



User's Manual

ScrubAir™ Pipette Washer Dryers

Models
46120 Series

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*Protecting your
laboratory environment*

LABCONCO®

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Labconco provides a warranty on all parts and factory workmanship. The warranty includes areas of defective material and workmanship, provided such defect results from normal and proper use of the equipment. Glassware is not warranted from breakage when dropped or mishandled.

The warranty for SrubAir™ Pipette Washer Dryers will expire one year from date of installation or two years from date of shipment from Labconco, whichever is sooner.

This limited warranty covers parts and labor, but not transportation and insurance charges. In the event of a warranty claim, contact Labconco Corporation or the dealer who sold you the product. If the cause is determined to be a manufacturing fault, the dealer or Labconco Corporation will repair or replace all defective parts to restore the unit to operation. Under no circumstances shall Labconco Corporation be liable for indirect, consequential, or special damages of any kind. This statement may be altered by a specific published amendment. No individual has authorization to alter the provisions of this warranty policy or its amendments. Lamps and filters are not covered by this warranty.

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

Limitation of Liability

The disposal and/or emission of substances used in connection with this equipment may be governed by various federal, state, or local regulations. All users of this equipment are required to become familiar with any regulations that apply in the user's area concerning the dumping of waste materials in or upon water, land, or air and to comply with such regulations. Labconco Corporation is held harmless with respect to user's compliance with such regulations.

Contacting Labconco Corporation

If you have questions that are not addressed in this manual, or if you need technical assistance, contact Labconco's Customer Service Department or Labconco's Product Service Department at 1-800-821-5525 or 1-816-333-8811, between the hours of 7:00 a.m. and 6:00 p.m., Central Standard Time.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION	1
Safety Symbols	1
CHAPTER 2: PREREQUISITES	3
Water Requirements	3
Electrical Requirements	4
Drain Requirements	4
Compressed Air/Gas Requirements	6
Space Requirements	6
CHAPTER 3: GETTING STARTED	7
Unpacking Your ScrubAir Pipette Washer Dryer	7
Washer Components	8
Setting Up Your ScrubAir Pipette Washer Dryer	9
Connecting the Compressed Air Supply	10
Connecting the Water Supply	10
Connecting the Drain Hose	12
Installing the Back Splash Assembly and Clear Cover	14
Connecting the Power Supply	14
ScrubAir Pipette Washer Dryer Controls	15
Testing Your Washer Dryer	15
Running the Diagnostics	15
CHAPTER 4: USING YOUR WASHER DRYER	17
Loading the Pipettes	17
Selecting an Operating Cycle	20
Programming and Starting a Wash Cycle	20
Interrupting a Wash Cycle	21
Alarms	22
CHAPTER 5: MAINTAINING YOUR WASHER DRYER	23
CHAPTER 6: TROUBLESHOOTING	25

APPENDIX A: PIPETTE WASHER DRYER ACCESSORIES	27
ScrubAir Accessories and Consumables	27
APPENDIX B: PIPETTE WASHER DRYER DIMENSIONS	29
APPENDIX C: PIPETTE WASHER DRYER SPECIFICATIONS	30
DECLARATION OF CONFORMITY	33

CHAPTER 1

INTRODUCTION

Congratulations on your purchase of a Labconco ScrubAir™ Pipette Washer Dryer. The ScrubAir Pipette Washer Dryers uses water and compressed air to wash, rinse and dry volumetric pipettes ranging in size from .135” (3.4 mm) stem diameter and 7.5” (190.5 mm) long up to .34” (8.6 mm) stem diameter and 25” (635mm) long. The ScrubAir is available in 115V or 230V models with and without a 750 watt heater which can heat the water and dry air up to 140°F (60°C). The heated models also come with an additional water inlet valve for pure water connections if pure water rinsing is desired.

The Pipette Washer Dryer graphic display shows operational information during set up and displays of the cycle segment and time remaining during the wash cycle. The transparent acrylic cover allows you to visually monitor the operation of your washer. You can select pre-programmed wash cycles or program customized wash cycles to meet your requirements.

The start time can be delay by up to 8 hours. The wash times can be programed from 0 to 8 hours. Rinse cycles can be set from 0 to 10 with rinse times from 0 to 4 hours each.

Safety Symbols

Your Pipette Washer Dryer was designed with safety in mind, however conditions may exist that could be hazardous.

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



CAUTION: This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

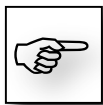
PRUDENCE: Ceci est le symbole d’alerte de sécurité. Il est utilisé pour vous alerter aux risques de dommages corporels potentiels. Obéissez à tous les messages de sécurité qui suivent

ce symbole pour éviter la possibilité de blessures corporelles ou même de la mort.



Critical information is presented in boldface type in paragraphs that are preceded by the exclamation icon. Failure to comply with the information following an exclamation icon may result in injury to the user or permanent damage to fume hood.

Les informations critiques sont présentées en gras dans les paragraphes qui sont précédés par l'icône d'exclamation. Ne pas se conformer aux informations qui suivent une icône d'exclamation peut résulter à la blessure de l'utilisateur ou à des dommages irréversibles de la hotte aspirante.



Important information is presented in capitalized type in paragraphs that are preceded by the pointer icon. It is imperative that the information contained in these paragraphs be thoroughly read and understood by the user.

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



CAUTION: See Manual. When this symbol is on the unit it indicates a caution that is detailed in this manual.

PRUDENCE : Voir manuel. Lorsque ce symbole est allumé l'appareil, il indique une mise en garde qui est indiqué dans ce manuel.



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CHAPTER 2

PREREQUISITES

Before you install the Pipette Washer Dryer, prepare your site for installation. Carefully examine the location where you intend to install the Pipette Washer Dryer. Be sure the area is level and of solid construction. In addition a water source, a drain, electrical and compressed air sources must be located near the installation site.

Refer to *Appendix C: ScrubAir Pipette Washer Dryer Specifications* for complete Pipette Washer Dryer electrical and environmental conditions, specifications and requirements.

The ScrubAir Pipette Washer Dryer is equipped with a single water supply/drain hose quick connector that can easily be attached to your sink faucet. If preferred, the ScrubAir Pipette Washer Dryer can be installed using dedicated water supply and drain piping.



CAUTION: If the unit is not operated as specified in this manual it may impair the protection provided by the unit.

PRUDENCE: Si l'unité n'est pas utilisée comme spécifié dans ce manuel il peut diminuer la protection fournie par l'unité.

Water Requirements

The water supply for non-heated models can be tap or purified water. An existing hot water supply may be used as the water source. Though not required, Labconco recommends the inlet water temperature be greater than 120°F (49°C). Hotter water will produce better washing results but should not exceed 140°F (60°C).

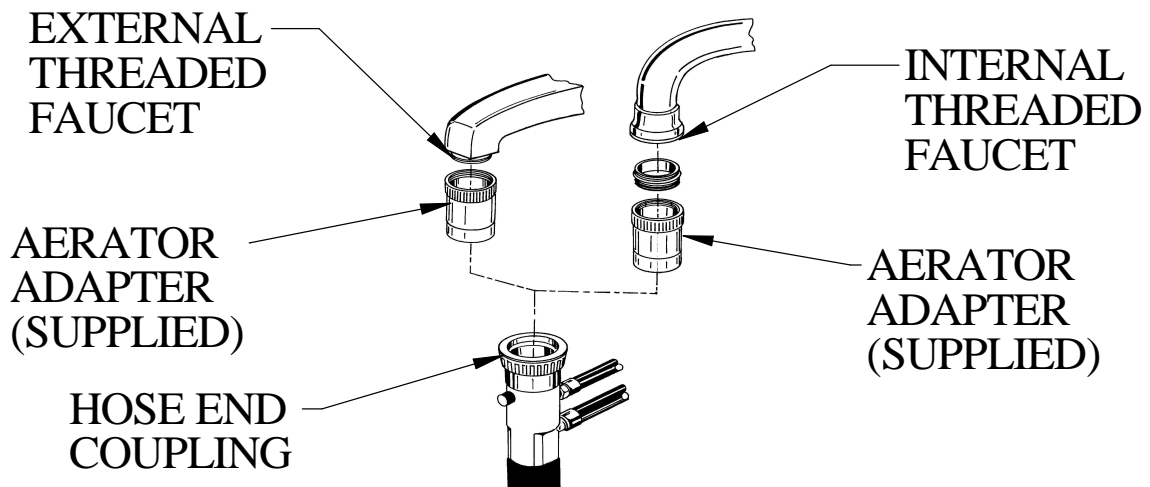
The heated models have an additional water inlet valve to allow for connection to a purified water source. A 3/8" (9.6 mm) O.D. x 6' (1.8m) long polyethylene tube is attached to the rear of the ScrubAir Pipette Washer Dryer (marked "P") for connection to a dedicated pure water source. This tube can be shortened as required, a shut off valve is recommended.

Chapter 2: Prerequisites

The heated models do not require a heated water source for the tap or the pure water but using heated water will allow the washer to reach the 140°F (60°C) wash temperature faster.

Water pressure for both tap and pure water must be between 8-120 psi (55-827 kPa) at the washer and provide a minimum of 1.33 gallons (5.0 liters) per minute flow rate.

By using the factory- installed quick connect hose coupling, the tap water/drain hoses can easily be connected or disconnected to a sink faucet. If using the quick connect hose coupling, a sink with a drain and threaded faucet is required. See the illustration that follows. Since the quick connect hose assembly length is 6' (1.8m) the installation should be within this distance to the faucet.



If a dedicated tap water supply is preferred a shut-off valve should be installed in the water supply line plumbed for the washer.

Electrical Requirements

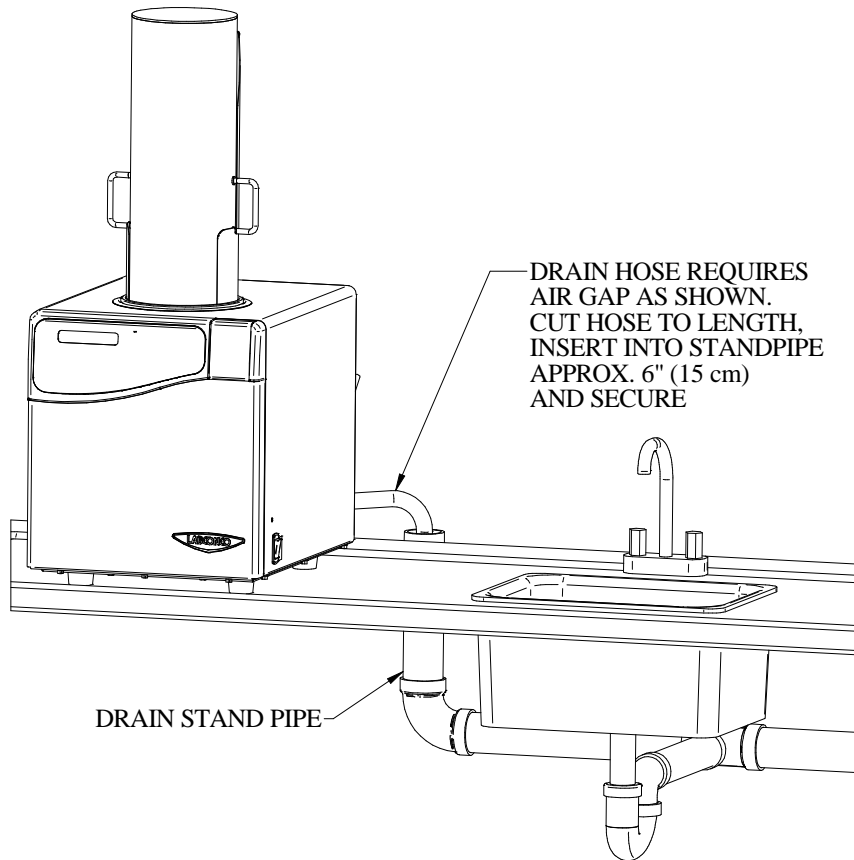
Minimum requirements for an outlet is a 15 Amp circuit breaker or fuse for models rated at 115V (60 Hz) or an 8 Amp circuit breaker or fuse is required for 230V (50/60 Hz) models. The 115V models are equipped with a 15 Amp NEMA 5-15P plug. 230V models are available with a NEMA 6-15P plug for use in the United States, a PS 1363 plug for use in the United Kingdom, a CEE 7/7 plug for use in Europe, a CHI-10P plug for use in China or a SANS164-1 plug for use in India. It may be necessary to remove the plug and install a different one to match the available receptacle if one of these models does not meet your needs.

Drain Requirements

The Washer Dryer is designed to use air pressure to drain the washer. If using the quick connect hose coupling, a sink with a drain and threaded faucet is required. Since the quick connect hose assembly length is 6' (1.8m) long the installation should be within this distance to the faucet.

When using the quick connect hose coupling the washer base should be no more than 12” (30.4 cm) below the outlet of your faucet.

If a dedicated drain is preferred, a standpipe should be connected to the building drain plumbing that the drain hose can be insert into. See illustration that follows.



Dedicated Drain Installation

It is recommended that the drain hose and drain hose outlet be routed as low as possible relative to the base of the washer, to allow gravity to assist in draining the washer. Low spots where water can sump in the drain line should also be avoided. If the drain hose must be higher, no section should be more than 11” (27.9 cm) above the base of the washer.

Tubing or pipe, 1.25 (3.2 cm) ID or larger, should be provided for the building drain. The use of an air gap (as shown above) where the drain hose is connected to the building drain plumbing is required.

Do not reduce the size of the drain plumbing.

Compressed Air/Inert Gas Requirements

The 3/8" (9.6 mm) O.D. x 6' (1.8m) long polyethylene tube on the rear of the ScrubAir Pipette Washer Dryer should be attached to a regulated source of air, or other suitable inert gas. This tube can be shortened as required. Pressure must be at least 20 psi (138kPa) and a minimum flow rate of 5 cfm (142 l/m). The pressure must not exceed 100 psi (689kPa). A suitable push-to-connect or compression fitting must be supplied by the user. An air shut off valve or quick disconnect air fitting is recommended.

An optional 5 micron Air Filter part number 4614900 is available to help filter incoming air if needed.

Space Requirements

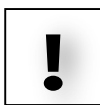
Refer to *Appendix B: ScrubAir Pipette Washer Dryer Dimensions* for dimensional drawings of the ScrubAir Pipette Washer Dryer.

CHAPTER 3

GETTING STARTED

Now that the site for your ScrubAir Pipette Washer Dryer is properly prepared, you are ready to unpack, inspect, install, and test your ScrubAir Pipette Washer Dryer. Read this chapter to learn how to:

- Unpack and move your ScrubAir Pipette Washer Dryer.
- Set up your ScrubAir Pipette Washer Dryer.
- Connect the water source to your ScrubAir Pipette Washer Dryer.
- Connect the drain hose from your ScrubAir Pipette Washer Dryer.
- Connect the compressed air source to your ScrubAir Pipette Washer Dryer.
- Connect the electrical supply source to your ScrubAir Pipette Washer Dryer.



The ScrubAir Pipette Washer Dryer weighs over 35 lbs. (16 Kg). The carton allows for lifting with a mechanical lift truck or hand truck.

Unpacking Your Pipette Washer Dryer

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



DO NOT RETURN GOODS WITHOUT THE PRIOR AUTHORIZATION OF LABCONCO. UNAUTHORIZED RETURNS WILL NOT BE ACCEPTED.



IF YOUR SCRUBAIR PIPETTE WASHER DRYER WAS DAMAGED IN TRANSIT, YOU MUST FILE A CLAIM DIRECTLY WITH THE FREIGHT CARRIER. LABCONCO CORPORATION AND ITS DEALERS ARE NOT RESPONSIBLE FOR SHIPPING DAMAGES.

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 ScrubAir Pipette Washer Dryer until you have checked all of the components, installed and tested the ScrubAir Pipette Washer Dryer.

Washer Dryer Components

Locate the model of ScrubAir Pipette Washer Dryer you received in the following table. Verify that the components listed are present and undamaged.

Catalog #	Description
4612020	ScrubAir Pipette Washer Dryer – 115V
4612021	ScrubAir Pipette Washer Dryer w/ Heater – 115V

Plus the Following:

Part #	Component Description
4612200	User's Manual
1334500	Power Cord NEMA 5-15P
4613600	Clear Cover Assembly
4613500	Back Splash Assembly
4616100	1/8oz Dispense Pump

Catalog #	Description
4612030	ScrubAir Pipette Washer Dryer – 230V EU
4612031	ScrubAir Pipette Washer Dryer w/Heater – 230V EU

Plus the Following:

Part #	Component Description
4612200	User's Manual
1336100	Power Cord CEE 7/7
4613600	Clear Cover Assembly
4613500	Back Splash Assembly
4616100	1/8oz Dispense Pump

Catalog #	Description
4612140	ScrubAir Pipette Washer Dryer – 230V US
4612141	ScrubAir Pipette Washer Dryer w/ Heater – 230V US

Plus the Following:

Part #	Component Description
4612200	User's Manual
1338000	Power Cord NEMA 6-15P
4613600	Clear Cover Assembly
4613500	Back Splash Assembly
4616100	1/8oz Dispense Pump

Catalog #	Description
4612060	ScrubAir Pipette Washer Dryer – 230V UK
4612061	ScrubAir Pipette Washer Dryer w/ Heater – 230V UK

Plus the Following:

Part #	Component Description
4612200	User's Manual
1332600	Power Cord PS 1363
4613600	Clear Cover Assembly
4613500	Back Splash Assembly
4616100	1/8oz Dispense Pump

Catalog #	Description
4612170	ScrubAir Pipette Washer Dryer – 230V CHINA
4612171	ScrubAir Pipette Washer Dryer w/ Heater – 230V CHINA

Plus the Following:

Part #	Component Description
4612200	User's Manual
1332700	Power Cord CHI-10P
4613600	Clear Cover Assembly
4613500	Back Splash Assembly
4616100	1/8oz Dispense Pump

Catalog #	Description
4612080	ScrubAir Pipette Washer Dryer – 230V INDIA
4612081	ScrubAir Pipette Washer Dryer w/ Heater – 230V INDIA

Plus the Following:

Part #	Component Description
4612200	User's Manual
1345700	Power Cord SANS 164-1
4613600	Clear Cover Assembly
4613500	Back Splash Assembly
4616100	1/8oz Dispense Pump

If you do not receive one or more of the components listed for your ScrubAir Pipette Washer Dryer, or if any of the components are damaged, contact Labconco Corporation immediately for further instructions.

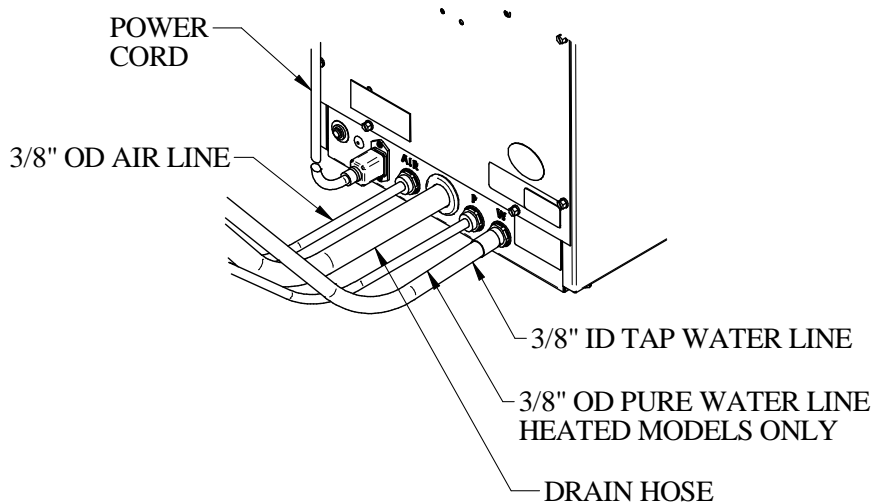
Setting Up Your ScrubAir Pipette Washer Dryer

After you verify the ScrubAir Pipette Washer Dryer components, move the unit to the location where you want to install it. Then, follow the steps listed below.



CAUTION: Do not position the unit so that it is difficult to operate the main disconnect device.

PRUDENCE: Ne placez pas l'appareil de sorte qu'il est difficile de faire fonctionner le dispositif principal de déconnexion.

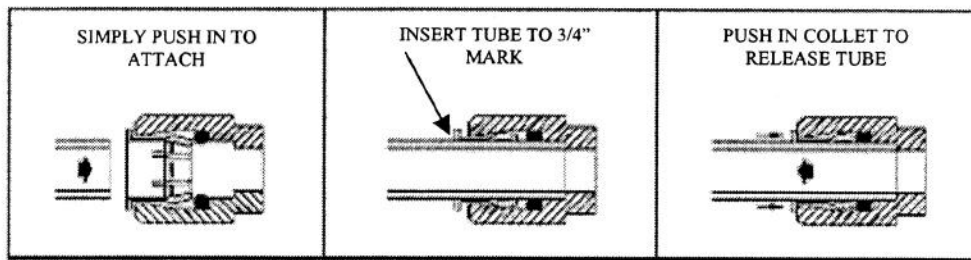


Washer Back View

Connecting the Compressed Air Supply

If not connected, mark the 3/8" (9.5mm) outside diameter air supply hose 3/4" (19 mm) from the end and push the hose into the fitting in the back of the ScrubAir Pipette Washer Dryer marked AIR. Attach the other end of the hose to user supplied air or insert gas supply. Turn on the air supply.

OPERATION OF QUICK CONNECT FITTINGS



PUSHING TUBE IN BEFORE
PULLING IT OUT HELPS TO
RELEASE TUBE

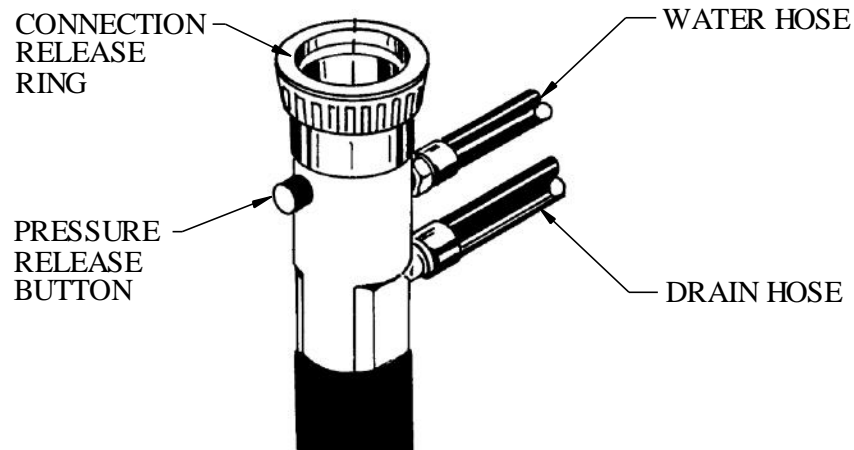
Connecting the Water Supply

To prevent valve clogging, thoroughly flush the water lines for your water supply source prior to connecting the washer to the water line. The tap water supply hose is connected to the press to connect fitting at the back of the washer base marked W. The 3/8 OD pure water supply hose is connected to the press to connect fitting at the back of the washer base marked P.

If using the quick connect hose coupling for the tap water supply, an aerator adapter and a standard adapter fitting are provided and need to be installed on the faucet. Refer to illustration on page 4. If the adapter fittings provided do not allow for a tight connection to the faucet, a variety of internally and externally threaded fittings are available at local hardware stores. Use caution when installing the fittings to prevent stripping the threads.

The hose faucet coupling attaches and seals to the aerator adapter by pushing the parts together. The hose end faucet coupling must be snapped into place before turning on the hot water. Turn the water on slowly until the faucet is fully open. When the coupler is attached to the faucet, water can be obtained through the bottom of the coupler by pressing the pressure release button.

The hose faucet coupling may be removed from the faucet when the washer is not in use. Make sure both the hot and cold water faucets are turned off. Push the pressure relief button on the hose faucet coupling to relieve the water pressure. Pull down on the release ring on the hose coupling to disconnect it from the faucet.



If a dedicated tap water supply is preferred, the water inlet hose (3/8" ID EPDM reinforce rubber) that is attached to the back of the washer can be used to connect to the water supply. Simply cut the hose to the desired length to remove the hose coupler and connect to the user supplied fitting at the water source.

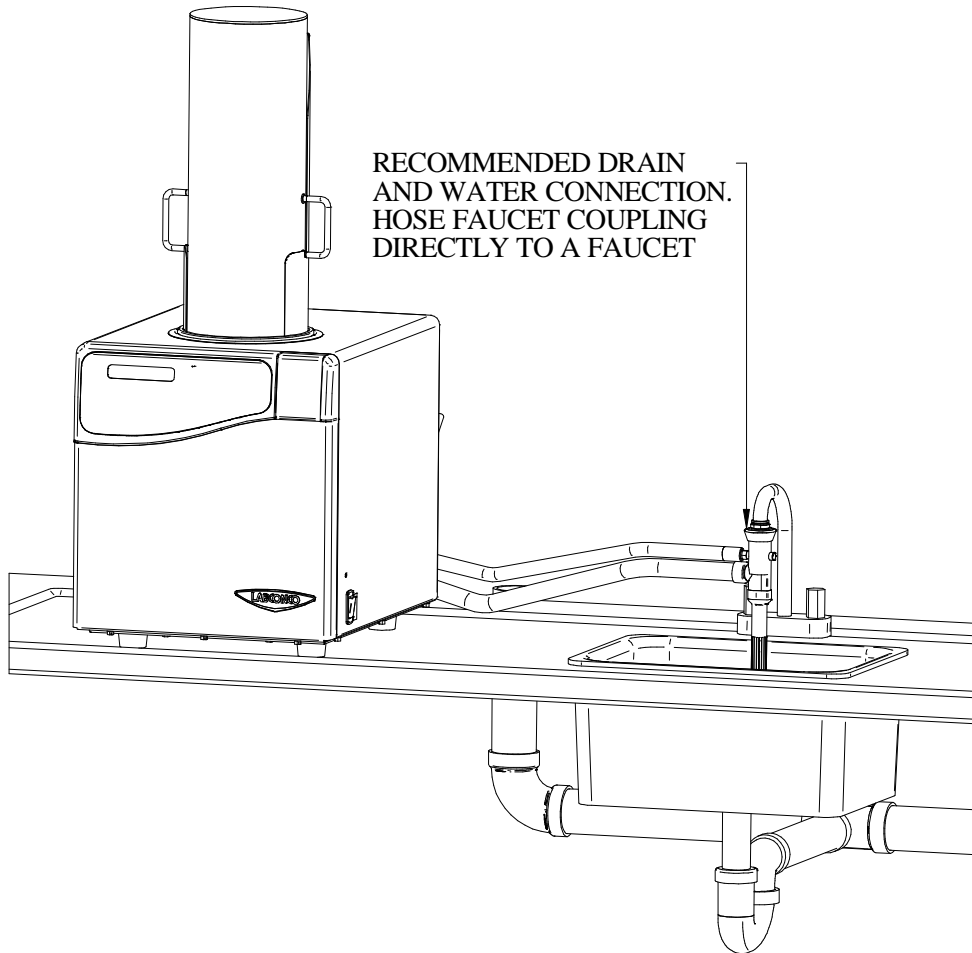
You may also provide your own 3/8" outside diameter tubing for connection to the water source. Disconnect the factory-installed hose by pressing in on the collet of the press-to-connect fitting at the back of the washer, and remove the brass fitting by pulling out. The user supplied 3/8" OD tubing can then be inserted into the unit's press-to-connect fitting. Attach the other end of the tubing to user supplied tap or purified water supply. Slowly turn the water valve on.

The 3/8" OD tubing provided for the pure water connection can be inserted into the unit's press-to-connect fitting. This tube can be cut to length and attach to the user supplied fitting at the purified water supply. Slowly turn the water valve on.

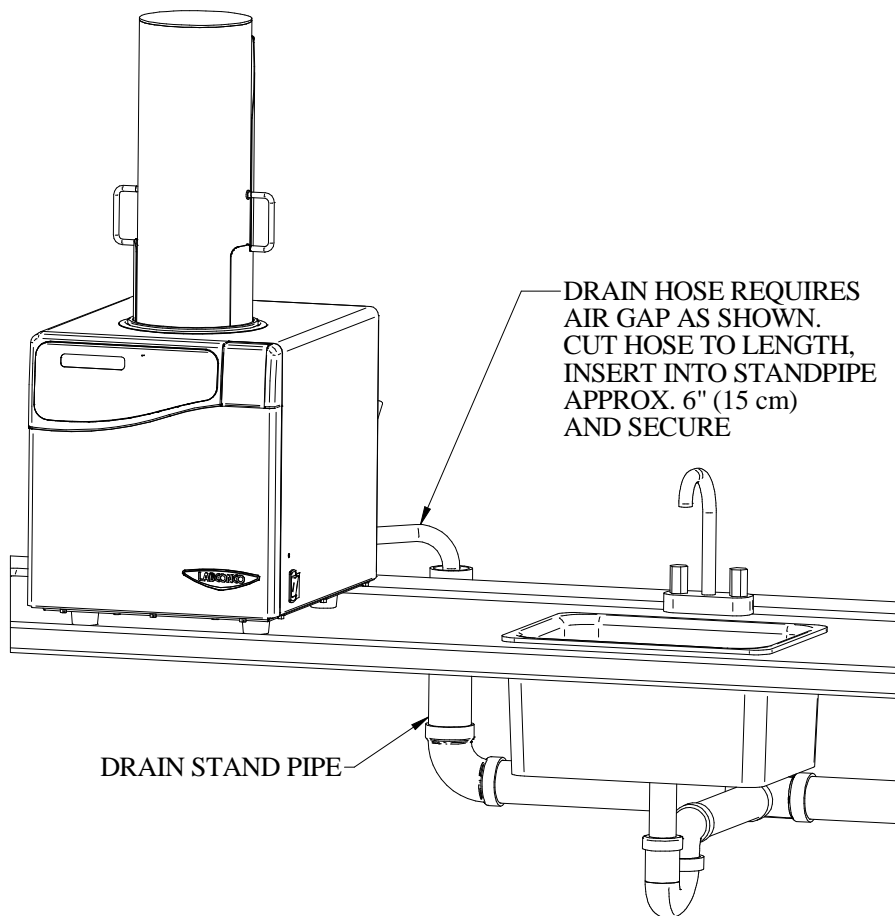
Connecting the Drain Hose

Be certain you conform to all local plumbing codes when you route and connect the drain.

If using the factory-supplied hose faucet coupling to connect to the water supply, the drain hose will be connected at the same time. See Connecting the Water Supply above. Make sure the outlet of the coupling is positioned over the sink drain.



If a dedicated drain connection is preferred, the factory-installed drain hose can be cut to fit the installation. The drain hose outlet can then be inserted directly into a standpipe approximately 6" and must be secured. When connecting to a standpipe, do not seal the hose to the pipe. Plumbing codes require that the air gap be left between the drain hose and standpipe.

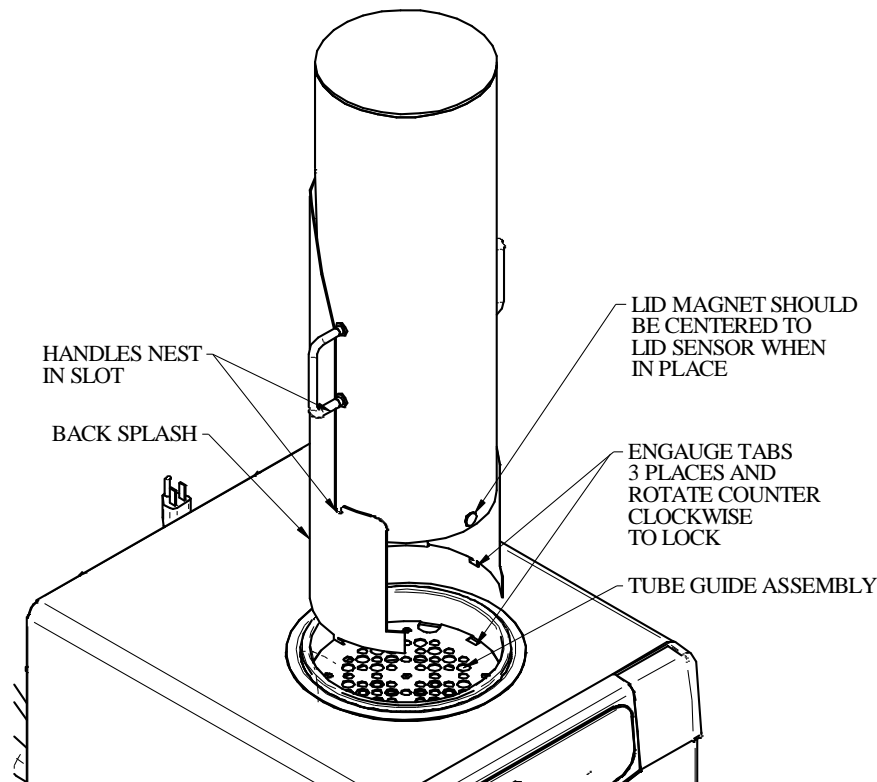


Where possible it is recommended that the drain hose and drain hose outlet be routed as low as possible relative to the base of the washer. Low spots where water can sump should also be minimized. No section of the hose should be more than 11" (27.9 cm) above the base of the washer.

The drain line outlet should not be connected to the plumbing below the sink drain level, because the air pressure during drain could force trapped water back out the sink drain.

Installing the Back Splash Assembly and Clear Cover

Hold the back splash vertically with the three tabs at the bottom and the opening towards the front of the washer dryer. Align the three tabs into the three rectangular notches in the tube guide. When the bottom of the back splash is seated against the top of the tube guide, rotate the back splash slightly counter clockwise to lock the assembly down. Center the clear cover over the back splash assembly with the opening toward the back and lower until the bottom of both handles are nested in the slots on each side of the back splash. Check to make sure the magnet on the clear cover is aligned with the lid sensor at the front of the tank.



Connecting the Power Supply

Plug the power cord into the receptacle on the back of the ScrubAir Pipette Washer Dryer and plug the other end into a suitable wall power receptacle that matches the rated voltage marked on the serial tag.

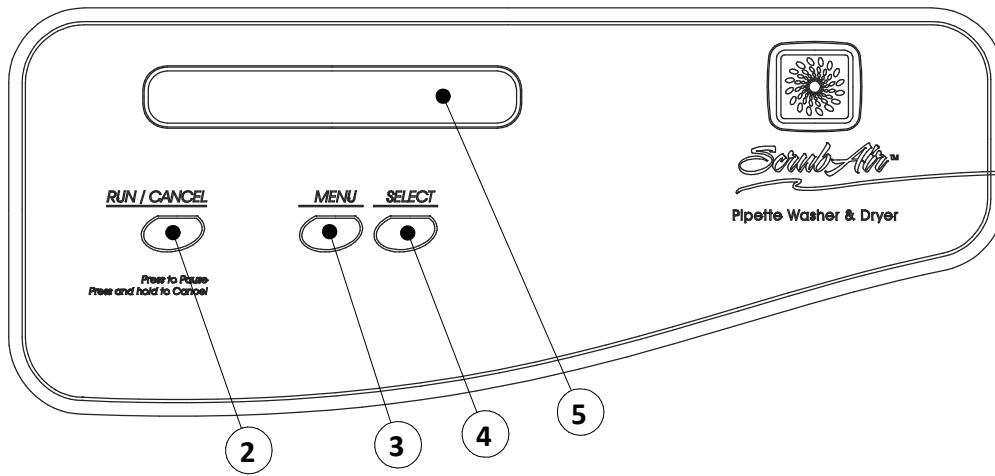


CAUTION: Do not use any detachable power cord that is not adequately rated for the unit.

PRUDENCE: *Ne pas utiliser un fil électrique amovible qui n'est pas du tension nominale de l'appareil..*

ScrubAir Pipette Washer Dryer Controls

The control panel for the ScrubAir Pipette Washer Dryer is shown below with a description of its each function.



1. Main Power Switch- (Not shown- Located on right side of cabinet) turns the unit on or off.
2. RUN/CANCEL Button- Initiates the wash cycle. Press and release to pause the wash cycle, press and hold to cancel the wash cycle.
3. MENU Button - Used to scroll through menus to select wash cycles and to program wash cycles. Used in diagnostics to scroll to individual washer functions for testing.
4. SELECT Button - Used to set wash, rinse and dry cycle times and the number of rinse cycles. Used in diagnostics to turn functions on and off.
5. Display- During run, displays cycle segment and the time remaining in that segment. Display alternates to show total time remaining.

Testing Your Washer

Now that you have made the required water, air and electrical connections, a series of diagnostic steps are provided in this section to test the operation of the washer.

Before turning on the washer, make certain the water and air are turned on, there are no leaks and no packing material remains inside the washer.

Running the Diagnostics

To ensure your washer is operating properly, perform the diagnostics procedure detailed below, which will take approximately 5 minutes to complete. Refer to the figure above to familiarize yourself with the control panel before you begin the procedure.

To run the diagnostics test:

1. Load one or more pipette into the washer. See chapter 4 for instructions.
2. With the Power Switch off, press the MENU Button on the control panel while turning the Power Switch on. Hold for approximately 5 seconds.
3. The display will show **Tap**. Press SELECT to turn the tap valve and air valve on. Water will fill the sump until the level switch is actuated or for 40 seconds. Press SELECT to turn the tap and air valves off. Once the water level switch is actuated, the tap valve cannot be turned back on until diagnostics is restarted.
4. Turn the Power Switch off then back on while pressing the MENU Button. Hold for approximately 5 seconds. The display will show **Tap**.
5. Press MENU. The display will show **Pure**. If the unit is a non-heated model proceeded to step 6. If the unit is a heated model press SELECT to turn the pure water valve and air valve on. Water will fill the sump until the level switch is actuated or for 40 seconds. Press SELECT to turn the pure and air valves off. Once the water level switch is actuated, the tap and pure valves cannot be turned back on until diagnostics is restarted.
6. Press MENU. **Air** will be displayed. Press SELECT to turn the air valve on. Air will force the water back up through the pipettes, after 15 to 30 seconds, air will begin to create a percolating action inside the pipettes. Press SELECT to turn the air valve off.
7. Press MENU. **Heat** will be displayed. . If the unit is a non-heated model proceeded to step 8. If the unit is a heated model press SELECT to turn the heater on. The heater will come on and begin to heat the water. This can be verified by monitoring the amperage of the unit when the heater is switched on. Press SELECT to turn the heater off.
8. Press MENU. **Drain** will be displayed. Press SELECT to turn the drain valve and air valve on. Press SELECT to turn the valves off. To fully drain the sump turn the drain on for 10 second and then off for 15 second repeatedly until no water comes out the drain. Do not leave the drain valve on for longer the 5 minutes at one time as damage to the valve could occur.
9. Press MENU. **Lid Check** will be displayed. Press SELECT to turn the lid check on. **Lid On** will be displayed. Remove the clear lid, the display should read **Lid Off**. Replace the clear lid. The display should read **Lid On**.
10. Press the MENU Button. **Factory Defaults** will be displayed. Press SELECT to reset the programs to factory defaults.
11. Press MENU. **Return to Wash** will be displayed. Press MENU to scroll back to **Tap** or press SELECT to return to the wash programs and end diagnostics.

CHAPTER 4

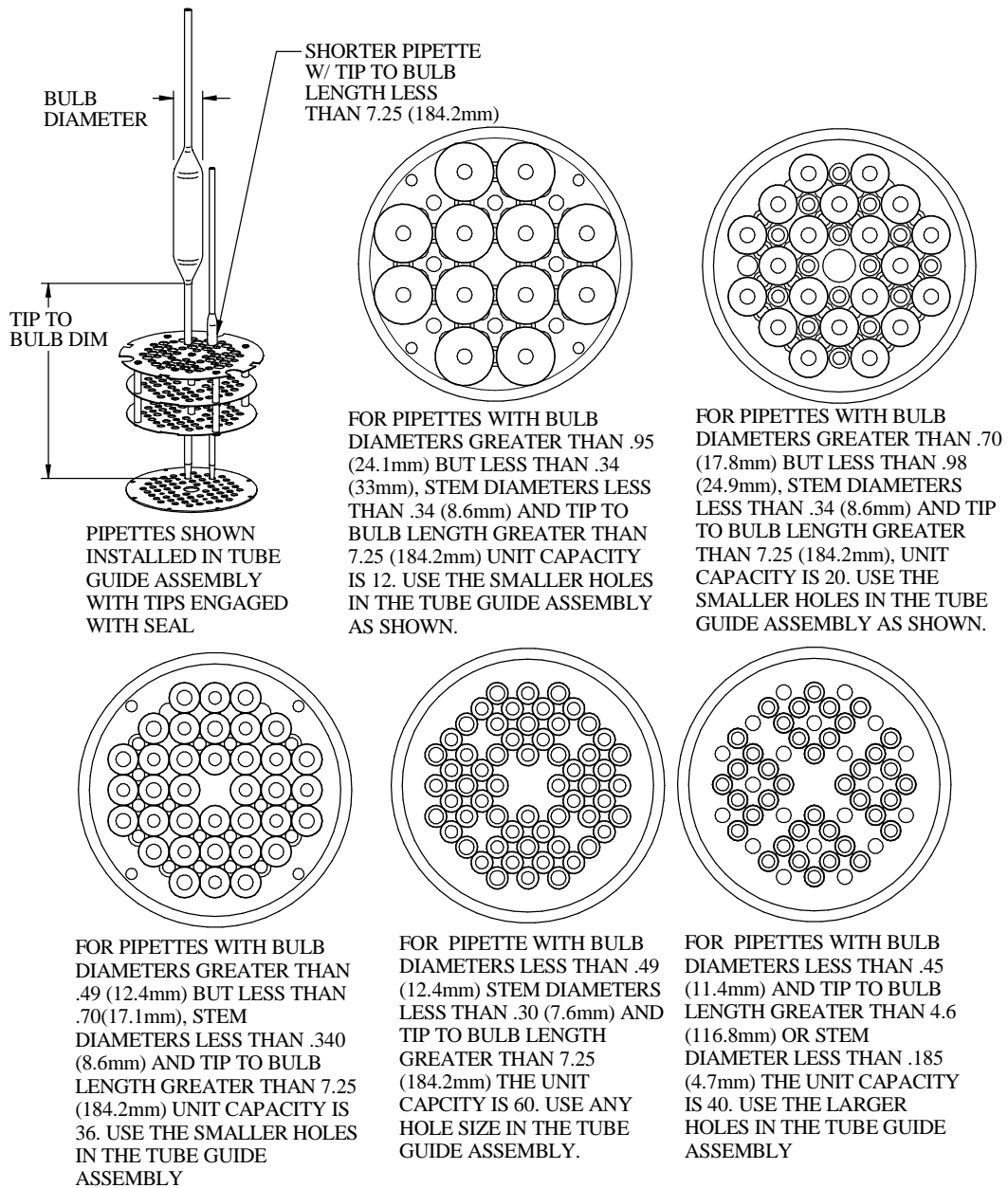
USING YOUR WASHER DRYER

After your Washer Dryer has passed the basic diagnostics test detailed in *Chapter 3: Getting Started*, you are ready to begin using your washer.

Loading Pipettes into the Washer Dryer

The pipette washer dryer has been designed to accommodate a wide variety of volumetric pipettes. Depending on the diameter of the bulb, and the diameter and length of the tapered end, the washer can hold up to 60 pipettes. The size of the pipettes determines the quantity that will fit in the washer chamber. In addition, the number of very small pipettes (with stem diameters less than .185" (4.7mm)) that can be washed at one time may be limited to 40. Please see the chart and illustrations below for an approximation of the number of pipettes that could be washed at one time.

BULB DIAMETER	STEM DIAMETER	TIP TO BULB LENGTH	CAPACITY
> .95" (24.1mm) & < 1.34" (33.0mm)	> .18 (4.6mm) & < .34 (8.6mm)	> 7.25 (184.2mm)	12
> .70" (17.8mm) & < .95" (24.1mm)	> .18 (4.6mm) & < .34 (8.6mm)	> 7.25 (184.2mm)	20
> .49" (12.4mm) & < .70" (17.1mm)	> .14 (3.6mm) & < .30 (7.6mm)	> 7.25 (184.2mm)	36
< .49" (12.4mm)	> .14 (3.6mm) & < .30 (7.6mm)	> 7.25 (184.2mm)	60
> .30" (7.6mm) & < .45" (11.4mm)	> .14 (3.6mm) & < .30 (7.6mm)	> 4.6 (116.8mm)	40
< .30" (7.6mm)	> .14 (3.6mm) & < .30 (7.6mm)	NA	40



To load the Washer Dryer:

To load a pipette, insert the tapered end through the Tube Guide Assembly as straight as possible. Engage the rubber seal hole in the bottom of the tank. Insert the pipette into the hole by twisting the pipette slightly while pressing down. Press with enough force to seal the tip of the pipette in the hole of the rubber seal. Do not force the pipette beyond the tapered portion of the tip.

When using multiple size pipettes use the following guidelines when loading the Washer Dryer.

1. Load the tallest pipettes first and locate them to the rear with the smaller pipettes near the front.
2. When loading larger pipettes, try the smaller holes in the Tube Guide Assembly first.
3. When loading smaller diameter or short pipettes, try the larger holes in the Tube Guide Assembly first.
4. If the pipette does not fit into the Tube Guide Assembly do not force it, instead try the other size hole.
5. For best results, pipettes should be loaded so that they do not touch each other, the back splash or the clear cover during a wash cycle.
6. For best results try to wash similar size pipettes at the same time.
7. For best results load the pipette washer as full as possible for each wash. Washing small numbers, especially of small pipettes can be done and will clean but may not allow for the bubbling action during the wash and rinse segments.



Petroleum-based compounds may degrade certain internal washer components. Always thoroughly rinse petroleum based compounds from glassware before placing in the Washer Dryer.



CAUTION: Flammable compounds in soild glassware may ignite when exposed to hot heating element. Rinse glassware before placing in to washer.

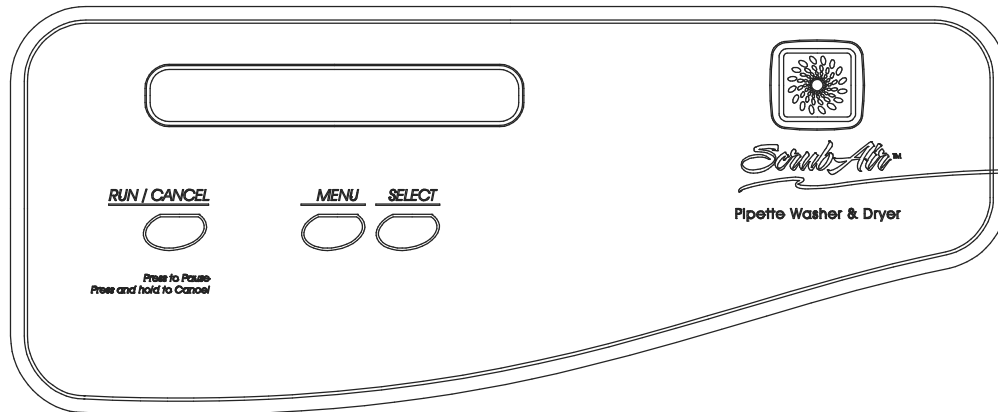
PRUDENCE: Il se peut que les composés inflammables dans la verrerie sale s'allument quand ils sont exposés á l'élément de chauffage. Rincez la verrerie avant de la placer dans le lave-vaisselle.

Labconco LabSolutions Non-foaming Liquid Detergent is recommended for use with the ScrubAir Pipette Washer Dryer. The unit was shipped with a dispensing pump, which when used with the 1 Gallon LabSolutions Liquid Detergent, will dispense approximately 1/8oz (4ml) per pump. Use detergents sparingly. Start with 1/8oz (4ml) to 1/4oz (8ml). Too much detergent, particularly with softened water may cause etching of the glassware, which appears as a permanent cloudy film on the glassware. See *Appendix A* for ordering information for the detergent.

Use 1/8oz (4ml), if the water hardness grains per gallon (GPG) for your water measures 0-4 GPG (soft water). Use 1/4oz (8ml), if your water measures 4 GPG or higher (medium to hard water). With the pipettes loaded and the clear lid removed, dispense the detergent directly into the wash sump.

Selecting an Operating Cycle

The microprocessor control on your Pipette Washer Dryer allows you to select a factory-preset wash program, to modify the factory-preset wash programs or to customize the two user programs. The control panel is shown below.



Programming and Starting a Wash Cycle


Refer to *Appendix C: Pipette Washer Dryer Specifications* for complete details on the various factory-preset programs and the options available for customizing the programs. After you have decided which washer program to use, follow the instructions below to begin using the washer dryer.

The preset factory 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:

- Start Delay 0 to 8 hours in 1 minute increments
- Wash Time 0 to 8 hours in 1 minute increments
- Rinse Time 0 to 4 hours in 1 minute increments
- Total number of Rinses 0 to 10
- Dry time 0 to 8 hours in 1 minute increments

To program and start a wash cycle:

1. Turn the Main Power Switch to on. The display will show the last program that was run.
2. Press **RUN/CANCEL** to select this program.
3. If a different program is desired, press **MENU** to scroll through the three available programs shown on the display.

4. Once a program is selected, if no modifications to the program are necessary, press RUN/CANCEL to begin the cycle.
5. If modifications to the program are necessary or you want to see the parameters that are entered into the program, press SELECT and the display will show **Delay Time 0:00**. If you would like to delay the start time of the wash cycle press SELECT. The time will change in 1 minute increments each time SELECT is pressed. Press and hold SELECT to scroll the time faster, up to a maximum of 8:00 hours and then it will wrap back to 0:00.
6. Press MENU and the display will show **Wash Time 0:05**. If you would like to change the wash time of this cycle press SELECT. The time will change in 1 minute increments each time SELECT is pressed. Press and hold SELECT to scroll the time faster, up to a maximum of 8:00 hours, and then wrap back to 0:00.
7. Press MENU and the display will show **# of Rinses 3**. If you would like to change the number of rinses for this cycle press SELECT. The number will increase 1 each time SELECT is pressed. Press and hold SELECT to scroll through faster, up to a maximum of 10, and then wrap back to 0.
8. Press MENU and the display will show **Rinse Time 0:04**. If you would like to change the rinse time of this cycle press SELECT. The time will change in 1 minute increments each time SELECT is pressed. Press and hold SELECT to scroll the time faster, up to a maximum of 4:00 hours, and then wrap back to 0:00. The rinse time selected will be the rinse time for each rinse, so if 4 hours and 10 rinses are selected, the total time added will be 40 hours.
9. Press MENU and the display will show **Dry Time 2:30**. If you would like to change the dry time of this cycle press SELECT. The time will change in 1 minute increments each time SELECT is pressed. Press and hold SELECT to scroll the time faster, up to a maximum of 8:00 hours, and then wrap back to 0:00.
10. Press MENU and the display will show **Lock**  . If the lock feature is not required, press MENU the display to return to the program menu. If you would like to lock the program's settings so that it cannot be inadvertently revised press SELECT. The lock symbol will close. Press MENU. The display will show the program that was just modified and the locked symbol. The only active button will be RUN/CANCEL. To unlock the program, press and hold MENU for 15 seconds, the lock symbol will disappear.
11. Once the display shows the modified program the Washer Dryer is ready to go. Press RUN/CANCEL to begin.

Interrupting a Wash Cycle

To temporarily pause a wash cycle, simply press the RUN/CANCEL button, press again to resume. The wash cycle will resume where it was interrupted. The wash cycle can also be paused by slowly raising the Clear Cover, which will actuate the lid sensor. Hold the Clear Cover over the tank for a few seconds to allow some of the water to drain off before removing completely. When removing the clear cover completely, slowly rotate the top of the cover forward as you raise it. This will allow more of the excess water to drain back into the tank. Reverse this process when replacing the Clear Cover and the wash cycle will resume.

The wash cycle can be terminated at any time by pressing and holding the RUN/CANCEL button. This will cause the washer to drain and end the current cycle.

Alarms

Throughout a wash cycle, there are several abnormal events that could occur. The washer is programmed to monitor these occurrences and provide an alarm to alert the operator. Information is shown on the display to identify the alarm situation. The following messages may be displayed.

Lid Pause

This displays if the Clear Lid has been removed or not in position.

Operation of the wash cycle is delayed until the Clear Lid is replaced in the correct position. Once replaced the wash cycle will resume where it was interrupted.

Fault-Drain

This displays during the drain cycle if there is a No Water or Water Found fault. Once the drain is complete one of two defaults will display as follows.

Fault-No Water

This displays if a water fill is inadequate. The washer will cancel the cycle and drain any water that is in the washer. The alarm is canceled by pressing RUN/CANCEL. See *Chapter 7: Troubleshooting – Washer will not fill.*

Fault- Water Found

This displays if water is detected in the base of the Washer Dryer. Water fill valves will be closed and the washer will cancel the cycle and drain any water that is in the washer. The alarm is canceled by pressing RUN/CANCEL. See *Chapter 7: Troubleshooting – Washer leaks.*

Fault-Temp Fail

This displays on heated models only if the temperature sensor is not working properly. The washer will stop the cycle. The alarm is canceled by pressing correcting the fault See *Chapter 7: Troubleshooting – Temperature sensor failure.*

CHAPTER 5

MAINTAINING YOUR

WASHER DRYER

Under normal operation, your ScrubAir Pipette Washer Dryer will require little routine maintenance to keep it functioning properly.

The following maintenance schedule is recommended. Before servicing the ScrubAir disconnect electrical power and wear appropriate eyewear, gloves and other safety apparel.

As needed:

Before using any cleaning or decontamination method except those recommended by the manufacturer, users should check with the manufacturer that the proposed method would not damage equipment.

1. Clean lid and gasket using soft cloth, sponge or chamois and a mild, non-abrasive soap or detergent.
2. Inspect the chamber to ensure that there are no cracks or structural damage. Call Labconco if defects exist.
3. Clean the center screen located in the bottom of the sump. Remove the Clear Cover and Back Splash. Remove the Tube Guide Assembly from inside the sump by lifting straight up. The screen is located in the bottom center of the sump. Clean any debris blocking water flow through the screen. Reassemble the washer.

Annually:

1. Check all rubber hoses and gaskets for leaks and replace any that show signs of hardening, permanent set or deterioration.
2. Using a soft cloth, sponge, or chamois and a mild, non-abrasive soap or detergent, clean the exterior surfaces. Liquid spray cleaners and polishes may be used on the exterior surfaces. Do not use solvents to remove stains from the exterior surfaces as they may damage the finish.

If your water has a high mineral content, film or spots may develop on the washer interior. If the procedures listed above do not eliminate the film or spots, you may run your washer through the special cycle below.

To remove film or spots from the washer interior:

1. Place several pipettes (5 to 10) in the washer distributed as evenly as possible.
2. Select User 1 program.
3. Carefully pour $\frac{1}{2}$ cup of bleach into the sump.
4. Replace the clear cover and run the program. Let the washer go through the wash and one rinse and drain.
5. When the washer fills for the second rinse, carefully remove the clear cover and add one cup of 4-8% acetic acid (or white vinegar) into the sump.
6. Replace the clear cover and allow the cycle to finish without further interruption.

CHAPTER 6

TROUBLESHOOTING

Refer to the following table if your Pipette Washer Dryer fails to operate properly. If the suggested corrective actions do not solve your problem, contact Labconco Product Service for additional assistance.

PROBLEM	CAUSE	CORRECTIVE ACTION
Poor washing results	Water is not hot enough	Check water temperature of inlet water on non-heated models. Recommended inlet temperature is 120°F (49°C). Not to exceed 140°F (60°C).
	Improper loading	Check washer loading instructions in <i>Chapter 4</i> in this manual. Pipettes should not touch. Make sure the tapered tips are properly inserted into the sump seal.
	Detergent too old or amount wrong	Replace detergent or change quantity used.
	Insufficient wash time	Increase wash cycle time.
Not draining properly	Clogged filter	Clean sump filter.
	Drain line clogged or kinked	Disconnect drain line and clean or remove kink.
Washer does not run	Clear cover is not installed.	Reposition Clear Cover.
	No power to unit	Check fuse or circuit breaker, or power cord.
Washer leaks	Loose connection at hose clamps	Tighten hose clamp.
	Loose connection at fill valve	Check fill valve and correct.
	Improper detergent	Use non-foaming detergent. Use only proper amount of detergent.
	Obstruction in drain line	Remove obstruction
	Washer overfilling	Check operation of fill switch.

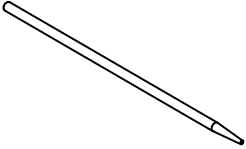
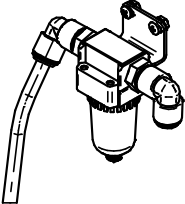
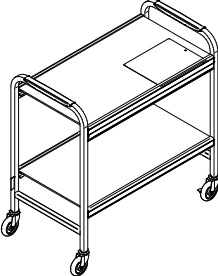
PROBLEM	CAUSE	CORRECTIVE ACTION
Washer will not drain	Clogged drain	Clean out drain.
	Drain hose too high Or hanging too low	Reroute drain hose
	Filter blocked	Check filter in washer and clean as needed.
	Drain valve or air valve not operating	Check operation.
Washer overfills	Defective fill switch	Check operation.
Selection buttons on control panel inoperable or controls malfunction	Microprocessor memory error	Perform "Factory Reset." Press and hold MENU button and simultaneously turn on power switch. Release MENU button and display will show the diagnostics screen. Press MENU until Factory Reset is displayed. Press SELECT. Press MENU Return to Menu is displayed. Press SELECT.
	Key pad defective	Replace key pad.
Water Low Alarm	Improper water supply	Make sure water is turned on. Water pressure must be at least 8 psi (55kPa) and flow must be at least 1.25 gallons (4.7 liters)/minute. At least .67 gallons (2.5 liters) must be available if using pure water.
	Defective fill valve	Clean screens inside the inlet fittings of the water valve. Check voltage to valve. Replace valve if it does not operate with proper voltage.
	Restricted flow	Check for kinks in water hoses in base of washer to water inlet fitting on side of tank.
Pipettes do not dry	Dry time too short	Increase dry time.
	Defective air valve	Check operation in diagnostics Check voltage to valve Replace valve if it does not operate with proper voltage.
Temp Fail Alarm	Temperature sensor failure	Check connection. Replace sensor

APPENDIX A

PIPETTE WASHER DRYER

ACCESSORIES

ScrubAir Accessories

PART #	DESCRIPTION	
4615700	<p>Spindle Kit. Contains 20 acetal plastic spindles to wash small test tube or vials. ScrubAir can hold a total of 60 spindles.</p>	
4614900	<p>5 Micron Air Filter Attaches to the back panel. Includes mounting bracket and 3/8" tubing to connect to the unit.</p>	
8025000	<p>Portable Table. For ScrubAir mobility.</p>	

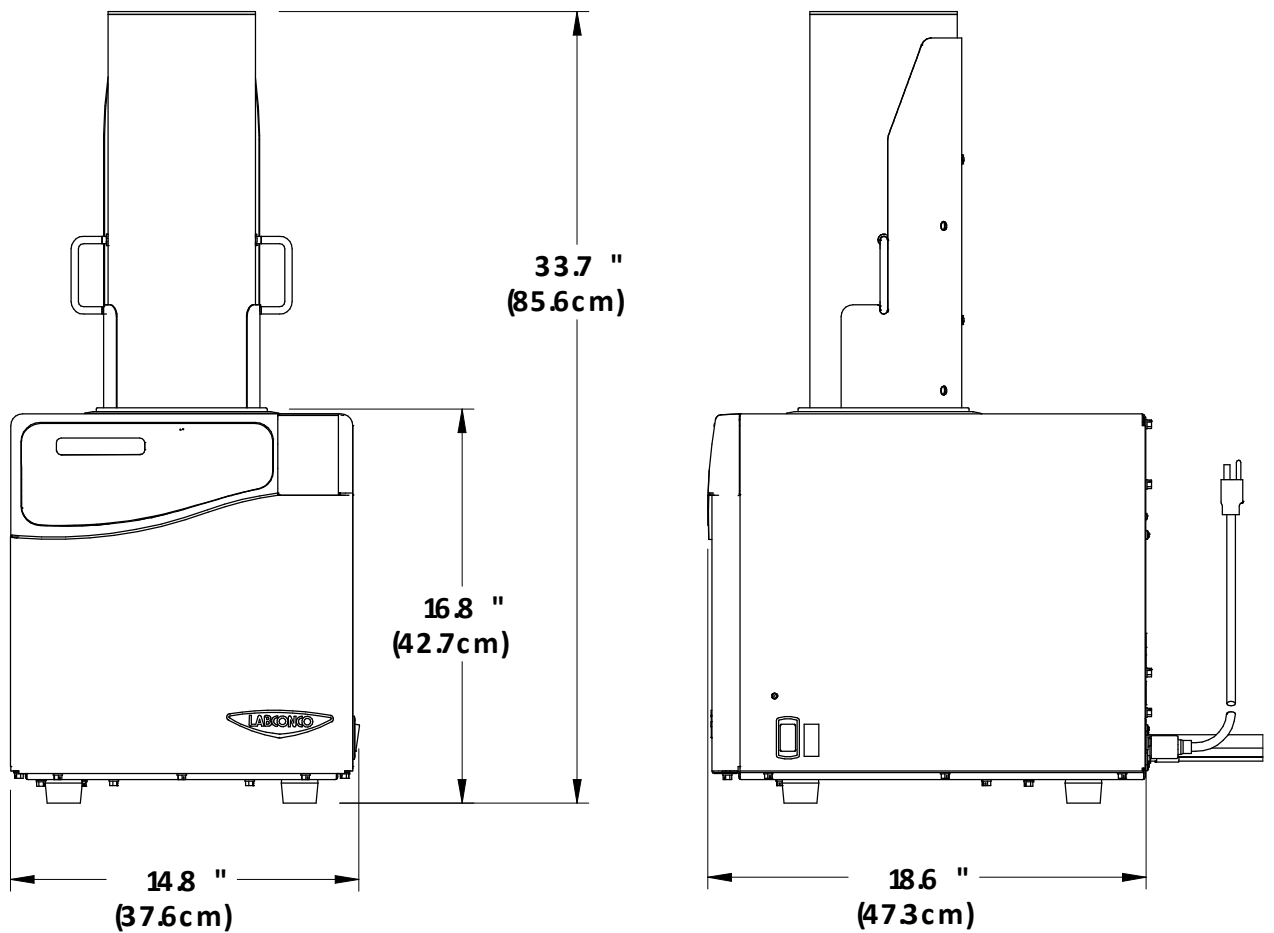
CONSUMABLES

PART #	DESCRIPTION
4522000	LabSolutions Liquid Detergent 1 gallon (3.8 L)

APPENDIX B

PIPETTE WASHER DRYER

DIMENSIONS



APPENDIX C

PIPETTE WASHER DRYER

SPECIFICATIONS

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

Pipette Washer Dryer Specifications

- Minimum fill water temperature: 120°F (49°C) recommended
- Maximum fill water temperature: 140°F (60°C)
- Water consumption per fill: .53 gal.(2.0L) to .7 gallons (2.5L)
- Minimum feed water pressure: 8 psi (55 kPa)
- Maximum feed water pressure: 120 psi (827 kPa)
- Minimum feed air flow/pressure: 5cfm (142 l/m) 20 psi (138 kPa)
- Maximum feed air pressure: 100 psi (689 kPa)
- Maximum sound level: <75dB(A)

Electrical Specifications

- Operating voltage for 115V washers: 104/127V
- Operating voltage for 230V washers: 207/253V
- Maximum amperage for 115 volt washers: <2 amperes
- Maximum amperage for 230 volt washers: <1 amperes
- Maximum amperage for 115 volt washers w/ heat: 9 amperes
- Maximum amperage for 230 volt washers w/heat: 5 amperes
- Frequency 115 volt washers: 50/60 Hz
- Frequency 230 volt washers: 50/60 Hz
- Phase: Single
- Heater element power: 750 watts

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 Set Programs

<u>Displayed Function</u>	<u>Standard Wash Factory Settings</u>	<u>User 1 Factory Setting</u>	<u>User 2 Factory Setting</u>	<u>User Set Point Ranges</u>
	Standard/Heated	Standard/Heated	Standard/Heated	
Delay Start	0	0	0	0-8 hr
Wash 1	15 min / 30 min	5 min / 10 min	30 min / 40 min	0-8 hr
Rinse 1	5 min / 15 min	3 min / 6 min	2 min / 4 min	0-4 hr
Rinse 2	5 min / 15 min	3 min / 6 min	2 min / 4 min	0-4 hr
Rinse 3	5 min / 15 min	3min / 6 min	2 min / 4 min	0-4 hr
Rinse 4		3 min / 6min	2 min / 4 min	0-4 hr
Rinse 5		3min / 6 min	2 min / 4 min	0-4 hr
Rinse 6			2 min / 4 min	0-4 hr
Rinse 7			2 min / 4 min	0-4 hr
Rinse 8			2 min / 4 min	0-4 hr
Rinse 9			2 min / 4 min	0-4 hr
Rinse 10			2 min / 4 min	0-4 hr
Dry	4 hr / 2 hr	4 hr / 2 hr	4 hr / 2 hr	0-8 hr
Max Total Times including fill and drain times	4 hr 46 min/ 3 hr 31 min	4 hr 42 min/ 3 hr 2 min	5 hr 27 min/ 3 hr 57 min	



Protecting your
laboratory environment

LABCONCO

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CE Declaration of Conformity

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8811 Prospect Avenue
Kansas City, MO 64132 USA
Ph. 816-333-8811 Fax. 816-363-0130
labconco@labconco.com

***being the representative party in the EU solely responsible for this certification,
hereby declare that the following product:***

Equipment: Laboratory Equipment – Pipette Washer Dryers
Type, Model: ScrubAir Pipette Washer Dryer 46120 followed by two digit number
based on options
Manufacturer: Labconco Corporation
8811 Prospect Avenue
Kansas City, MO 64132 USA
Ph. 816-333-8811 Fax. 816-363-0130
labconco@labconco.com

is in conformity with the standards listed below:

EN61010-1 (10)
EN61326-1 (06)
EN55022 (10)
EN61000-3-2 (09)
EN61000-3-3 (08)

following the provisions of the following directives:

2006/42/EC
2006/95/EC
2004/108/EC
2011/65/EU

***when installed and operated in accordance with the manufacturers installation and
operating instructions.***

Mark Schmitz
Vice President, Research and Engineering
Labconco Corporation
Kansas City, MO USA

Date of issue

Labconco P/N 3696099, Rev. -, ECO #J256