

**CLASS I 2 & 3 foot Purifier®**

**INSTRUCTION MANUAL**

**HEPA FILTERED ENCLOSURES  
CLASS I SAFETY ENCLOSURES**

**HEPA FILTERED ENCLOSURE**

Models 37200-00, 37200-20

Models 37300-00, 37300-20

**CLASS I SAFETY ENCLOSURE**

Models 37200-01, 37200-21

Models 37300-01, 37300-21

Product designs are subject to change without notice

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## **Components Shipped**

Carefully check the contents of the carton for damage that might have occurred in transit. Do not discard the carton or packaging material until all components have been checked against the following component list and the equipment has been installed and tested.

As shipped, the carton should contain the following:

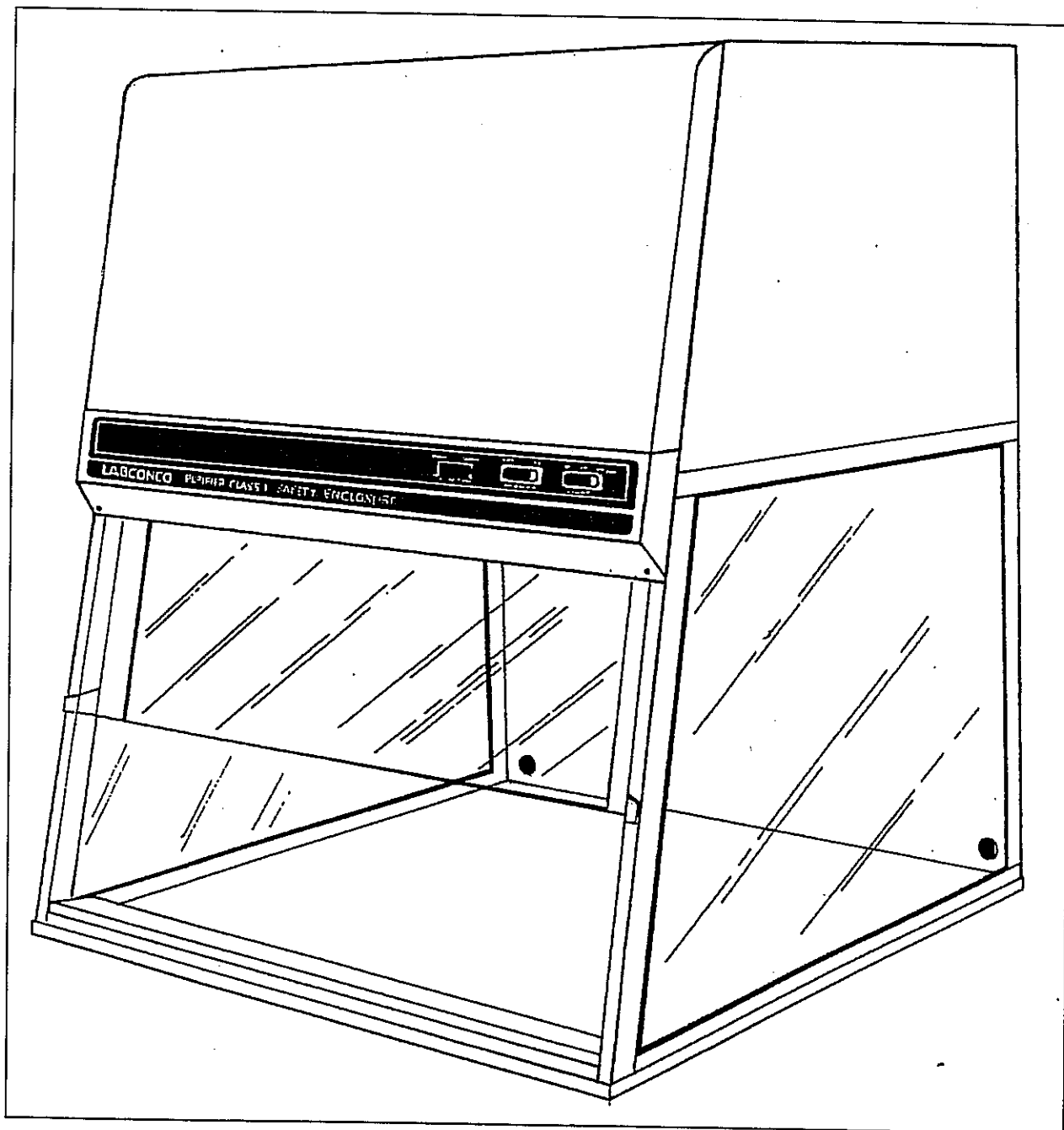
<u>Part Number</u>	<u>Description</u>
37200-00	2 Foot Purifier HEPA Filtered Enclosure
37200-01	2 Foot Purifier Class I Safety Enclosure with UV light
37200-20	2 Foot Purifier HEPA Filtered Enclosure, 230V
37200-21	2 Foot Purifier Class I Safety Enclosure with UV light, 230V
37300-00	3 Foot Purifier HEPA Filtered Enclosure
37300-01	3 Foot Purifier Class I Safety Enclosure with UV light
37300-20	3 Foot Purifier HEPA Filtered Enclosure, 230V
37300-21	3 Foot Purifier Class I Safety Enclosure with UV light, 230V
37110-00	Instruction Manual

# *INTRODUCTION*

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## **General Description**

The Labconco Purifier® HEPA Filtered and Class I Safety Enclosures are HEPA (High Efficiency Particulate Air) filtered ventilated enclosures designed to provide personnel and environmental protection from toxic or biohazardous particulate matter. Each enclosure uses a single HEPA filter, which has been tested at the factory to be at least 99.99% efficient for particles 0.3 micron.

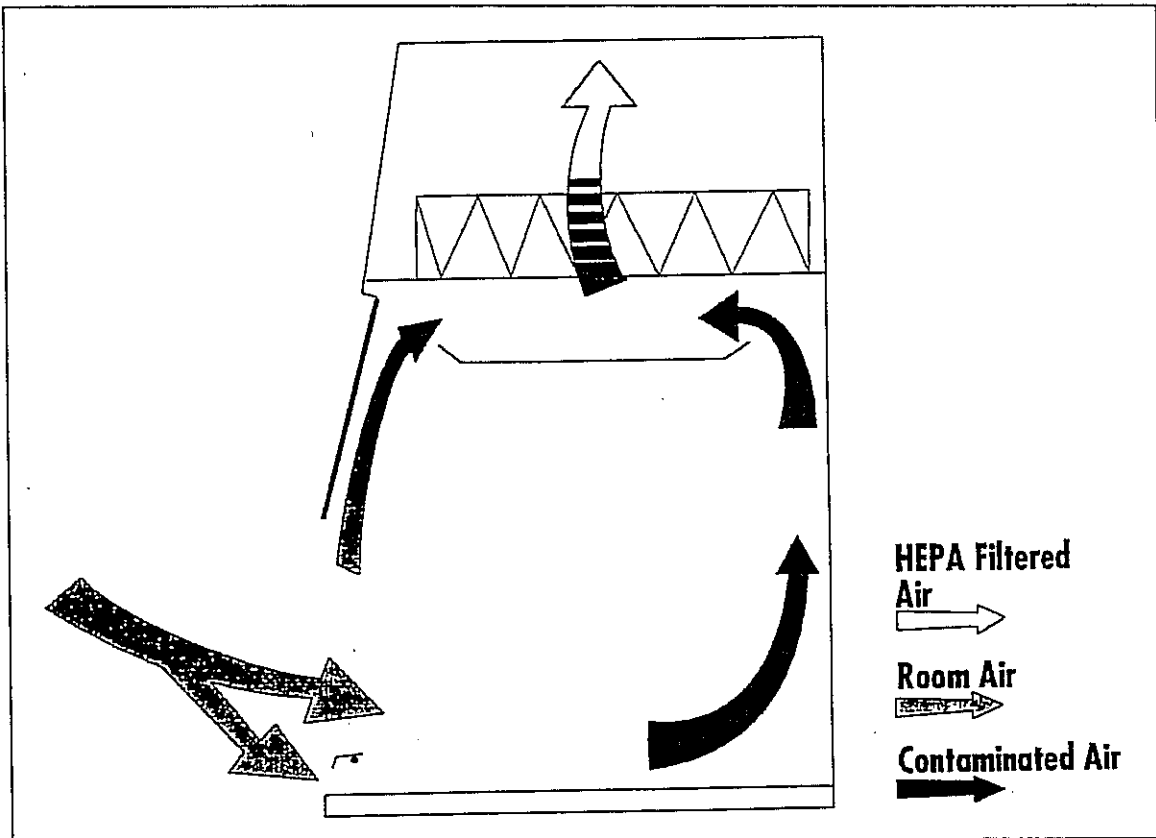


**Figure 1**

**Performance**

During operation, the enclosure's motorized impeller draws room air past the operator and through the work area opening at a nominal average face velocity of 90 fpm. This contaminated air is then pulled through the HEPA filter. The HEPA filtered exhaust air is forced out of the top of the enclosure by the integral motorized impeller.

The HEPA filtered exhaust air can be recirculated to the laboratory, or exhausted outside with the addition of the Exhaust Connection Kit, and Remote Blower, listed in the 'Accessories' section of this manual of this manual.



**Figure 2**

# ***INTRODUCTION***

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## **Component Identification – See Figure 3**

1. **Speed Control.** The solid-state speed control regulates the speed of the motorized impeller.
2. **Motorized Impeller.** The Safety Enclosure is equipped with a variable speed motorized impeller. The impeller wheel is dynamically balanced for low vibration and noise, and the low wattage requirements of the permanent split capacitor (PSC) motor reduces operating costs.
3. **Fluorescent Lamp.** The lamp is suspended above the work area, out of contact with contaminated air. A safety glass window beneath the lamp distributes the light evenly across the work surface.
4. **Filter System Indicator.** The two light system indicates the pressure across the HEPA filter. During operation a 'Normal' indicator light stays on. When the HEPA filter becomes excessively loaded, the 'Service' light turns on, indicating the filter should be serviced.
5. **Filter Clamping Device.** The clamping devices seal the HEPA filter to the frame of the Safety Enclosure. The devices are spring-loaded to compensate for filter gasket compression.
6. **Sash.** The sash is constructed of ¼ inch laminated safety glass. It pivots up to allow loading and unloading of tall items.
7. **Control Panel.** The control panel, which is located above the sash, contains the filter system indicator light and the control switches.
8. **HEPA (High Efficiency Particulate Air) Filter.** The HEPA filter is rated to remove greater than 99.99% of all particles 0.3 micron in size.
9. **Lamp Starter(s).** The lamp starters for both the fluorescent and the optional UV lamps are located behind the control panel.
10. **UV (Ultraviolet) Lamp (not shown).** The UV lamp found on some models of Safety Enclosures allows the operator to surface disinfect the work area of the enclosure when it is not in use.

Component Identification

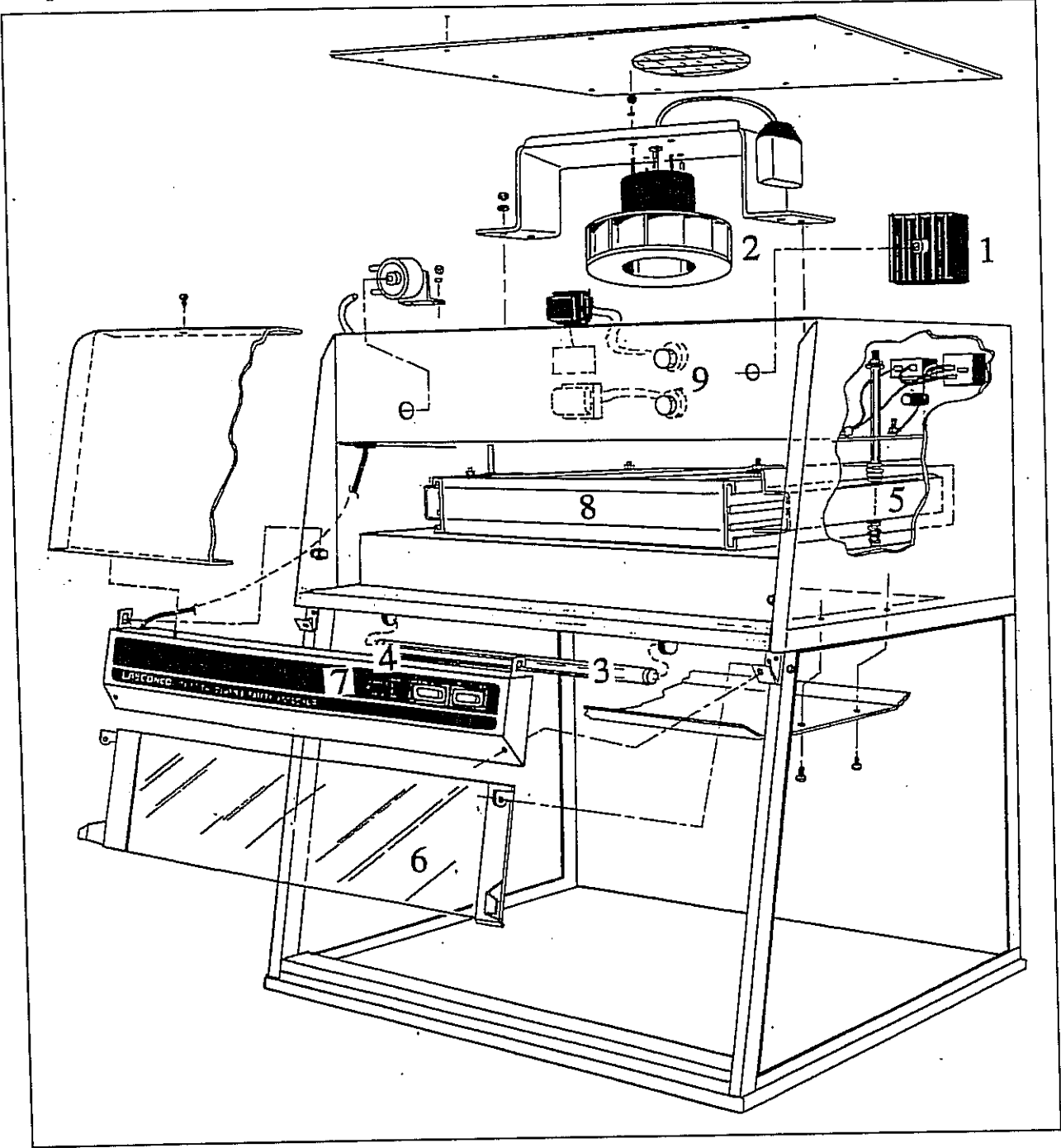


Figure 3



# INSTALLATION

## Preparation

**DO NOT** remove the enclosure from its carton until it is ready to be placed in its final location. Move the enclosure by placing a flat, low dolly under the shipping carton. **DO NOT** move the enclosure by tilting it onto a hand truck.

## Location

The enclosure should be located away from traffic patterns and doors that could disrupt its airflow patterns. The safety enclosure should be located away from fans, heating and air conditioning registers, fume hoods, and any other air-handling device. All windows in the room should remain closed. Figure 4 shows the optimum locations for the Purifier.

There should be a minimum clearance of 12" between the air outlet on the top of the enclosure and any overhead obstructions.

**NEVER** place items on top of the enclosure. They may block or restrict the exhaust opening on the top of the cabinet, affecting performance.

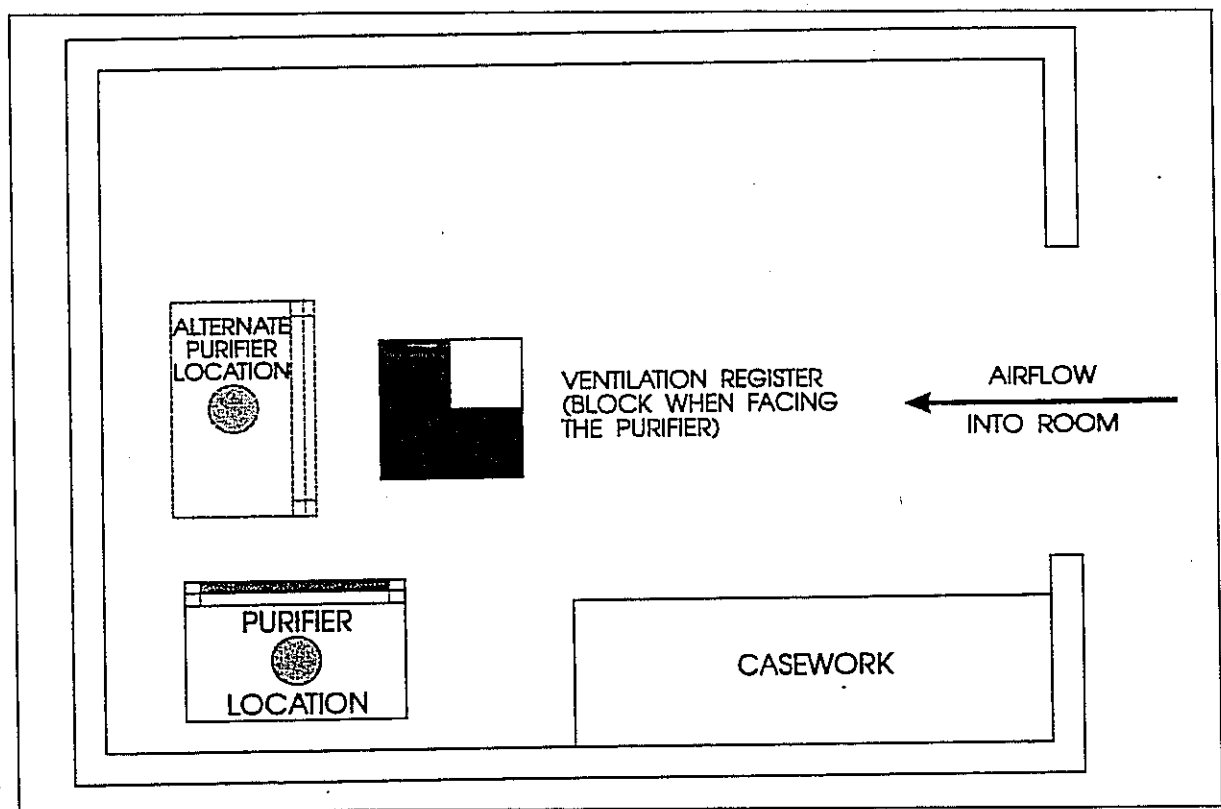


Figure 4

## Installing the Safety Enclosure on the Work Surface

Labconco offers an optional molded work surface to capture minor spills. The work surface is available for both the 2 and 3-foot wide enclosures. For further information see, 'Accessories' section of this manual.

<u>Safety Enclosure Model</u>	<u>Width (feet)</u>	<u>Work Surface</u>
37200 (All models)	2	48621-00
37300 (All models)	3	48631-00

## Installing the Enclosure on the Work Surface:

1. Position the work surface in its intended location, with the front of the work surface, (wide flange), towards you.
2. Insert two of the supplied mounting screws in the rear holes of the work surface. Leave the screws loose to allow for positioning the safety enclosure.
3. Place the safety enclosure on the work surface and slide the rear flange under the rear mounting screws.
4. Rotate the airfoil on the front of the safety enclosure to expose the two front mounting holes.
5. Insert the front screws through the Safety Enclosure brackets and into the work surface. Tighten securely. Rotate airfoil back into its standard position.
6. Tighten the two rear screws to finish this installation.

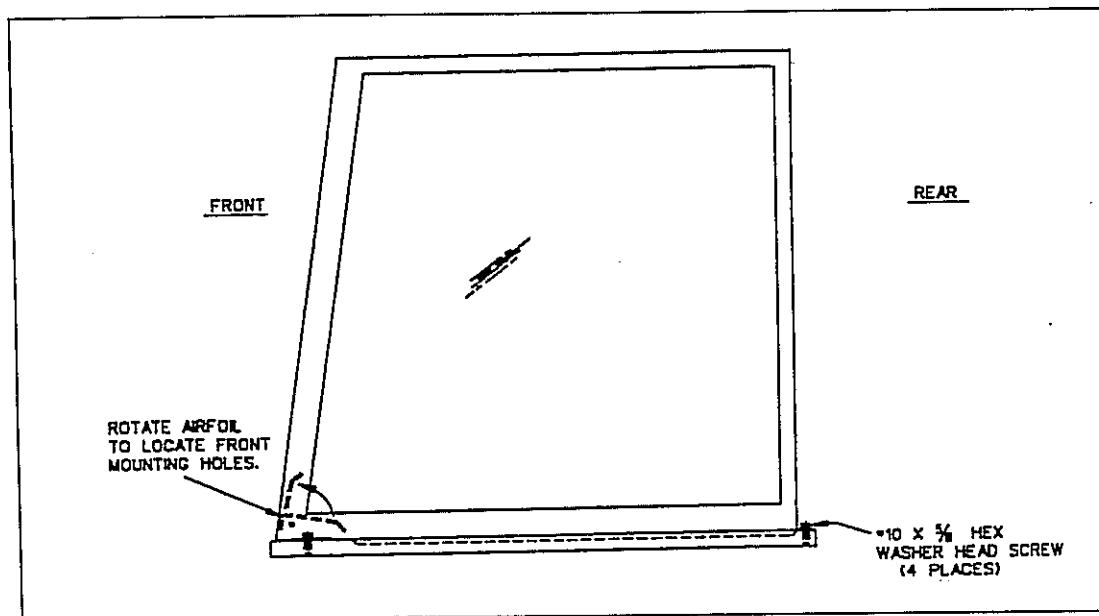


Figure 5

# ***INSTALLATION***

## **Electrical Connections**

Electrical requirements are as follows:

### **115 VAC Models:**

3720000, 3720001 and 3730000, 3730001 all models 115 VAC, 5 Amp, 60 Hz.

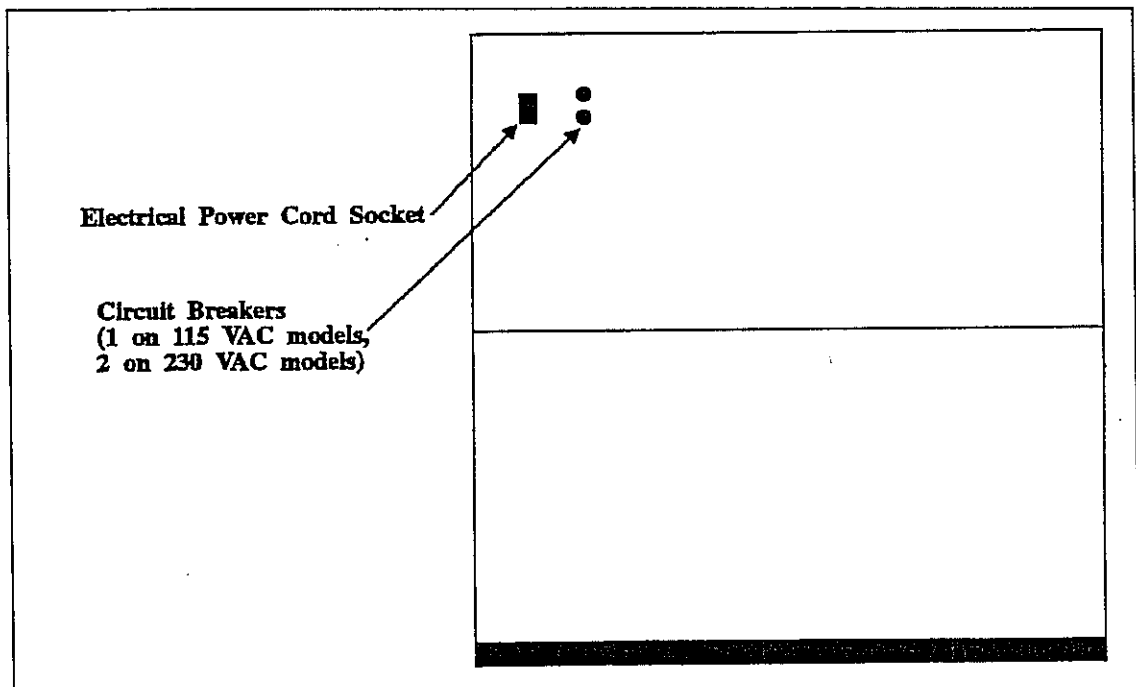
To connect the enclosure to electrical service, plug the power cord into the power cord socket located on the right rear side of the enclosure rear panel, as shown in Figure 6.

### **230 VAC Models:**

3720020, 3720021 and 3730020, 3730021 all models 230 VAC, 3 Amp, 50 Hz.

To connect these enclosures to electrical service, attach the appropriate type of plug to the end of the power cord. Plug the power cord into the power cord socket shown in Figure 6.

**NOTE:** Always follow the plug manufacturer's instructions for the proper assembly and testing of the plug and power cord.



**Figure 6**

## ***SAFETY PRECAUTIONS***

The Purifier HEPA Filtered and Class I Safety Enclosures should be certified by a qualified certifier before its initial use. The cabinet should be re-certified whenever it is serviced or at least annually thereafter.

Some components of the enclosure should only be serviced by a qualified certification technician. Ensure that the unit is connected to electrical service in accordance with local and national electrical codes. Failure to do so may create a fire or electrical hazard. DO NOT remove or service any electrical components without first disconnecting the Purifier from electrical service.

The enclosure will provide personnel and environmental protection from particulate matter. Because room air is drawn over the work surface during operation, this enclosure should not be used for operations requiring product protection from environmental contamination.

Avoid the use of flammable gases or solvents in the enclosure if possible. Care must be taken to ensure against the concentration of flammable or explosive gases or vapors. Use of an open flame should be avoided in the Purifier. Open flames may disrupt the airflow patterns in the cabinet, burn the HEPA filter and damage the filter's adhesive. Gases under high pressure should not be used in the Purifier cabinet as they may disrupt the airflow patterns of the cabinet.

HEPA filters are only effective for entrapment of particulate matter. Manipulations, which generate gases or vapors, i.e., toxic chemicals or radionuclides, must be evaluated carefully from the standpoint of buildup to dangerous levels, the decontamination of the cabinet, and compliance with applicable regulations.

The surface of the HEPA filters is fragile, and should not be touched. Care must be taken to avoid puncturing the HEPA filter during installation or normal operation. If you suspect that a HEPA filter has been damaged DO NOT use the enclosure; contact a local certification agency or Labconco.

The HEPA filter in the enclosure will gradually accumulate airborne particulate matter from the room and from work performed in the cabinet. The rate of accumulation will depend upon the cleanliness of the room air, the amount of time the cabinet is operating, and the nature of work being done in the cabinet. With normal usage, the HEPA filters will last two to five years before requiring replacement.

Proper operation of the cabinet depends largely upon the cabinet's location and the operator's work habits. Consult the 'Installation' and 'Normal Operation' sections of this manual for further details.

Avoid direct exposure to Ultraviolet (UV) radiation; NEVER work in or near the Purifier when the UV light is on.

## ***SAFETY PRECAUTIONS***

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**NEVER** place items on top of the Class I Enclosure. They may block or restrict the exhaust opening on the top of the cabinet, affecting its performance.

When surface disinfecting the Purifier:

Avoid splashing the disinfecting solution on skin or clothing.

Ensure adequate ventilation.

Carefully follow the manufacturer's safety instructions when handling disinfectants and always dispose of disinfecting solutions in accordance with local and national laws.

Disinfectants with high concentrations of free chlorine will corrode stainless steel components of the Purifier after extended contact.

**WARNING:** The enclosure weighs over 70 lbs. (33 Kg.). The carton allows for lifting with a mechanical lift truck or hand truck. If you must lift manually, have at least two people lift and follow safe lifting guidelines.

## INITIAL CERTIFICATION

Prior to use, the enclosure should be certified by a qualified certification technician. Under normal operating conditions, the enclosure should be recertified at least annually. The certifier should perform the following tests:

Inflow Velocity Test

HEPA Filter Leak Test

In addition, the following tests should also be performed at the user's discretion.

Electrical Leakage and Ground Circuit Resistance Test

Measurement of Line Voltage and Current

Smoke Test to determine proper airflow patterns

Lighting Intensity Test (when appropriate)

Noise Level Test (when appropriate)

Vibration Test (when appropriate)

## ***NORMAL OPERATION***

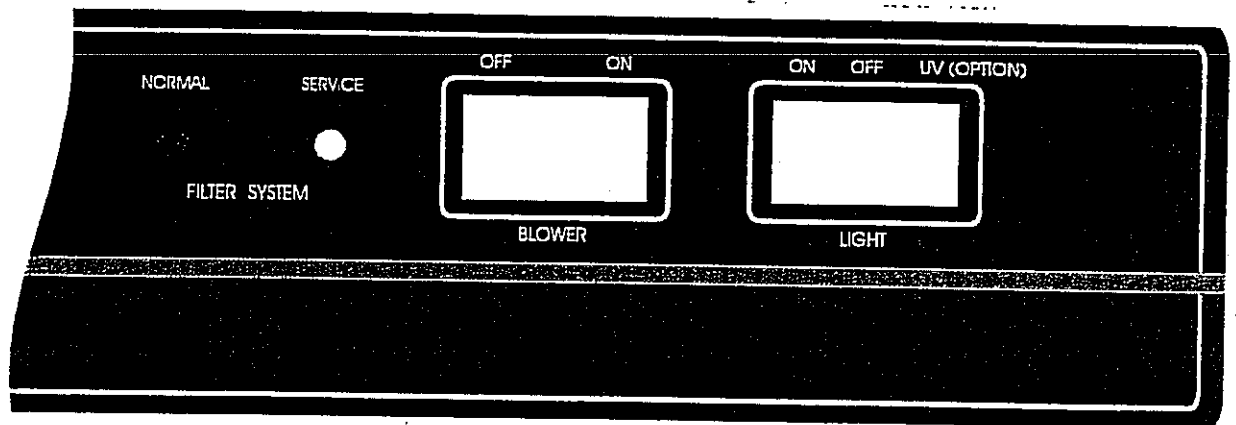
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### **Starting the Enclosure**

To start the enclosure, turn the blower switch to the 'ON' position, as shown in Figure 7.

### **Reading the Filter System Indicator**

The two light system located on the control panel as shown in Figure 7 indicates the pressure across the HEPA filter. During operation, a green 'NORMAL' indicator light stays on. When the HEPA filter becomes excessively loaded, the 'NORMAL' light turns off and the 'SERVICE' light turns on, indicating the unit should be serviced. A qualified certifier can then determine if the HEPA filter needs to be replaced.



**Figure 7**

### **Use of the Enclosure**

#### **Planning**

- Thoroughly understand procedures and equipment required before beginning work.
- Arrange for minimal disruptions, such as room traffic or entry into the room, while the enclosure is in use.

#### **Start-Up**

- Turn off the UV light, if on. Turn on the fluorescent light and blower.
- Wipe down the interior surfaces of the enclosure with 70% Ethanol or a suitable cleaner. DO NOT use abrasive cleaners, bleach, or solvents, as they may damage the work surface of the safety enclosure.
- Allow the unit to operate unobstructed for 5–15 minutes.
- Wear appropriate protective clothing and equipment and use protective eyewear.

#### **Loading Materials and Equipment**

- Only load the materials required for the procedure. Do not overload the enclosure.
- Large objects should not be placed close together. Keep items at least 6 inches inside the airfoil for proper containment. Make sure that the sash is properly positioned before using.
- After loading the enclosure, wait 2-3 minutes to purge airborne contaminants from the work area.



# ***NORMAL OPERATION***

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## **Work Techniques**

- Keep all materials at least 6 inches inside the airfoil and perform all contaminated operations as far into the work area as possible.
- Segregate all clean and contaminated materials in the work area.
- Arrange materials to minimize the movement of contaminated materials into clean areas.
- Keep all discarded contaminated material to the rear of the work area.
- Avoid moving materials or the operator's hand and arms in and out of the work area during use.
- Avoid the use of an open flame, if possible.
- Use proper aseptic technique.
- Avoid using techniques or procedures that disrupt the airflow patterns of the enclosure.

## **Final Purging**

- Upon completion of work, the enclosure should be allowed to operate for 2-3 minutes undisturbed, to purge airborne contaminants from the work area.

## **Wipe-Down**

- Wipe down the interior surfaces of the enclosure with a proper disinfectant or cleaner, depending on the work performed in the enclosure, and allow to dry.

## **Shut Down**

- Turn off the fluorescent light and blower. Turn on the UV light, if applicable.

## **ROUTINE MAINTENANCE SCHEDULE**

Under normal operation, your Purifier Enclosure will require little routine maintenance. The following schedule is recommended:

### **Weekly**

- Wipe down the interior surfaces of the enclosure with a disinfectant or cleaner, depending upon the usage of the unit, and allow to dry.
- Using a damp cloth, clean the exterior surfaces of the unit, particularly the front and top to remove any accumulated dust.

### **Annually**

- Have the enclosure recertified by a qualified certification technician.
- Replace the UV lamp (on applicable models)

### **Biannually**

- Replace the fluorescent lamp as required.
- All annual activities.

## ***HEPA FILTERS***

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The HEPA filter in the Purifier Enclosure will gradually accumulate airborne particulate matter from the room. The rate of accumulation will depend upon the cleanliness of the room air, the amount of time the enclosure is operating, and the nature of work being done in the enclosure. In typical installations and usage, the HEPA filters will last two to five years before requiring replacement.

To determine if the HEPA filter should be replaced, a qualified certifier should adjust the speed control at its maximum setting. If the average inflow, as calculated in the 'Airflow Data Table' section of this manual is less than needed, the filter should be replaced.

The HEPA filter for the Series 37200 Enclosure is Labconco part #3707900, and measures 18" x 18" x 3-3/16".

The HEPA filter for the Series 37300 Enclosure is Labconco part #3707901, and measures 30" x 18" x 3-3/16".

## *RECERTIFICATION*

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Under normal operating conditions, the enclosure should be recertified at least annually if serviced. The certifier should perform the following tests.

- Inflow Velocity Test
- HEPA Filter Leak Test

In addition, the following tests should also be performed at the user's discretion:

- Electrical Leakage and Ground Circuit Resistance Test
- Measurement of Line Voltage and Current
- Smoke Test to determine proper airflow patterns
- Lighting Intensity Test (when appropriate)
- Noise Level Test (when appropriate)
- Vibration Test (when appropriate)

## DECONTAMINATION

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When used in conjunction with biohazards, the enclosure should be decontaminated with formaldehyde gas before:

- maintenance work in contaminated areas
- HEPA filter changes
- moving the cabinet to a new location
- changing research programs
- after a gross spill of biohazardous material

The procedures for performing a gaseous decontamination are thoroughly outlined in the U.S. Department of Health, Education and Welfare booklet entitled Formaldehyde Decontamination of Laminar Flow Biological Safety Cabinets, available from NIH, Division of Safety, Bethesda, MD 20892, call 301-496-2801, or from Labconco Corporation.

## Sash Adjustment

Rotate the sash to its up position by pulling the sash tabs or the lower edge of the sash away from the front of the unit, and holding it in an open position.

## Dress Panel Removal

1. Locate the front dress panel, just above the control panel. Remove the two screws located on the top of the panel. Remove the panel by pulling it slightly upward and out, as shown in Figure 8.

## Fluorescent Lamp Removal

1. Remove the front dress panel as described above.
2. Locate the control panel on the front of the cabinet, which has the filter indicator lights and switches. Remove the screws located on each lower end of the panel. Swing the panel upward for access to the fluorescent lamp as shown in Figure 8.
3. Remove the fluorescent lamp by rotating the lamp and pulling it straight out of its sockets.
4. Install the new lamp by reversing the removal procedure.

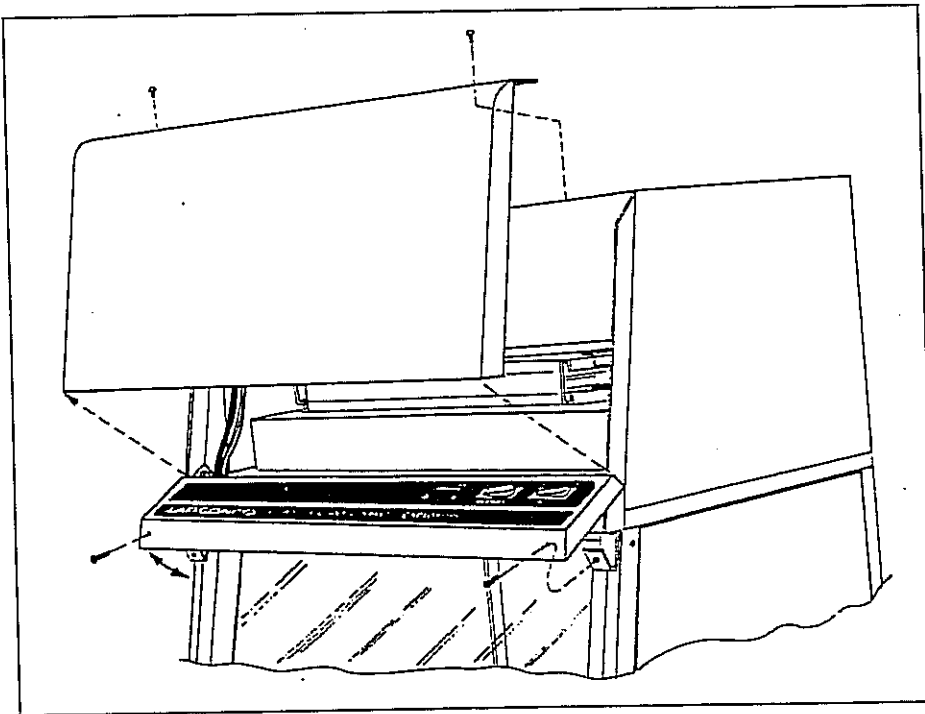


Figure 8

## ***CUSTOMER SERVICE OPERATIONS***

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### **Changing a Lamp Starter**

**NOTE:** Both the fluorescent and UV lighting systems utilize a starter (preheat) style lighting system. The starters for either system are interchangeable. If one lighting system works, and the other does not work, or operates erratically, try switching the starters. If the situation is eliminated or reversed, replace the defective starter.

**NOTE:** Two replacement starters have been included with the unit in the instruction manual package.

1. Unplug the cabinet.
2. Remove the front dress panel as described above.
3. The starters are located on the left side of the front panel, above the HEPA filter. Remove them from the module depressing and twisting them counterclockwise approximately 1/8 turn. Pull the starter straight out of the plug and replace with an FS-2 type starter only.
4. Reassemble the cabinet and plug it in.

### **Changing the UV Lamp**

**NOTE:** For optimum performance, the UV lamp should be changed on an annual basis. The UV lamp and the work area of the cabinet must be thoroughly disinfected before removing the lamp.

1. Unplug the cabinet.
2. Swing the sash from its lower position by rotating and holding the sash up.
3. Remove the UV lamp by rotating and pulling it straight out of its sockets.
4. Install the new lamp by reversing the removal procedure.

## Speed Control Adjustment

**NOTE:** The speed control should only be adjusted by a qualified certifier.

1. Remove the front dress panel as described in 'Customer Service Operations' section of this manual.
2. Adjust the speed control as required by turning the screw counterclockwise to increase blower speed, or clockwise, to decrease the blower speed.
3. Replace the front dress panel and re-establish the inflow air velocity.

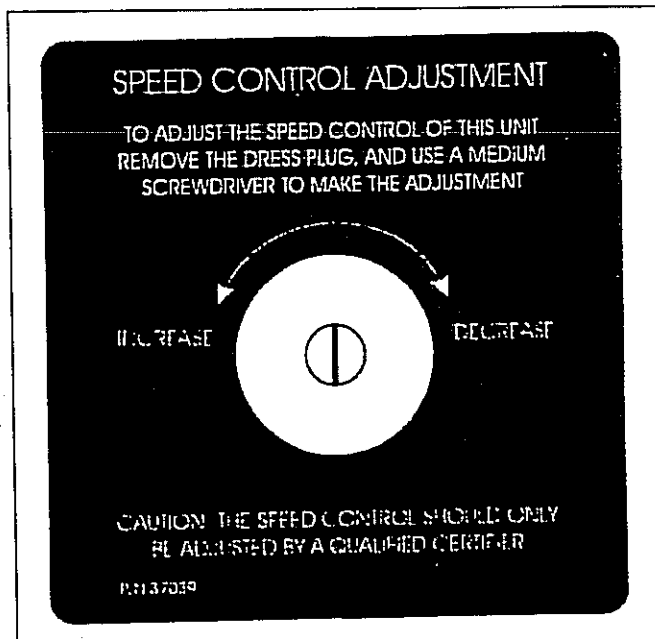


Figure 9

## Filter Indicator System Adjustment

To adjust the filter indicator light system, remove the front dress panel as described in 'Customer Service Operations' section of this manual, and follow the instructions on the decal located to the left of the lamp starters.



# ***CERTIFIER SERVICE PROCEDURES***

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## **HEPA Filter Replacement**

**NOTE:** The enclosure must be properly decontaminated before servicing the HEPA filter. The HEPA filter should be serviced only by a qualified certifier. After the HEPA filter is replaced, the unit **MUST** be certified.

1. Unplug the cabinet.
2. Remove the front dress panel as described in 'Customer Service Operations' section of this manual.
3. Remove the two access hole plugs on the top of the unit.
4. Using the 9/16" deep socket, loosen the filter clamp nuts located in the access holes. Refer to Figure 10 for further details.
5. With the clamp bolts loosened, the supply filter-clamping frame should be clear of filter. Carefully pull the filter straight out of the unit and discard properly.
6. With the filter removed, inspect the clamping frame and the frame of the cabinet for damage.
7. Cover the surface of the new HEPA filter gasket with a light coating of silicone grease, if desired.
8. Install the new HEPA filter by pushing it straight into the cabinet, ensuring that it is correctly oriented and the filter fits properly in the cabinet.

**CAUTION: The filter clamp nuts should only be tightened enough to ensure a proper seal at maximum tightness, the height of the filter spring should equal 1" (25 mm). NEVER tighten the clamp nuts beyond this setting. See Figure 10.**

9. Tighten the clamp nuts uniformly until the filter gasket is properly compressed against the cabinet frame. Inspect the seal thoroughly before proceeding.
10. Reinstall the front dress panel and the access hole plugs on the top of the unit.
11. Plug the cabinet in and have it recertified before use.

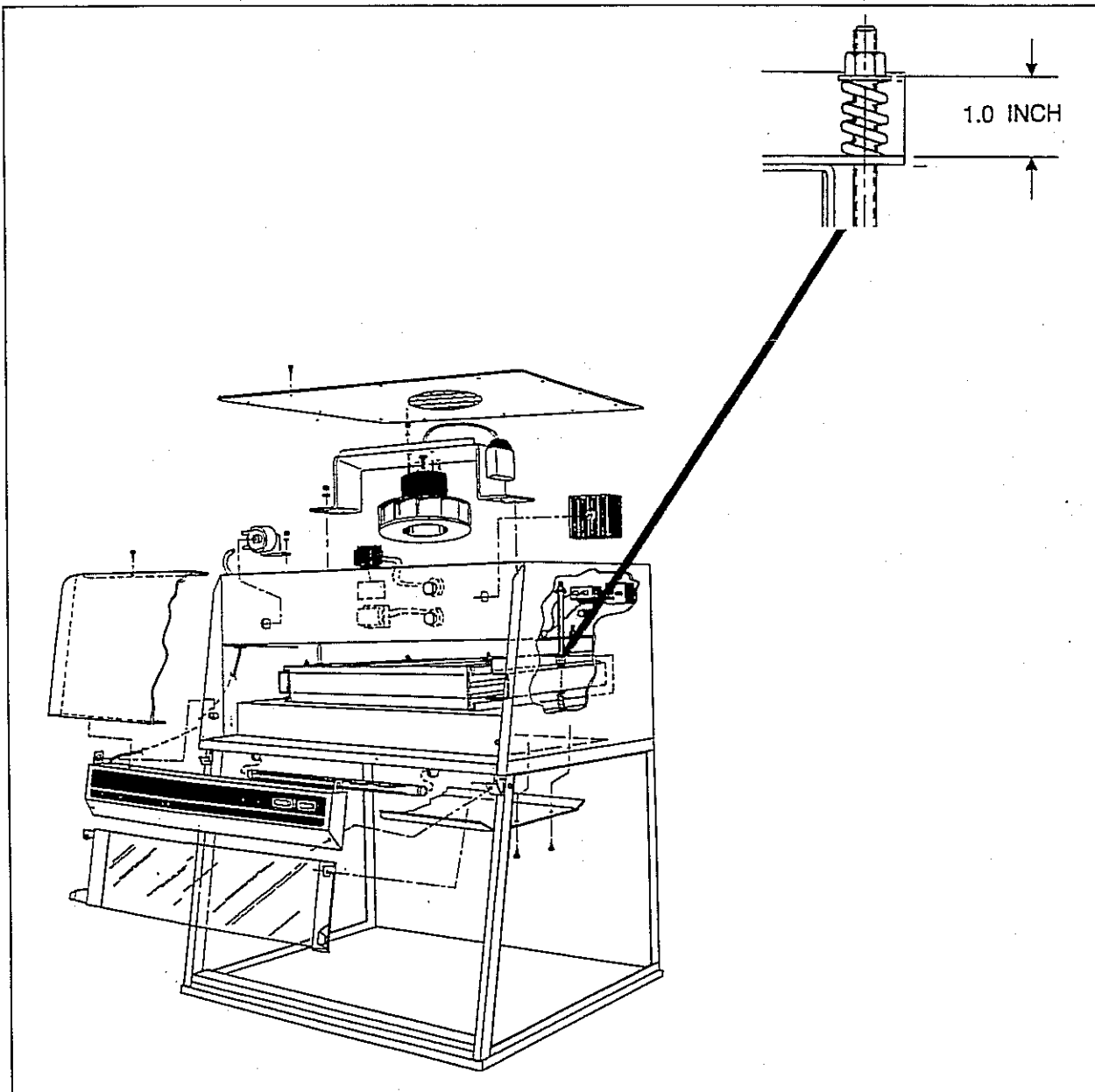


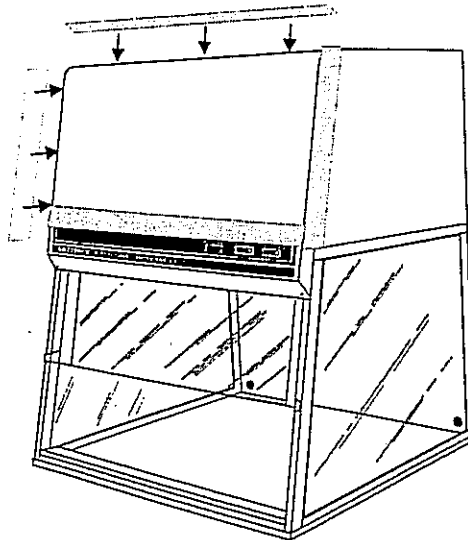
Figure 10

# ***CERTIFIER SERVICE PROCEDURES***

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## **HEPA Filter Leak Test Procedure**

1. To ensure dirty room air does not affect the HEPA Filter Leak Test and that the control panel and sash gaskets are sealing, take the following steps:
  - A. Turn on the enclosure and set the average inflow velocity as indicated in inflow velocity test procedure.
  - B. Tape closed all openings full length across top, front and sides of the front dress panel as shown below.
  - C. Turn the photometer on and calibrate it per the manufacturer's instructions. The upstream concentration of DOP will be approximately 42 ug/l for the 2-foot enclosure, and 28 ug/l for the 3-foot model. Use these values to establish the upstream value of 100%.
  - D. Place photometer pickup over the exhaust discharge and sample the concentration. The concentration must not exceed 0.005%.
  - E. If the unit fails, check the gasket between the control panel and the upper cabinet flange. Also, check gasket attached to underside of the upper cabinet for contact with the upper edge of the sash when it is in the closed position.
  - F. Use a Laskin nozzle-type aerosol generator. DO NOT use more than one nozzle. Operate the generator at 10 PSIG. The calculations listed above are based on the use of Di-octyl-Pthalate as an aerosol challenge. You may need to correct the values listed if you use an alternate fluid.
  - G. Place the generator discharge near the work access opening of the enclosure.
  - H. Start the generator. Ensure that only one nozzle is operating at 10 PSIG.
  - I. To establish the downstream concentration of aerosol, place the photometer pickup over the exhaust discharge, and sample the concentration at several locations.
  - J. The average concentration at each of the points must not exceed 0.005% of the upstream concentration.



**Figure 11**

### **Motorized Impeller Replacement**

The motorized impeller should be serviced by a qualified certifier. The motorized impeller is a non-serviceable component and must be replaced as a unit. When the motorized impeller is replaced, its capacitor should be replaced with a new one. Following replacement of the motorized impeller, the cabinet **MUST** be re-certified by a qualified certifier.

**NOTE:** Earlier versions of the Purifier were equipped with a five-wire motor. They are identified by having two brown wires (that are connected to the capacitor). Newer units are equipped with a four-wire motor, identified by having a single brown lead. Five-wire motors can be replaced by the four-wire motor, by ordering an impeller conversion kit. Contact Labconco's Technical Services department at 800-821-5525, 800-522-7658 or 816-333-8811 for further details.

1. Unplug the enclosure. Remove the front dress panel by removing all of the fasteners on the top as described in the 'Customer Service Operations section of this manual.
2. Disconnect the motor ground wire from the frame. Disconnect the wires connecting the motorized impeller to the wiring harness.
3. Using a small wrench, remove the four locknuts that secure the motor brace to the blower shelf. Remove the brace and motorized impeller as an assembly. Placing the assembly on a flat surface, remove the four screws that secure the motorized impeller to the brace. Disconnect the two wires from the motor to its capacitor, located on the side of the brace. Remove the motorized impeller from the brace.
4. Replace the capacitor with a new one of equal voltage and capacity.
5. Reassemble the unit by reversing the disassembly steps. Re-certify the enclosure.

## ***STORAGE***

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### **Storage**

If the Purifier is to be left unused for more than one month, the unit should be prepared for storage.

1. Surface disinfect or decontaminate the cabinet as required.
2. Unplug the unit.
3. Cover and seal the work area access opening and the exhaust outlet with plastic sheeting.
4. Ensure that the cabinet will not be moved or disturbed while in storage.

**NOTE: The cabinet should not be stored in excessive humidity or temperature extremes. If the cabinet is moved during storage it must be re-certified before use.**

## REPLACEMENT PARTS

Ref. No.	Qty.	Catalog No.	Description
1	1	1327204	Circuit Breaker, 5 Amp
2	2	1327200	Circuit Breaker, 3 Amp
3	1	3704400	Speed Control Assembly, 115 VAC
3A	1	3704401	Speed Control Assembly, 230 VAC
4	1	1302300	Switch - 2 position
4A	1	1302400	Switch - for UV Lamp
5	2	1271800	Starter - #FS-2
6	1	3708300	Lamp, 15 inch Fluorescent (FT8)
6A	1	1271700	Lamp, 30 inch Fluorescent (FT8)
7	1	3707900	HEPA Filter, 2 foot units
7A	1	3707901	HEPA Filter, 3 foot units
8	1	3708100	Impeller, 5 Wire, 2 foot units, 115 VAC
8A	1	3710400	Impeller, 5 Wire, 2 foot units, 230 VAC
8B	1	3713300	Impeller, 5 Wire, 3 foot units, 115 VAC
8C	1	3713400	Impeller, 5 Wire, 3 foot units, 230 VAC
8D	1	3718700	Impeller, 4 Wire, 2 foot units, 115 VAC
8E	1	3718800	Impeller, 4 Wire, 2 foot units, 230 VAC
8F	1	3717400	Impeller, 4 Wire, 3 foot units, 115 VAC
8G	1	3717500	Impeller, 4 Wire, 3 foot units, 230 VAC
9	1	1300800	Capacitor, 5 Wire, 2 foot units, 115 VAC
9A	1	1300400	Capacitor, 5 Wire, 2 foot units, 230 VAC
9B	1	1301200	Capacitor, 5 Wire, 3 foot units, 115 VAC
9C	1	1301600	Capacitor, 5 Wire, 3 foot units, 230 VAC
9D	1	1300400	Capacitor, 4 Wire, 2 foot units, 115 VAC
9E	1	1301200	Capacitor, 4 Wire, 2 foot units, 230 VAC
9F	1	1304600	Capacitor, 4 Wire, 3 foot units, 115 VAC
9G	1	1304600	Capacitor, 4 Wire, 3 foot units, 230 VAC
10	1	1270100	Lamp, 15 inch UV (FT9) (not shown)

# REPLACEMENT PARTS

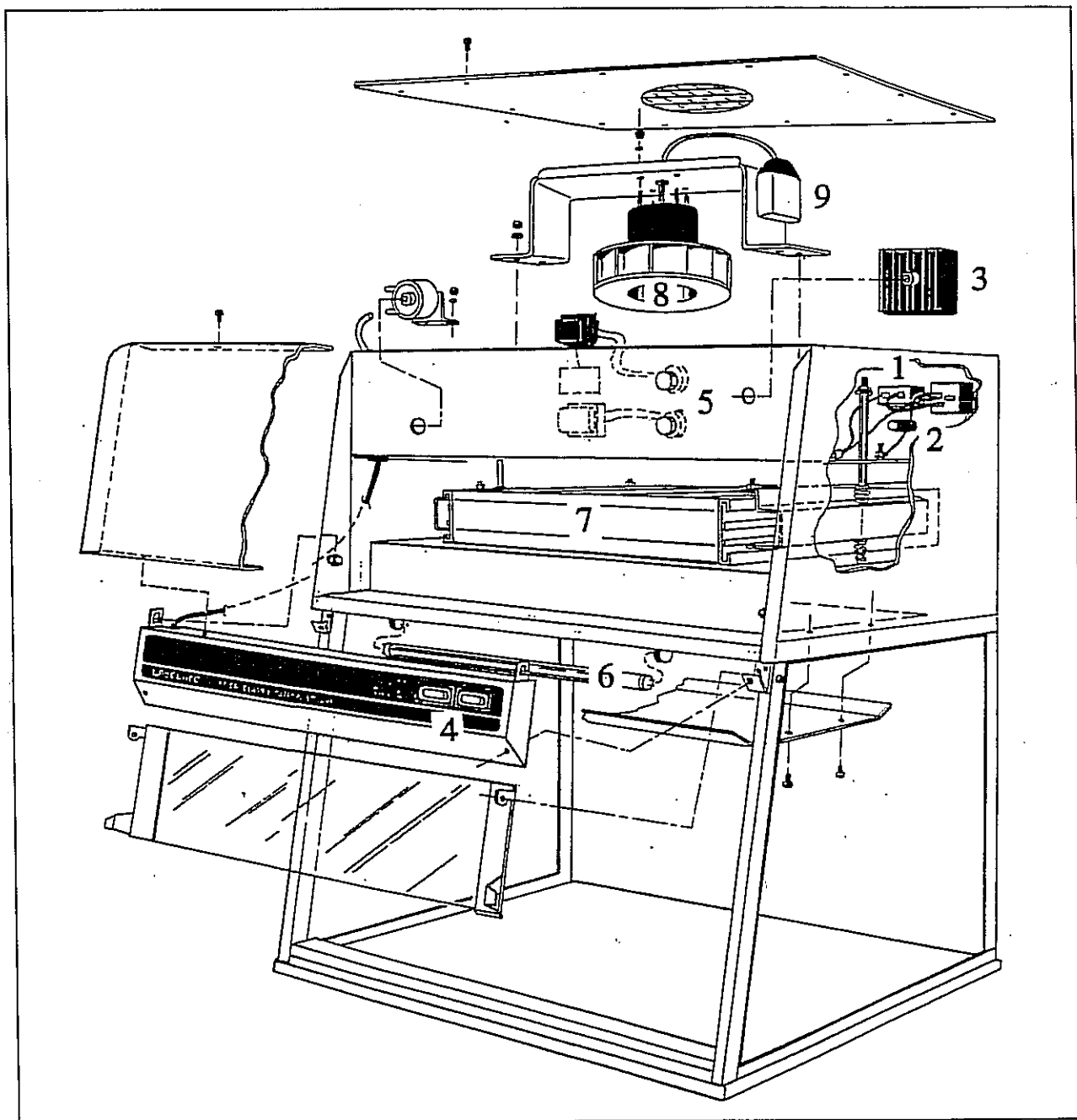


Figure 12

# CABINET DIMENSIONS

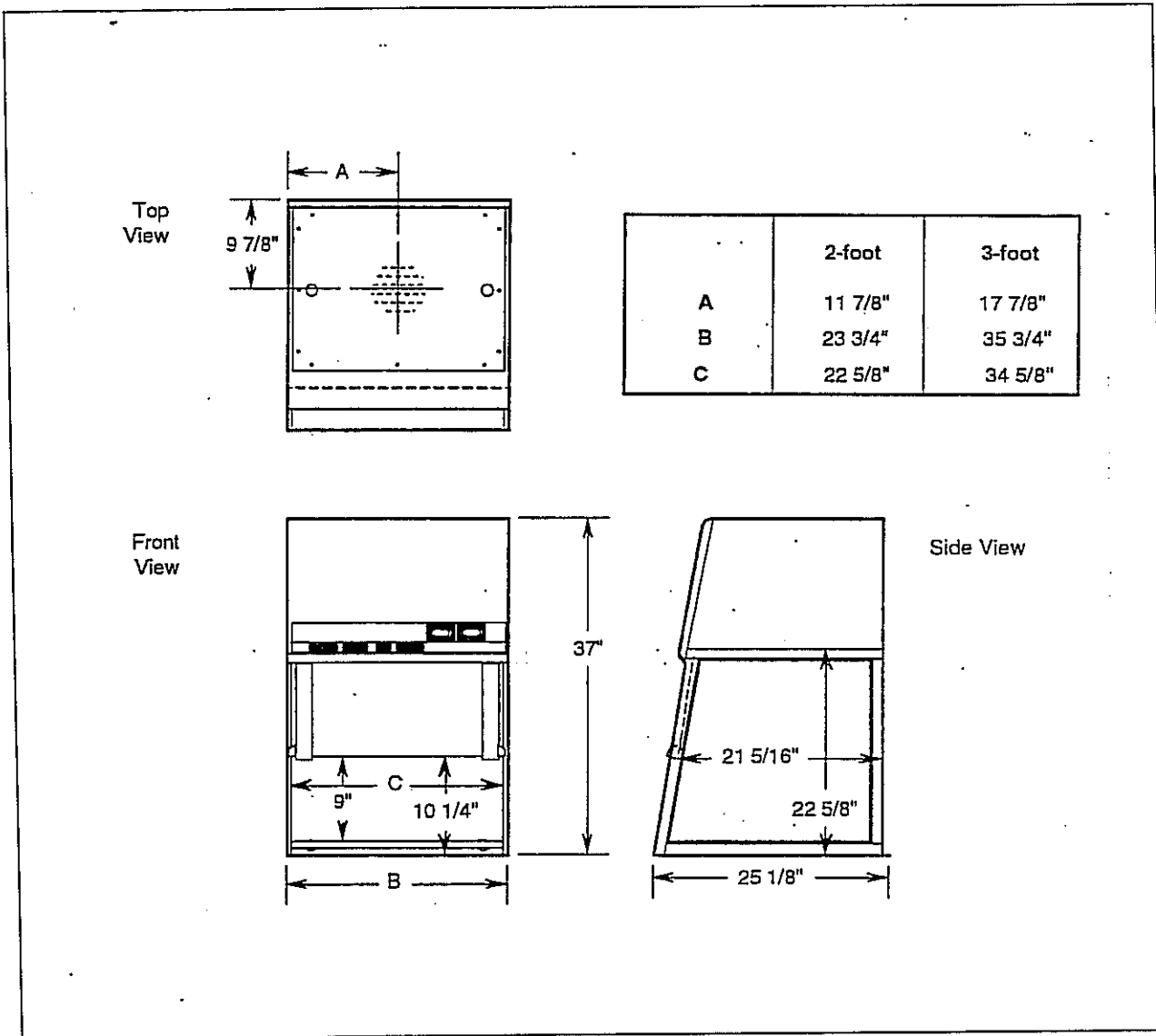


Figure 13



# ***ELECTRICAL DATA TABLE***

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<b>CABINET MODEL</b>	<b>ELECTRICAL REQUIREMENTS</b>
3720000, 3720001	115 VAC – 60 Hz 1 Phase – 2.5 Amp
3730000, 3730001	115 VAC – 60 Hz 1 Phase – 2.5 Amp
3720020, 3720021	230 VAC – 50 Hz 1 Phase – 1.5 Amp
3730020, 3730021	230 VAC – 50 Hz 1 Phase – 1.5 Amp

## **MOTOR SPECIFICATIONS**

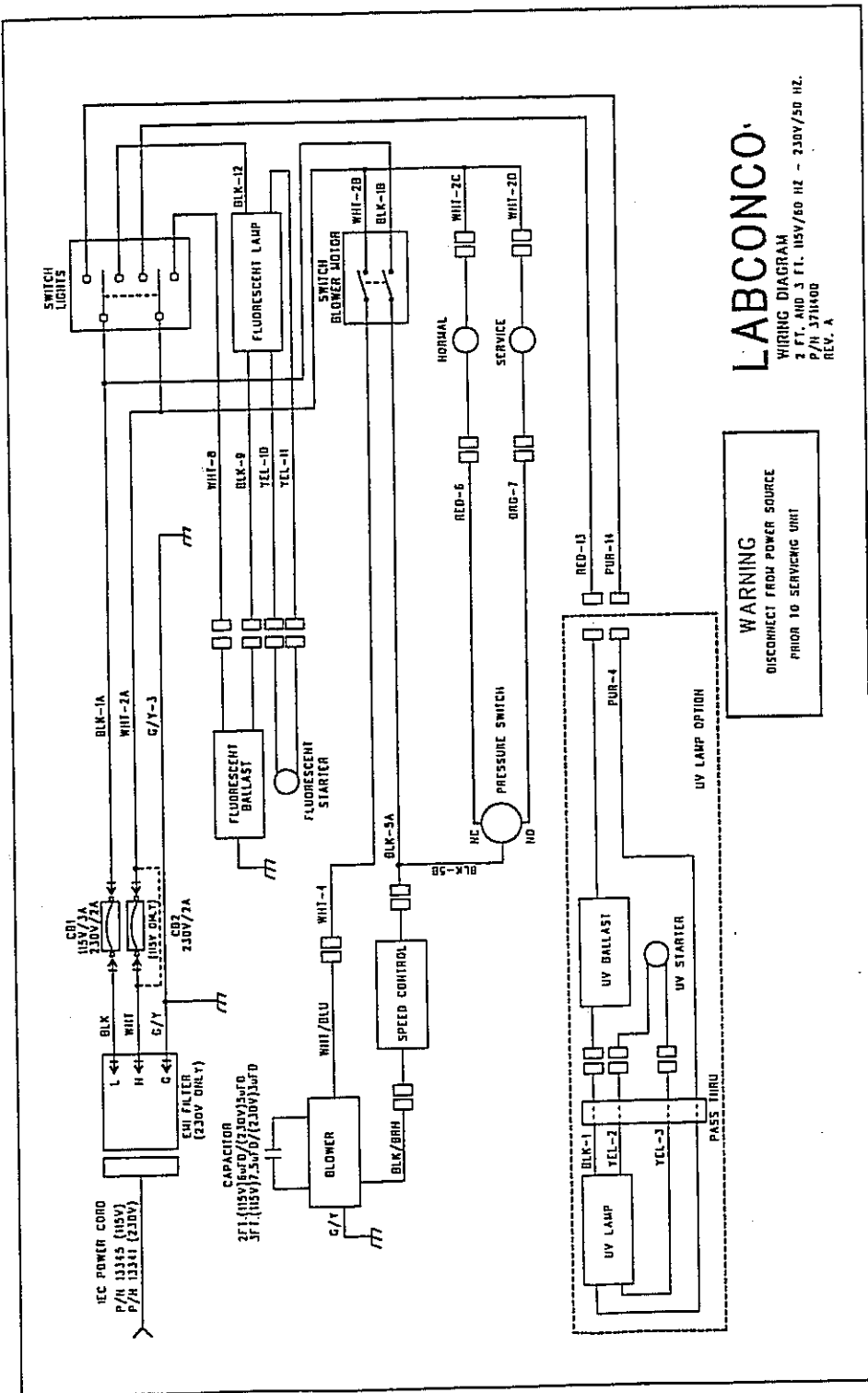
<b>MODELS 3720000, 3720001</b>	<b>3730000, 3730001</b>
115 VAC – 60 Hz .71 Full Load Amps 1625 RPM Automatic Thermal Protection	115 VAC – 60 Hz .82 Full Load Amps 1625 RPM Automatic Thermal Protection
<b>MODELS 3720020, 3720021</b>	<b>3730020, 3730021</b>
230 VAC – 50 Hz .35 Full Load Amps 1625 RPM Automatic Thermal Protection	230 VAC – 50 Hz .41 Full Load Amps 1625 RPM Automatic Thermal Protection

## **ENVIRONMENTAL CONDITIONS**

The Purifier Enclosure is designed to operate under the following conditions:

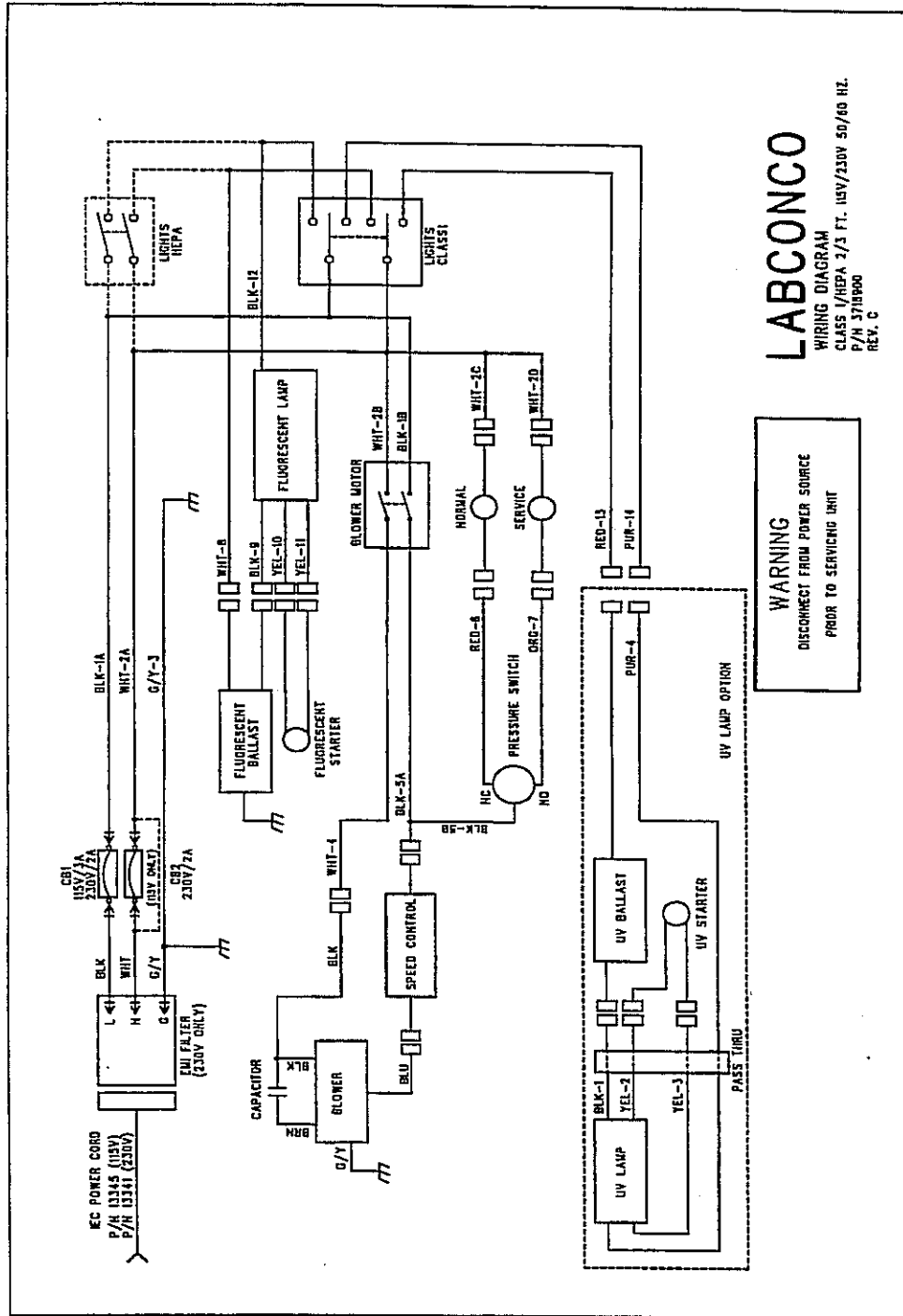
- indoor use
- altitude up to 2000 m
- temperature 5°C to 40°C
- maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C
- main supply voltage fluctuations not to exceed  $\pm 10\%$  of the nominal voltage
- transient overvoltages according to Installation Category II (overvoltage categories per IEC 1010)
- pollution degree 2 in accordance with IEC 464

## 5-Wire Motor Systems



# WIRING DIAGRAM

## 4-Wire Motor Systems

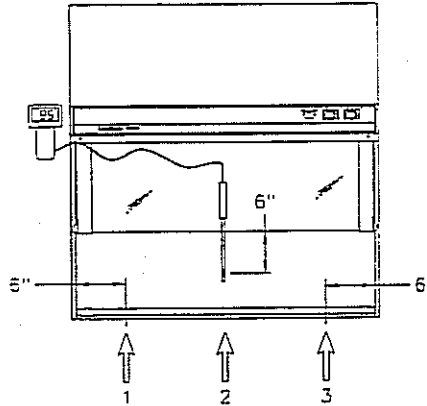


**Inflow Velocity Test Procedure**

**Primary Method as per ASHRAE Standard 110**

Inflow velocity can be determined by use of a thermal anemometer at the face of the work access opening by taking the following steps:

- A. If the meter has an adjustable time constant, set it at 10 to 15 seconds.
- B. Place the anemometer probe six inches down from the bottom edge of the sash opening and take one reading six inches from left side wall, one reading six inches from right side wall and one reading at center of sash. Each of these readings should be the average of five readings. See below for probe placement.



**Figure 14**

- C. Add the three readings together and divide by three to obtain the average inflow velocity.
- D. Multiply the average by the correction factor 0.88 to yield the corrected average inflow velocity.
- E. The factory inflow velocity setting is 90 FPM  $\pm$  10 FPM. The blower speed can be adjusted by turning the speed control located behind the front dress panel.

**Secondary Method**

The inflow velocity can be determined by the use of a Direct Read Velometer (DIM) sealed to the work access opening. The DIM establishes the volume of air being drawn into the enclosure in Cubic Feet per Minute (CFM). To establish the average inflow velocity, divide the average Inflow Volume (based on 10 sequential readings of the DIM) in CFM by the work access opening area in Square Feet to yield the average inflow velocity. It should fall between 80 and 100 FPM. Units are factory set at 90  $\pm$  10 FPM.

Unit Size	Work Access Opening Area	Inflow Volume @ 80 FPM avg.	Inflow Volume @ 90 FPM avg.	Inflow Volume @ 100 FPM avg.
2-foot	1.57 sq. ft.	126 CFM	141 CFM	157 CFM
3-foot	2.42 sq. ft.	194 CFM	218 CFM	242 CFM

## **TROUBLESHOOTING**

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<b><u>PROBLEM</u></b>	<b><u>CAUSES</u></b>	<b><u>CORRECTIVE ACTION</u></b>
<b>Cabinet blower and lights won't turn on</b>	Unit not plugged into outlet	Plug the Purifier into appropriate electrical service
	Circuit breaker(s) tripped	Reset circuit breaker(s)
<b>Motorized Impeller won't turn on but lights work</b>	Impeller wiring is disconnected	Inspect impeller wiring
	Impeller switch is defective	Replace impeller switch
	Motorized impeller is defective	Replace motorized impeller
<b>Cabinet impeller turns on but lights don't work</b>	Lamp not installed correctly	Inspect lamp installation
	Lamp wiring is disconnected	Inspect lamp wiring
	Defective lamp starters	Replace lamp starters
	Lamp is defective	Replace lamp
	Lamp switch is defective	Replace lamp switch
	Defective lamp ballast	Replace lamp ballast
<b>'Service' light is on</b>	Blockage of the exhaust grille	Check the exhaust grille on top of the unit to ensure they are not blocked or restricted.
	HEPA filter loading	The light will turn on when the filter is loaded

If you are having problems with the operation of your Purifier, call Labconco's Customer Service Department at 800-821-5525 or 816-333-8811.

**Collins, C. H.**, 1988. *Laboratory Acquired Infections, History, Incidence, Causes and Prevention*, 2<sup>nd</sup> ed., Butterworths, London.

**Kruse, R.H., W.H. Puckett and J. H. Richardson.** 1991. *Biological Safety Cabinetry*, Clin. Microbiol. Rev. 4:207-241.

**Miller, C. D., D.H.M. Gröschel, J. H. Richardson, D. Vesley, J. R. Songer, R.D. Housewright and W. E. Barkley.** 1986. *Laboratory Safety, Principles and Practices*, American Society for Microbiology, Washington, D. C.

**National Research Council (U.S.) Committee on Hazardous Biological Substances in the Laboratory.** 1989. *Biosafety in the Laboratory. Prudent Practices for Handling and Disposal of Infectious Materials*. National Academy Press, Washington, D.C.

**Rayburn, S.R.** 1990. *The Foundations of Laboratory Safety*, Springer-Verlag, New York.

**U. S. Department of Health, Education and Welfare.** *Formaldehyde Decontamination of Laminar Flow Biological Safety Cabinets*, National Institutes of Health, Division of Safety, Bethesda, MD 20892.

**U. S. Department of Health, Education and Welfare.** *Effective use of a Laminar Flow Biological Safe Cabinet*. National Audiovisual Center (GSA), Sales Branch, Catalog No., NAC 005133, Washington, D.C.

**U. S. Department of Health, Education and Welfare.** 1975. *Selecting a Biological Safety Cabinet*. National Audiovisual Center (GSA), Sales Branch, Catalog No. NAC 000709, Washington, D.C.

**U. S. Department of Health and Human Services.** 1999, *Biosafety in Microbiological and Biomedical Laboratories, 4th ed.* U. S. Department of Health and Human Services, Publication No. (CDC) 93-8395. U. S. Government Printing Office, Washington, D.C.



## WARRANTY

We are committed to providing our customers with quality equipment and service after the sale. Part of this objective involves keeping you informed of changes and new product additions. We, therefore, request that you take a moment to fill out the product registration card so we may know your location as well as some of the reasons that prompted you to purchase our product.

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.

The warranty for all Labconco products will expire one year from date of installation or two years from date of shipment from Labconco, whichever is sooner, except the following:

- Purifier® Delta® Series Biological Safety Cabinets carry a three-year warranty from date of installation or four years from date of shipment from Labconco, whichever is sooner.
- Carts carry a lifetime warranty.
- Glassware is not warranted from breakage when dropped or mishandled.

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. Damage due to corrosion or accidental breakage is also not covered.

**WARNING:** 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 urged 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.

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## SHIPPING CLAIMS

If a shipment is received in visibly damaged condition, be certain to make a notation on the delivering carrier's receipt and have their agent confirm the damage on your receipt. Otherwise, the damage claim may be refused.

If concealed damage or pilferage is discovered, notify the carrier immediately and retain the entire shipment intact for inspection. Interstate Commerce Commission rules require that the claim be filed with the carrier within 15 days after delivery.

**NOTE: Do not return goods.** Goods returned without prior authorization will not be accepted. Labconco Corporation and its dealers are not responsible for shipping damage. Claims must be filed directly with the freight carrier by the recipient. If authorization has been received to return this product, by accepting this approval, the user assumes all responsibility and liability for biological and chemical decontamination and cleansing. Labconco reserves the right to refuse delivery of any products, which do not appear to have been properly cleaned and/or decontaminated prior to return.



## ACCESSORIES

<u>ACCESSORY PART #</u>	<u>DESCRIPTION</u>
4862100	Work Surface – 2 Foot.
4863100	Work Surface – 3 Foot.
3715000	Exhaust Connection Kit, 2 foot. Allows for the connection of the Class I Cabinet to a hard-ducted exhaust system. Includes transition to 6 inch PVC duct.
3715001	Exhaust Connection Kit, 3 foot. Allows for the connection of the Class I Cabinet to a hard ducted exhaust system. Includes transition to 6 inch PVC duct.
3716000	Remote Blower with back draft damper, 115 VAC, 60 Hz.
3716001	Remote Blower with back draft damper, 230 VAC, 50 Hz.

## CONTACTING LABCONCO

If you have any questions that are not addressed in this manual, or if you need technical assistance, please contact Labconco's Sales Information Department at 1-800-821-5525, and Service Information at 1-800-522-7658 or 1-816-333-8811, between the hours of 7:00 a.m. and 6:00 p.m. Central Standard Time.

Labconco's mailing address is:

Labconco Corporation  
8811 Prospect Avenue  
Kansas City, Missouri 64132-2696

Fax # 816-363-0130

Visit Labconco through the Internet at:

<http://www.labconco.com>

or

email: [labconco@labconco.com](mailto:labconco@labconco.com)