Operation & Maintenance Manual

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

MADE IN THE U.S.A.
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.
### Parts List

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

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

*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
Head Detail For Electronic Washfountains

ELBOW W/ CONNECTOR
PART# 320577

SPRAYHEAD PART# 320157A
BASE PART# 800001

NUT PART# 701215

IR SENSOR
PART# 701336

TWISTED PAIR WIRE
PART# 701330-1 (RED)
-2 (ORANGE)
-3 (YELLOW)

TUBING
PART# 600523R (RED)
PART# 600523O (ORANGE)
PART# 600523Y (YELLOW)

PIEZO PUSH BUTTON
PART# 701179-C

TWISTED PAIR WIRE
PART# 701330-1 (RED)
-2 (ORANGE)
-3 (YELLOW)

TUBING
PART# 600523R (RED)
PART# 600523O (ORANGE)
PART# 600523Y (YELLOW)
Valve Detail For Electronic Washfountains

ELECTRONIC VALVE (803105-3EW SHOWN)

(1) #980408PR
E1L VALVE ASSEMBLY
RIGHT-PLUGGED PORT

(2) #980408
E1L VALVE ASSEMBLY
#980183
CHECKSTOP ASSEMBLY

#700480E
POWERS HYDROGUARD
T/P E480

#9805013
PLASTIC VALVE BRACKET

#980506
6" STAINLESS STEEL FLEXHOSE

#980600A
VALVE FITTING ASSEMBLY
3/8" ELBOW

FLEXIBLE STEEL TUBING
#980506

FLEXIBLE PLASTIC TUBING
(COLOR CODED)
#600523

NOTE: TUBING CONNECTS THE MIXING VALVE SUPPLIES TO THE STOP VALVE. THE CUSTOMER SUPPLIES CONNECTIONS TO THE WATER SUPPLY.

visit our website at http://www.willoughby-ind.com

Rev. 6/2014
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:

<table>
<thead>
<tr>
<th>Component</th>
<th>PN#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug In Transformer</td>
<td>701211</td>
</tr>
<tr>
<td>Solenoid Valve body and Coil</td>
<td>600954</td>
</tr>
<tr>
<td>Infrared Sensor</td>
<td>701336</td>
</tr>
<tr>
<td>Piezo Pushbutton</td>
<td>701179-C</td>
</tr>
<tr>
<td>Pneutronic Timer</td>
<td>330000</td>
</tr>
</tbody>
</table>
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.
P/N 801256 Hardware Kit Identification Chart

1/4"-20 x 1 1/2" SECURITY SCREW
800125
QTY. (8)

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

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

4" WIRE TIE WRAP
70173
QTY. (8)

4 WAY WIRE TIE BASE
701206
QTY. (15)

1/4"-20 TINNERMAN NUT
800113
QTY. (5)

TT30 PINNED TORX BIT
QTY. (1)

SECURITY SPANNER TOOL
800116A
QTY. (1)

TT27 PINNED TORX BIT
QTY. (1)
Fitting Instructions

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.
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

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>e480-00</td>
<td>1/2&quot; NPT (Rough Bronze)</td>
<td>4.0 gpm (15.0 l/m)</td>
</tr>
<tr>
<td>e480-01</td>
<td>1/2&quot; NPT (Rough Chrome)</td>
<td></td>
</tr>
<tr>
<td>e480-10</td>
<td>3/8&quot; Compression (Rough Bronze)</td>
<td>125psi (862 kpa)</td>
</tr>
<tr>
<td>e480-11</td>
<td>3/8&quot; Compression (Rough Chrome)</td>
<td></td>
</tr>
</tbody>
</table>

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)
Min. 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

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
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.
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.
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.

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 hydochloride can ruin the surface.
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 Willoughby's 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.