Aqua-FIT®

Serio SeriesTM

Connected Sensor-Operated Lavatory Faucets

Installation, Operation, Maintenance and Parts Manual

Z6955-XL-S-W1

Z6950-XL-S-W1

Sensor-Operated Lavatory Faucets with Smart Connected Features

⚠ **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.

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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] for faucet 7.5 VDC @ 800mA [P6900-ACA / P6000-HW6 with CWB] or P6900-ACA-BA with CWB for endpoint
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:	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® 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/Servicer 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 a wet & dry calibration).*

Electronic Emission Notices:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The following information refers to Zurn Smart Connected Products, types: -W1. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference intended for use in non-residential/non-domestic environments. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

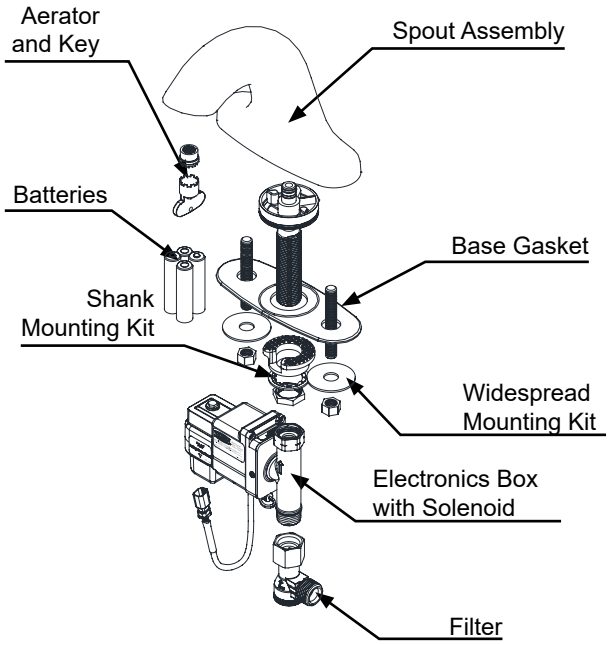
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an authorized dealer or service representative for help.

Zurn is not responsible for any radio or television interference caused by using other than specified or recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user’s authority to operate the equipment.

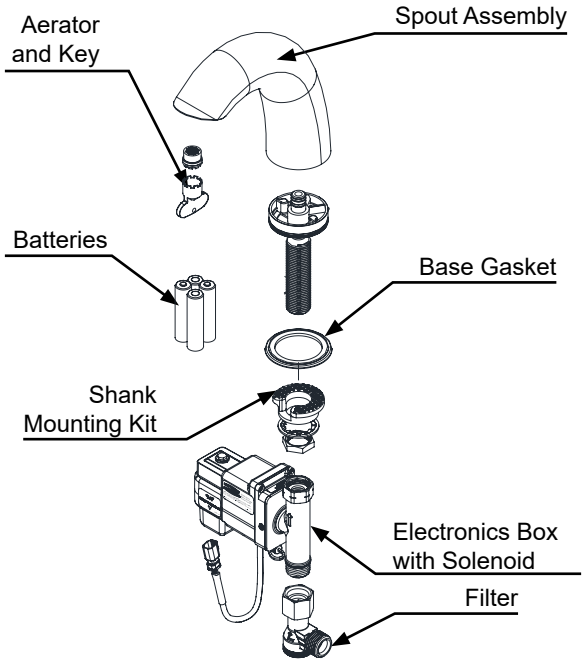
<u>NOTE</u>: The information in this manual is subject to change at any time without notice. Installations may be performed at different times of construction by different individuals. For this reason, these instructions should be left on-site with the facility or maintenance manager.

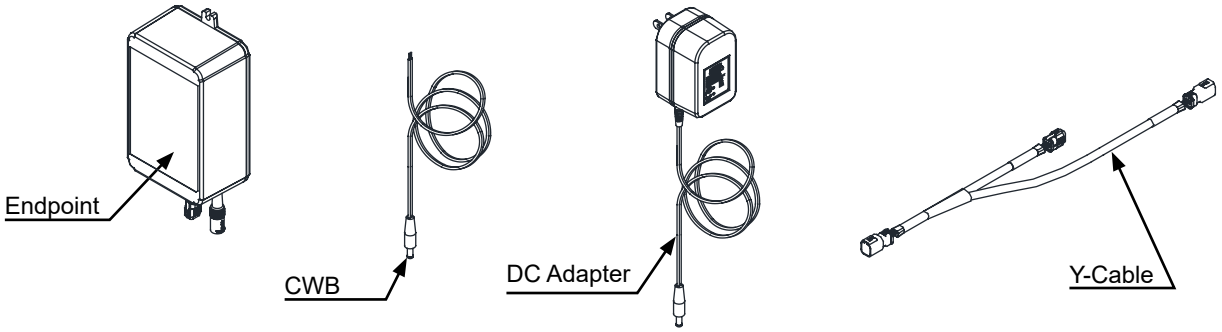
Serio Series™ Faucets Parts List

Z6955-XL-S-W1

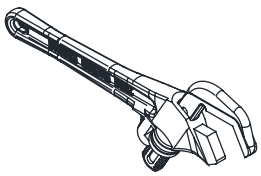


Z6950-XL-S-W1

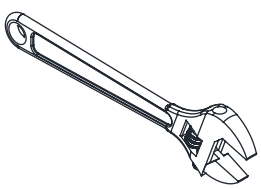




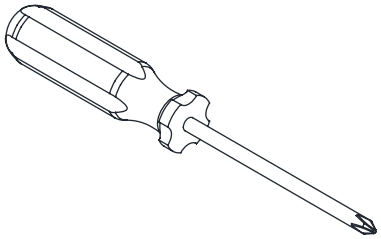
Required Tools



Smooth Jawed
Wrench



Adjustable Wrench
(Optional)



Phillips Head
Screwdriver

3/32', M3
Allen Wrench

Spout Installation - Step 1

<u>NOTE</u>: 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

1.1. 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.

Note: Faucet location needs to be within 3 feet radius above electrical outlet for ACA configurations.

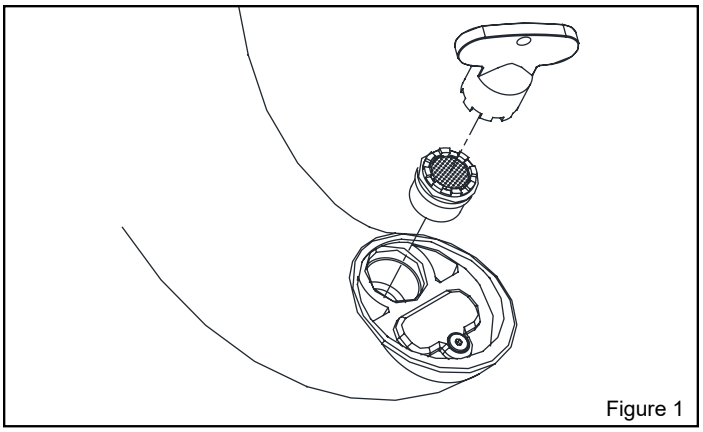


Figure 1

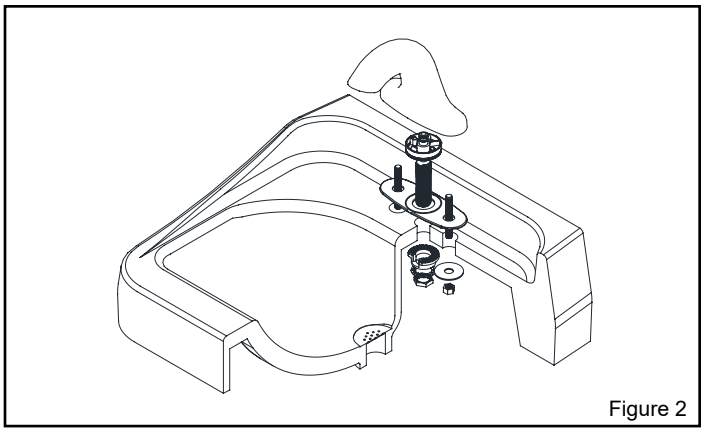


Figure 2

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

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

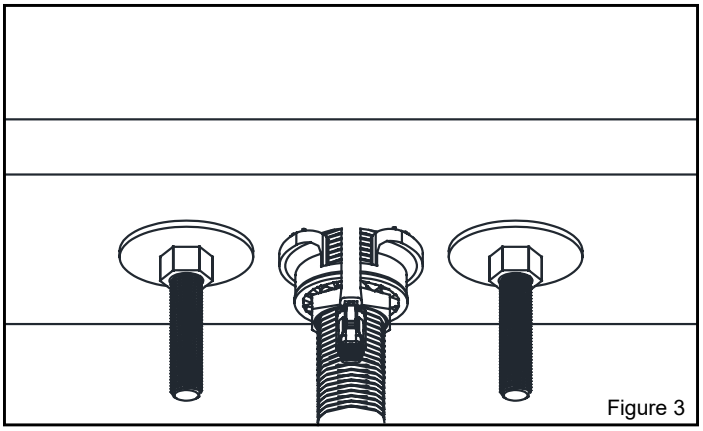


Figure 3

1.4. Assemble the electronics module

⚠ *Do not connect the electronic module to spout*

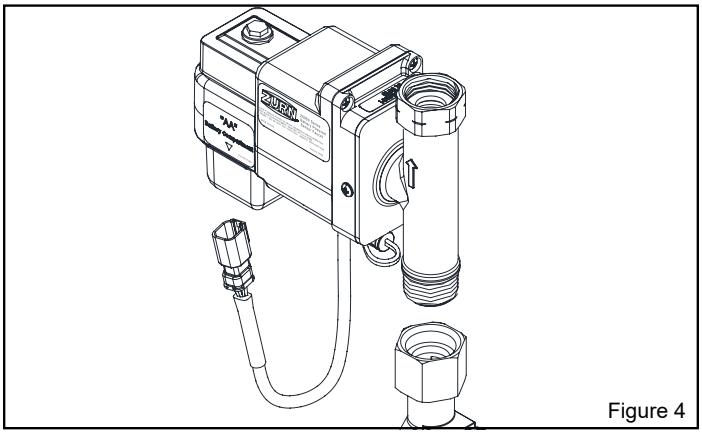


Figure 4

Endpoint Installation - Step 2

2.1a. Install endpoint on wall surface within 2 feet radius of faucet with dry wall anchors & screws or doubled sided VHB tape

2.1b. For concealed wiring installation, drill 3/16” hole in wall surface for DC power cable , route wire-end through hole to HW6 unit. After routing, apply sealant around wire in hole.

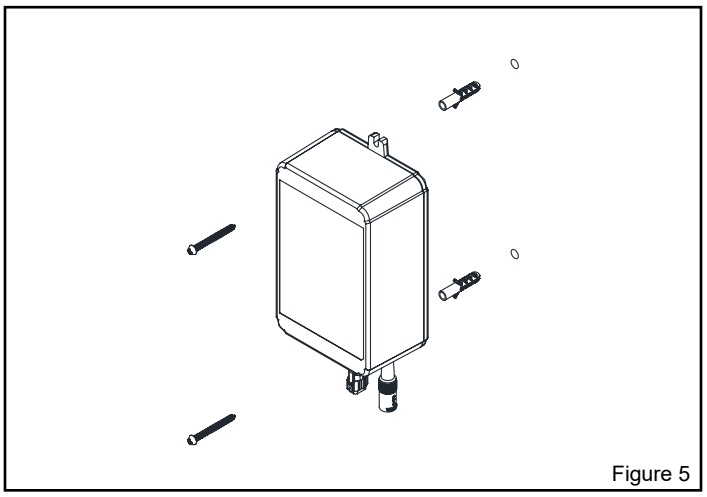


Figure 5

2.2. Connect monitor and DC power cable..

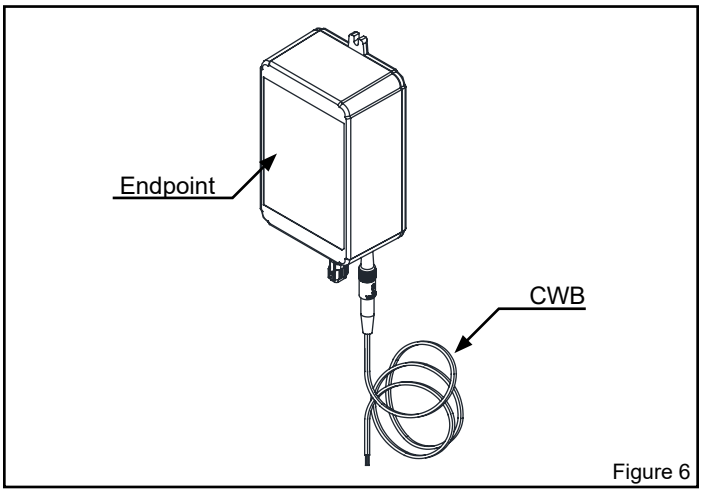


Figure 6

2.3. Connect endpoint and electronics module assembly using supplied Y cable.

⚠ *Do not connect Y-cable to the spout.*

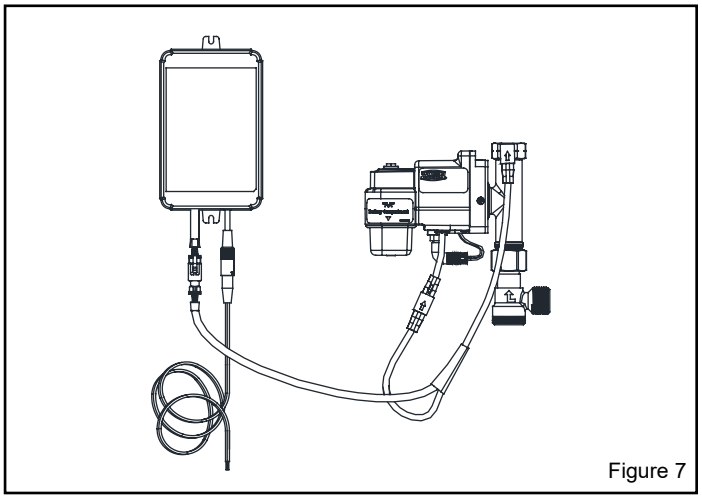


Figure 7

2.4. Secure 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.

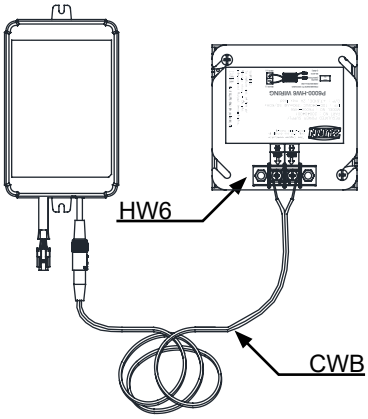


Figure 8

Note: Do not connect more than 4 solenoids to a single transformer

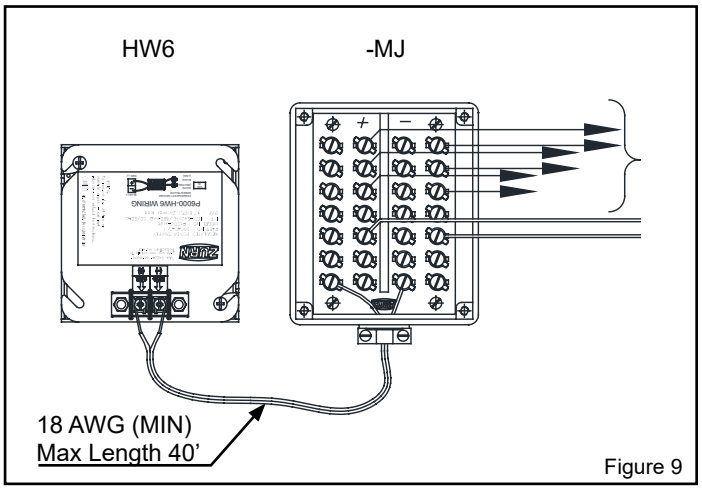


Figure 9

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

2.5. Open battery module using supplied Alen wrench and install supplied batteries in the electronics module. Battery will function as backup power in the event of a power failure.

Use AA Lithium Batteries or AA Alkaline batteries, but do not mix Lithium with Alkaline.

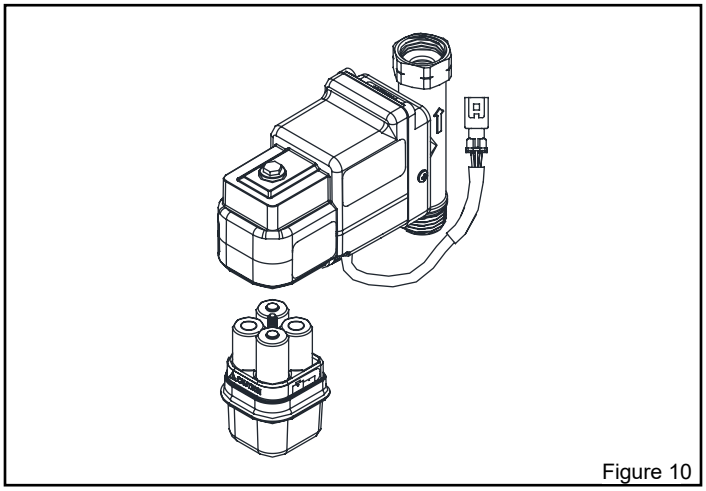


Figure 10

2.7. Ensure that sink is clear of tools/debris and is in normal operating condition, and remove protective film from sensor lens has been removed.

2.8. Turn on water supply(ies).

*** Water supply must be turned on in order for sensor to perform wet calibration step ***

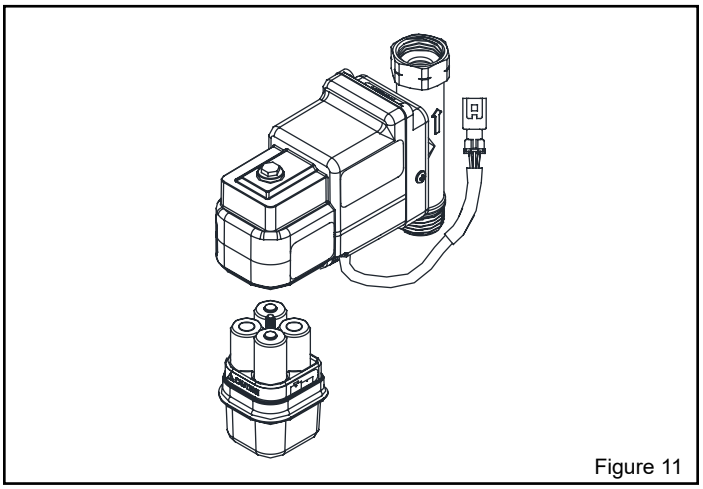


Figure 11

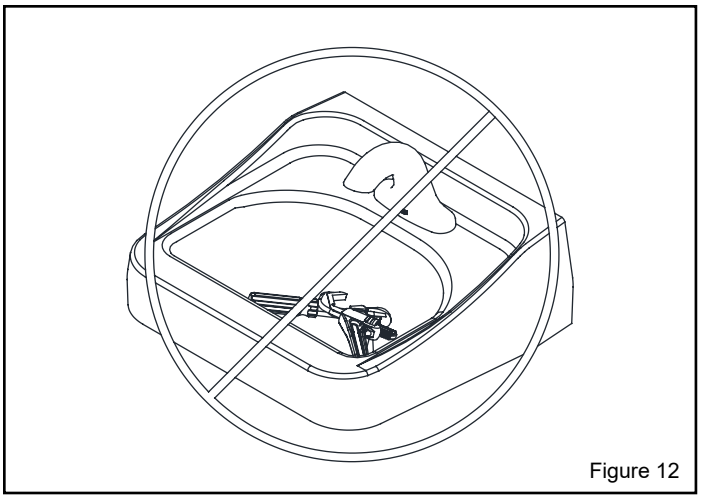


Figure 12

2.9. Connect Y cable from electronics module and wireless monitor to sensor cable from spout.

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

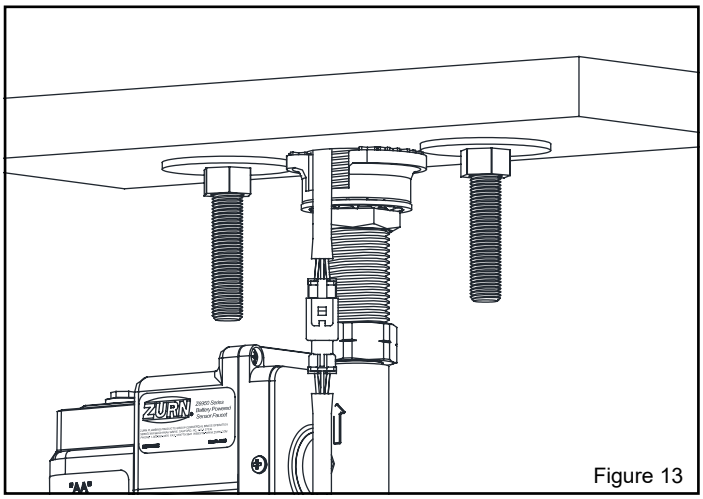


Figure 13

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.

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.

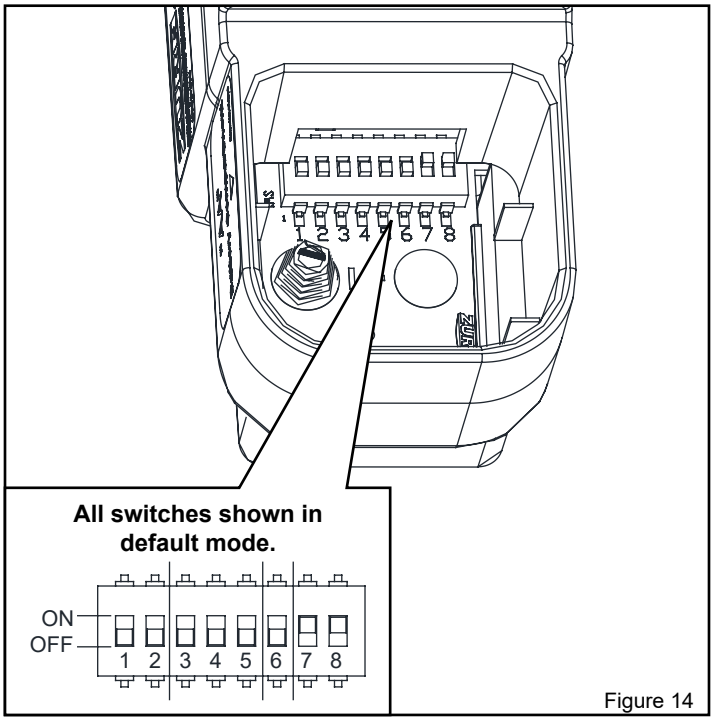


Figure 14

Switch Position:	1	2	3	4	5	6	7	8
Purge (Hours)								
Disable:	Off	Off						
12:	On	Off						
24:	Off	On						
48:	On	On						
Time (Seconds) 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			
Mode Select								
Sensing Mode:						Off		
Metering Mode:						On		
Sensor Sensitivity								
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.

Trouble Shooting: Faucet

Problem	Possible Cause	Corrective Action
Faucet is non-responsive	Battery voltage low or no power.	Change out batteries or verify power provided by 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 to be 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 highly 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 sink may make the unit inoperable. Do not allow direct sunlight into sink. 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 Reset sensor after dip switch changes.
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 to be replaced.
Ghost Activation	Sensor lens could be obstructed or environmental factors such as highly 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. Also, decreasing the sensitivity setting (switch 7) may help. Reset sensor after dip switch changes.
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

Trouble Shooting: Smart ZEMS Endpoint, Gateway & Portal

Problem	Possible Cause	Corrective Action
Endpoint		
Device not communicating	Device lost power	Double check power connections and supply
	Y cable was not connected	Ensure cable is securely connected
	Gateway disconnected	See gateway troubleshooting
Connected device not functioning	Wiring error in y cable	Ensure cable is securely connected
	See Connected Device Troubleshooting Guide	See Connected Device Troubleshooting Guide
Faucet / Flush Valve actuates but does not register on portal	IR sensor not connected to endpoint	Connect IR sensor to endpoint
Gateway		
Gateway appears online and LoRA light on, but activations are not registering on plumbSMART product page		Power cycle gateway
Gateway powered up where status light flashes, LoRA light is off	No ethernet connection, no SIM card	Reconnect ethernet or reinsert simcard, depending on device type
	Gateway was disabled in Senet	Call Customer Support
	Building LAN has restricted access	Contact organization IT department
No lights are flashing	Gateway is not powered	Power Gateway
Portal		
High daily use alerts	Usage spiked	Adjust threshold (possibly move to portal area)
Endpoint is not appearing on portal	Endpoint was not registered on plumbSMART	Register device in plumbSMART
Device not communicating alert	See endpoint troubleshooting	See endpoint troubleshooting
	Gateway is at extreme limit of communication range	Call customer support to verify signal strength. (Move Gateway closer to connected devices)
Water usage does not match reported usage	Not paired with correct product type	Call customer support
	Correct aerator is not installed	Check that correct aerator is installed and replace with correct aerator if needed
	Flow rate parameter settings does not match default for product type	Reset to default parameter settings
	Not enough water pressure	Call building maintenance
	Swapped lids / labels	Call customer support
Omitted activations	Gateway is at extreme limit of communication range	Call customer support to verify signal strength. (Move Gateway closer to connected devices)

For further assistance with troubleshooting, visit https://plumbsmart.zurn.com/app/training

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.

Note location of set screw and spring lock.

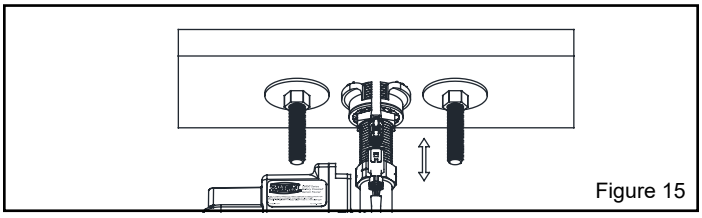


Figure 15

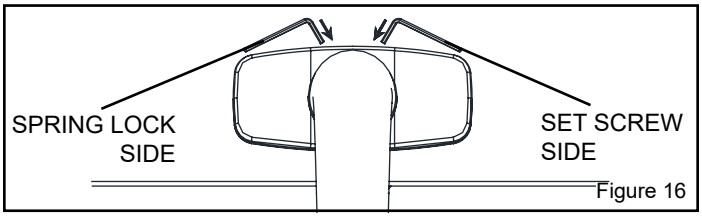


Figure 16

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.

Lift spout and pull sensor cable through deck and base.

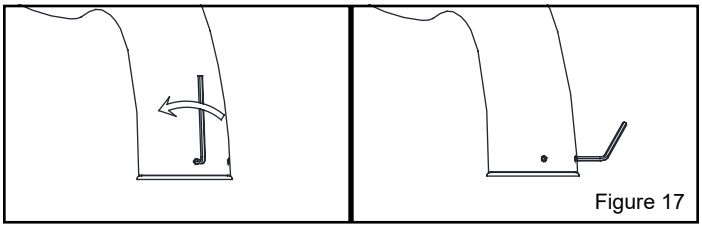


Figure 17

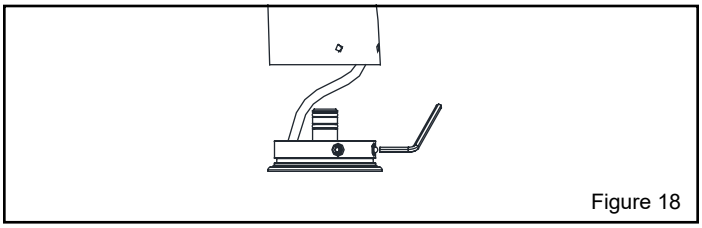


Figure 18

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.

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.

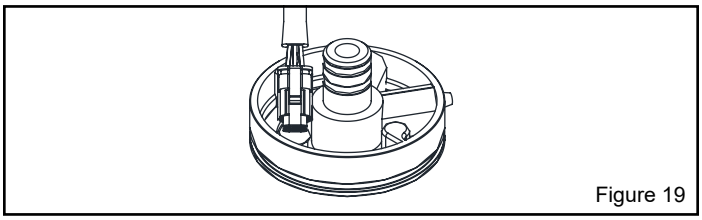


Figure 19

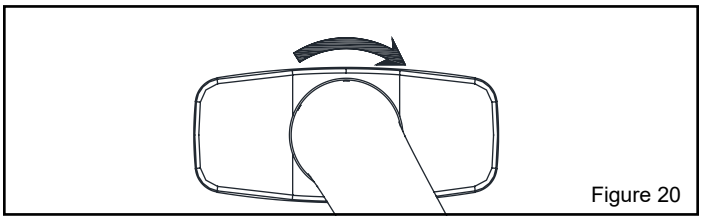


Figure 20

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.

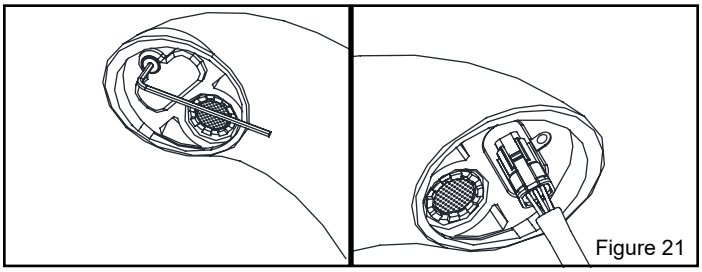


Figure 21

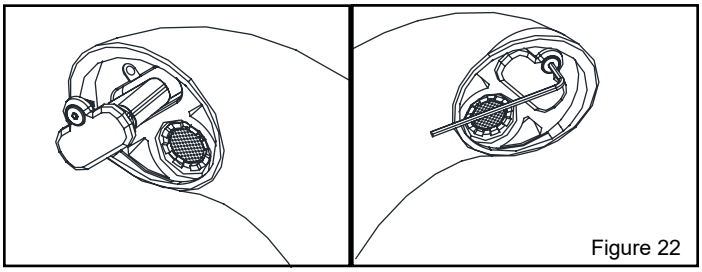


Figure 22

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.

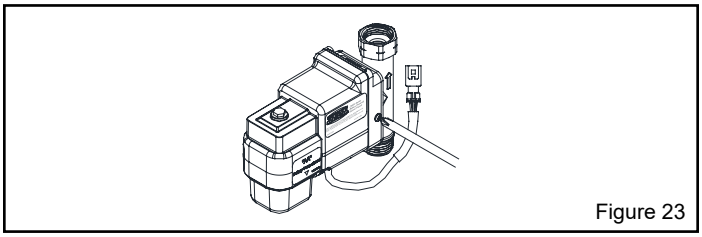


Figure 23

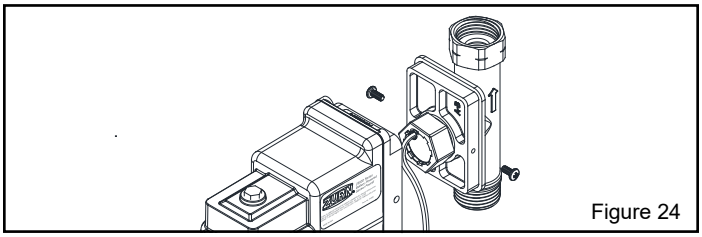
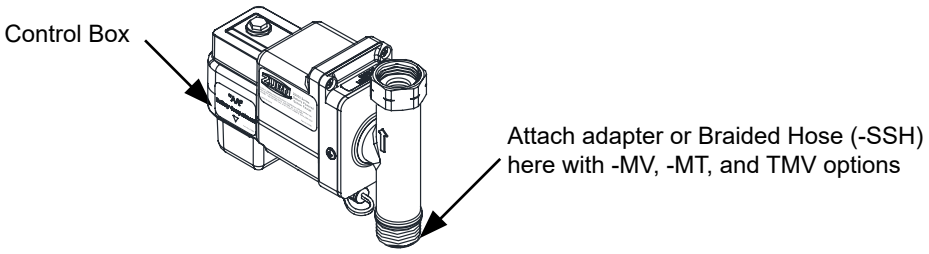
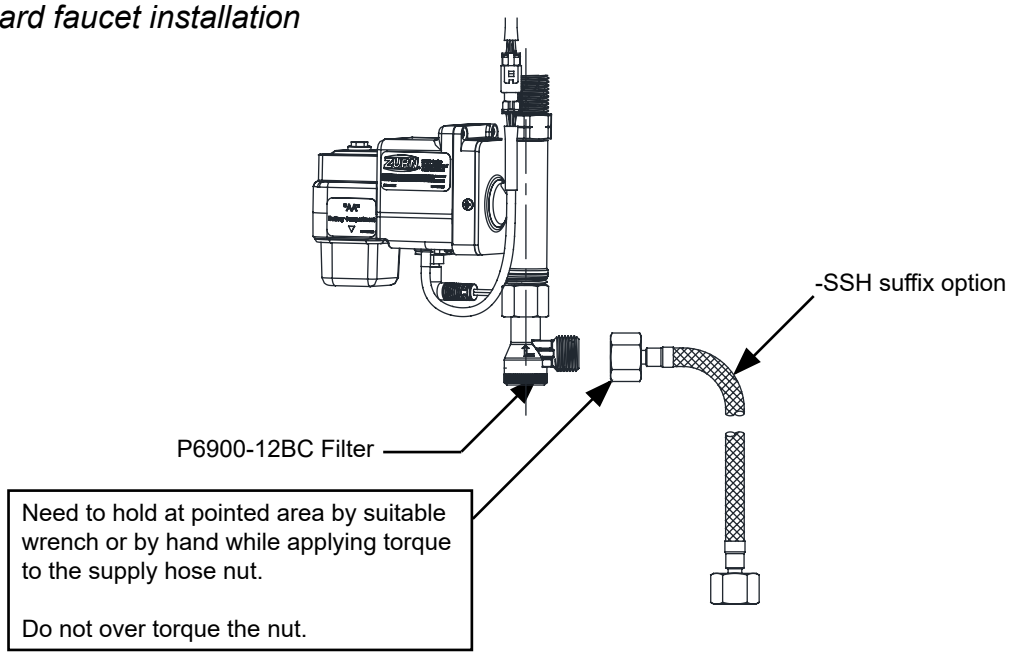


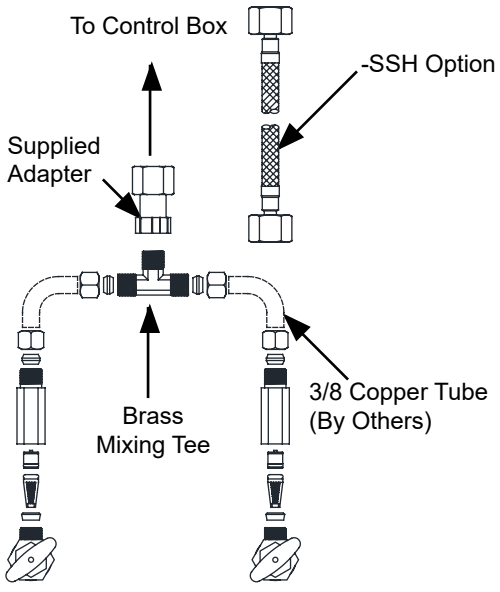
Figure 24



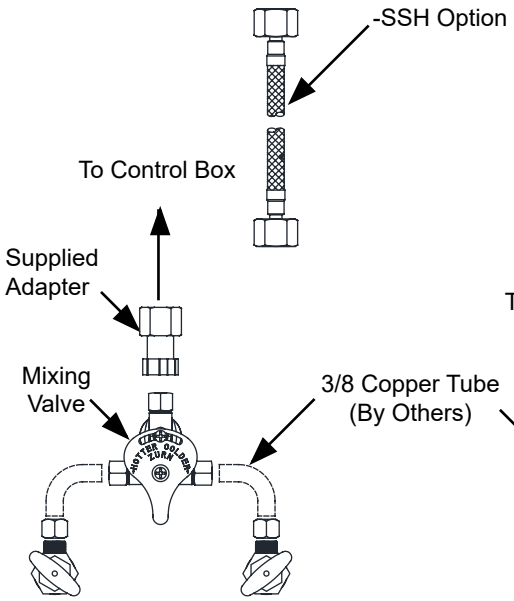
P6900-120BC,
Filter in standard faucet installation



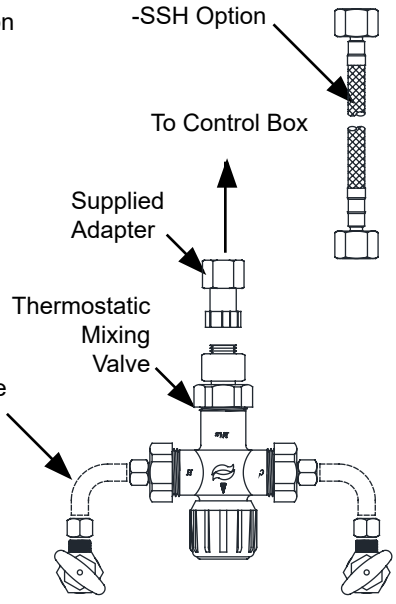
P6900-MV-ADAP [Supplied Adapter]
with -MT, -MV, and -TMV Options



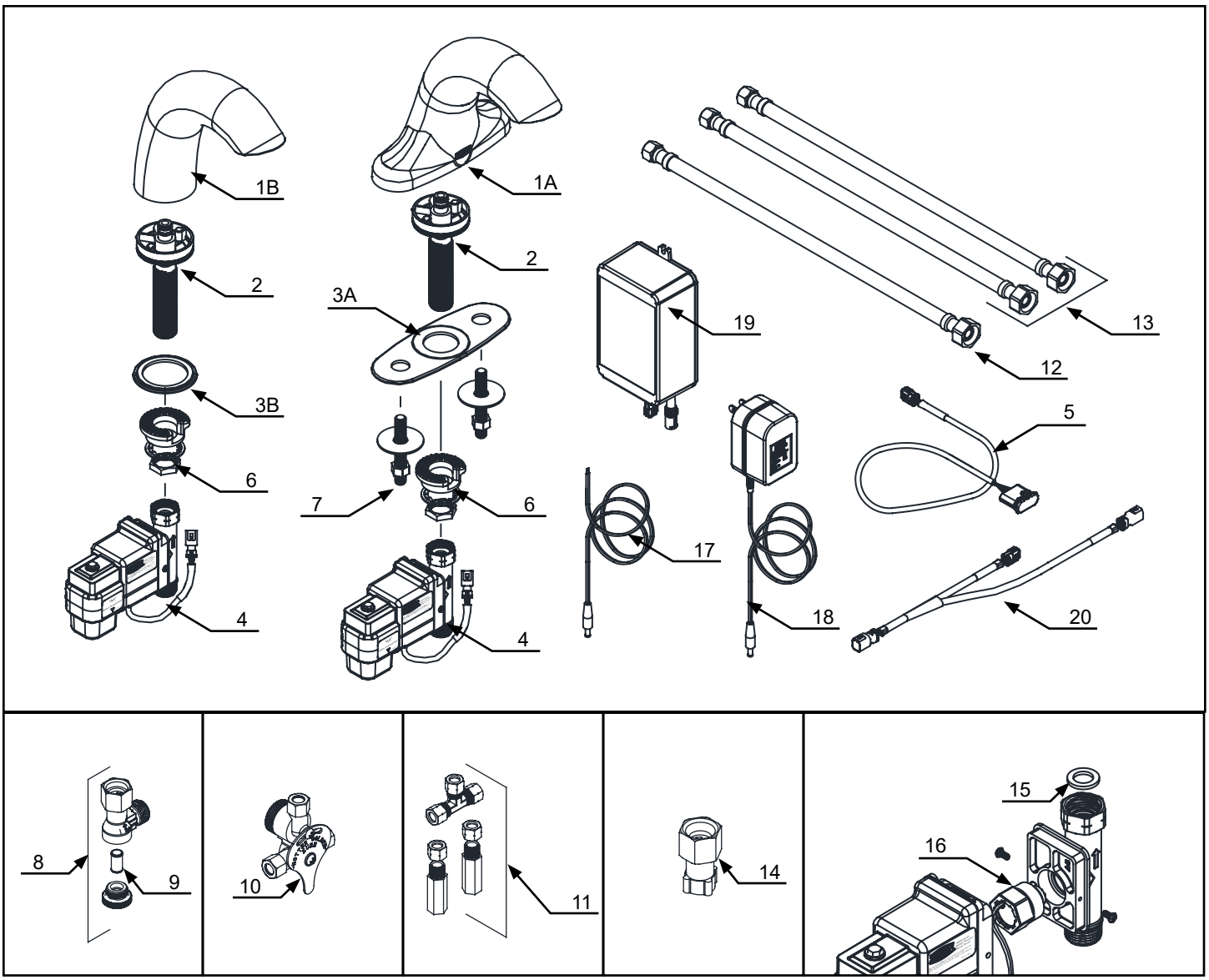
For use with
-MT Option



For use with
-MV Option



For use with
-TMV-1 Option



Description	Product No.
Z6955 Spout Assembly with Sensor, Item 1A	P6955-XL-S-1
Z6950 Spout Assembly with Sensor, Item 1B	P6950-XL-S-1
Spout shank base, Item 2	P6950-XL-B
Z6955 Spout base gasket, Item 3A	P6950-XL-44
Z6950 Spout base gasket, Item 3B	P6950-XL-42
Electronics Box with Solenoid, Item 4	P6950-XL-B-L
Z6955 Sensor Assembly, Item 5	P6950-XL-EL
Mounting Kit, Item 6	P6950-43
Widespread Mounting Kit, Item 7	P6912-43M
Filter Kit, Item 8	P6900-120BC
Filter Screen, Item 9	P6900-MV-7
Mixing Valve with Filter, Item 10	P6900-XL-MV

Description	Product No.
Mixing Tee with Filters and Back Checks, Item 11	P6900-XL-MT
Single Stainless Supply Hose (XL), Item 12	P6900-SSH
Stainless Supply Hose (XL), Item 13	P6900-SH-XL
Composite Mixing Valve Adapter, Item 14	P6900-MV-ADAP
Shank Connection Gasket, Item 15	P6900-SG
Solenoid Rebuilt Kit (Diaphragm, Plunger and Plunger spring), Item 16	P6950-SRK
DC Power Cord, Item 17	P6900-CWB-1
6V DC Plug-in Power Converter, Item 18	P6900-ACA
Smart Connected Faucet Retrofit Kit, Item 17-20	P6950/55-RK-W1

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