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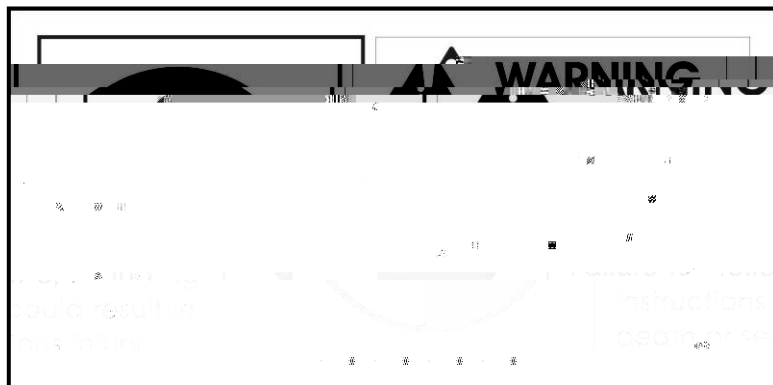
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CHAPTER 1

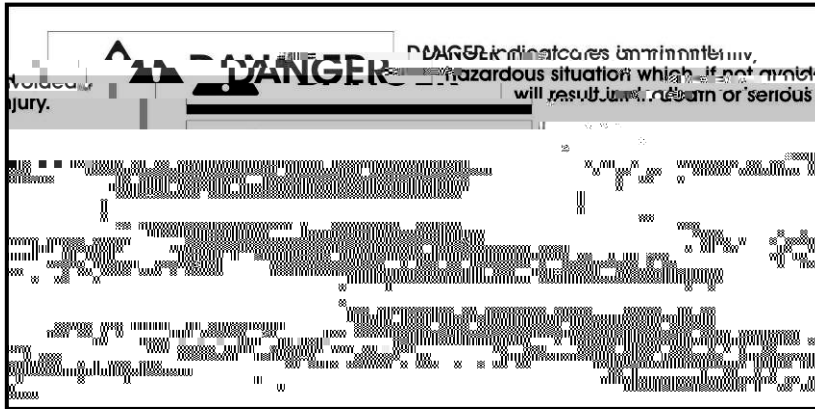
INTRODUCTION

Congratulations on your purchase of a Labconco Glassware Washer. Labconco manufactures two types of Gla



Chapter 1: Introduction

Throughout this manual potentially hazardous conditions are identified using the following words and symbols.



It is important that you understand the warnings listed throughout this manual before you operate the Glassware Washer.

CHAPTER 2

PREREQUISITES

Before you install the Glassware Washer, prepare your site for installation. Carefully examine the location where you intend to install the Glassware Washer. You must be certain that the area is level and of solid construction. In addition, a hot water source, a drain, a purified water source (if applicable), and an electrical source must be located near the installation site. A cold water source is required when the optional Cool Drain Water Kit is installed.

Refer to _____ for complete Glassware Washer electrical and environmental conditions, specifications and requirements.

Hot Water Requirements

An existing hot water supply may be used as the hot water source for your Glassware Washer. The washer requires the inlet water temperature to be greater than 120°F (49°C) to fully activate powdered detergents and raise the glassware temperature to achieve fast and complete drying. Hotter water will produce better washing results.

Water pressure must be between 20-120

The purified water system must be provided with supply piping of sufficient size to permit at least 0.9 gallons (3.4 liters) per minute of flow. Tubing with an internal diameter of at least .375 (9.53 mm) is recommended. The purified water inlet valve on the washer is equipped with a plastic hose barb connection to accommodate .375 (9.53 mm) ID flexible plastic or rubber hose. Use a spring or band hose clamp to secure the hose to the hose barb connection. The hose barb connection may be removed from the valve to expose a male 3/4 - 11-1/2 NH hose coupling. Rigid plastic, tin-lined, or stainless steel tubing and fitting can be connected to the washer fitting.

An optional connection kit (Labconco P/N 4592200) is available for connecting .375" (9.53mm) OD plastic tubing to the purified water inlet valve. The purified water system connections must be airtight to prevent the washer pump from pulling air instead of water.

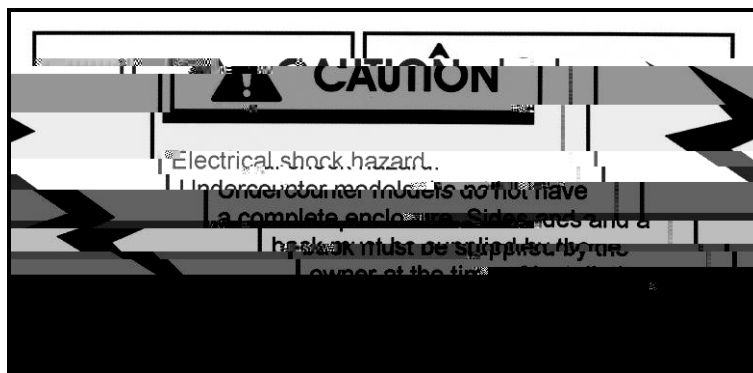
If the purified water is stored in a carboy, at least 3.4 gallons (13 liters) must be available for each rinse. If all the purified water is not available at the start of a wash cycle, but instead is produced concurrently with the wash cycle, the production rate must permit at least 0.9 gallon (3.4 liters) per minute to be delivered to the washer.

Electrical Requirements

Undercounter and Freestanding models, are hard-wired directly into a junction box using conduit. A 20 Amp circuit breaker or fuse is required for models rated at 115V (60 Hz) or 230V (50/60 Hz).

High voltage models are designed to operate at 230 VAC, single phase. It will operate safely at nominal 208 VAC, however the heater output will be significantly degraded as the operating voltage drops below 230V. It is highly recommended that if the voltage is low that a boost transformer is used.

If your Glassware Washer is converted to a Mobile model, a dedicated electrical outlet is required. A 20 Amp circuit breaker or fuse is required for models rated at 115V (60 Hz) or 230V (50/60 Hz). 115V models are equipped with a 20 Amp NEMA 5-20P plug. 230V models are equipped with a 15 Amp NEMA 6-15P plug. It may be necessary to remove the plug and install a different plug to match the available receptacle.



Drain Requirements

The drain hose, .75" (1.9 cm) ID is installed during manufacture. The hose provides a flexible coupling to the building drain piping and can be secured with a spring or band hose clamp. (A band hose clamp is provided with the washer.)

Tubing or pipe, .75 (1.90 cm) ID or larger, should be provided for the building drain. The use of an air gap is strongly recommended to prevent siphoning of wastewater into the washer.

Do not reduce the size of the drain plumbing.

Glassware Washers that have been converted to Mobile models drain into a sink through a hose assembly that attaches to the faucet.

Space Requirements

If your Glassware Washer is an Undercounter model, you must ensure the undercounter opening is the proper size to accommodate the washer. The dimensions for the Undercounter washer are shown in Appendix B.

CHAPTER 3

Unpacking Your Glassware Washer

Carefully unpack your Glassware Washer and inspect it for damage that may have occurred in transit. If your Glassware Washer is damaged, notify the delivery carrier immediately and retain the entire shipment intact for inspection by the carrier.

The United States Interstate Commerce Commission rules require that claims be filed with the delivery carrier within fifteen (15) days of delivery.

Do not discard the carton or packing material for your Glassware Washer until you have checked all of the components and installed and tested the Glassware Washer.

NOTE: Do not return goods without the prior authorization of Labconco. Unauthorized returns will not be accepted. If your Glassware Washer was damaged in transit, you must file a claim directly with the freight carrier. Labconco Corporation and its dealers are not responsible for shipping damage.

Do not remove the washer from its shipping skid until it is ready to be placed into its final location. Move the washer by placing a flat, low dolly under the shipping skid.

Washer Components

Locate the model of washer you received in the following group of tables. Verify that the components listed are present and undamaged.

Catalog #	Washer Description	SteamScrubber Undercounter Models
4400320	SteamScrubber Undercounter – 115 V with upper and lower racks	
4400321	SteamScrubber Undercounter – 230 V with upper and lower racks	
4400330	SteamScrubber Undercounter – 115 V with window with upper and lower racks	
4400331	SteamScrubber Undercounter – 230 V with window with upper and lower racks	

Plus the Following Loose Parts:

Part #	Component Description
1879801	Leveling Feet (4)
4591100	User Manual
4462900	Screws (2)
1488800	Clamp (1)
4522500	LabSolutions Powder Detergent with MSDS – 6 ounces (175 grams)
1410700	Water Connector
1448700	Coupling & Sleeve (1)

Catalog #	Washer Description	SteamScrubber Freestanding Models
4400420	SteamScrubber Freestanding – 115 V with upper and lower racks	
4400421	SteamScrubber Freestanding – 230 V with upper and lower racks	
4400430	SteamScrubber Freestanding – 115 V with window with upper and lower racks	
4400431	SteamScrubber Freestanding – 230 V with window with upper and lower racks	

Plus the Following Loose Parts:

Part #	Component Description
1879801	Leveling Feet (4)
4591100	User Manual
4468000	Hole Plug (2)
1488800	Clamp (1)
4522500	LabSolutions Powder Detergent with MSDS – 6 ounces (175 grams)
1410700	Water Connector (1)
1448700	Coupling & Sleeve (1)

Catalog # Washer Description

4420320	FlaskScrubber Undercounter – 115 V with lower spindle rack
4420321	FlaskScrubber Undercounter – 230 V with lower spindle rack
4420330	FlaskScrubber Undercounter – 115 V with window with lower spindle rack
4420331	FlaskScrubber Undercounter – 230 V with window with lower spindle rack

Plus the Following Loose Parts:

Part #	Component Description
4584600	Lower Spindle Rack with 36 spindles
1879801	Leveling Feet (4)
4591100	User Manual
4462900	Screws (2)
1488800	Clamp (1)
4522500	LabSolutions Powder Detergent with MSDS – 6 ounces (175 grams)
1410700	Water Connector (1)
1448700	Coupling & Sleeve (1)
4525200	Spindle – Small (10)
4414703	Clip – Spindle (10)
4425101	Plug – Spindle (36)

Catalog # Washer Description

4420420	FlaskScrubber Freestanding – 115 V with lower spindle rack
4420421	FlaskScrubber Freestanding – 230 V with lower spindle rack
4420430	FlaskScrubber Freestanding – 115 V with window with lower spindle rack
4420431	FlaskScrubber Freestanding – 230 V with window with lower spindle rack

Plus the Following Loose Parts:

Part #	Component Description
4584600	Lower Spindle Rack with 36 spindles
1879801	Leveling Feet (4)
4591100	User Manual

If you did not receive one or more of the components listed for your washer, or if any of the components are damaged, contact Labconco Corporation immediately for further instructions.

Removing the Shipping Skid

After you verify the washer components, move your washer to the location where you want to install it. Then, follow the steps listed below to remove the shipping skid from your washer.

To remove the shipping skid:

1. Remove accessories and loose items from inside the washer. Cut tie wraps and remove racks.
2. Gently place the washer on its back, positioning the washer on the shipping carton or other cushioning material.
3. Remove the four screws fastening the skid to the washer.
4. Retain the shipping skid until you test the various features of the washer.

Washer Installation

After you remove the skid from your washer, you must install leveling feet on the bottom of the washer. If you have an Undercounter or Freestanding model, then you must level the washer and center the washer door. If you have an Undercounter model, you must also secure the washer to the underside of the countertop or worksurface.

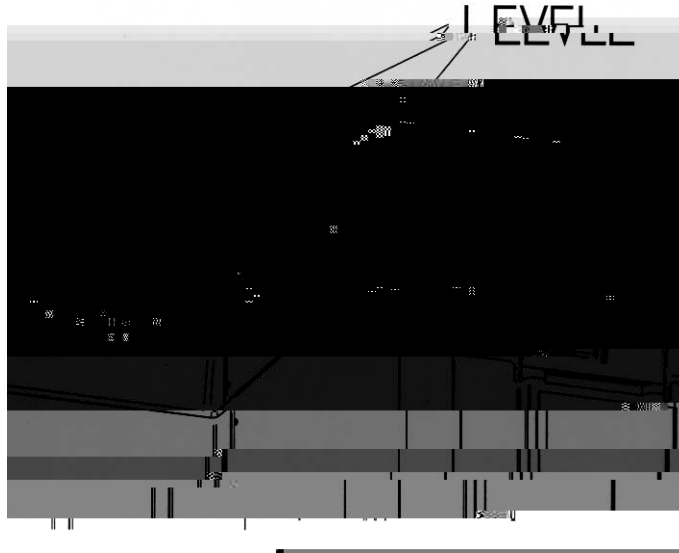
Installing the Leveling Feet

1. Locate the holes on the bottom of the washer where the four skid-fastening screws were previously attached.
2. Thread the four leveling feet into the holes.
3. Carefully move the washer into an upright position. Be careful to distribute the weight evenly on the leveling feet when setting the washer upright.
- 4.

Leveling the Washer

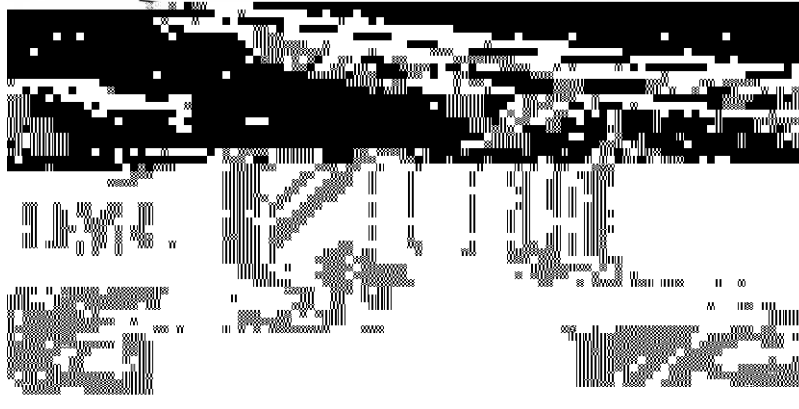
If you have a Freestanding model of the SteamScrubber or FlaskScrubber Glassware Washer, after you have installed the leveling feet, level the washer by adjusting the leveling feet.

1. Position the washer in its final installed location.
2. Place a carpenter level on the washer in the positions shown.



3. Turn the four leveling feet, as needed, to level the washer.

If you have an Undercounter model, level it side-to-side by placing a short level on the inside top edge of the door. See the figure below for the placement of the level on the washer. Check the level front to back by placing a level on the rail that the lower rack slides on.

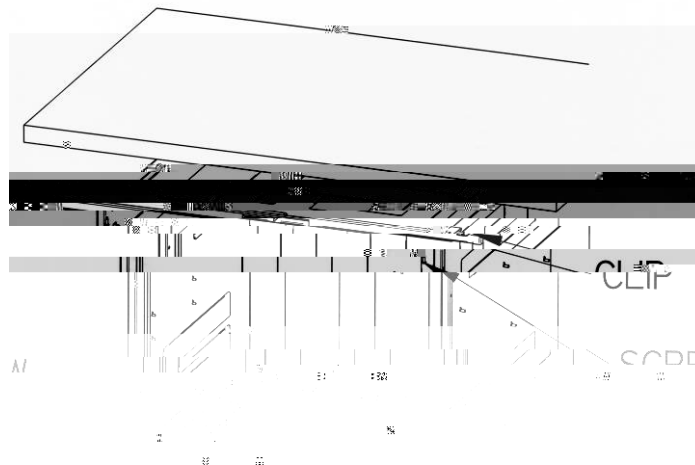


Centering the Washer Door

When the washer is level, check the operation of the washer door for alignment with the washer tank. If the door is not centered in the opening, you must center the door by adjusting the corresponding leveling foot. (For example, if the door hits the right side of the tank, raise the right front corner of the washer. If the door hits the left side of the tank, raise the left front corner of the washer.)

Securing the Washer to the Countertop

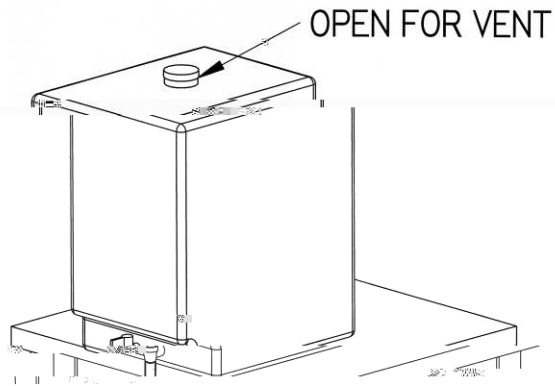
If you have an Undercounter Glassware Washer, two screws have been provided to attach the front of the washer to the underside of the countertop or work surface. After the washer is leveled in its final position and the washer door is properly centered, install the two screws as shown in the figure below to stabilize the unit and prevent it from moving.



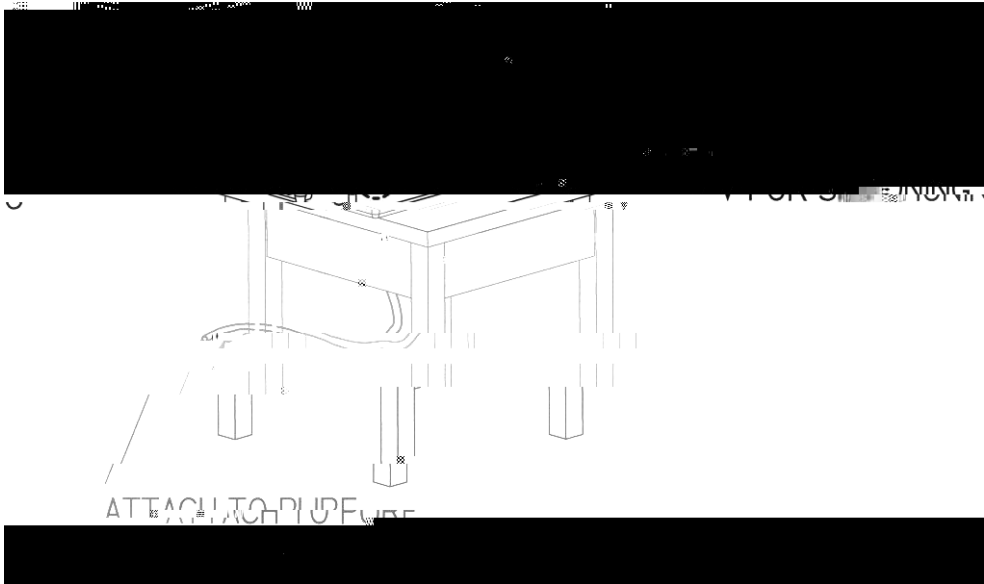
Chapter 3: Getting Started

Connecting the Purified Water Supply

To prevent valve and pump clogging, flush to which Purp ied Watwr Supslsust be cectingWatis locagW






Example of a Bottom Feed Connection



Example of a Top Feed Connection

Chapter 3: Getting Started

To set up the washer control:

1. Locate the control panel on the front of the washer.
2. Press and hold the  button and close the handle of the washer by sliding the door latch knob to the right. Hold for 5 seconds.
3. The display will show the SET UP screen.
4. The > on the left side will highlight VOLTAGE.
5. Press the  or  buttons to select the correct operating voltage of the washer.
CAUTION: The voltage selected (115V or 230V) does not change the acceptable

Running the Diagnostics

To ensure your washer is operating properly, perform the diagnostics procedure detailed below, which will take approximately 10 minutes to complete. Refer to

CHAPTER 4

USING YOUR WASHER

After your washer has passed the basic diagnostics test detailed in [Section 3.1](#), you are ready to begin using your washer.

Arranging the Washer Racks

The FlaskScrubber and SteamScrubber are equipped with different rack configurations to accommodate the various types of laboratory glassware. In addition to the standard configuration of the Glassware Washers, many optional racks and inserts are available to customize your washer to best suit your needs. For a complete list of available rack accessories, refer to [Table 4.1](#).

If you purchased a SteamScrubber, proceed to the following section, [Section 4.1](#). If you purchased a FlaskScrubber, proceed to the section, [Section 4.2](#), later in this chapter. A FlaskScrubber can be converted to a SteamScrubber by replacing the lower rack and adding an upper rack and slides. Drying will be less efficient than a SteamScrubber. A spindle rack may be used in a SteamScrubber. The interior of the glassware may not dry well.

The SteamScrubber Racks

The SteamScrubber is equipped with a top rack and a bottom rack. Both racks are designed to accommodate inserts that hold flasks, beakers, culture tubes,

Refer to [Table 4.1](#)

Removing the Upper Rack

The upper rack may be easily removed from the Glassware Washer to facilitate loading the rack outside the washer or to allow very tall glassware to be loaded and washed on the lower rack.



To remove the upper rack:

1. Slide the upper rack all the way out of the washer.
2. Grasp each side of the rack placing a thumb on the release buttons.
3. Press each release button and lift the rack straight upward.

To install the upper rack:

1. The upper rack can be replaced into the washer by first sliding each slide rail all the way out of the washer and then lowering the rack onto the rails.
2. Press down and the latch will automatically engage the rail.

The FlaskScrubber Spindle Rack

The FlaskScrubber Glassware Washer is equipped with a lower spindle rack and glassware holders. The FlaskScrubber spindle rack is designed for narrow-necked glassware such as volumetric flasks, Erlenmeyer flasks, graduated cylinders, Kjeldahl flasks, test tubes, and digestion tubes.

Two sizes of spindles are provided with the washer: thirty-six .25 (6.35 mm) OD and ten .125 (3.18mm) OD spindles. The optional Forty-Eight Pin Insert (Labconco P/N 4591601) may be positioned directly over spindles or spindles can be removed with a screw driver and replaced with the plugs included with the washer.

Optional top racks are available for the FlaskScrubber to expand the washer's capacity to accommodate many types of glassware. An Upper Spindle Rack (Labconco P/N 4595600) is available with 30 spindles.

Loading Glassware into the FlaskScrubber

Glassware Holders are supplied with each FlaskScrubber. These holders enable you to position glassware onto the FlaskScrubber spindles.



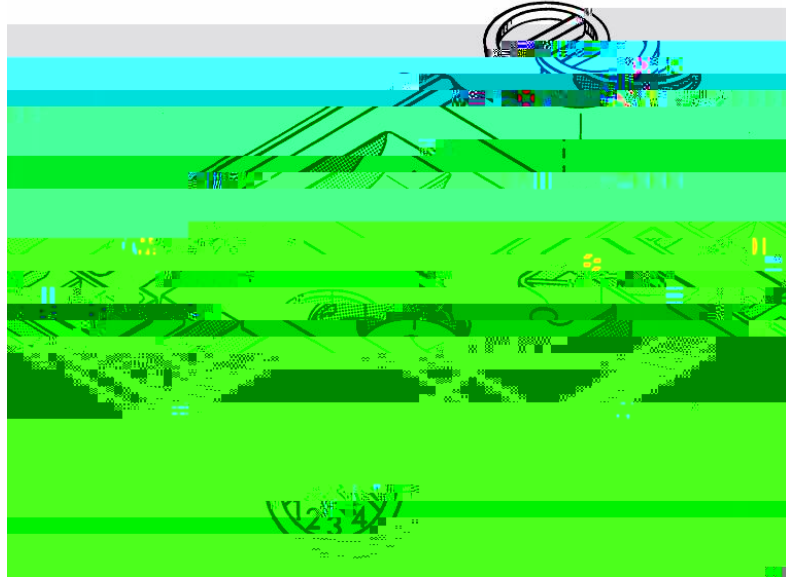
To use a Glassware Holder:

1. Press the glassware into the holder; the clamps should spring out and grip the glassware.
Note: It is normal for the clamps to deform if large glassware is inserted into the Holder and the washer is operated at high temperature.
2. The holder may be raised or lowered by squeezing the spring clip on the bottom of the holder and then sliding the holder up or down.
3. For best results, do not allow the glassware to rest directly on top of the spindle.

Glassware should be loaded so that it does not touch during a wash cycle. The washer has been designed for quiet operation. To prevent noise and glass breakage, be certain that glassware is retained.

The Detergent Dispenser

Your Glassware Washer is equipped with a detergent dispenser that contains a main wash cavity and a neutralizing solu



Chapter 4: Using Your Washer

To fill the neutralizing acid dispenser:

1. Twist and pull up on the cap to remove the round cover on the neutralizing solution port.
2. Fill the cavity with LabSolutions Neutralizing Acid Rinse (Labconco P/N 4522200) 1M citric acid or 10% phosphoric acid until the level of the liquid rises and is visible in the port.
3. Set the dial to read 4 ml.
4. Replace the cover.

Selecting an Operating Cycle

The microprocessor control on your Glassware Washer allows you to select a factory programmed wash program, to modify the factory preset wash programs or to customize two additional programs. The control panel is shown below.



Programming and Starting a Wash Cycle

Refer to [Section 4.1](#) for complete details on the various factory-set programs and the options available for customizing programs. After you have decided which washer program to use, follow the instructions below to start the washer.

Washers have the capability to wash glassware at high temperatures. Use care when selecting high-heat programs if plasticware is being washed.

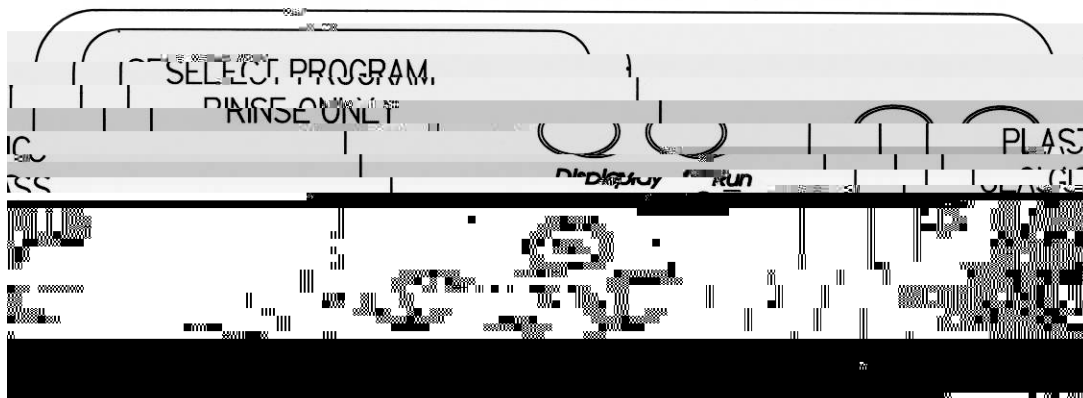
Chapter 4: Using Your Washer

Any of the standard factory wash programs may be customized to suit specific wash requirements. All changes made to the programs will be stored in the washer microprocessor's memory until it is changed again. If a FACTORY RESET is performed, all inputs entered by the user will be erased and the programs shipped with the washer will be reinstated. It is possible to customize the following program parameters:

- Wash 2 temperature
- Wash 2 time
- Total number of rinses
- Number of purified water rinses
- Final rinse temperature
- Enable or disable the steam function
- Dry temperature
- Dry time

To program and start a wash cycle:

1. Close the washer door and slide the latch to the right. This energizes the electronic control and the display will show the last program that was run.
2. Press RUN to select this program.
3. If a different program is desired, press DISPLAY. The available programs will be shown on the display.



4. Press the or buttons until the desired program is indicated by the arrow on the left side. The arrow on the lower right side means that there are additional program selections that will be shown on the display if the button is pressed. If an arrow is visible in the upper right corner of the display, additional program selections will be displayed when the button is pressed.
5. Press RUN if no modifications to the program are necessary.
6. If modifications to the program are necessary or you want to see the parameters that are entered into the program, press DISPLAY and the elements in the program that may be altered will be displayed.

Chapter 4: Using Your Washer

3.

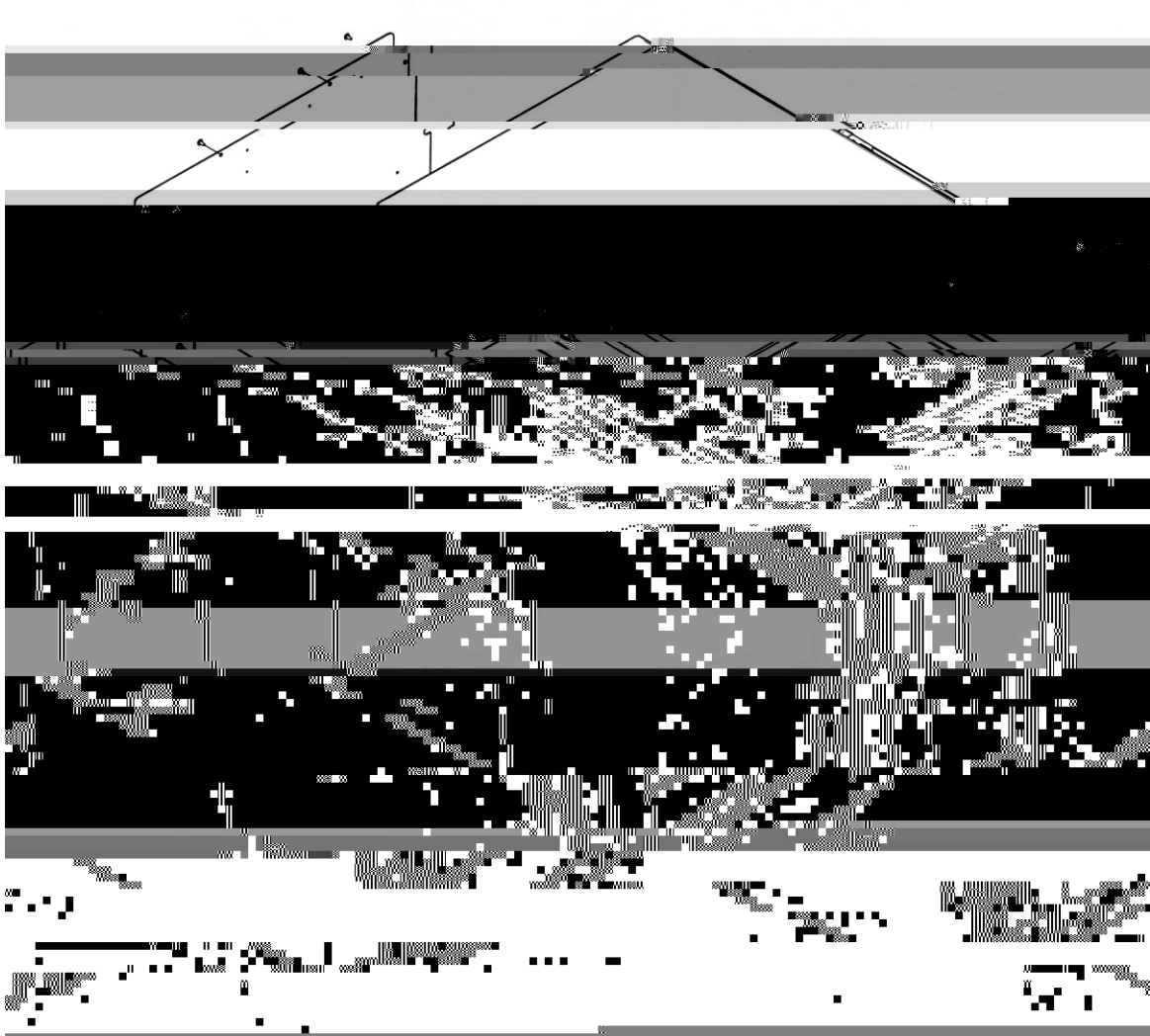
5. Remove the four screws from the valve plate and separate the valve from the inlet connection.
6. Remove the valve filter screen and clean it under running water.
7. Replace the screen and reassemble the va

Removing the Washer Top, Back, and Side Panels

There may be times when you need to remove the washer top, back, and side panels to clean, maintain, or repair your washer. Refer to the figure below and follow the instructions to remove the top, back, and side panels of your washer.

To remove the washer top, back, and side panels:

1. Turn off electrical power to the Glassware Washer.
2. Remove all of the screws from the back panel of the washer and remove the back panel.
3. Remove the 2 screws at the kick panel.
4. Remove 2 screws at the rear that hold the sides to the top.
5. Remove the two screws from each side of the washer at the front edge.
6. Remove the side panels.
7. Remove the 2 screws that hold the top.
8. Remove the top.



Cleaning the Sump Filter Screen

If debris accumulates on the filter screen that is located in the washer sump, you can remove and clean the screen. To clean the sump filter screen, refer to the figure below and follow the instructions below.

To clean the sump filter screen:

1. Open the washer door and remove the bottom rack.
2. Remove the screw that retains the filter screen.
3. Carefully lift the screen and pull forward, using care not to drop debris into the sump.



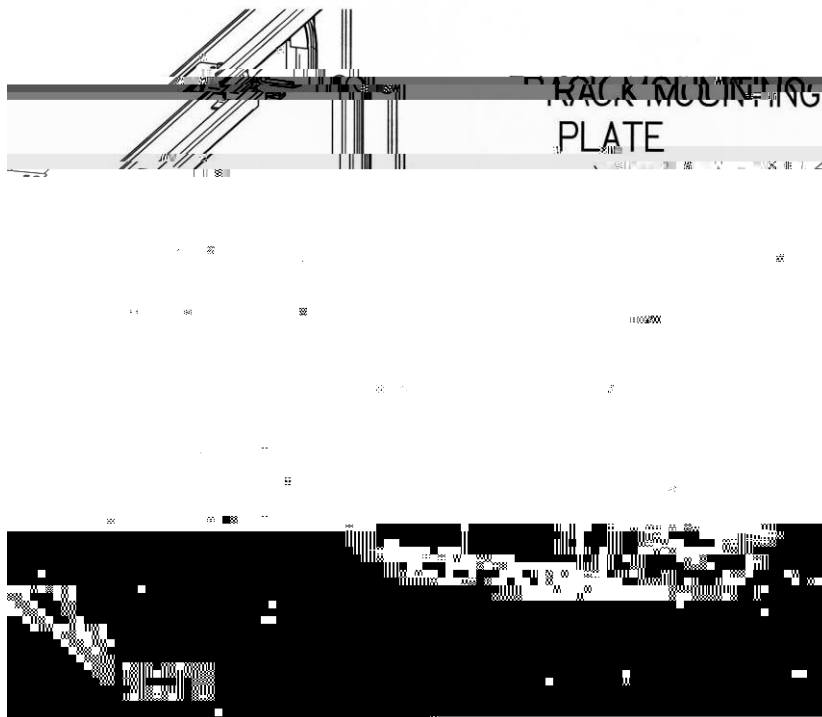
CHAPTER 6

MODIFYING YOUR WASHER

The configuration of your washer may be changed to accommodate your needs. For example, you may want to install pipet inserts, install an optional top rack, or install an optional liquid detergent dispense system or Cool Drain Water Kit. Refer to _____ for the accessories that are available for your Glassware Washer.

Adjusting the Height of the Upper Rack

The height of the upper rack may be varied to suit the heights of glassware that will be washed in the upper and lower racks.



To adjust the height of the upper rack:

1. Remove the upper rack as described in
2. Remove the 2 nuts that retain the rack mounting plate to the slide.
3. Reposition the rack mounting plate to the slide using the other set of holes.
Replace the 2 nuts.
4. Repeat the procedure on the opposite slide.

Spindle Rack Options

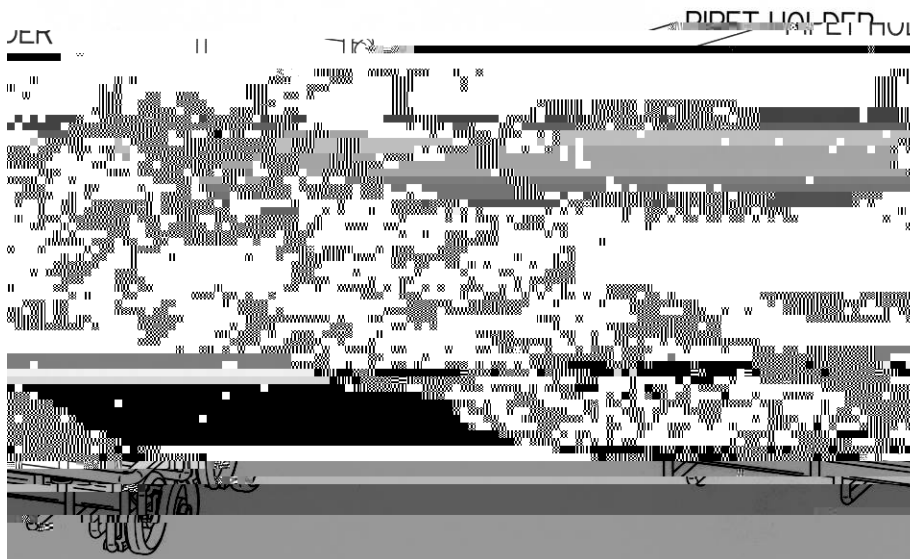
If you purchased a FlaskScrubber Glassware Washer, you can modify the configuration of your washer to better suit your needs. Optional accessories include two Pipet Inserts, and an Upper Spindle Rack. The Pipet Inserts are easily installed in place of one or more spindles in the washer and are designed to accommodate 1 ml to 50 ml pipets.

Installing Optional Pipet Inserts in a FlaskScrubber

Two sizes of Pipet Inserts are available. The 8-place Pipet Insert, shown below accommodates 1 ml to 10 ml pipets. Multiple Pipet Inserts may be installed, if desired. Refer to the figure and follow the instructions below to install an 8-place Pipet Insert.

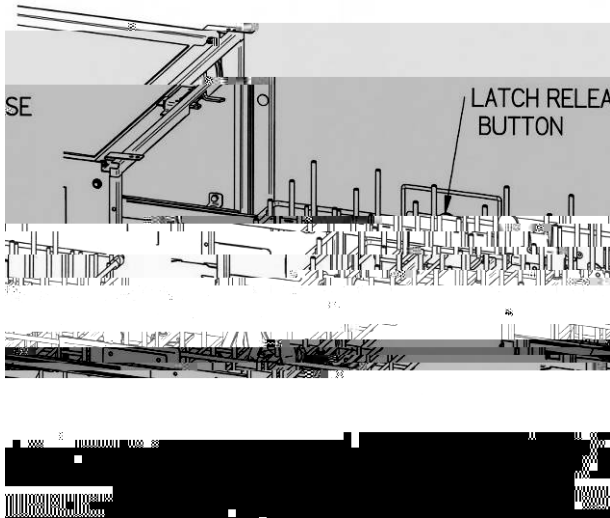
To install an 8-place Pipet Insert:

1. Insert the tool supplied with the Spindle Rack or a screwdriver into the top of a spindle and turn counterclockwise to remove the spindle.
2. In the position previously occupied by the spindle, thread into place the short spindle you received with the Pipet Insert.
3. Push the Pipet Insert over the short spindle.
4. If spindles other than the one used for the short spindle are removed, the holes must be plugged with the plastic plugs supplied with the spindle rack.



The 16-place Pipet Insert, shown below accommodates 1 ml to 50 ml pipets. Two

Chapter 6: Modifying Your Washer



3. Install the Upper Spindle Rack by lowering the rack onto the rack mounting plates. The water inlet must have its inlet toward the rear. Make sure the latch on each side secures the rack to the rack mounting plate.

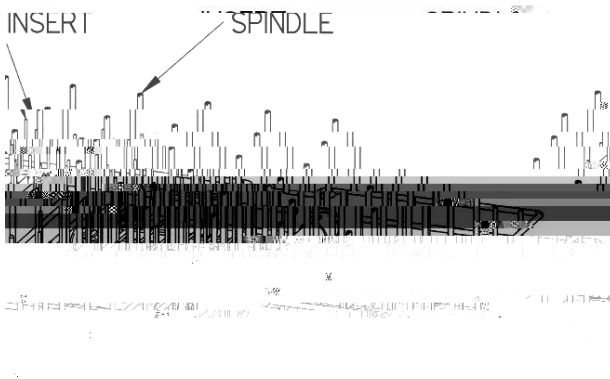
When the Upper Spindle Rack is in place, it limits the height of the glassware that can be washed. If very tall glassware or long pipets are to be washed, remove the Upper Spindle Rack.

Installing Optional Inserts into the Spindle Rack

A Multi-Pin insert is available that can be placed directly on the FlaskScrubber upper or lower spindle rack. It can hold beakers or wide mouth glassware. The insert can be positioned either on the left side or right side.

To install an insert:

1. Remove all glassware, spring retainers and glassware holders.
2. Lower the insert down over the spindles. If necessary, spindles may be removed using the tool supplied with the Spindle Rack or a screwdriver in the slot on the top of the spindles. Be sure to replace any removed spindle with a plug supplied.



Installing Small Spindles

Ten small spindles are included with each Spindle Rack. Since the large volume of water which flows through the standard spindles may be great enough to force the glassware off the spindle, small spindles should be used when small pieces of glassware will be washed.

To install small spindles:

1. Remove the standard spindle by inserting the tool supplied with the Spindle Rack or a screwdriver into the slot on the top and turning counterclockwise.
2. Replace the standard spindle with a small spindle.

Installing the Optional Cool Drain Water Kit

An optional Cool Drain Water Kit is available to reduce the water temperature of the drain water in installations where hot drain water is not permitted. It may be installed on Undercounter or Freestanding models. A supply of cold water must be available. It is recommended that the cold water temperature is colder than 54°F (12°C). Warmer water temperature will cause the drain temperature to be higher. The cold water supply must be

Chapter 6: Modifying Your Washer

7. Remove the lower panel and the electrical junction box cover as described in
8. Plug the supplied harness into terminal J6 on the Relay PCB and route the other end to the left rear corner of the washer base.
9. Plug the wire from the detergent container to the mating connector in the new harness in the base of the washer.
10. Plug the connectors on the pump to the mating connectors in the new harness in the base of the washer.
11. Reinstall the junction box cover and lower panel.
12. Reinstall the back panel if the washer is a Freestanding model.
13. Turn on the electrical power.





Enable the liquid detergent dispenser operation:

- 1.

CHAPTER 7

TROUBLESHOOTING

Refer to the following table if your Glassware Washer fails to operate properly. If the suggested corrective actions do not solve your problem, contact Labconco

PROBLEM

PROBLEM

PROBLEM	CAUSE	CORRECTIVE ACTION
Washer will not drain	Clogged drain	Clean out drain.
	Blockage of air gap	Clean the air gap by lifting the cover, unscrewing the cap, and removing any accumulated material. See .
	Kink in drain hose	Check for a kink in the drain hose.
	Filter blocked	Check filter in washer and clean as needed.
	Drain valve or pump not operating	Check operation.
Washer will not fill	Fill valve clogged	Clean fill valve.
	Water supply turned off	

PROBLEM	CAUSE	CORRECTIVE ACTION
	Drain hose not routed properly (cont.)	Hose must be attached to building plumbing pipe Tf9.5569 0defective 5.16Tc-0.0005 Tw[Hose]1(u)2(E A4)480hed

PROBLEM	CAUSE	CORRECTIVE ACTION
	Improper water supply (cont.)	At least 3.4 gallons (13 liters) must be available for each DI rinse.
	Defective fill valves	Clean screens inside the inlet fittings of the water valves. Check voltage to valves. Replace valve if it does not operate.
	Restricted flow	Check for kinks in water hoses in base of washer to water inlet fitting on side of tank.

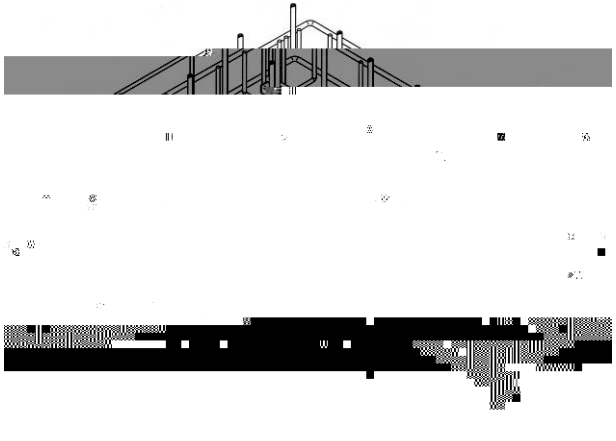

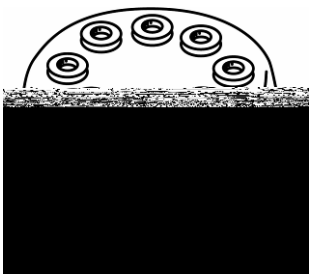
PROBLEM

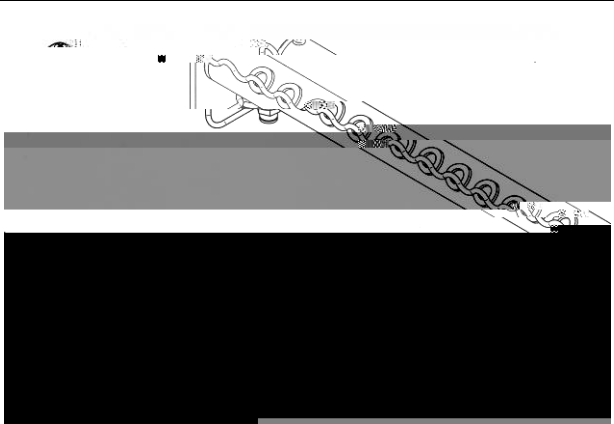
CAUSE

APPENDIX A

GLASSWARE WASHER ACCESSORIES


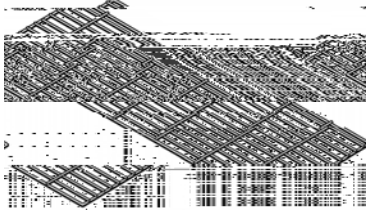

FlaskScrubber Accessories


PART #	DESCRIPTION	
4595600	Upper Spindle Rack – Stainless Steel. Contains one upper spindle rack with 30 spindles, 30 glassware holders and 2 slides.	
4595800	Same as above except without slides.	
4494200	8-Place Pipet Washer – Stainless Steel. Holds 1 ml to 10 ml pipets.	

PART #	DESCRIPTION	
4595200	16-Place Pipet Washer – Stainless Steel. Holds 1 ml to 50 ml pipets.	

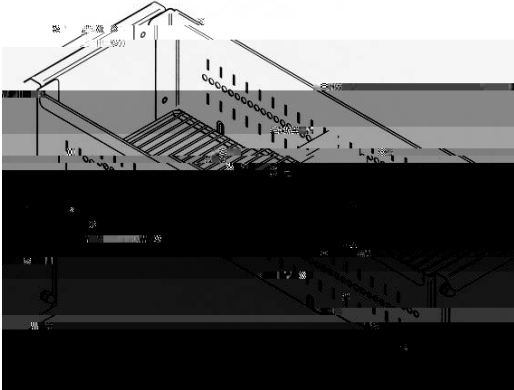
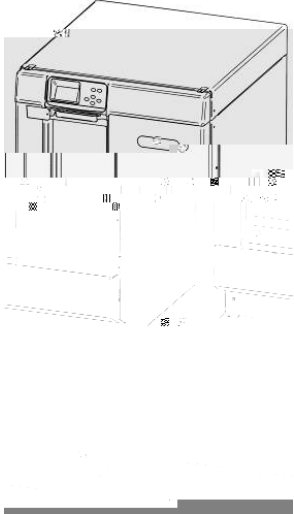
4424600 **Glassware Holder – Small.**
Grips wide-mouth glassware over spindles.

4424800

PART #	DESCRIPTION	
4401801	<p>32-Pin Insert – Stainless Steel. For use with beakers, Erlenmeyer flasks, and other wide-mouth glassware.</p>	
4401901	<p>Retainer Top – Stainless Steel. To keep lightweight flasks in place under water pressure. For use with 4401801 or 4401501.</p>	
4589701	<p>Petri Dish Insert – Stainless Steel. For plates, petri dishes, and watch glasses.</p>	
4589201	<p>BOD Rack/Beaker/ Erlenmeyer Flask Insert – Stainless Steel. Rack secures glassware used in oxygen-demand</p>	

PART #	DESCRIPTION	
4402201	Utensil Basket – Stainless Steel. For miscellaneous labware such as stoppers, spatulas, small beakers, etc. Furnished with drop-in cover (part number 4403801).	

4591601 **48-Pin Insert – Stainless Steel.** For use with beakers, Erlenmeyer flasks,

PART #	DESCRIPTION	
4542100	Bulk Tube Insert. For vertically positioning test tubes.	
4595400	Stand. For use with Freestanding models. Raises washer approximately 17 inches (43 cm). Front opens to provide storage underneath washer. Shown with glassware washer installed.	
4591900 (115V) 4591901 (230V)	Cool Drain Water Drain Kit. Provides cool water to the drain plumbing. Connects to a cold water source.	
4587500	Liquid Detergent Dispense Kit. Permits liquid detergent to be dispensed into the glassware washer directly from a 1 gallon container.	
4596100 (115V) 4596101 (230V)	Mobile Conversion Kit. Permits a Freestanding Glassware Washer to be converted to a Mobile model. Includes casters, electrical cord and plug, and plumbing to connect to a sink faucet.	

Appendix A: Glassware Washer Accessories

PART #	DESCRIPTION	
4592200	Connection Kit. DI Water inlet valve to plastic tubing.	
1233700	Power Boost Transformer. For 208V operation.	

CONSUMABLES

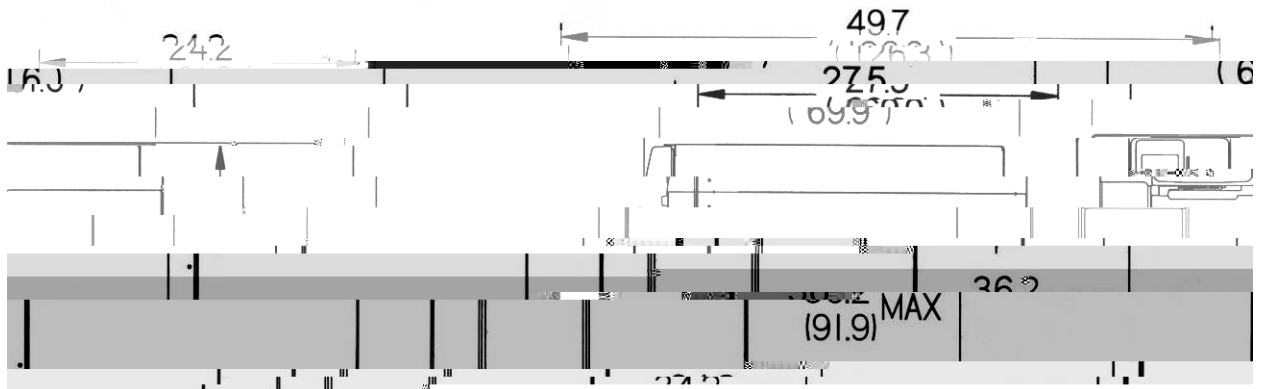
PART #	DESCRIPTION
4422000	10-lb. (4.5 kg) LabSolutions Powder Detergent
4422100	27.5-lb. (12.5 kg) LabSolutions Powder Detergent

4522000

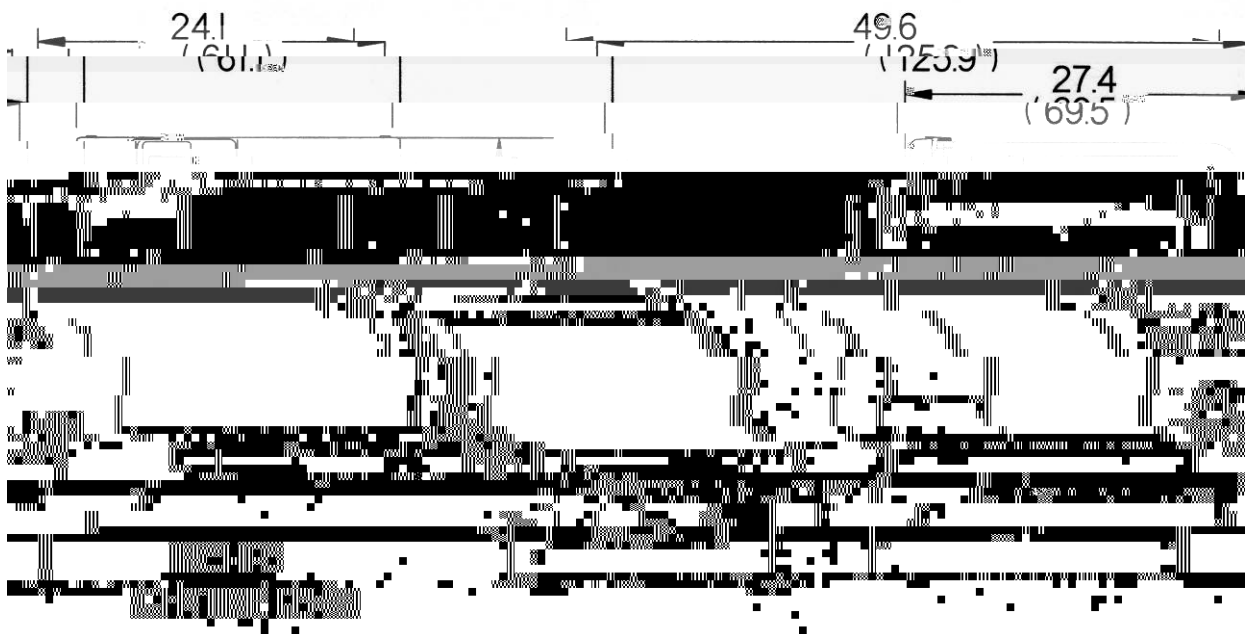
APPENDIX B

GLASSWARE WASHER DIMENSIONS

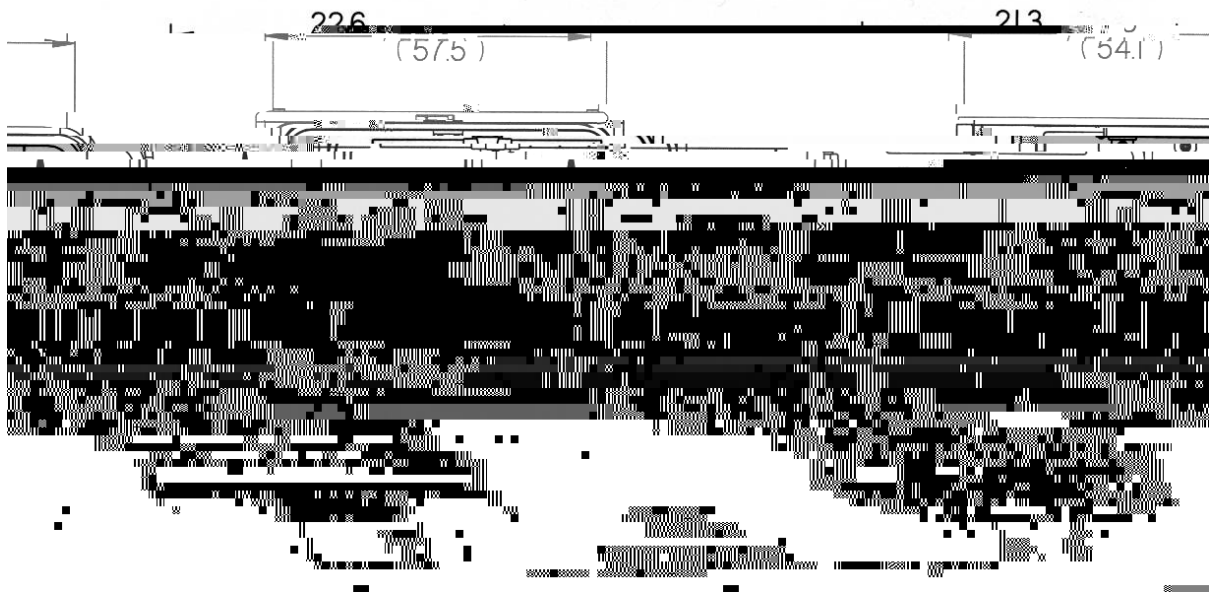
Freestanding Washer



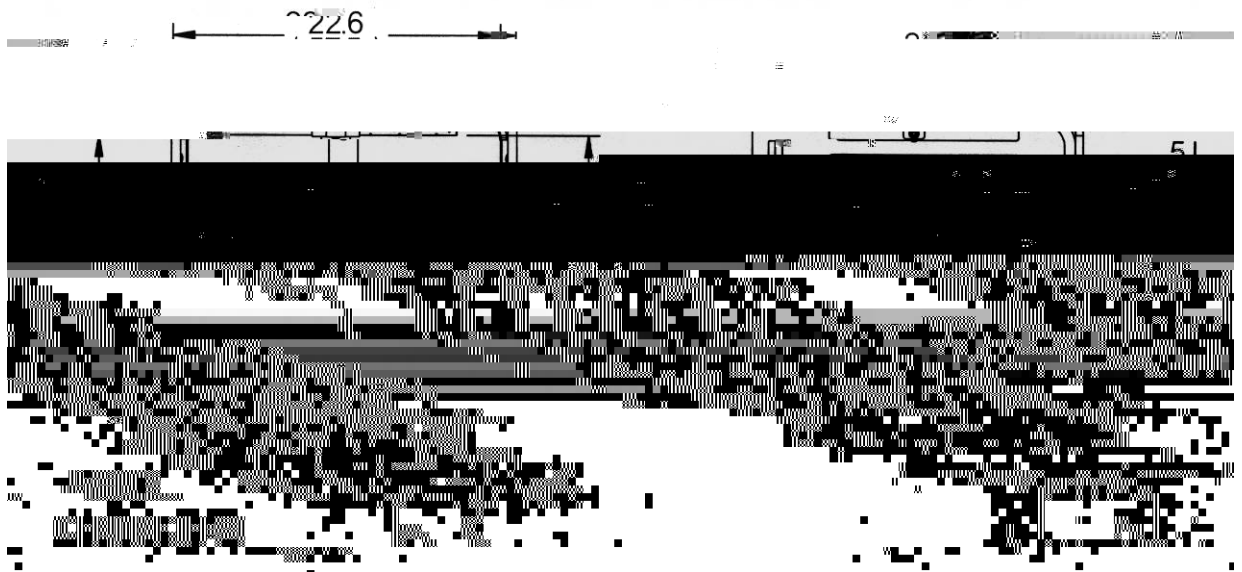
Undercounter Washer



Interior - All SteamScrubbers



Interior - All FlaskScrubbers



APPENDIX C

GLASSWARE WASHER

SPECIFICATIONS

This Appendix contains various specifications for the Glassware Washer, including program times and water consumption for both the 115V and 230V models.

- Minimum fill water temperature: 120°F (49°C)
- Water consumption per fill: 3.4 gallons (13 liters)
- Minimum feed water pressure: 20 psi (138 kPa)
- Maximum feed water pressure: 120 psi (827 kPa)
- Minimum purified water feed pressure: 0 psi (0 kPa)
- Heat rejected from washer: less

Environmental Conditions

- Indoor use only.
- Maximum altitude: 6562 feet (2000 meters).
- Ambient temperature range: 41° to 104°F (5° to 40°C).
- Maximum relative humidity: 80% for temperatures up to 88°F (31°C), decreasing linearly to 50% relative humidity at 104°F (40°C).
- Main supply voltage fluctuations not to exceed $\pm 10\%$ of the nominal voltage.
- Transient overvoltages according to Installation Categories II (Overvoltage Categories per IEC 1010). Temporary voltage spikes on the AC input line that may be as high as 1500V for 115V models and 2500V for 230V models are allowed.
- Used in an environment of Pollution degrees 2 (i.e., where normally only non-conductive atmospheres are present). Occasionally, however, a temporary conductivity caused by condensation must be expected, in accordance with IEC 664.

Factory Program Descriptions and Possible User Modifications- 115V Models

<i>Units</i>	<i>Factory</i>	<i>User set</i>	<i>Factory</i>	<i>User set</i>	<i>Factory</i>	<i>User set</i>	<i>Factory</i>	<i>User set</i>
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Factory Program Descriptions and Possible User Modifications- 230V Models

Units	Factory	User set	Factory	User set	Factory	User set	Factory	User set	Factory	User set
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Factory Program Descriptions and Possible User Modifications- 230V Models

DECLARATION OF CONFORMITY

Application Council Directive(s): 73/23/EEC, 89/336/EEC, 2002/95/EC (ROHS),
2002/96/EC (WEEE), 2004/108/EC

Standard(s) to which conformity is declared: EN61010-1, EN61326-1, EN55022,
EN61000-3-2/3

Manufacturer's Name: Labconco Corporation

Manufacturer's Address: 8811 Prospect Avenue
Kansas City, MO 64132 USA

Importer's Name: See Shipping/Customs Documents