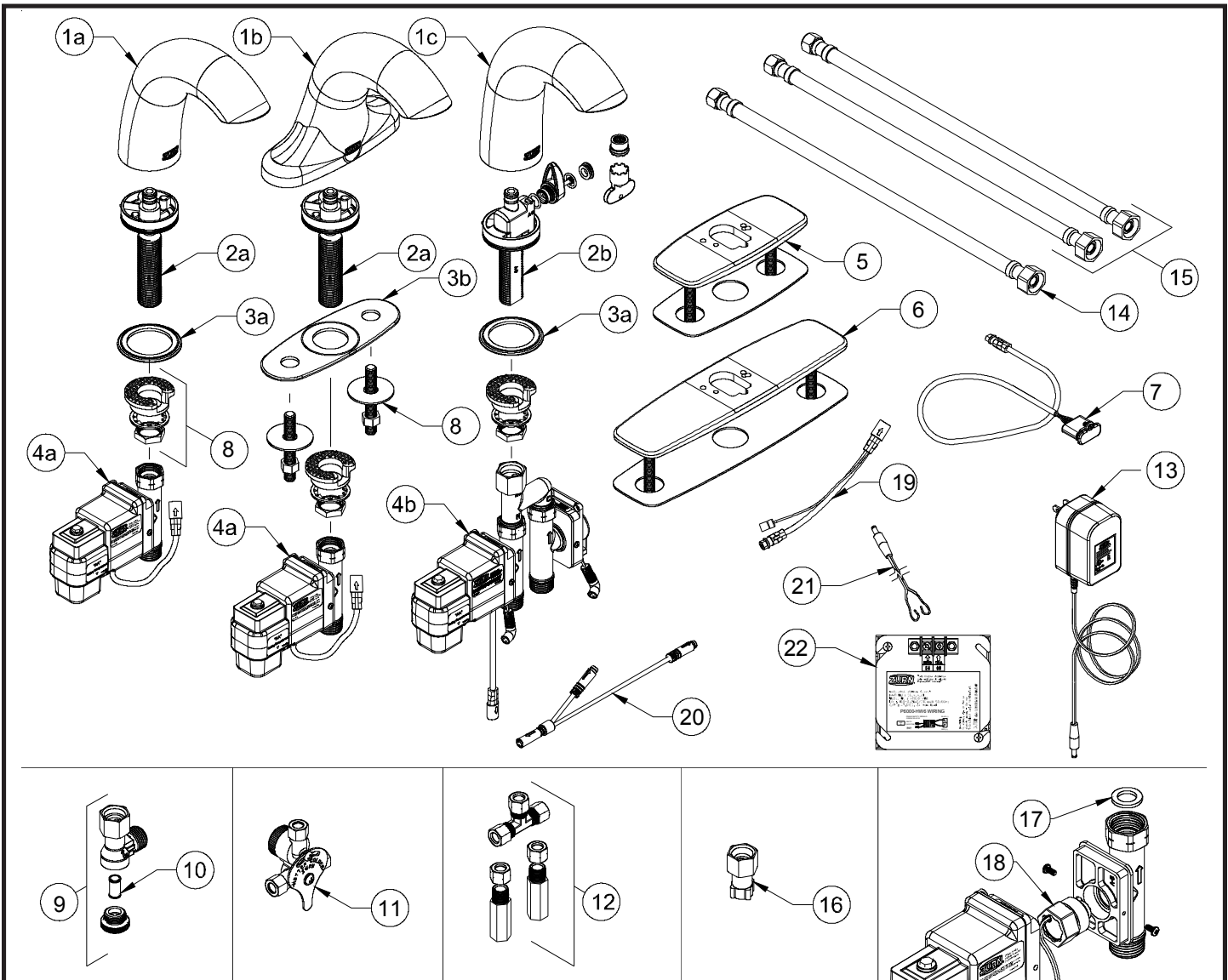
## SENSING & METERING MODE:



## TROUBLESHOOTING GUIDE:

POTENTIAL SITUATIONS	POSSIBLE CAUSES	SUGGESTED SOLUTION TIPS
Sensor faucet is not activating or running	Battery voltage low or no power	Change out batteries or verify power provided by HW6 or ACA
	If faucet is hardwired, voltage may be out of allowable range.	Check voltage levels and verify within recommended ranges.
	Contamination in battery tray causing a voltage drain	Remove the battery tray and inspect for visual signs of rust, water, debris. Replace battery tray if these symptoms are found.
	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 from chemical cleaners	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
	Solenoid is not connected properly	Place hands in sensor range. If clicking occurs, solenoid is connected correctly. If no clicking occurs, disconnect the sensor cable from the black box and wait 30 sec before reconnecting. Once reconnected try activating again.
	Solenoid is lodged with debris or plunger is sticking	Check solenoid for debris and clean if necessary and reassemble
Sensor 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.
Faucet runs continuously (longer than the selected time-out that is programmed)	Solenoid is lodged with debris	Check solenoid for debris and clean if necessary and reassemble
	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.
Sensor faucet is experiencing random activations when a user or target is not within sensing range	Sensor lens could be obstructed or environmental factors such as high reflective surfaces and/or bright sunlight conditions	Change dip switch settings (switches 7 & 8) for sensor sensitivity per the diagram and allow 15s for calibration to occur.
		Loosen the mounting nuts and try sliding the faucet back in the lavatory, sink, or counter top holes back towards the wall and retightening. Could be detecting the grid drain in the sink bowl. After repositioning faucet, recalibrate sensor by unplugging & replugging cable
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.

# Z6950 Parts List



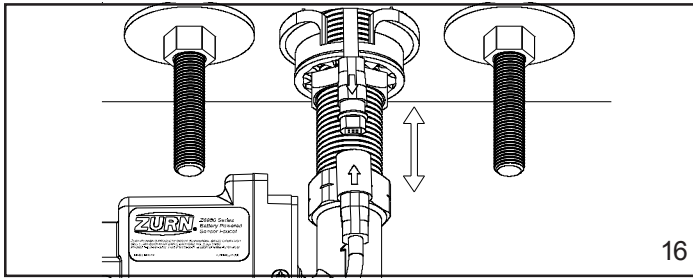
Description	Product No.
1a. Z6950 Spout Assembly with Sensor	P6950-XL-S-1
1b. Z6955 Spout Assembly with Sensor	P6955-XL-S-1
1c. Z6950-IM Spout Assembly with Sensor	P6950-XL-S-IM-1
2a. Spout shank base for Z6950/Z6955-XL	P6950-XL-B
2b. Spout shank base on Z6950-XL-IM	P6950-XL-IM-B
3a. Z6950 Spout base gasket	P6950-XL-42
3b. Z6955 Spout base gasket	P6950-XL-44
4a. Electronics Box with Solenoid - Z6950/55-XL	P6950-XL-B-L
4b. Electronics Box with Solenoid - Z6950-XL-IM	P6950-XL-IM-B-L
i. Y pipe adaptor for Z6950-XL-IM model	P6950-XL-Y
ii. Mixing Handle for Z6950-XL-IM model	P6950-XL-H
iii. Mixing handle plug/cap for Z6950-XL-IM model	P6950-XL-C
iv. Handle O-ring & Handle Screw for Z6950-XL-IM model	P6950-XL-OS
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	P6900-120
10. Filter Screen	P6900-MV-7
11. Mixing Valve w/Filter	P6900-XL-MV
12. Mixing Tee w/Filters and Back Checks	P6900-XL-MT
13. Optional Plug-in Power Converter	P6900-ACA
14. Single Stainless Supply Hose (XL)	P6900-SSH
15. Stainless Supply Hoses (XL)	P6900-SH
16. Composite Mixing Valve Adaptor	P6900-MV-ADAP
17. Shank Connection Gasket	P6900-SG
18. Solenoid Rebuild Kit (Diaphragm, plunger and plunger spring)	P6900-SRK
19. Sensor Inline Connector	P6950-XL-DC
20. IM Solenoid Y Connector	P6950-XL-YC
21. -CWB Pigtail	P6900-CWB
22. -HW6 Power Supply	P6900-HW6

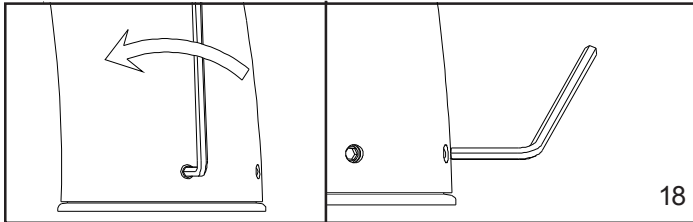


## Spout Upgrade

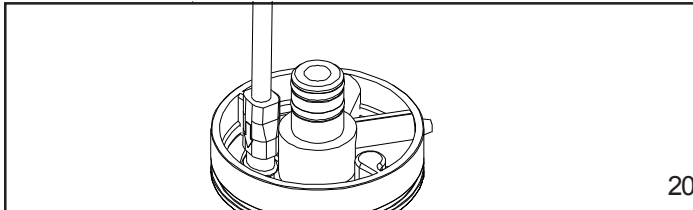
To replace spout body, you must first turn water off, then remove spout with sensor cable.



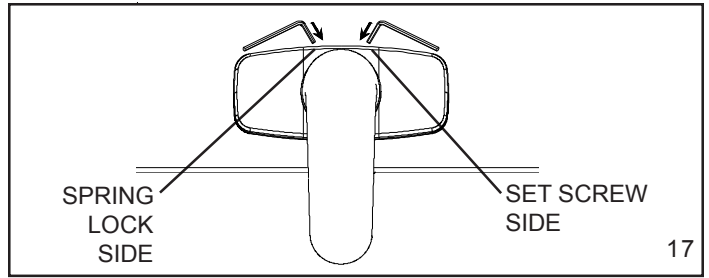
Before removing the spout, disconnect the sensor cable below the deck so that the cable head can be pulled up through the deck.



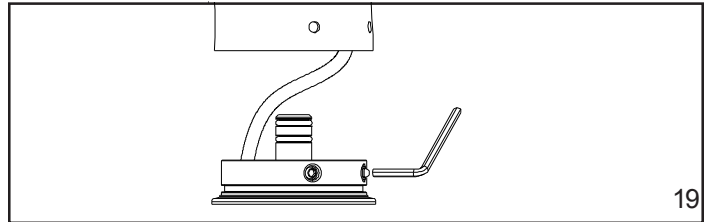
Use supplied 3/32" hex wrench to loosen set screw. Screw will retract into the base to eliminate loss. Using the same hex wrench, depress the ball detent to release spout from base.



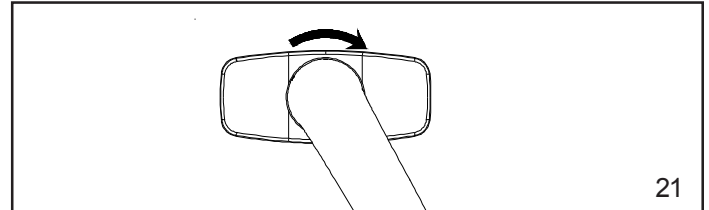
To reinstall faucet, first drop sensor cable of new spout through the front of the base. Lower spout onto base inserting base nipple into spout port.



Note location of set screw and spring lock.

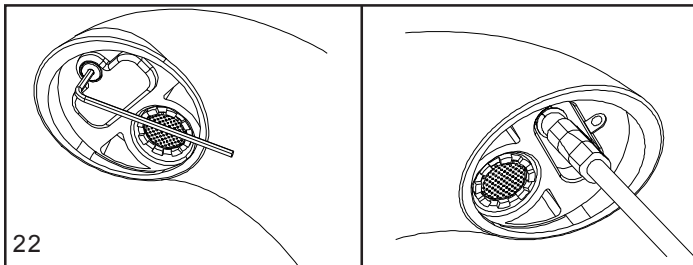


Lift spout and pull sensor cable through deck and base.

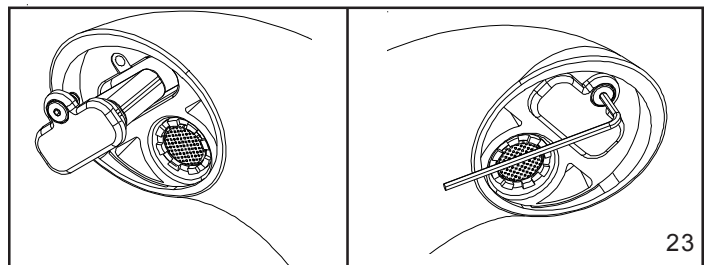


Align spout so that the ball detent is between the 2 holes. Press down and turn clockwise. Use hex wrench to back set screw out to secure spout.

## Sensor Assembly Replacement

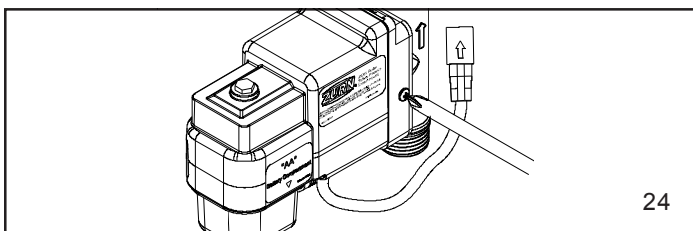


With spout disengaged, sensor assembly can now be removed by loosening the center screw with provided 3mm hex wrench. With assembly removed, you can now install new assembly and reassemble your spout.

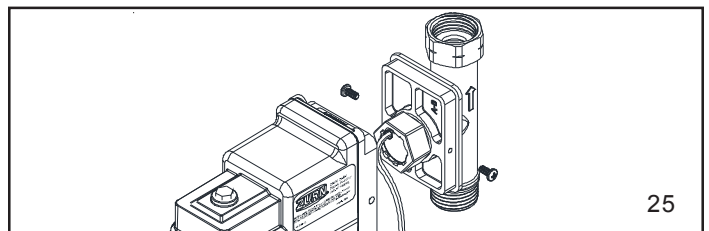


Loosening screw will cause sensor assembly to back out of spout body. It may be necessary to push cable from connector end to aid in sensor assembly removal. Firmly press into pocket and tighten screw.

## 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.



**ZURN INDUSTRIES, LLC. ♦ COMMERCIAL BRASS OPERATION ♦ 5900 ELWIN BUCHANAN DRIVE ♦ SANFORD NC 27330**

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