

# Operation & Maintenance Manual

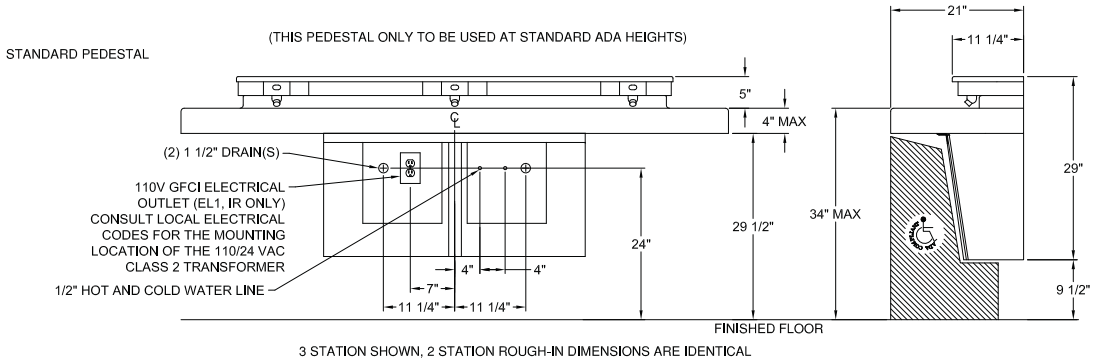
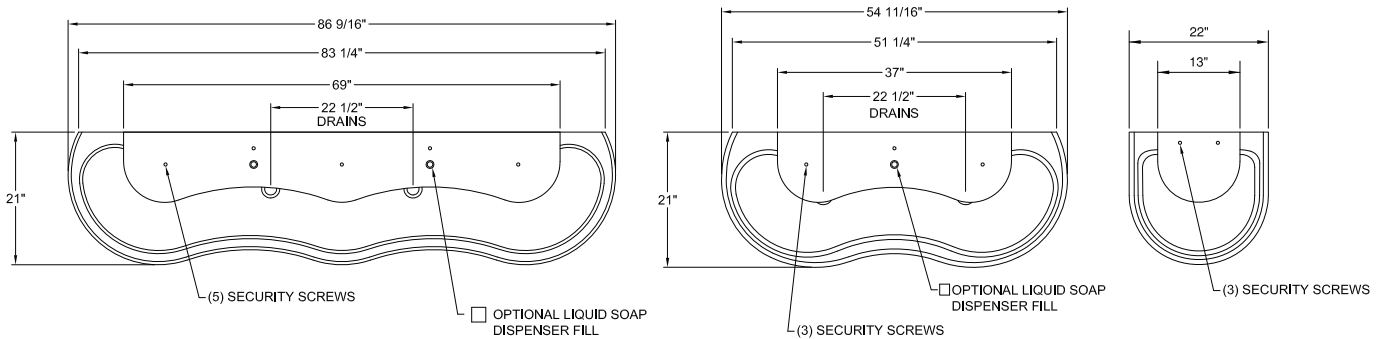
Aquawave® (WAW Series)  
Electronic Washfountains  
Infrared and Piezo Pushbuttons  
WAW2311, WAW2322, WAW2333 1, 2 and 3 Station Units



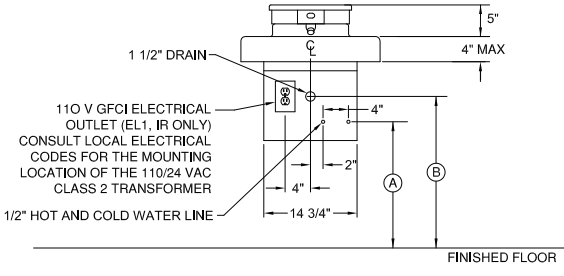
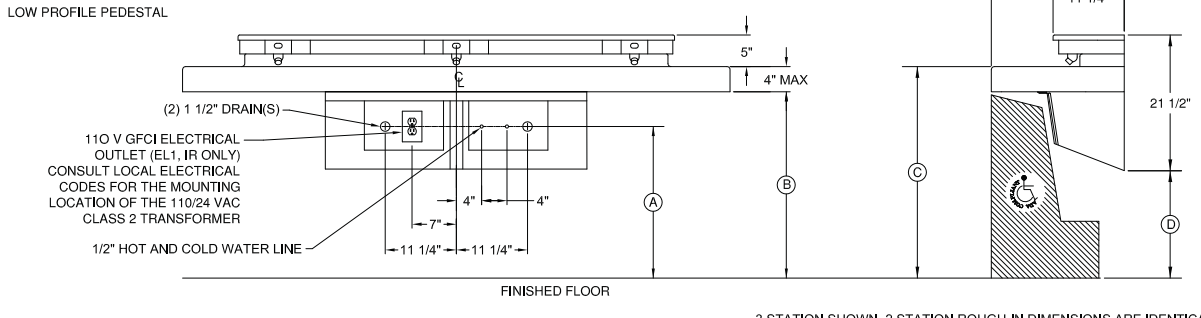
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# Operation and Maintenance Manual



**NOTE:**  
FOR A RIM HEIGHT OTHER THAN THE STANDARD 34", THE LP PEDESTAL MUST BE SELECTED



VARIABLE MOUNTING HEIGHT CHART FOR LP PEDESTALS				
DIMENSION	DESCRIPTION	T.A.S. AGES 4-10	T.A.S. AGES 11-15	A.D.A. STANDARD
(A)	ROUGH-IN	20 1/2"	22 1/2"	24"
(B)	KNEE CLEARANCE	26"	28"	29 1/2"
(C)	RIM HEIGHT	30"	32"	33 1/2"
(D)	TOE CLEARANCE	13 1/2"	15 1/2"	17"

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# Installation notice!

Check Rough-In location **PRIOR** to installation

Flush lines thoroughly **PRIOR** to hook-up

When installing the **Willoughby Industries' WAW, WAF or WWF** series washfountains or lavatory deck systems:

Before step 1 of the installation instructions, ensure that rough-ins are in the correct location.

It is essential that the water supply lines be thoroughly flushed prior to making final connection to the hot and cold water supply lines. These lines **must** be flushed sufficiently to remove the small particles of debris that are inherent with new construction projects. If this debris is not removed, the valving in these units **will be damaged**. Do not attempt to remove aerators to flush debris into the lavatory. The damage can only be fixed by replacing the valves. Damage to valves caused by debris will not be covered by the manufacturers warranty.

# Installation notice!

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Flush lines thoroughly **PRIOR** to hook-up

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## Parts List 1, 2 and 3 Station Replacement Part Numbers

DESCRIPTION	PART# 1 STATION	PART# 2 STATION	PART# 3 STATION
SOLID SURFACE BASIN	800219B-XX*	800220-XX*	800221-XX*
SOLID SURFACE TOP COVER	800218-XX*	800222-XX*	800223-XX*
FRONT PANELS (LP)	800225C-XX*	801224-XX*	801224-XX*
FRONT PANELS (STANDARD)	N/A	800224C-XX*	800224C-XX*
DRAIN ASSEMBLY	380276	380276	380276
ELECTRONIC VALVE ASSEMBLY	803105-1EW	803105-2EW	803105-3EW
LEFT SIDE CLOSURE PANEL	N/A	N/A	800254
RIGHT SIDE CLOSURE PANEL	N/A	N/A	800255
SOAP TRAY	N/A	LSD-2WAV-A	LSD-3WAV-A
PEDESTAL (LP)	801210-1WWDS	801210-2WWDS	801210-3WWDS
PEDESTAL (STANDARD)	800210-1WDS	800210-2WDS	800210-3WDS
PEDESTAL (FLOOR MOUNTED)	800210-1FWS	800210-2FWS	800210-3FWS
POWER SUPPLY ASSEMBLY	800150BW	800146B	800137B
HARDWARE KIT	801256	801256	801256
LEFT WING EXTENTION	N/A	N/A	800263
RIGHT WING EXTENTION	N/A	N/A	800264
HEAD ASSEMBLY (PIEZO)	801260-1WE	801260-2WE	801260-3WE
HEAD ASSEMBLY (INFRARED)	801260-1WI	801260-2WI	801260-3WI

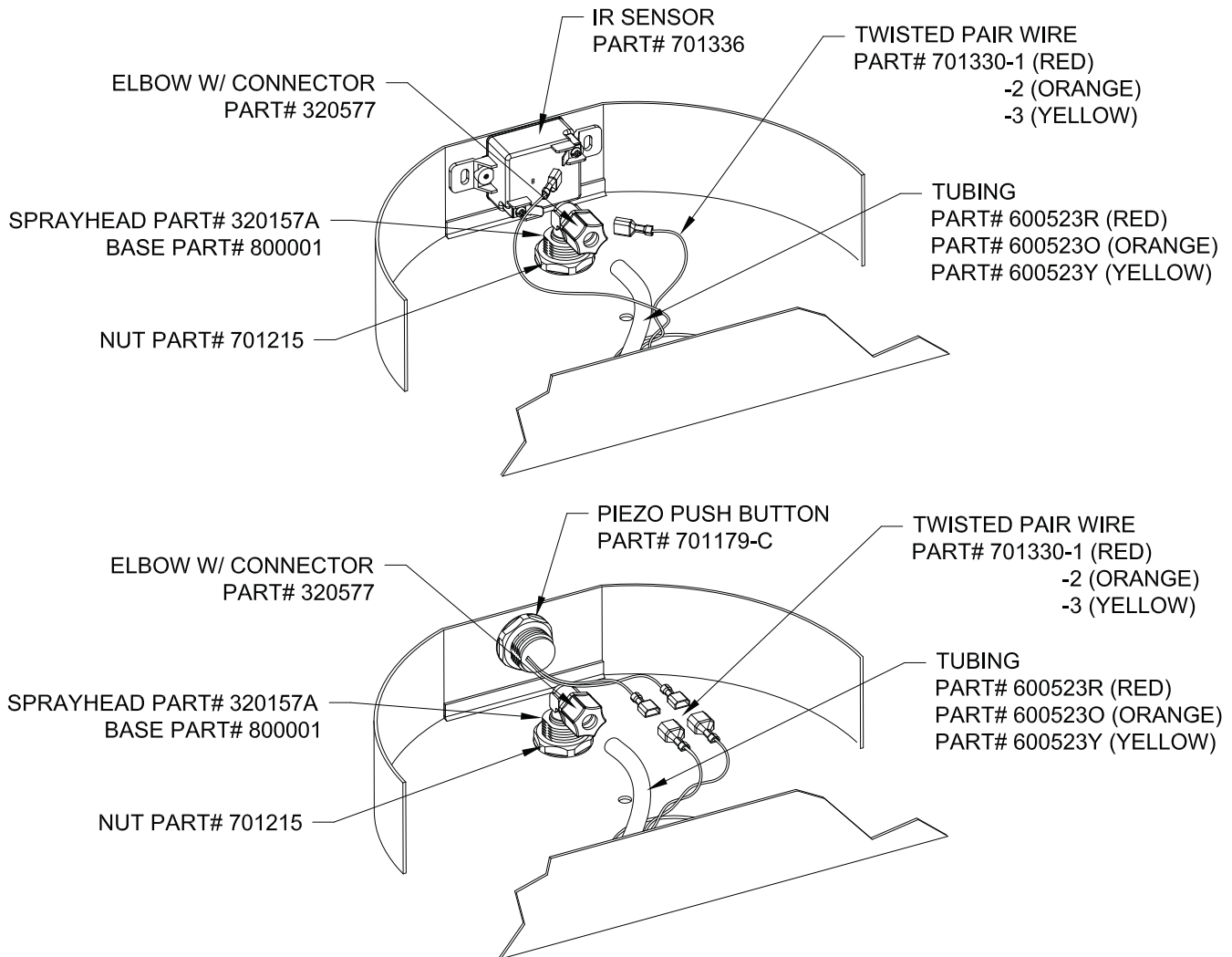
\*XX REPRESENTS THE WASH FOUNTAIN COLOR

WHITE GRANITE=WG  
 SAND STONE=SS  
 GRAY GRANITE=GG  
 BLACK GRANITE=BG  
 SEA GREEN=SG  
 NOCTURNAL BLUE=NB  
 RED CORAL=RC  
 GLACIER WHITE=GW  
 BONE=B

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## Head Detail For Electronic Washfountains



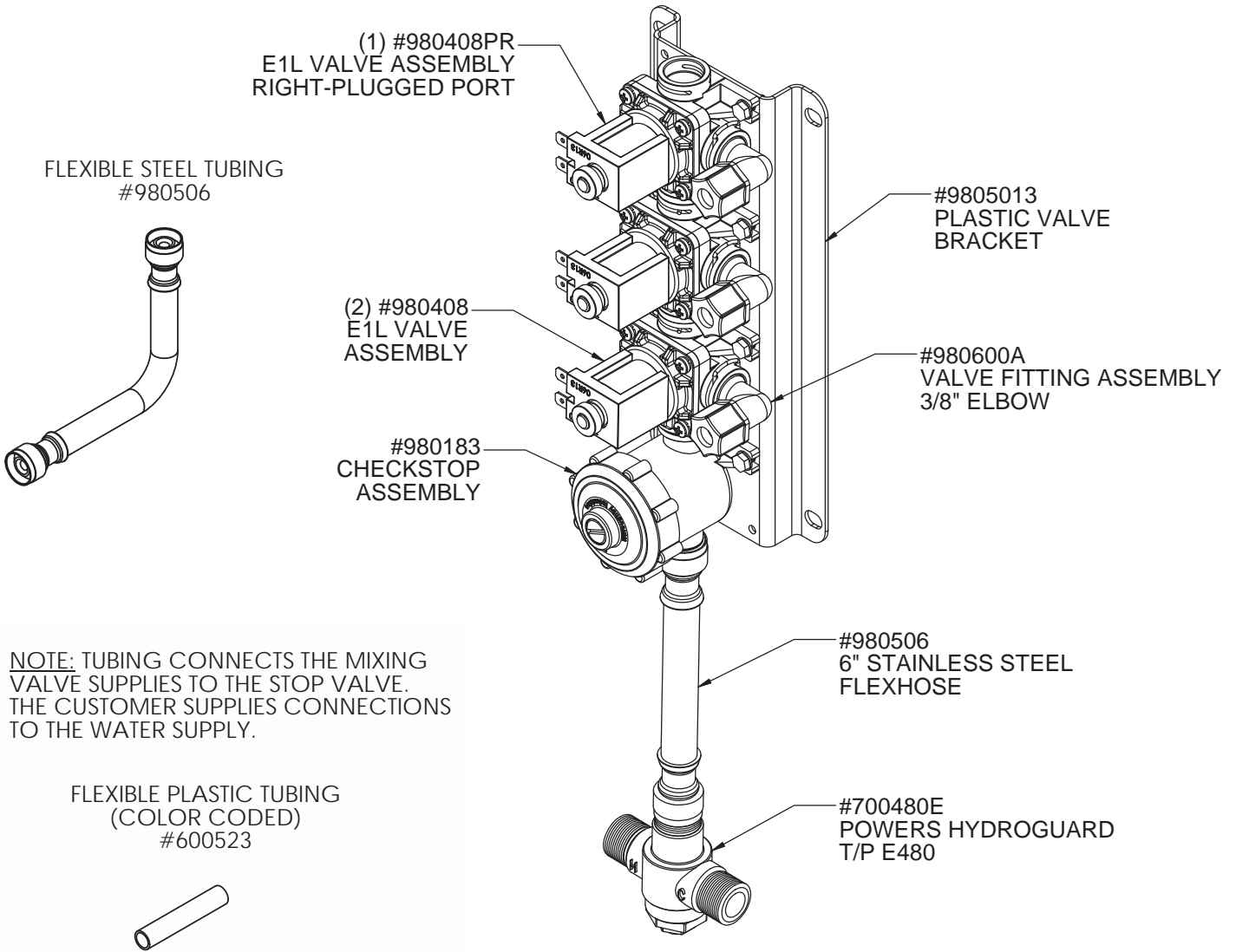
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## Valve Detail For Electronic Washfountains

ELECTRONIC VALVE (803105-3EW SHOWN)



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## **Trouble Shooting Electronic Valves** **For Aquasurf® Washfountains**

The two most common reasons an electronic valve does not operate properly are (1) lack of power or (2) lack of water pressure. The following steps should be used as a guide in identifying the problem of a non-functioning electronic valve.

Trouble shooting a lack of power:

- Verify that the 110V GFCI outlet has power
- Check all connections to ensure they have been made correctly:
  - Cable connecting the valve coil and the timer or IR sensor
  - Cable connecting the timer and the pushbutton (Piezo only)
  - Cable connecting the timing device and the 24VAC transformer
  - The 24VAC transformer and the 110V GFCI outlet

If the valve is wired correctly, the solenoid will make a “click” sound indicating that the valve has been actuated. The electronic valve is actuated by either the piezo pushbutton or the triggering of the Infrared Sensor (see the Sloan Start-Up Guide in the back of this manual).

Trouble shooting a lack of water.

- Check the supply to the rough-ins
- Make sure the screwdriver stops are in the open position
- Water pressure needs to be above 20psi to operate the valve

If the inlet water supply is above 20psi but not exiting the valve:

- Clean any debris from the screen on the inlet side of the solenoid valve body
- Remove the screws on the valve body and clean any debris from the diaphragm

After all of the above steps have been followed, if there is still no water coming out of the spray head, there may be a damaged or defective part (see installation notice in the front of this manual).

Replacement part numbers:

Plug In Transformer	PN# 701211
Solenoid Valve body and Coil	PN# 600954
Infrared Sensor	PN# 701336
Piezo Pushbutton	PN# 701179-C
Pneutronic Timer	PN# 330000

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## **LIQUID SOAP SPECIFICATION FOR LSD OPTION**

**Liquid soap viscosity is measured in “cps” (centipoise) and should be between 100 and 2500.**

The viscosity of the soap should be thin and free flowing.

Some soap types are available in a concentrate & must be diluted with water.

**The pH (acid) level should be in a range of 6.5 to 8.5.**

Acidic soap (pH less than 6.5) can corrode stainless steel

Acidic soap (pH less than 6.5) can degrade rubber, plastic, or chrome-plated materials.

Soap that is not within the range of 6.5 - 8.5, might be harsh on the hands or skin.

(Generally, any quality soap meeting the viscosity and pH guidelines should work well.)

## **MAINTENANCE SCHEDULE RECOMMENDATION**

To maintain proper function, Willoughby's LSD should be cleaned periodically to remove soap residue. The "Liquid Soap Spout" should be soaked in hot water for a period of 30 minutes when cleaning is being performed. The soap tray should also be cleaned with hot water.

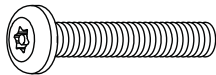
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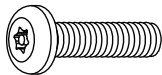
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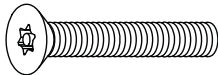
## P/N 801256 Hardware Kit Identification Chart



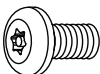
**1/4\"-20 x 1 1/2\"  
SECURITY SCREW  
800125  
QTY. (6)**



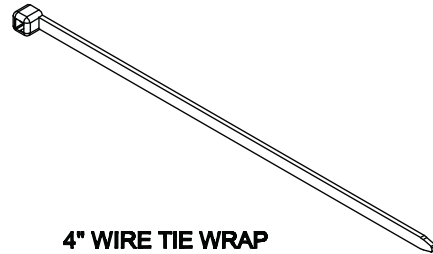
**1/4\"-20 x 1\"  
SECURITY SCREW  
800114  
QTY. (8)**



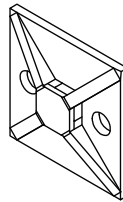
**1/4\"-20 x 1 1/2\"  
SECURITY SCREW  
(FLAT HEAD)  
800114  
QTY. (5)**



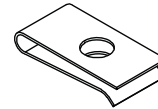
**1/4\"-20 x 1/2\"  
SECURITY SCREW  
4502SSN  
QTY. (8)**



**4\" WIRE TIE WRAP  
701173  
QTY. (6)**



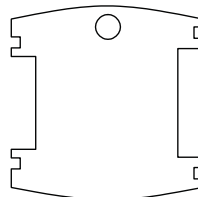
**4 WAY WIRE TIE BASE  
701206  
QTY. (4)**



**1/4\"-20  
TINNERMAN NUT  
800113  
QTY. (15)**



**TT30  
PINNED TORX BIT  
QTY. (1)**



**SECURITY SPANNER TOOL  
800116A  
QTY. (1)**



**TT27  
PINNED TORX BIT  
QTY. (1)**

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## Fitting Instructions

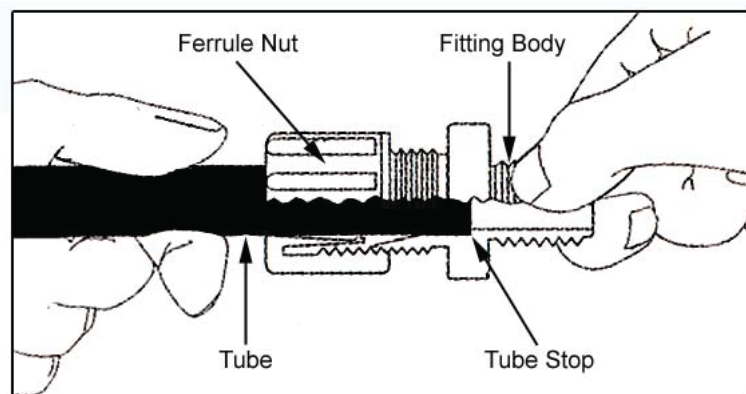
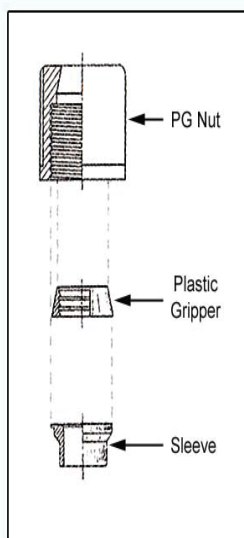
# JACO

*Note: It is not necessary to disassemble this fitting for application. Merely insert tubing to stop and tighten seal.*

1. Cut tubing end squarely and remove the internal burrs.
2. Insert the tubing through the back of the nut all the way through the nut assembly to the tube stop in the fitting body (see illustration). If the tubing does not enter the nut easily, loosen the nut one turn and reinsert the tubing all the way to the tube stop in the fitting body.
3. Turn the nut hand tight.
4. Wrench tighten the nut 1½ - 2 turns.
5. All nuts must be retightened when the system reaches projected operating temperature.

*Note: To ensure proper assembly, tubing MUST be fully inserted into the fitting body all the way to the tube stop.*

*Note: Squeaking sound when tightening nut is normal. For pipe threaded connections, Teflon tape must be used.*



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# Thermostatic Mixing Valve

**POWERS™**

IS-P-e480

**HydroGuard® T/P Series e480  
Lavatory Combination Valve**

## Installation Instructions

### To Install ■

**NOTE:** Installation should be in accordance with accepted plumbing practices. Flush all piping thoroughly before installation.

1. Locate a suitable place for the tempering valve. Valve should be accessible for service and adjustment and as close to the point-of-use as possible.
2. Connect hot and cold water to the supply valve using 1/2" NPT or 3/8" compression connections.
3. Connect outlet of tempering valve to fixture(s) using 1/2" NPT or 3/8" compression connections.
4. Turn on hot and cold water supplies. If any leaks are observed, tighten connections as necessary to stop leaks before proceeding.
5. Turn on fixture and allow water to flow for 2 minutes. Measure water temperature at outlet. If water is not at desired temperature, adjust as necessary.

### Specifications ■

e480-00 .....	1/2" NPT (Rough Bronze)
e480-01 .....	1/2" NPT (Rough Chrome)
e480-10 .....	3/8" Compression (Rough Bronze)
e480-11 .....	3/8" Compression (Rough Chrome)
Capacity: .....	4.0 gpm (15.0 l/m)
Approach Temperature: .....	5°F (2.8°C) above set pt.
Max. Operating Pressure: .....	125psi (862 kpa)
Max. Static Pressure: .....	125psi (862 kpa)
Max. Hot Water Temperature: .....	180°F (82°C)
Temp. Adjustment Range:	
..... ASSE Type T/P: 95 – 110°F (43-48°C)	
..... ASSE Type T: 80 – 120°F (27-49°C)	
Minimum Flow: .....	0.5 gpm (2.2 l/m)
Checks: .....	Integral
Construction: .....	Cast Brass Body
Certified: .....	CSA B125
Listing .....	ASSE 1016-1996 (Type T/P)
.....	ASSE 1070

### CALIFORNIA PROPOSITION 65 WARNING

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (California law requires this warning to be given to customers in the State of California.)

For more information: [www.watts.com/prop65](http://www.watts.com/prop65)

Figure 1

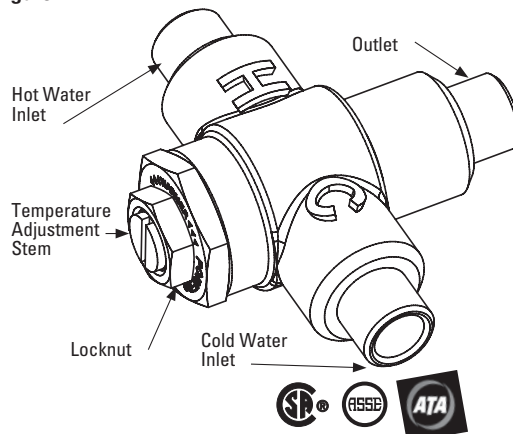
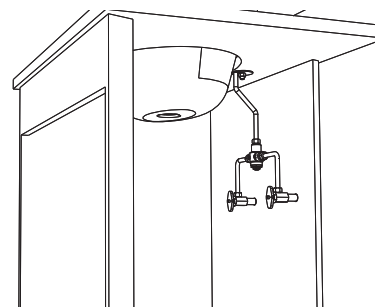


Figure 2: Typical Installation



Advanced Thermal Activation

### To Adjust Temperature ■

1. Loosen locknut.
2. Turn on fixture and run water for at least two (2) minutes to allow supply temperature to stabilize.
3. Turn temperature stem counter-clockwise for hotter or clockwise for colder outlet temperature.
4. Tighten locknut to prevent accidental or unauthorized temperature adjustment.
5. Re-check outlet temperature.

### Repair Kit ■

Motor Repair Kit.....480-270

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## **Start-Up Instructions For Infrared Sensors**

*The self-adaptive sensor automatically adapts to the surrounding environment when 24-volt supply is activated. No manual adjustments are required.*

Start-up mode will take approximately **5 minutes** to complete its cycle and is important that **no non-permanent** target is present at this time. A continuous red light visible in sensor window indicates sensor is in the start-up mode. If the red light is flashing, this indicates the sensor is picking up a target. Unless this target is a permanent fixture in the sensor's environment (i.e. A wall or stall door) it must be removed from the view of the sensor. When the start-up cycle is completed, there will be no light in the sensor window.

Note: if the 24 volt power supply is ever interrupted for longer than fifteen seconds, the start up mode automatically begins when power is restored.

Incorrect wiring or a short in the 24-volt power supply is indicated by a continuous warning signal seen in the sensor window. The visible red light flashes a SOS signal; 3 slow, 3 fast, 3 slow flashes.

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## **Trouble Shooting Guide For Infrared Sensors**

- I. Faucet does not Function (red light does not appear when user steps in front of sensor)
  - A. No power to sensor. Make certain that power is on. Check transformer leads and connections. Repair or replace as necessary.
  - B. EL-1500-LL sensor not operating. Replace EL-1500-LL sensor.
  
- II. Faucet does not Function (red light appears when user steps in front of sensor and solenoid does not click)
  - A. Debris in solenoid; disassemble, clean and flush.
  - B. Solenoid not wired correctly check solenoid connections.
  - C. Solenoid problem; replace solenoid.
  
- III. No Water when Activated (valve clicks)
  - A. Make certain that water is turned on.
  - B. Valve clogged; clean or replace filter.
  
- IV. Very low Flow or Slow Dribble
  - A. Check supply stop(s); open if closed.
  - B. Debris in filter; remove, clean and reinstall.
  - C. Debris in aerator or spray head; remove, clean and reinstall.
  - D. Disassemble solenoid; clean and flush.
  
- V. Continues to Run (with power on and red light flashing)
  - A. Non-permanent target in range after user leaves. Remove non-permanent target. If this target is a new permanent target (i.e., a new wall or partition), turn off 24 volt power for fifteen (15) seconds. Turn power back on and let the sensor complete start-up mode.
  - B. Sensor failure; replace sensor.
  
- VI. Continues to Run (even with power disconnected)
  - A. Solenoid valve installed backwards.
  - B. Debris in solenoid, won't close properly; remove operator and clean. Reassemble in the same manner.

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## **Care and Maintenance**

### **Solid Surface Care**

Aquasurf® surfaces may be easily cleaned using conventional cleaning agents such as an ammonia based liquid cleaner, (glass cleaner).

Dry stains on a matte finish can be removed with a 3M Scotch-Brite gray scouring pad or a mild abrasive cleaner.

Burns or scorches can be removed by sanding with coarse grit sandpaper followed by finer grit (220) sandpaper. Follow sanding with a 3M Scotch-Brite gray pad (or equivalent) to match finish of sanding area to surrounding area. A final buffing may be required on polished surfaces. Accidental nicks or chips can be repaired with special patch kits available in all Aquasurf® colors.

Avoid exposing Aquasurf® surfaces to strong chemicals such as acetone's; paint removers and sulfuric acid or hydrochloric chemical cleaners. Exposure to strong chemicals may result in permanent damage to Aquasurf® surfaces.

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### **Stainless Steel Care**

Stainless Steels are basically alloys of iron and chromium, and are corrosion resistant. Stainless steel has a bright surface that is easy to clean and is free from oxides. Therefore, cleaning of stainless steel is relatively simple and easy if done on a regular basis.

Frequency of cleaning should depend on the rate at which the fixture becomes dirty. Remember that fresh (soft) deposits of all kinds are relatively easy to remove, while removing older (hard) deposits are much more difficult. Establish a cleaning SCHEDULE.

Routine cleaning should involve ordinary soap or detergent and water, applied with a sponge, brush or cloth. Baking soda, borax or any of several non-abrasive commercial cleansing agents can help hasten the cleaning action. After scrubbing, rinse THOROUGHLY and wipe dry.

DO NOT use common steel wool, scouring pads, scrapers, wire brushes, files or other steel tools to clean stainless steel. Such items will scratch the surface or leave small particles of iron imbedded in the surface, which will eventually rust and stain the surface—even appearing as if the stainless itself was rusting.

Certain chemical compounds, if used on stainless steel, can give the appearance of rust and if allowed to stand for long periods of time, can pit the surface of even stainless. Products containing hydrochloric acid, muriatic acid or potassium hydrochloride can ruin the surface.

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## **Aquasurf® Solid Surface Warranty**

Aquasurf® Solid Surface Products are a homogeneous blend of resins, mineral filler and colorant manufactured for panels, molded and/or shaped products and components. Aquasurf® Solid Surface products provide a luxurious appearance with the durability of stain proof, impact resistant, burn resistant material with ease of maintenance and cleaning.

Willoughby Industries, Inc. warrants to commercial and institutional purchasers only that each unit will be free from defects in workmanship and materials under normal use and service upon the following terms and conditions. The period during which Aquasurf® components are warranted as follows:

1. Aquasurf® solid surface components are warranted for 2 years from date of shipment.
2. All other components warranted for 1 year from date of shipment.

This warranty does not cover installation or any other labor charges and does not apply to any components damaged by accident, abuse, improper installation or improper maintenance. This warranty does not cover any installation that did not comply with national, state and local building, plumbing, or electrical codes. The warranty is limited to replacing or repairing at Willoughbys option, transportation charges prepaid by the purchaser, any Aquasurf® component or part which upon our inspection shall be deemed as defective within the limitations of this warranty. The replacement or repair of defective units as stated in this warranty shall constitute the sole remedy of the purchaser and the sole liability of Willoughby Industries, Inc. Willoughby Industries, Inc. shall not otherwise be liable under any indirect damages caused by defects in the repair or replacement thereof.

This warranty only extends to commercial and institutional purchasers and does not extend to any others, including consumer customers of commercial institutional purchasers. This warranty is in lieu of all other warranties, expressed or implied, including implied warranty of merchantability or fitness for a particular purpose or otherwise.

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