

INSTALLATION INSTRUCTIONS

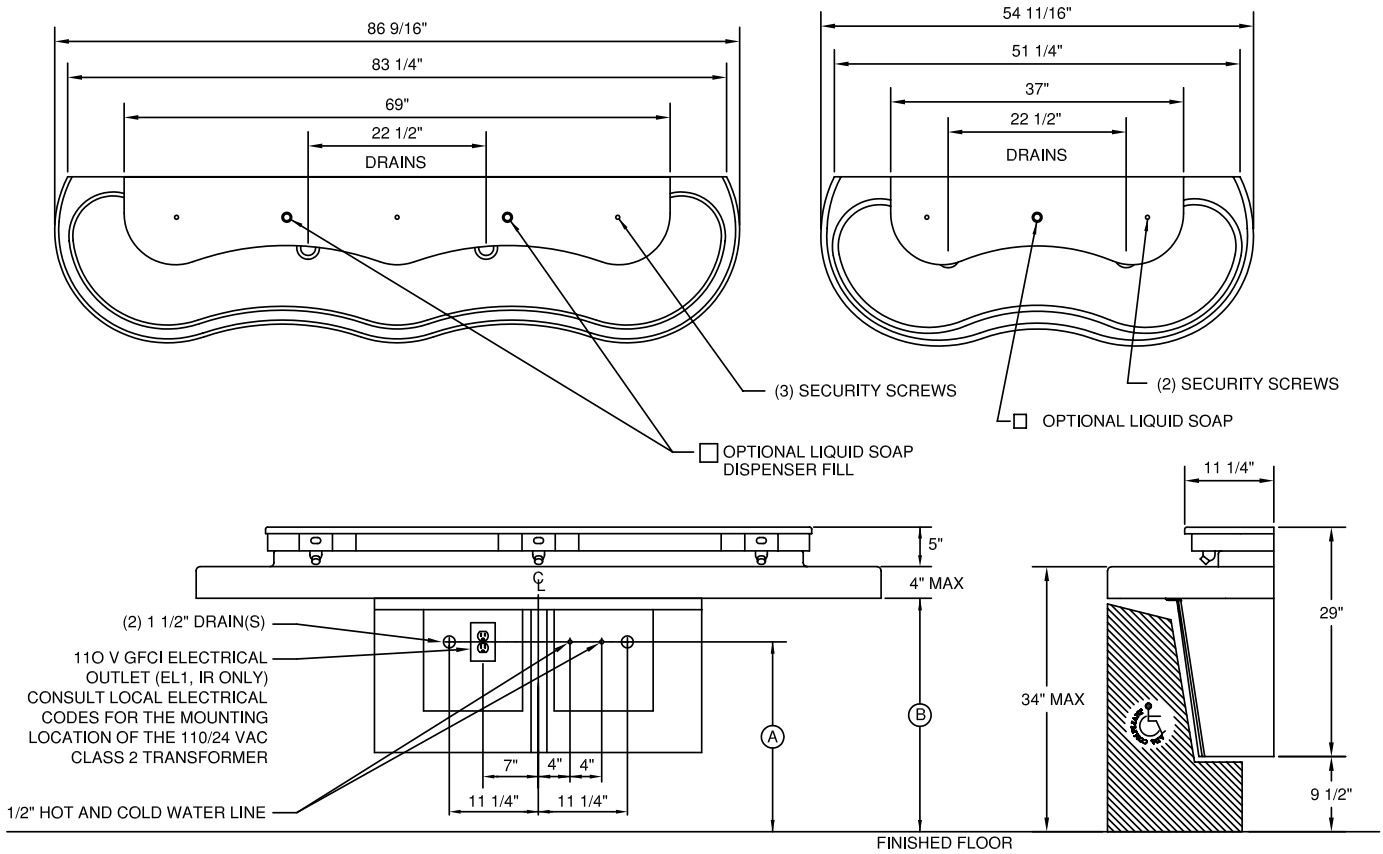
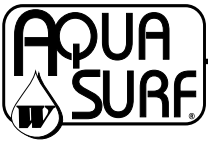
AquaWave™ Washfountain Models

**2 and 3 Station
Infrared / Pneumatic / Piezo**



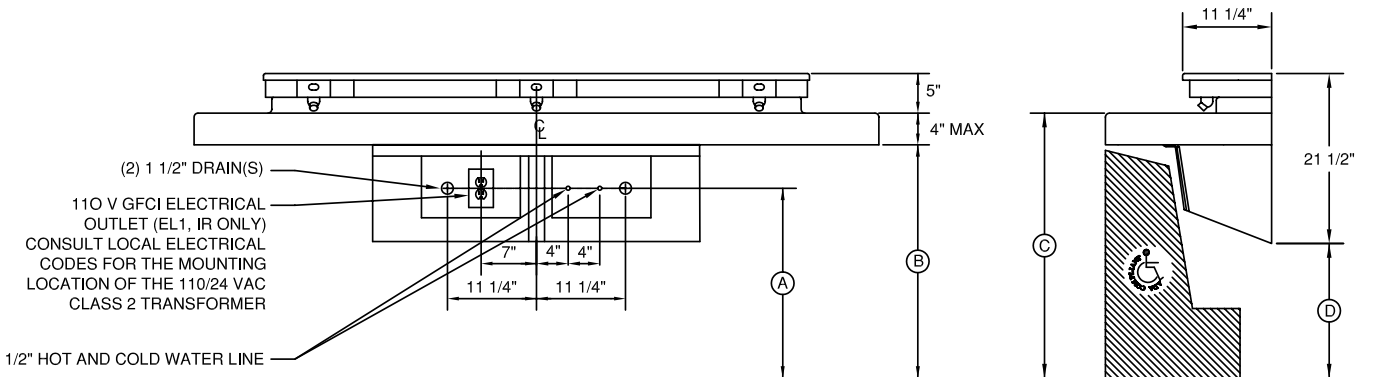
Visit our website at <http://www.willoughby-ind.com>
2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221
(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065

Rev. 1/2005



3 STATION SHOWN, 2 STATION ROUGH-IN DIMENSIONS ARE IDENTICAL

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



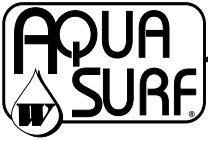
3 STATION SHOWN, 2 STATION ROUGH-IN DIMENSIONS ARE IDENTICAL

VARIABLE MOUNTING HEIGHT CHART				
	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"

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



Installation notice!

Check Rough-in location and flush lines 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 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.

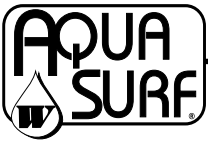
Installation notice!

Check Rough-in location and flush lines prior to hook up!

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



PACK LIST ROUGH-IN DETAIL

Packing List

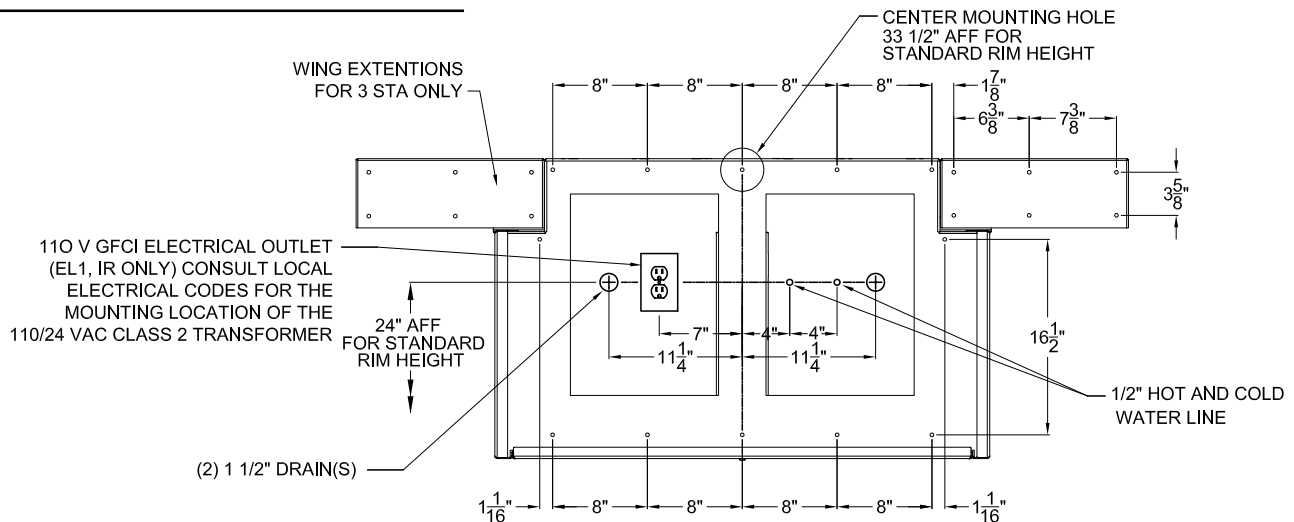
Box 1:

- Pedestal (with valving installed)
- Solid surface front panels
- Pedestal wing extensions (for 3 station only)
- Closure panels (for 3 station only)

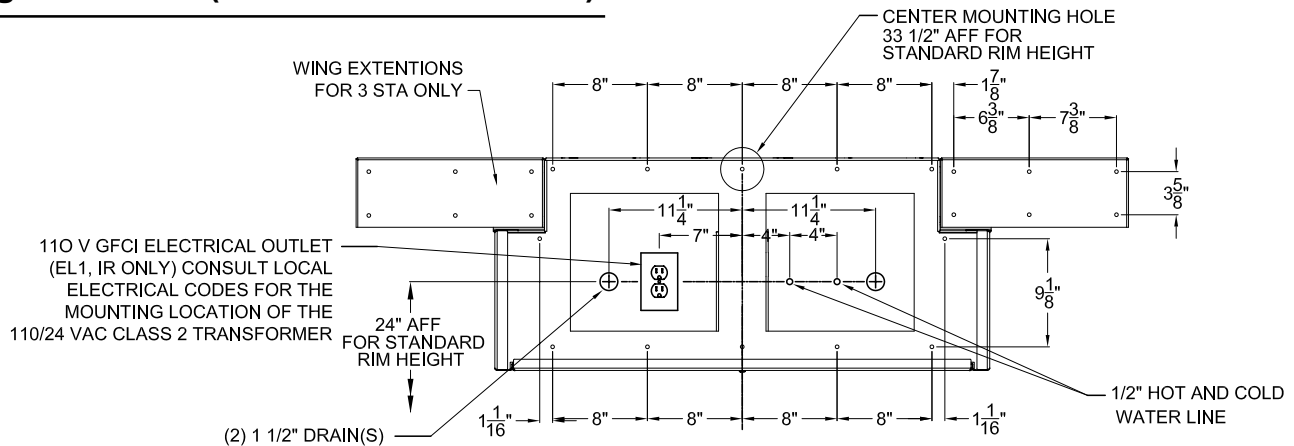
Box 2:

- Solid surface basin (with head assembly installed)
- Solid surface top (with optional soap installed)
- Hardware kit
- Installation manual

Rough-In Detail (Std Pedestal)



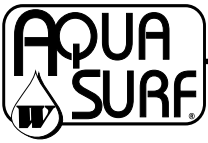
Rough-In Detail (Low Profile Pedestal)



Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



STEP ONE Pedestal Mounting

Parts supplied:

- Pedestal (pre-assembled)
- Wing extensions (3 sta only)
- Pedestal hardware *Note: Hardware for wall anchoring by others.*

1. Check rough-ins and ensure placement is correct. (See Rough-In Detail on previous page)
2. Remove contents from shipping cartons and compare with packing list.
3. Remove front panels from pedestal, using TT-27 security bit (provided). Remove wing extensions and closure panels (wire tied to top of pedestal) (3 station only).
4. With (4) 1/2" security screws and tinnerman nuts, mount wing extensions to pedestal. Using level, adjust wings.(3 station only).
5. Place mark on wall at 33-1/2" AFF along desired vertical fixture centerline and install appropriate anchoring hardware. With the help of an assistant, lift pedestal assembly up to wall and mount pedestal using the top center hole near the top of the backplate.

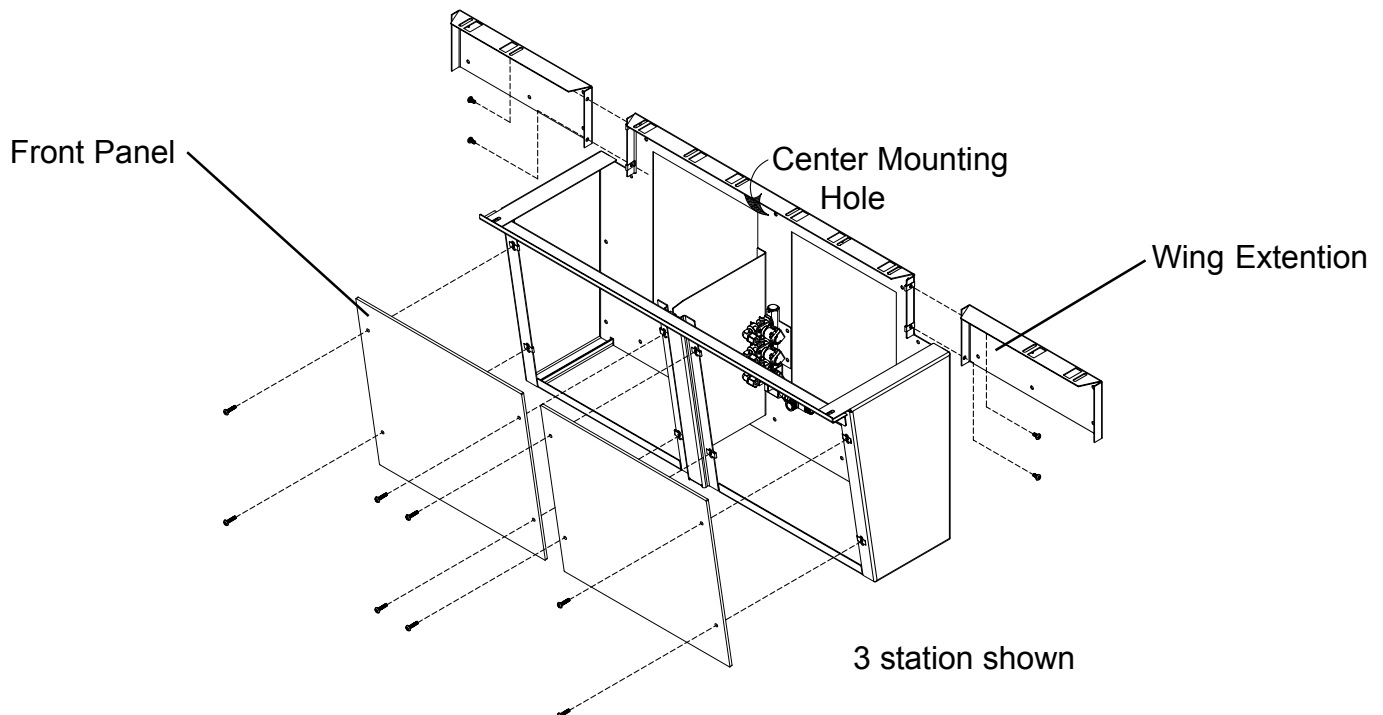
Note: Proper backing or anchoring required.

Note: Above dimensions are for the standard 34" rim height.

6. With pedestal hanging on wall, place level on top lip. Adjust unit left-to-right until level. Mark remaining holes. Install remaining anchors & fasten to wall (hardware by others)

Note: Leveling of unit is critical. Fixture must be level to drain water properly.

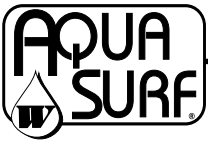
Note: Mounting hardware by others. Suitable mounting hardware must be used.



Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065

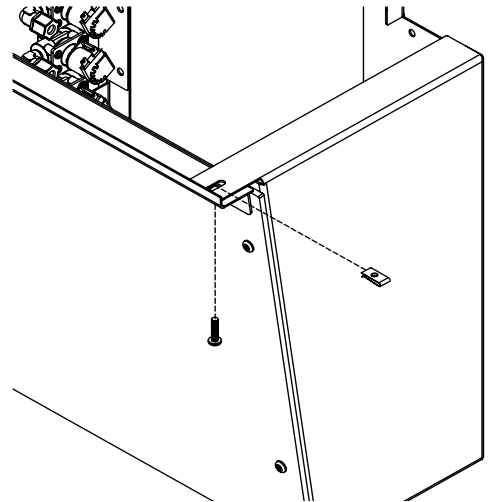


STEP TWO Preparing the Pedestal

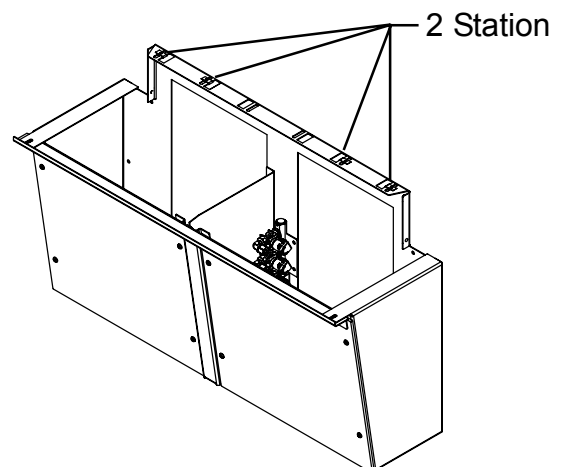
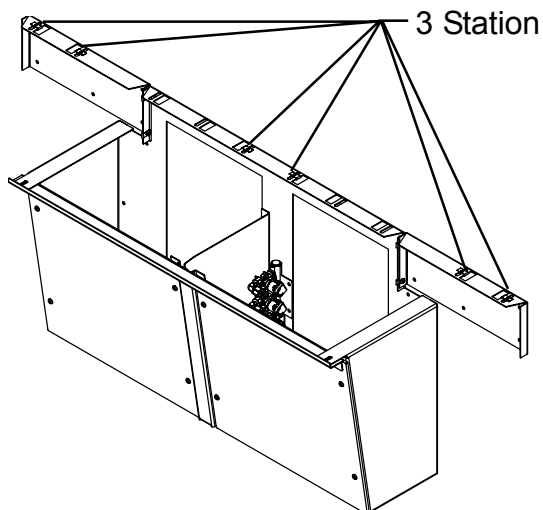
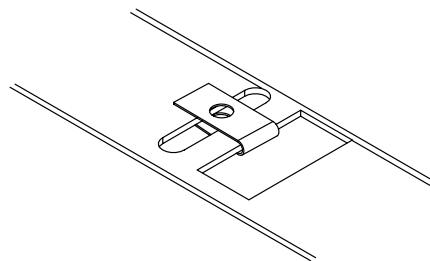
Parts supplied:

- Pedestal
- Tinnerman nuts

1. Remove (2) 1/2" screws and the tinnerman nuts on both sides of the center channel rail from pedestal (Shipping Hardware).



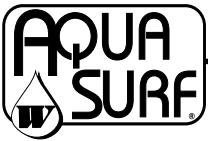
2. Position tinnerman clips on back of pedestal & wing extensions as shown (to be used for securing the head assembly).



Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065

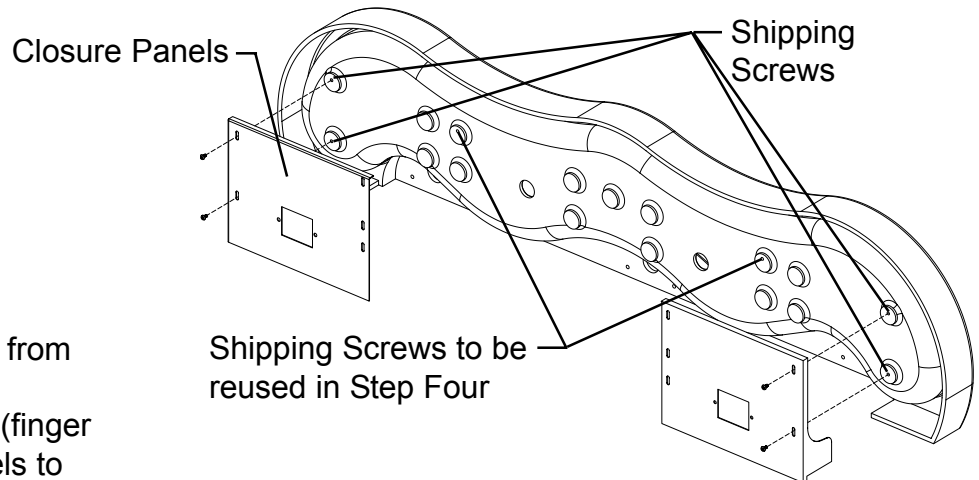


STEP THREE Preparing the Basin

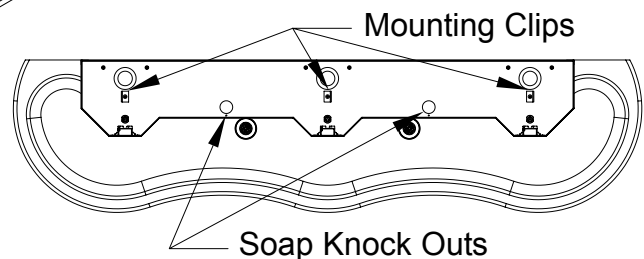
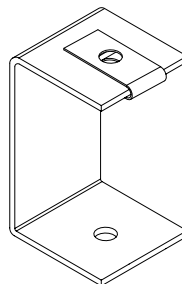
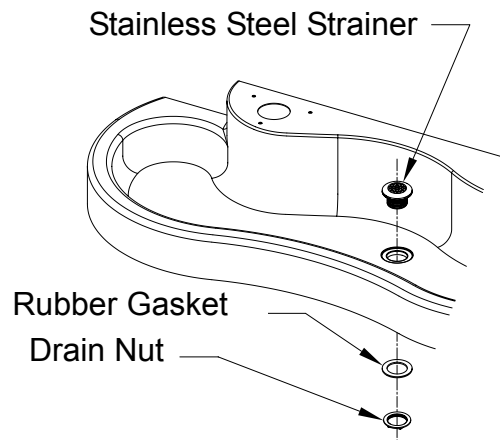
Parts supplied:

- Basin
- Closure Panels (L & R)
- Mounted Pedestal
- Drains
- Hardware

1. Remove shipping screws from bottom of bowl (6 total).
2. With (4) shipping screws (finger tight), install closure panels to bottom side of basin (3 station only)
3. Install (2) drain assemblies on basin with rubber washer on underside of bowl. Use small (aprox 1/4" dia 6" long) strand of plumbers putty on underside of lip at radius on drain body.
Note: Over tightening can crack the basin.



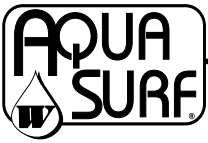
4. Place (1) tinnerman nut on each mounting clip in the top of the head assembly.
5. If fixture has optional soap dispenser, remove the circle knock outs in the bottom of the stainless steel head assembly.



Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065

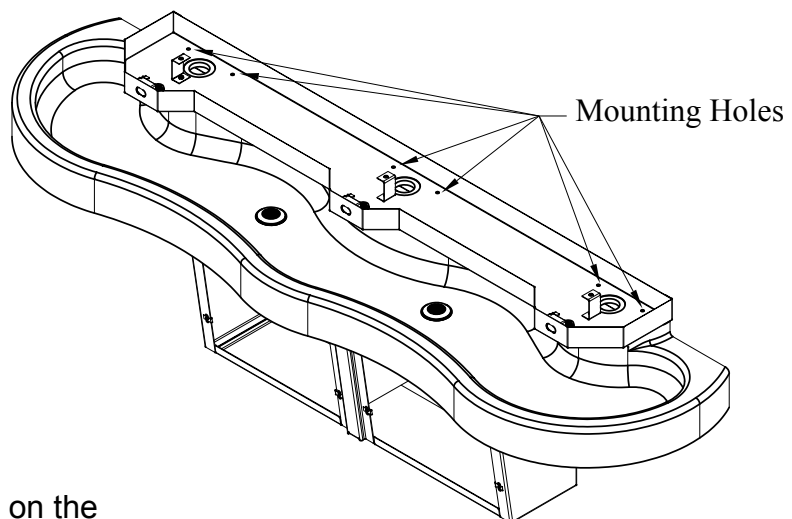


STEP FOUR Mounting the Basin

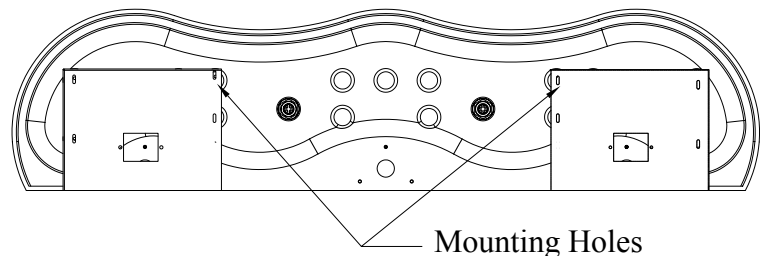
Parts supplied:

- Basin (assembled)
- Pedestal (mounted and assembled)
- Hardware

1. With the help of an assistant, place the bowl and attached head assembly on top of pedestal. *Adjust all tinnerman nuts on the pedestal with thru holes in top of basin before fastening anything.* Fasten with 1 1/2 security screws only finger tight.



2. Line up the front two brass inserts on the front bottom of bowl with mounting holes on pedestal (the same holes the shipping screws were removed from). Fasten the front anchor points through center channel rail with 1/2" screws removed in Step Two.



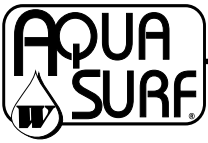
3. Tighten all fasteners securely.

Note: Basin must be level for fixture to drain correctly. If fixture is not level, see Step Four B.

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

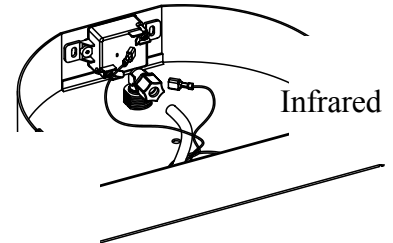
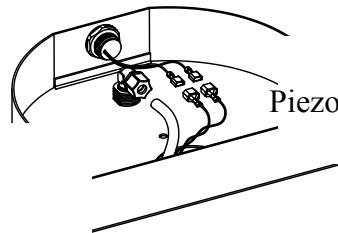
(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



STEP FIVE A Connections for Infrared / Piezo Actuators

Parts supplied:

- Valve Assembly
- Plug-In Transformer
- 4' x 3/8" multi-colored water lines
- Multi-colored wires
- Wire ties
- Wire tie mounts (adhesive backed)



1. Feed two like-colored wires into each of the actuator housing assemblies.

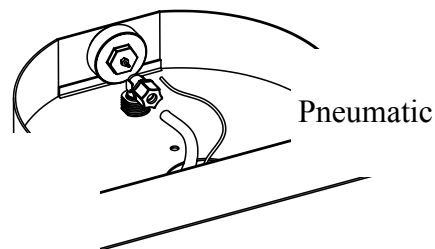
Note: Use wire tie mounts and wire ties to route and secure wiring. Wires are long enough to accommodate various routing paths. Longer wires may need to be bundled with wire ties so that they do not come in contact with sharp corners.

2. Locate the 3/8" x 4' colored tubing water lines. Match up the color of water lines with the color of tubing and run the lines to the actuator housing assemblies. See Jayco Fitting instructions near the end of this document before attaching tubing to connector. Repeat for each spray head, being sure to match each of the like colors together (water line and tubing).

STEP FOUR-B Connections for Pneumatic Actuators

Parts supplied:

- 4' x 3/8" multi-colored water lines
- Pneumatic tubing

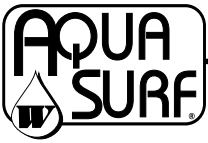


1. Locate the small pneumatic tubing.
Feed each one into each of the actuator housing assemblies and plug the tubing onto the hose barb on the back of the pushbutton.
2. Locate the 3/8" x 4' colored tubing water lines. Match up the color of water lines with the color of tubing and run the lines to the actuator housing assemblies. See Jayco Fitting instructions near the end of this document before attaching tubing to connector. Repeat for each spray head, being sure to match each of the like colors together (water line and tubing).

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



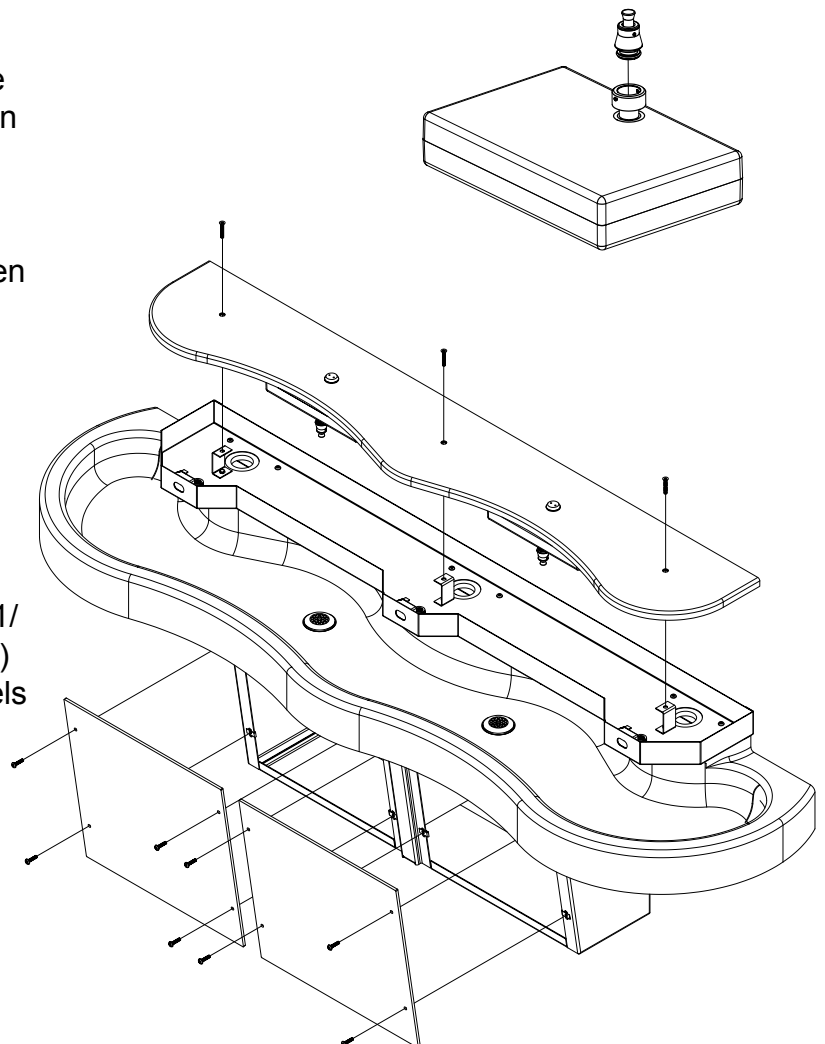
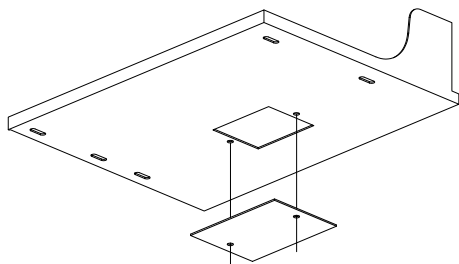
STEP SIX Testing

1. Make all plumbing connections (supplies and drains)
2. Plug in transformer to GFCI outlet and test system for leaks.
Note: See Sloan start up instructions at the end of this document for infrared sensor operation.
3. Adjust mixing valve to desired temperature.
Note: See Powers instructions near the end of this document for details.

STEP SEVEN Final Assembly

1A. If fixture has optional soap, attach soap pump to the adapter on the under side of the soap tray (attached to the top cover). Tighten the two set screws on either side of adapter.

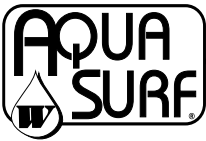
1. Attach solid surface top with 1" flathead security screws (TT30 bit). Do not overtighten screws.
2. Re-install solid surface front panels removed in Step One (TT27 bit).
3. Do not discard tooling from hardware kit (Soap tool, Aerator tool, and security bits).
4. Attach closure panel access cover with 1/2" screws and tinnerman nuts (3 station only) over the rectangular hole in the closure panels



Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



PARTS LIST
2 and 3 Station Replacement Part Numbers

ITEM	DESCRIPTION	PART# 2 STATION	PART# 3 STATION
1	Solid Surface Basin	800220-XX*	800221-XX*
2	Solid Surface Top Cover	800222-XX*	800223-XX*
3	Front Panels (LP)	801224-XX*	801224-XX*
-	Front Panels (Standard)	800334-XX*	800334-XX*
4	Drain Assembly	380276	380276
5	Electronic Valve Assembly	803105-2E	803105-3E
-	Pneumatic Valve Assembly	803105-2P	803105-3P
7	Left Side Closure Panel	N/A	800254
8	Right Side Closure Panel	N/A	800255
9	Soap Tray	LSD-2WAV-A	LSD-3WAV-A
10	Pedestal (LP)	801210-2WWA	801210-3WWA
-	Pedestal (Standard)	800210-2WA	800210-3WA
-	Pedestal (Floor Mounted)	800210-2FL	800210-3FL
11	Power Supply Assm	800146B	800137B
12	Hardware Kit	801256	801256
13	Left Wing Extention	N/A	800263
14	Right Wing Extention	N/A	800264

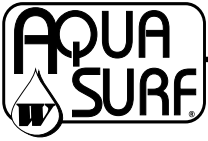
*XX REPRESENTS THE WASH FOUNTAIN COLOR

- 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

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



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.)

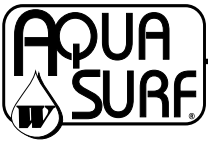
Maintenance Schedule Recommendation

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.

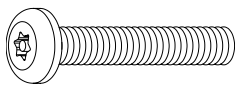
Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

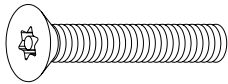
(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



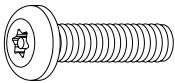
**P/N 801256 HARDWARE KIT
Identification Chart**



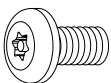
1/4-20 x 1 1/2"
SECURITY SCREW
800125



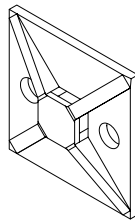
1/4-20 x 1 1/2"
SECURITY SCREW
(FLAT HEAD)
800127



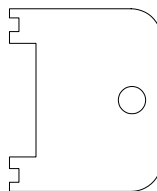
1/4-20 x 1"
SECURITY SCREW
800114



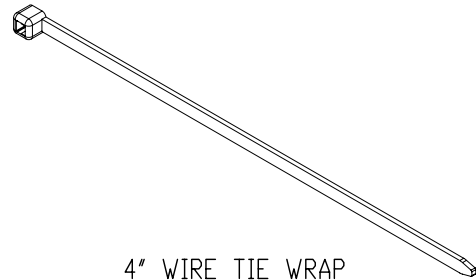
1/4-20 x 1/2"
SECURITY SCREW
4500NSS



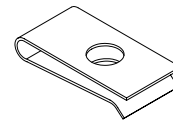
4 WAY WIRE TIE BASE
701206



SECURITY SPANNER TOOL
800116



4" WIRE TIE WRAP
701173



1/4-20
TINNERMAN NUT
800113



TT30
PINNED TORX BIT

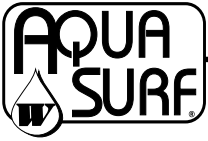


TT27
PINNED TORX BIT

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



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.

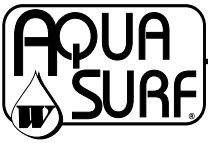
This warranty does not cover installation or any other labor charges and does not apply to any components damaged by accident, abuse, improper installation or improper maintenance. This warranty does not cover any installation that did not comply with national, state and local building, plumbing, or 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.

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



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.

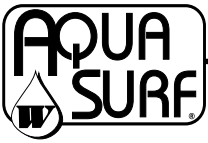
DO NOT use common steel wool, scouring pads, scrapers, wire brushes, files or other steel tools to clean stainless steel. Such items will scratch the surface or leave small particles of iron imbedded in the surface, which will eventually rust and stain the surface—even appearing as if the stainless itself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

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



JAYCO Fitting Instructions

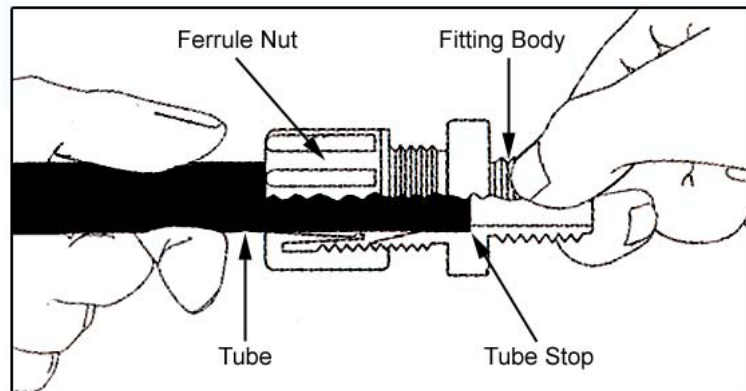
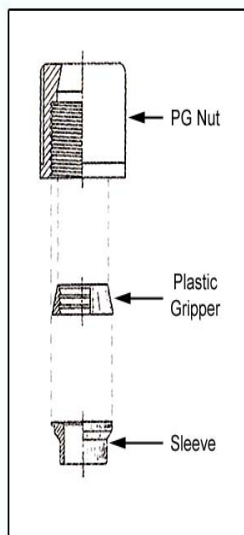
JAYCO

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.

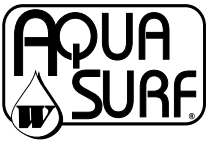
Note: Squeaking sound when tightening nut is normal. For pipe threaded connections, Teflon tape must be used.



Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

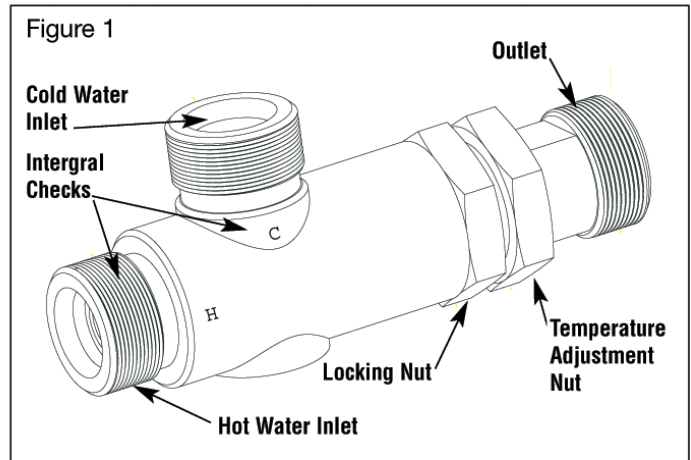
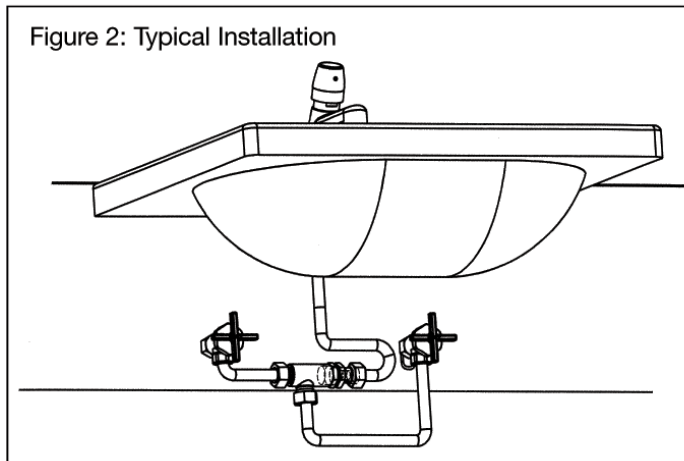
(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



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

TO INSTALL

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 flex lines with 1/2" or 3/8" compression connections.
3. Connect outlet of tempering valve to fixture(s) using a flex line with 1/2" 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.

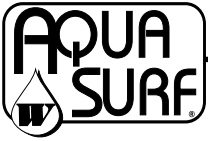


TO ADJUST TEMPERATURE

1. Hold adjusting nut with a 1" open end wrench, and loosen lock nut with a second wrench.
2. Turn on fixture and run water for at least 2 minutes to allow supply temperatures to stabilize.
3. Turn temperature adjustment nut until desired temperature is achieved at outlet.
4. Hold temperature adjustment nut with wrench, and tighten lock nut to prevent accidental or unauthorized temperature adjustment.
5. Recheck outlet temperature.

SPECIFICATIONS

Connections:	480 - 1/2" Compression 480 - 3/8" Compression
Capacity:	3.65 gpm @ 45psi Δ
Max. Operating Pressure:	125 psig
Max. Hot Water Temperature:	180°F (81°C)
Temperature Adjustment Range:	90 – 110°F (31– 43°C)
Min. Flow:	.50 gpm
Checkstops:	Integral
Construction:	Forged Brass Body
Compliance:	ASSE 1016, CSA B125
Factory Set:	105°F (40°C)



SLOAN[®]

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.

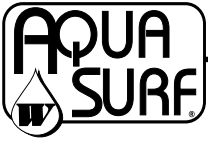
Note: if the 24 volt power supply is ever interrupted for longer than fifteen seconds, the start up mode automatically begins when power is restored.

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.

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065



SLOAN[®]

TROUBLESHOOTING GUIDE

- 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.

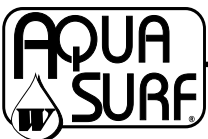
- VI. Continues to Run (even with power disconnected)
 - A. Solenoid valve installed backwards.
 - B. Debris in solenoid, won't close properly; remove operator and clean. Reassemble in the same manner.

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221

(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065

Thank You for using
Willoughby Industries, Inc.



INSTALLATION INSTRUCTIONS

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street • P.O. Box 21217 • Indianapolis, IN 46221
(317) 638-2381 • Fax: (317) 638-6110 • (800) 428-4065