Original Instructions

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User's Manual

Purifier® Horizontal Clean Benches

Models

38897 Series, 3'
38884 Series, 4'
32500 Series, 5'
38730 Series, 6'
38185 Series, 8'

To receive important product updates,
complete your product registration card
online at **register.labconco.com**

Please read the User's Manual before operating the equipment.

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Warranty

Labconco Corporation provides a warranty to the original buyer for the repair or replacement of parts and reasonable labor as a result of normal and proper use of the equipment with compatible chemicals. Broken glassware and maintenance items, such as filters, gaskets, light bulbs, finishes and lubrication are not warranted. Excluded from warranty are products with improper installation, erratic electrical or utility supply, unauthorized repair and products used with incompatible chemicals.

The warranty for Purifier® Horizontal Clean Benches will expire one year from date of installation or two years from date of shipment from Labconco, whichever is sooner. Warranty is non-transferable and only applies to the owner (organization) of record.

Buyer is exclusively responsible for the set-up, installation, verification, decontamination or calibration of equipment. This limited warranty covers parts and labor, but not transportation and insurance charges. If the failure is determined to be covered under this warranty, the dealer or Labconco Corporation will authorize repair or replacement of all defective parts to restore the unit to operation. Repairs may be completed by 3rd party service agents approved by Labconco Corporation. Labconco Corporation reserves the rights to limit this warranty based on a service agent's travel, working hours, the site's entry restrictions and unobstructed access to serviceable components of the product.

Under no circumstances shall Labconco Corporation be liable for indirect, consequential, or special damages of any kind. This warranty is exclusive and in lieu of all other warranties whether oral, or implied.

Returned or Damaged Goods

Do not return goods without the prior authorization from Labconco. Unauthorized returns will not be accepted. If your shipment 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.

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 7:30 a.m. and 5:30 p.m., Central Standard Time.

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CHAPTER 1
INTRODUCTION

Congratulations on your purchase of a Labconco Purifier® Clean Bench. Your Clean Bench is designed to protect your product from particulate matter contamination.

The Clean Bench offers many features to enhance safety, performance and ergonomics. To take full advantage of them, please acquaint yourself with this manual and keep it handy for future reference. If you are unfamiliar with how clean benches operate, please review *Chapter 4: Theory of Operation and Safety Precautions* before you begin working in the bench. Even if you are an experienced clean bench user, please review *Chapter 5: Using Your Clean Bench*; it describes your Clean Bench's features so that you can use it efficiently.

About This Manual

This manual is designed to help you learn how to install, use, and maintain your clean bench. Instructions for installing optional equipment on your bench are also included.

Chapter 1: Introduction provides a brief overview of the clean bench, explains the organization of the manual, and defines the typographical conventions used in the manual.

Chapter 2: Prerequisites explains what you need to do to prepare your site before you install your clean bench. Electrical and service requirements are discussed.

Chapter 3: Getting Started contains the information you need to properly unpack, inspect, install, and certify your clean bench.

Chapter 4: Theory Of Operation And Safety Precautions explains how the clean bench operates and the appropriate precautions you should take when using the bench.

Chapter 5: Using Your Clean Bench discusses the basic operation of your bench. Information on how to prepare, use and shut down your clean bench is included.

Chapter 6: Maintaining Your Clean Bench explains how to perform routine maintenance on your clean bench. Information on how to safely disinfect the interior of your bench and replace the lamps is included.

Chapter 7: Troubleshooting contains a table of problems you may encounter while using your clean bench including the probable causes of the problems and suggested corrective actions.

Appendix A: Clean Bench Components contains labeled diagrams of all of the components of the clean benches.

Appendix B: Clean Bench Dimensions contains comprehensive diagrams showing all of the dimensions for the 4, 6 and 8 foot models of the clean bench.

Appendix C: Clean Bench Specifications contains the electrical requirements for the clean bench. Wiring diagrams for both the 115V and 230V units are also included.

Appendix D: Clean Bench Accessories lists the part number and descriptions of all of the accessories available for your clean bench.

Appendix E: Quick Chart for the Purifier Clean Benches provides useful operating specifications.

Typographical Conventions

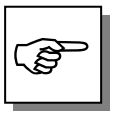
Recognizing the following typographical conventions will help you understand and use this manual:

- Book, chapter, and section titles are shown in italic type (e.g., *Chapter 3: Getting Started*).
- Steps required to perform a task are presented in a numbered format.
- Comments located in the margins provide suggestions, reminders, and references.

- Critical biosafety information is presented in boldface type in paragraphs that are preceded by the biosafety icon. Failure to comply with the information following a biosafety icon may result in illness or death.

- 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 your clean bench.

- Critical information is presented in boldface type in paragraphs that are preceded by the wrench icon. These operations should only be performed by a trained certifier or contractor. Failure to comply with the information following a wrench icon may result in injury to the user or permanent damage to your clean bench.



- 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.

CHAPTER 2
PREREQUISITES

Before you install your clean bench, you need to prepare your site for installation. Carefully examine the location where you intend to install your bench. You must be certain that the area is level and of solid construction. In addition, a dedicated source of electrical power must be located near the installation site.

Carefully read this chapter to learn:

- the location requirements for your installation site.
- the electrical power requirements for your installation site.
- the service line requirements for your installation site.
- the space requirements for your installation site.

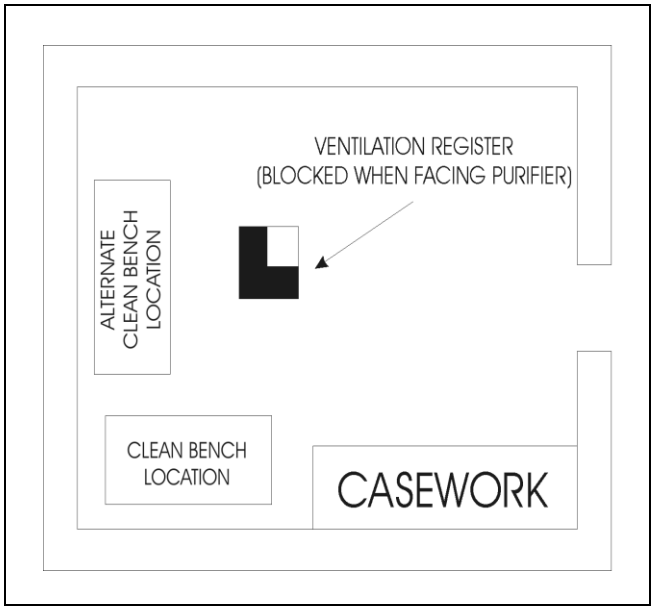
Refer to *Appendix C: Clean Bench Specifications* for complete clean bench electrical and environmental conditions, specifications and requirements.

Location Requirements

The Purifier Clean Bench should be located away from traffic patterns, doors, fans, ventilation registers, fume hoods and any other air-handling device that could disrupt its airflow patterns. All windows in the room should be closed. Figure 2-1 shows the optimum location for the bench.

L'hotte à flux laminaire Purifier doit etre située à l'écart de la circulation, des portes, des ventilateurs, des registres de ventilation, des sorbonnes et n'importe quel dispositif de traitement d'air qui peut interrompre le circuit du courant d'air. Toutes les fênetres de la chambre doit etre fermée. La figure 2-1 montre l'emplacement optimal pour l'hotte.

Figure 2-1



Electrical Requirements

The different Purifier Clean Bench models have the following electrical requirements:

Table 2-1

Model #	Requirements	Nominal Width
3889700, -01, -20, -21	115 VAC, 60 Hz, 7 Amps	3'
3889702 to -12 & -22 to -32	230 VAC, 50/60 Hz, 4 Amps	3'
3888400, -01, -20, -21	115 VAC, 60 Hz, 7 Amps	4'
3888402 to -12 & -22 to -32	230 VAC, 50/60 Hz, 4 Amps	4'
3250000, -01, -20, -21	115 VAC, 60 Hz, 10 Amps	5'
3250002 to -12 & -22 to -32	230 VAC, 50/60 Hz, 5 Amps	5'
3873000, -01, -20, -21	115 VAC, 60 Hz, 10 Amps	6'
3873002 to -12 & -22 to -32	230 VAC, 50/60 Hz, 5 Amps	6'
3818500, -01, -20, -21	115 VAC, 60 Hz, 16 Amps	8'
3818502 to -12 & -22 to -32	230 VAC, 50/60 Hz, 8 Amps	8'

All Purifier Clean Benches with model numbers ending in -00, -01, -20 & -21 are designed for operation at 115 volts, 60 Hz, alternating current. Clean Benches with model numbers ending in -02 through -12 & -22 through -32 are designed for operation at 230 +/- 20 volts, 50/60 Hz alternating current. A dedicated outlet with a circuit breaker rated at 20 amps should be located as close as possible to the right rear side of the bench, at a height even with, or higher than, the bottom of the bench in its final location. If your electrical outlet is distant from this location, contact Labconco's Product Service Department for information on longer cords.

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

Ne pas utliser un fil électrique amovible qui n'est pas du tension nominale de l'appareil.

Service Line Requirements

All service lines to the Clean Bench should be quarter inch outside diameter, metal, and equipped with an easily accessible shut-off valve should disconnection be required. If the service line pressure exceeds 40 PSI, it must be equipped with a pressure regulator to reduce the line pressure.

The use of flammable gases or solvents should be avoided in the clean bench. Open flames in the cabinet will disrupt the laminar airflow in the bench. If you feel that your procedure requires the use of an open flame or flammable materials, contact the appropriate safety official.

The use of air or gases under high pressure should be considered carefully as they may seriously disrupt the airflow patterns in the bench.

L'utilisation de gaz inflammables ou de solvants dans l'hotte doit être évitée. Les flammes nues interromprent le circuit du courant d'air laminaire dans l'hotte. Si vous estimez que votre procedure exige l'utilisation d'une flamme nue ou des matériaux inflammables, Prenez contact avec un officiel de sécurité competent.

Prenez en considération l'uilisation d'air ou de gaz sous haute pression car il peut interrompre gravement le circuit du courant d'air dans l'hotte.

Space Requirements

The dimensions for the different models are shown in *Appendix B: Clean Bench Dimensions*.

Overhead Clearance

In order for the clean bench to operate properly, there should be at least six inches (150 mm) of clearance from any overhead obstructions when the bench is in its final operating position.

CHAPTER 3
GETTING STARTED

Now that the site for your clean bench is properly prepared, you are ready to unpack, inspect, install, and certify your unit. Read this chapter to learn how to:

- unpack and move your bench.
- set up the bench.
- connect the electrical supply source.
- connect the service lines.
- arrange certification of your Purifier Horizontal Clean Bench.

Depending upon which model you are installing, you may need common plumbing and electrical installation tools in addition to two 1/2" wrenches, a 7/16" wrench, a flat-blade screwdriver, a Phillips screwdriver, a carpenter level to complete the instructions in the chapter.

The Purifier Clean Bench models weigh between 500 – 600 lbs. (182-318 kg). The carton allows for lifting with a mechanical lift truck or floor jack.

Les modèles de hotte à flux laminaire Purifier Clean Bench pèsent entre 500 à 600 lbs (182-318 kg). Le carton permet le levage avec un chariot élévateur á fourche.

Unpacking Your Clean Bench

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

Carefully unpack your Purifier Clean Bench and inspect it for damage that may have occurred in transit. If your unit 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 YOUR DEALER AND LABCONCO. UNAUTHORIZED RETURNS WILL NOT BE ACCEPTED.

IF YOUR BENCH 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.

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

Do not remove the clean bench from its shipping skid until it is ready to be placed into its final location. Move the unit by placing a flat, low dolly under the shipping skid, or by using a floor jack.

Do not move the bench by tilting it onto a hand truck.

Ne pas déplacer l'hotte au moyen de incliner sur un diable.

Clean Bench Components

Labconco manufactures stainless steel clean benches for operation on 115V or 230V. Each of these benches is available in 3, 4, 5, 6 and 8-foot models with work surface depths of 21" and 26".

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

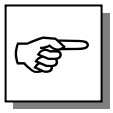
Catalog #	Description
3889700, -01, -20, -21	3' Purifier Horiz. Clean Bench, 115 VAC
3889702 to -12 & -22 to -32	3' Purifier Horiz. Clean Bench, 230 VAC
3888400, -01, -20, -21	4' Purifier Horiz. Clean Bench, 115 VAC
3888402 to -12 & -22 to -32	4' Purifier Horiz. Clean Bench, 230 VAC
3250000, -01, -20, -21	5' Purifier Horiz. Clean Bench, 115 VAC
3250002 to -12 & -22 to -32	5' Purifier Horiz. Clean Bench, 230 VAC
3873000, -01, -20, -21	6' Purifier Horiz. Clean Bench, 115 VAC
3873002 to -12 & -22 to -32	6' Purifier Horiz. Clean Bench, 230 VAC
3818500, -01, -20, -21	8' Purifier Horiz. Clean Bench, 115 VAC
3818502 to -12 & -22 to -32	8' Purifier Horiz. Clean Bench, 230 VAC

Plus the Following:

Part #	Component Description
3876800	User's Manual
1337100	Power Cord, 115V
	Or (*one of the following*)
1338000	Power Cord, 230V United States
1332600	Power Cord, 230V United Kingdom
1336100	Power Cord, 230V Schuko
1332700	Power Cord, 230V China/Australia

If you did not receive one or more of the components listed for your clean bench, or if any of the components are damaged, contact the Labconco Product Service Department immediately for further instructions @ 1-800-821-5525.

Removing the Shipping Skid



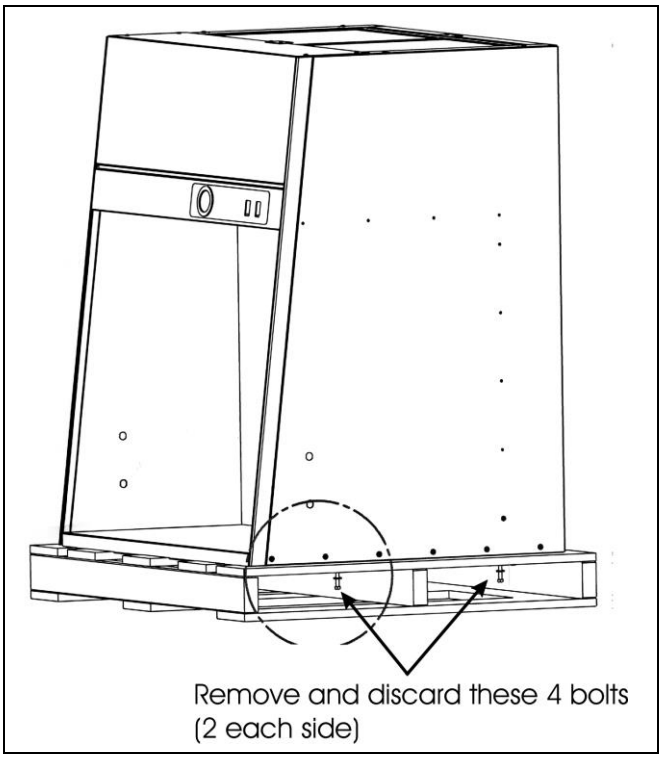
LEAVE THE CLEAN BENCH ATTACHED TO ITS SHIPPING SKID UNTIL IT IS AS CLOSE TO ITS FINAL LOCATION AS POSSIBLE. MOVE THE UNIT BY USING A SUITABLE FLOOR JACK, OR BY PLACING A FURNITURE DOLLY UNDERNEATH THE SKID. DO NOT MOVE THE BENCH BY TILTING IT ONTO A HAND TRUCK.

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

To remove the shipping skid:

1. Remove the plastic wrapping and corner posts. Remove the packaging material from the top of the bench.
2. Remove and discard the four bolts that secure the unit to the skid, as shown in Figure 3-1.

Figure 3-1



Installing the Purifier Clean Bench On An Existing Work Surface

The clean bench is very top heavy! Use caution when lifting or moving the unit.

L'hotte est très lourde du haut! Soulever ou déplacer l'appareil avec précaution.

When installing the clean bench onto an existing work surface or benchtop, ensure that the structure can safely support the combined weight of the bench and any related equipment. The work surface should be level and at least as wide as the unit and 34 inches deep to properly support the unit.

Installing the Purifier Clean Bench on a Labconco Base Stand

Labconco offers a variety of accessory base stands in a number of different configurations to suit your particular needs. Stands can be ordered with preset telescoping legs, or with a manually or electrically adjustable variable height stand.

Telescoping Base Stands

These stands are available with either fixed feet or caster wheels. The user sets the height of these stands before installation of the Clean Bench. The height can be set at 27.5 to 34.5 inches in 1-inch intervals, giving a work surface height of 28.75 to 35.75 inches. The Base Stands for each Clean Bench model are listed in Table 3-1 below.

Table 3-1

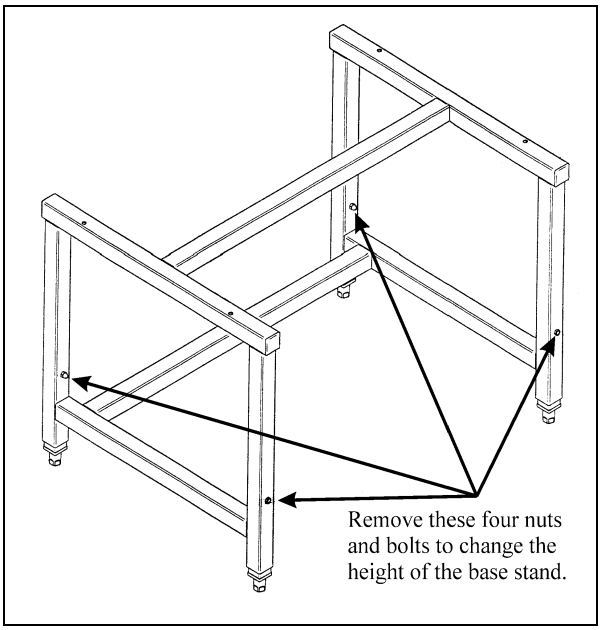
Width	Clean Bench Model #	Base Stand w/Feet Model #	Base Stand w/wheels Model #
3'	38897	3613200	3613201
4'	38884	3888700	3888701
5'	32500	3255000	3255001
6'	38730	3857700	3857701
8'	38185	3857300	3857301

For further information regarding Telescoping Base Stands or other accessories, please contact Labconco's Customer Service Department at 1-800-821-5525 or 816-333-8811 weekdays, between the hours of 7:00 a.m. and 6:00 p.m. CST.

1. Before positioning the Telescoping Base Stand in its final location, decide the final height of the stand. The height of the work surface can be raised in one-inch increments from 28.75 to 34.75 inches.

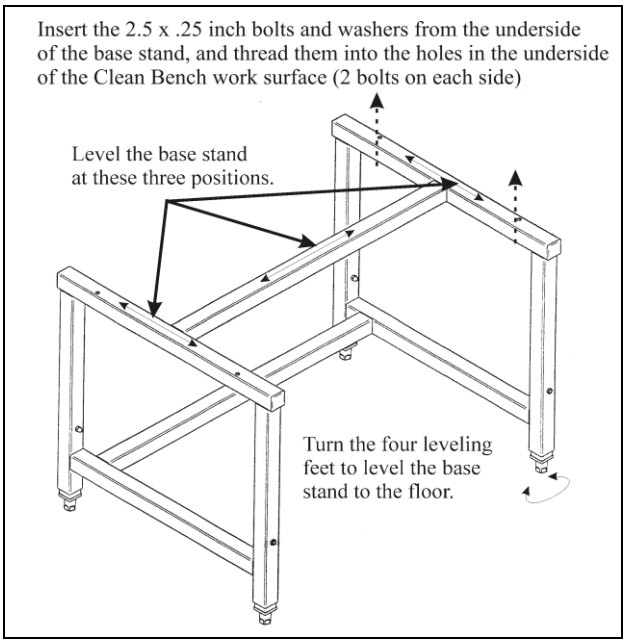
2. Select the height of the Telescoping Base Stand and slide four (4) leg extensions into base stand corner posts and attach with 2.25" long bolt, flatwasher, lockwasher and nut. Ensure that the same height hole is selected for each leg. Tighten the leg bolts securely. See Figure 3-2.

Figure 3-2



3. Move the base stand into its final location. Using a carpenter's level, adjust each leveling foot until the stand is level in both planes as shown in Figure 3-3. You are now ready to lift the clean bench onto its stand.

Figure 3-3



The clean bench is very top heavy! Use caution when lifting or moving it.

L'hotte est très lourde du haut! Soulever ou déplacer avec précaution.

4. Carefully lift the clean bench onto the top rails of the base stand and slide it into position. The rear of the bench should be flush with the rear of the base stand and the sides of the clean bench will overhang the side rails of the base stand approximately 0.25 inches on both sides.
5. Insert the 2.5 inch x 0.25 inch mounting bolts through the hole in the underside of the base stand and secure it with a flatwasher and lockwasher.
6. Repeat steps 5 and 6 for the remaining bolts.
7. Tighten all four bolts securely.

Initial Certification

Prior to use, all Purifier Clean Benches should be certified by a qualified certifier. Under normal operating conditions, the Purifier Clean Bench should be recertified at least annually and when moved or serviced. The certifier should perform the following tests, as recommended in Institute of Environmental Sciences and Technology, IEST RP-CC0002.2:

- Airflow Velocity Test
- HEPA Filter Leak Test
- Introduction Leak Test/Backstreaming (when appropriate)
- Airborne Particle Count (when appropriate)
- Lighting Intensity Test (when appropriate)
- Noise Level Test (when appropriate)
- Vibration Test (when appropriate)

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 airflow patterns

If you have any questions regarding certification agencies or need assistance in locating one, contact Labconco's Product Service Department at 1-800-522-7658 or 816-333-8811.

CHAPTER 4
THEORY OF OPERATION AND SAFETY PRECAUTIONS

All clean benches operate using the following principles:

- Filtration and retention of particulates by High Efficiency Particulate Air (HEPA) filter(s)
- Laminar airflow

The major components in a clean bench are:

- The HEPA filter
- The motor/blower to force air through the unit
- A speed control for the motor

HEPA Filters

HEPA filters are disposable, dry-type particulate filters. The filter material or media is typically made of borosilicate microfibers that are made into a thin sheet, in a process similar to the production of paper. This sheet is folded, or pleated to increase its surface area. The pleats are held in place by aluminum diffusers or by beads of glue that add rigidity to the media pack. The media pack is then set into a suitable frame, and the perimeter sealed to the filter frame, as shown in Figure 4-1.

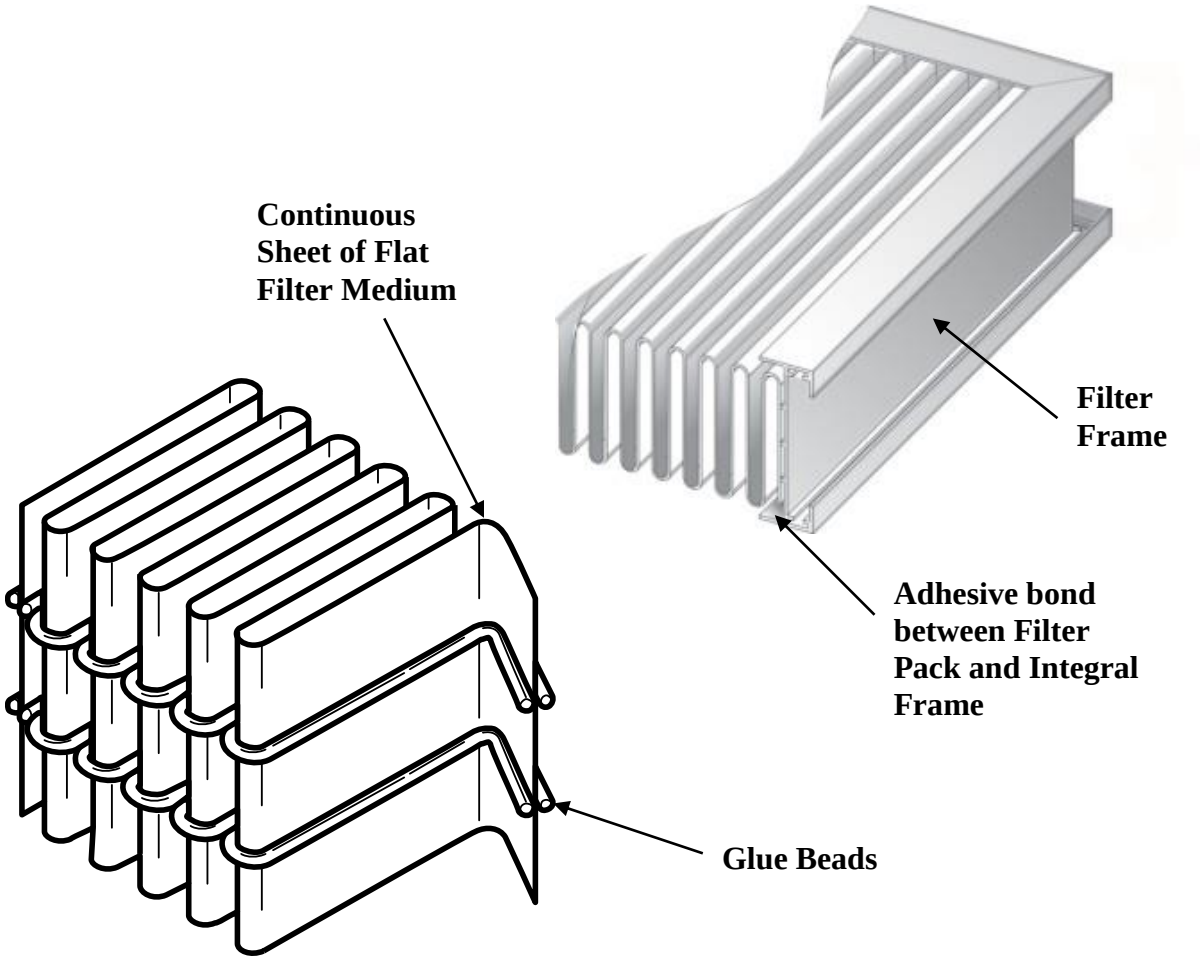
The HEPA filter media is very fragile. Do not touch or contact the media surface. If you think the surface of a HEPA filter is damaged, DO NOT USE THE BENCH. Have the HEPA filter integrity tested by a qualified certifier before using the cabinet.

HEPA Filters are only effective against particulate material. Gases will pass through the filter.

Le matériel du filtre HEPA est très fragile. Ne pas toucher ou être en contact avec la surface du matériel. Si vous pensez que la surface d'un filter HEPA est endommagé, NE PAS UTILISER L'HOTTE. Faire tester l'intégrité du filter HEPA par un certificateur qualifié avant d'utiliser l'hotte.

Filtres HPA ne sont efficaces que contre les matières particulaires. Le gaz passe à travers du filtre.

Figure 4-1

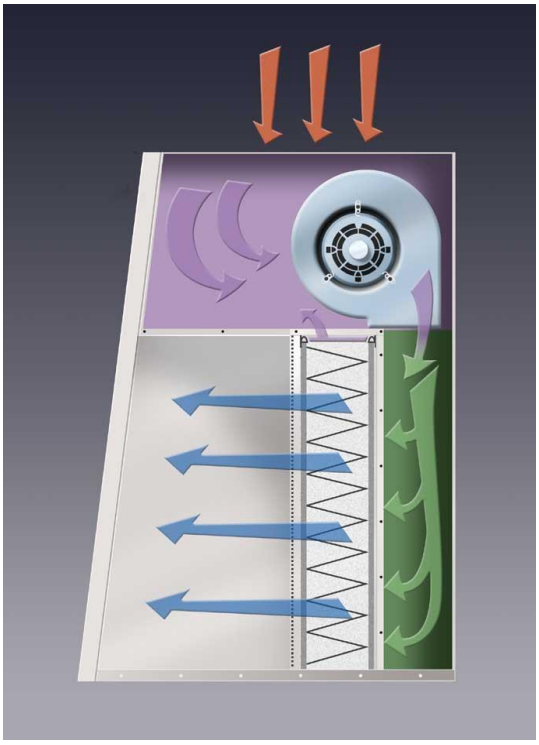


Note - The HEPA Filters in the Purifier Horizontal Clean Bench are separatorless filters that utilize a series of glue beads to hold the filter medium in place.

Laminar Airflow

Laminar airflow is defined as the movement of a body of air in a single direction, with a uniform velocity. In practice, the horizontal laminar flow of sterile air in the clean bench flushes out any aerosol generated in the work area of the bench. This sterile airflow maintains the sterility of sterile items inside the clean bench. Laminar airflow is shown graphically in Figure 4-2.

Figure 4-2



Motor/Blower

The motor/blower assembly pulls air through the prefilters on the top of the bench, and flows through the HEPA filter, which then flows horizontally through the work area.

Speed Control

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

Le contrôle de la vitesse doit être réglée uniquement par un certificateur qualifié.

The speed control is an electronic circuit that allows the certifier to set the motor speed by adjusting its voltage.

Never block or obstruct the air intake on the top of the clean bench.

Ne jamais bloquer l'entrée d'air au dessus de l'hotte.

Safety Precautions

Because air from the work area is dispersed directly into the laboratory, the Purifier Clean Bench should never be used in conjunction with biohazardous material, toxins, or radionuclides. The operator and qualified safety officer(s) must carefully assess the risk associated with any operation performed in a Clean Bench.

Étant donné que l'air de la zone de travail est dispersée directement dans le laboratoire, l'hotte à flux laminaire Purifier ne doit jamais être utilisé conjointment avec des matières infectieuses, des toxins ou des radionucléides. L'opérateur et l'oficiel de sécurité competent doivent soigneusement évaluer le risque associé à tous les opérations effectuées dans un hotte à flux laminaire.

The Purifier Clean Bench should be certified by a qualified certification technician before its initial use. The clean bench should be recertified whenever it is relocated, serviced, or at least annually thereafter.

Some components of the Purifier Clean Bench 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 clean bench from electrical service.

Le Purifier Clean Bench doit être certifié par un technician de certification qualifié avant la première utilization. L'hotte doit être certifié à nouveau chaque fois qu'il est déplacé, reparé ou au moins une fois par an par la suite.

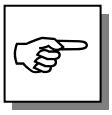
Certains composants de la Purifier Clean Bench ne doit être réparé que par un technician de certification qualifié. Assurez-vous que l'appareil est connecté à un service électrique qui est en conformité avec les règlements de sécurité locaux et nationaux. Non-respect des règlements peut causer un incendie ou autre danger électrique. Ne pas enlever ou réparer des compasants électriques sans débrancher l'hotte du service électrique.

Avoid the use of flammable gases or solvents in the clean bench. An open flame should NOT be used in the clean bench. Open flames may disrupt the airflow patterns in the Clean Bench. Gases under high pressure should not be used in the Purifier Clean Bench, as they may disrupt the airflow patterns.

The surface of the HEPA filter 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 the HEPA filter has been damaged, DO NOT use the clean bench; contact a local certification agency or Labconco at 800-821-5525 for recertification information.

Évitez l'utilisation de gaz inflammables ou de solvants pour nettoyer l'hotte. Une flamme nue ne doit PAS être utilisé dans l'hotte. Flammes nues peuvent interrompre le circuit du courant d'air dams l'hotte. Gaz sous haute pression ne doit pas être utilisé dans l'hotte, car il peut interrompre le ciruit du courant d'air dans l'hotte.

La surface du filtre HEPA est fragile et ne doit pas être touchée. Faites attention de ne pas percer le filtre HEPA lors de l'installtion ou le fonctionnement normal. Si vous pensez que le filtre HEPA a été endommagé. NE PAS utiliser l'hotte, prenez contact avec une agence de certification locale ou avec Labconco à 800-821-5525 pour de plus amples informations sur la recertification.



THE HEPA FILTER IN THE PURIFIER CLEAN BENCH 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 CLEAN BENCH IS OPERATING AND THE NATURE OF WORK BEING DONE IN THE CLEAN BENCH. IN TYPICAL INSTALLATIONS AND USAGE, THE HEPA FILTERS WILL LAST TWO TO FIVE YEARS BEFORE REQUIRING REPLACEMENT.

PROPER OPERATION OF THE CLEAN BENCH DEPENDS LARGELY UPON THE CLEAN BENCH'S LOCATION AND THE OPERATOR'S WORK HABITS. CONSULT THE *Installation* AND *Normal Operation* SECTIONS OF THIS MANUAL FOR FURTHER DETAILS.

WIPE THE INTERIOR SURFACES OF THE CLEAN BENCH WITH STAINLESS STEEL CLEANER OR 70% ETHANOL. DO NOT USE ABRASIVE CLEANERS, BLEACH OR SOLVENTS, AS THEY MAY DAMAGE THE WORK SURFACE.

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.

CHAPTER 5
USING YOUR CLEAN BENCH

Starting the Clean Bench

To start the Clean Bench, push the blower switch to the "ON" position, as shown in Figure 5-1.

Operating the Fluorescent Light

To turn on the fluorescent light, push the light switch to the "ON" position, as shown in Figure 5-1.

Figure 5-1

Reading the Pressure Gauge

The pressure gauge on the front of the unit displays the total system operating pressure (the negative pressure below the prefilters, plus the positive pressure on the HEPA filter). The pressure gauge reading should be periodically recorded during use. An increase in pressure from the original pressure reading indicates either prefilter or HEPA filter loading.

Use of the Clean Bench

Planning

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

Start-Up

- Turn on fluorescent light and clean bench blower.
- Check the prefilter for obstructions and note the gauge reading.
- Wipe down the interior surfaces of the clean bench with stainless steel cleaner or 70% ethanol. DO NOT use abrasive cleaners, bleach or solvents, as they may damage the work surface of the clean bench.
- Allow the clean bench to operate undisturbed for 5 to 15 minutes before loading materials.
- Wear long sleeved lab coat with knit cuffs and over-the-cuff rubber gloves. Use protective eyewear.

Loading Materials and Equipment

- Only load the materials required for the procedure. Do not overload the clean bench.
- Do not obstruct the air diffuser.
- Large objects should not be placed close together.
- After loading the clean bench, wait 2 to 3 minutes to purge airborne contaminants from the work area.

Work Techniques

- Keep all materials at least 4 inches inside of the clean bench and perform all contaminated operations as far to the front of the work area as possible.
- Perform sterile operations as far to the rear of 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 front of the clean bench.
- Avoid moving materials or the operator's hands and arms in and out of the work area during use.

- Avoid the use of an open flame.
- Use proper aseptic technique. – "Sterile Air First"
- Avoid using techniques or procedures that disrupt the airflow patterns of the clean bench.

Final Purging

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

Wipe-Down

- Wipe down the interior surfaces of the clean bench with stainless steel cleaner or 70% ethanol and allow to dry.

Shutdown

- Turn off the fluorescent light and clean bench blower.

Operating the UV Light

To activate the ultraviolet light, the following steps must be taken:

1. Turn the blower switch to the "Off" position, as shown in Figure 5-1.
2. Lower the UV Shade to the worksurface.
3. Select the desired length of time by pressing the Timer Button repeatedly until the appropriate value is selected. Selecting the Infinity "∞" value will activate the UV light until you manually deactivate it.
4. Set the Light Switch to the "UV" position, as shown in Figure 5-1.

U.V. Light is restricted by interlock. Blower Switch must be in off position for U.V. Light operation. Avoid direct exposure of eyes and skin to ultraviolet light.

La lumière ultrviolette est interdit par verrouillage. L'interrupteur du ventilateur doit être dans la position d'arrête pour le fonctionnement de la lampe. Evitez toute exposition directe aux yeux et à la peau de la lumière ultraviolette.

CHAPTER 6
MAINTAINING YOUR CLEAN BENCH

Now that you have an understanding of how to work in the clean bench, we will review the suggested maintenance schedule and the common service operations necessary to maintain your clean bench for peak performance.

Many of the service operations should be performed only by trained and experienced certification technicians. DO NOT attempt to perform these operations if you are not properly trained. The service operations that require qualified certifiers are preceded by the wrench icon.

La plupart des operations d'entretien doivent être effectués uniquement par des techniciens de certification qualifiés et expérimentés. NE PAS tenter effectuer ces operations si vous n'êtes pas bien formés. Les operations de service qui exigent des certificateurs qualifies sont précédés par l'icône de la clé.

Routine Maintenance Schedule

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

Weekly

- Wipe down the interior surfaces of the clean bench with stainless steel cleaner or 70% ethanol and allow to dry.
- Using a damp cloth, clean the exterior surfaces of the clean bench, particularly the front and top of the clean bench to remove any accumulated dust.

Monthly (or more often as required)

- Check all service valves, if so equipped, for proper operation.
- Check the prefilters and replace if necessary. The prefilters should be replaced at least quarterly.
- All weekly activities.

Quarterly

- Replace the prefilter. See *Appendix A: Clean Bench Components* for ordering information.
- All monthly activities.

Annually

- Have the clean bench recertified by a qualified certification technician.
- All quarterly activities.

Biannually

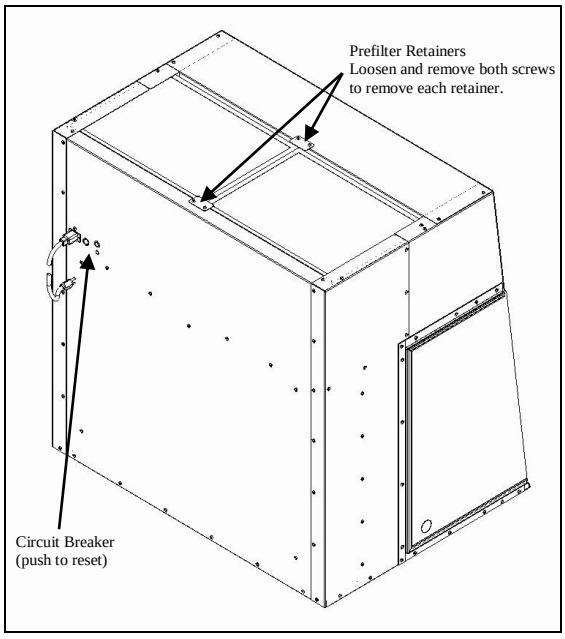
- Replace the fluorescent lamp (and optional UV lamp) if required.
- All annual activities.

Service Operations

Resetting the Circuit Breaker:

1. The circuit breaker is located next to the power cord on the upper rear panel of the bench as shown in Figure 6-1. If the circuit breaker trips, it can be reset by pressing the white button in.

Figure 6-1



Changing the Prefilter:

The prefilter should be replaced at least quarterly, or more often as conditions require. See *Appendix A: Clean Bench Components* for replacement prefilter ordering information.

1. Make sure the clean bench is off.
2. Using a Phillips screwdriver, remove the prefilter retainer(s) located on the front edge of the prefilters, as shown on Figure 6-1.
3. Remove the center prefilter by lifting the front edge straight up and forward.
4. Remove the side prefilters by sliding them towards the center of the bench, then lifting the front edges straight up and forward.
5. Install new prefilters by reversing the above steps.

Do NOT contact blower wheel while still in motion.

NE PAS être en contact avec la roué du ventilateur tant qu'il est en marche.

Changing the Fluorescent Lamp:

1. Unplug the Purifier Clean Bench.
2. Remove the prefilters as described earlier in this chapter.
3. Remove the front dress panel by removing the four screws located on the top front corners of the panel, and then lifting the panel up and forward.
4. Remove the lamp reflector by gently squeezing the reflector to compress it and then lift the reflector straight up.
5. Remove the lamp by rotating it out of its sockets and pulling it straight up.
6. Make sure that the surface of the new lamp is clean and free of dirt or fingerprints, by cleaning its surface with alcohol or glass cleaner.
7. Install the new lamp by reversing the above steps.

Hg

THE LAMP(S) IN THIS PRODUCT CONTAIN MERCURY

Manage in accordance with local disposal laws. DO NOT place lamps in trash. Dispose as a hazardous waste. For information regarding safe handling, recycling and disposal, consult www.lamprecycle.org

CETTE LAMPE DANS CE PRODUIT CONTIENT DU MERCUE

Éliminez ou recyclez conformément aux lois applicables. Pour de l'information concernant des pratiques de manipulation sécuritaires et l'élimination sécuritaire et le recyclage, veuillez consulter www.lamprecycle.org

Changing the UV Lamp (if option is installed):

1. Unplug the Purifier Clean Bench.
2. Access to the UV Lamp is from within the Clean Bench work area, the bulb is located on the roof of the cabinet in the work area.
3. *(On 3 & 4 Foot models)* Remove the UV Lamp by rotating it out of its sockets and pulling it down.
3. *(On 6 & 8 Foot models)* Remove the UV Lamp by sliding the bulb axially toward the side of the unit and then pull down.
4. Make sure that the surface of the new UV Lamp is clean and free of dirt or fingerprints, by cleaning its surface with alcohol or glass cleaner.
5. Install the new UV Lamp by reversing the above steps.

The service operations listed in the rest of this chapter should only be performed by a qualified certifier.

Les operations de service listées dans le reste de ce chapitre ne doit être effectuée que par un certificateur qualifié.

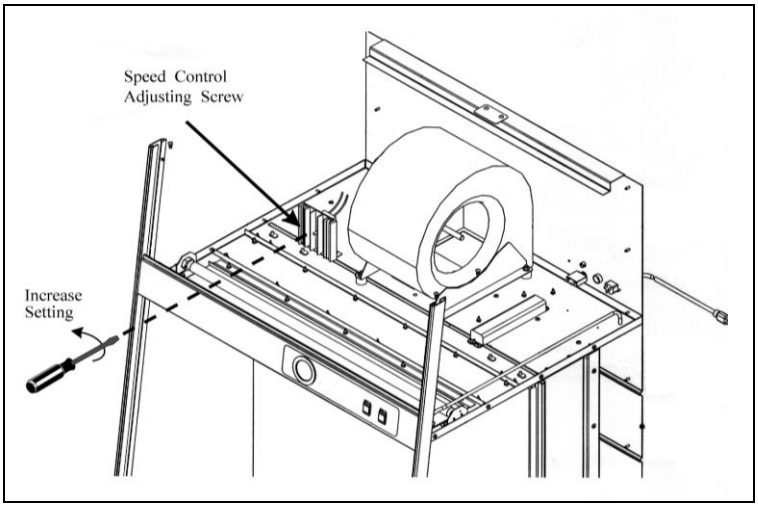
Speed Control Adjustment:

Adjusting the speed control will have an effect on the air velocities and the effectiveness of the clean bench. Only a qualified certification technician, as part of the recertification process, should adjust the speed control.

Do NOT contact blower wheel while still in motion.
NE PAS être en contact avec la roué du ventilateur tant qu'il est en marche.

1. Remove the prefilters as described on page 24.
2. Locate the speed control. It is to the left of the blower on 3-foot and 4-foot models, and between the blowers on the 5-foot, 6-foot & 8-foot models.
3. Using a medium-sized, straight blade screwdriver turn the speed control screw clockwise to decrease the blower speed as shown in Figure 6-2.

Figure 6-2

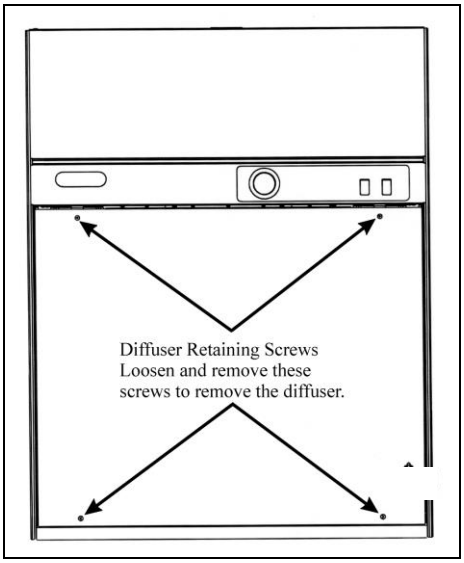


4. After completing the speed control adjustment, establish the average air velocity, using a calibrated thermal anemometer with an accuracy of ± 3%. Establishing a boundary of 6.5 inches from the sides, 3.0" from top and bottom, measure the velocities in 12-inch increments, 6 inches in front of the diffuser. This methodology is more fully defined in the IEST recommended practice #IEST-RP-CC0002.2
5. The average velocity should be 90 ± 10 FPM.
6. Reinstall the prefilters.

Diffuser Removal:

1. Locate and remove the diffuser screws, shown in Figure 6-3. Pull the diffuser straight out.

Figure 6-3



HEPA Filter Replacement:

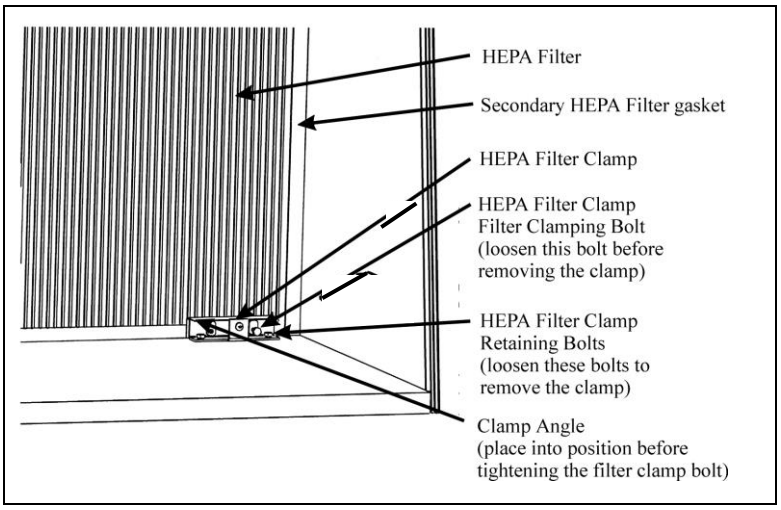
The HEPA filter should only be serviced by a qualified certification technician. Following replacement of the HEPA filter, a qualified certification technician MUST recertify the clean bench.

1. Unplug the clean bench.
2. Remove the diffuser as described above.
3. Loosen and remove the filter clamps.

THE TOP AND BOTTOM FILTER CLAMPS ARE DIFFERENT ASSEMBLIES. THE BOTTOM CLAMP ASSEMBLIES ARE DARK IN COLOR, WHILE THE UPPER CLAMPS ARE LIGHTER.

4. Gently pull out the Secondary HEPA filter gasket on the top and both sides of the HEPA filter as shown in Figure 6-4. Save the gasket for reinstallation. Remove the stainless steel clamp angle placed between the clamps and the frame of the HEPA filter.

Figure 6-4



5. Remove the filter by pulling it straight out of the Purifier.
6. Install the new filter by placing the filter back into the clean bench. Make sure that the HEPA filter is centered side-to-side in the Purifier. Reinstall the stainless steel plates on the HEPA filter frame.
7. Install the secondary HEPA filter seal, ensuring that the seal is in place completely around the sides and top of the filter frame.
8. Install the HEPA filter clamps, with the darker colored clamps on the bottom of the filter, and the lighter colored clamps on the top. Tighten the clamp bolt until the filter gasket is compressed approximately 50% or 1/8 of an inch. Plug the clean bench back in.
9. Test the filter for leakage as described in IEST recommended practice #IEST-RP-CC0002.2.
10. Reinstall the diffuser.
11. Establish the average velocity of the filter. It should be 90 ± 10 FPM, with all values falling within ± 20% of the average.

Motor/Blower Service:

THE MOTOR BEARINGS ARE PERMANENTLY LUBRICATED AND SEALED. NO FURTHER LUBRICATION IS NEEDED.

Motor/Blower Replacement:

A QUALIFIED CERTIFICATION TECHNICIAN SHOULD SERVICE THE MOTOR/BLOWER. FOLLOWING REPLACEMENT OF A MOTOR/BLOWER, A QUALIFIED CERTIFICATION TECHNICIAN MUST RECERTIFY THE CLEAN BENCH.

Do NOT contact blower wheel while still in motion.
NE PAS être en contact avec la roué du ventilateur tant qu'il est en marche.

1. Unplug the clean bench.
2. Remove the prefilters, as described earlier.
3. Using a Phillips screwdriver, remove the front dress panel by removing the four screws that secure it on the top of the unit.
4. Disconnect the motor wires from the wiring harness and disconnect the ground wire.

The motor/blower assembly is heavy. Lift & handle with care.
L'ensemble moteur/ventilateur est lourd. Soulever et manipuler avec precaution.

5. Using a 7/16 inch wrench, remove the four nuts that secure the blower to its isolation mounts.
6. To replace the motor, reverse the above steps.
7. Recertify the unit before use.

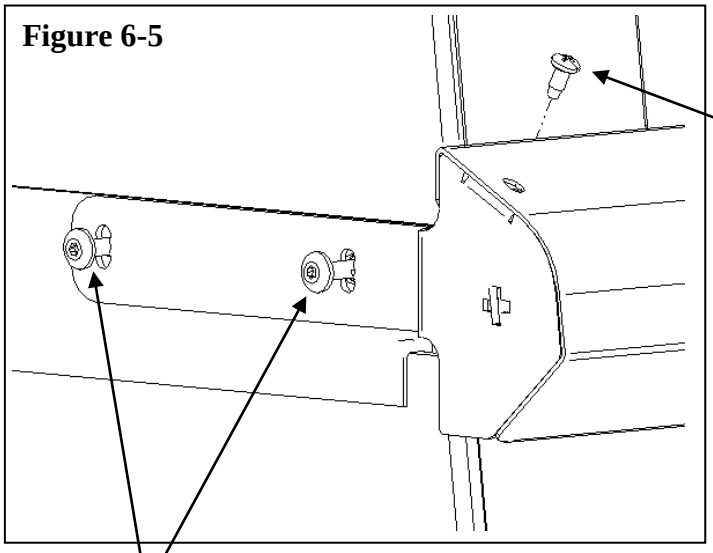
Adjusting the UV Shade Height:

Should the need arise to adjust the level of the UV Shade to ensure proper contact with the UV Lockout Sensor at the far right end of the Worksurface, perform the following steps as necessary.

1. Unplug the clean bench.
2. Larger adjustments in the height that the UV Shade will stop at a particular ratchet point can be made by removing the Shade Cover and pulling the UV Shade out of its support brackets, and then rotate the metal tab on the end of the shade one ratchet click and reassemble. CAREFUL! Tab is under pressure
3. Check shade height and repeat if necessary.
4. The metal tab on the end of the shade can also be inserted into the horizontal or vertical slot in the support bracket to provide increased variability in shade closing height as necessary.

5. A finer adjustment can be made to the shade closing height by backing the two torx head (T20) screws out one or two turns on each of the UV Shade support brackets, in order to allow the support brackets to slide up or down one hole notch on the brackets. The UV Shade Cover does not need to be removed for this adjustment.

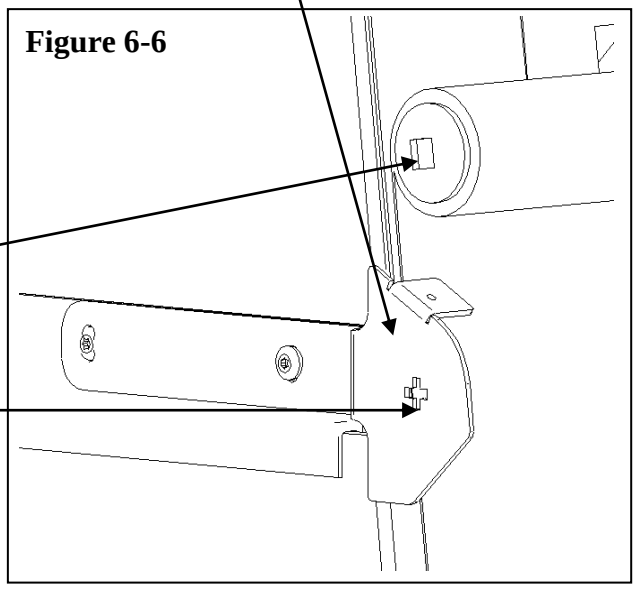
Figure 6-5



To remove UV Shade Cover, remove this screw (and same screw on opposite end)

Loosen but do NOT remove these 2 screws (and same 2 screws on opposite bracket) for fine adjustment

Figure 6-6



Bend bracket away from UV Shade slightly to pull tab out of slot

Rotate Tab with pliers one ratchet click up or down, if necessary

Crossed slots allow Tab to be inserted in any of the 90 degree positions for additional adjustment

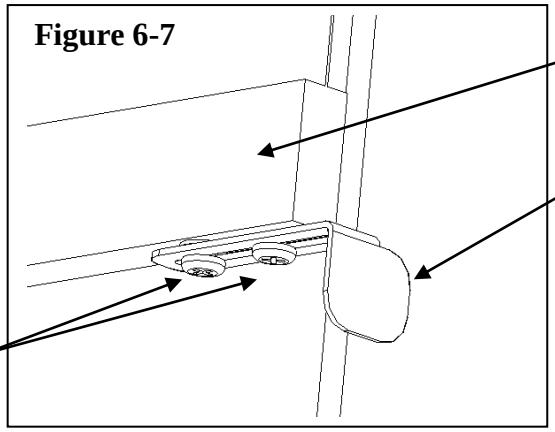
Adjusting the UV Shade Sensor Bracket:

Should the need arise to adjust the position of the Sensor Bracket on the UV Shade handle to ensure proper contact with the UV Lockout Sensor at the far right end of the Worksurface, perform the following steps as necessary.

1. Lower the UV Shade to the normal closed height, where the UV Shade Handle is resting at the Stainless Steel Worksurface.

2. Look to see how far away from the UV Lockout Sensor the Sensor Bracket is, it should be approximately ¼" (6 mm) or closer to the white, round, Lockout Sensor in the Stainless Steel Worksurface.
3. Turn on the UV Light as described in Chapter 5, Section **Operating the UV Light**. If the UV Light does not come on, or is on intermittently, slide the Sensor Bracket towards the Lockout Sensor by loosening the two screws (shown below in Figure 6-7), moving the Bracket, and then retightening the two screws when the Bracket is in a position that allows the UV Light to remain on constantly with the UV Shade sitting in a normally closed position. Note - Do NOT over tighten the two screws holding the Sensor Bracket onto the UV Shade Handle.

Figure 6-7



Storage

IF THE CLEAN BENCH IS TO BE LEFT UNUSED FOR MORE THAN ONE MONTH THE UNIT SHOULD BE PREPARED FOR STORAGE.

1. Unplug the clean bench.
2. Cover and seal the prefilter and the work area opening with plastic sheeting.

The clean bench should not be stored in areas of excess humidity or temperature extremes. If the clean bench is moved during storage, it should be recertified before use.

L'hotte ne doit pas être entreposés dans des zones de l'excès d'humidité ou de températures extrêmes. Si l'hotte est déplacée pendant le stockage, il doit être certifié de nouveu avant l'utilisation.

CHAPTER 7
TROUBLESHOOTING

Refer to the following table if your Purifier Clean Bench 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
Blower and lights won't turn on	Unit not plugged into outlet	Plug the clean bench into appropriate electrical service.
	Circuit breakers tripped	Reset circuit breakers.
Lights work but motor won't run	Speed control out of adjustment	Have speed control adjusted by a qualified certifier.
	Defective speed control	Replace speed control.
	Defective motor	Replace motor.
Pressure gauge reading increases (more than 0.1 in.)	Blockage of the prefilter or diffuser	Ensure that both the prefilter and diffuser are clear.
	HEPA filter loading	The gauge reading will increase when the HEPA filter is plugged.
Contamination of work in the clean bench	Improper technique or procedure for the clean bench	See *"Use of the Clean Bench"* section of this manual.

PROBLEM	CAUSE	CORRECTIVE ACTION
Contamination of work in the clean bench (cont.)	External factors are disrupting the clean bench airflow patterns or acting as a source of contamination	See *"Installation"* section of this manual.
	Clean bench is out of adjustment/HEPA filter(s) are defective	Have clean bench recertified.
Excessive vibration	Motor/blower out of adjustment Application requires equipment isolation	Accessory vibration table.

APPENDIX A
CLEAN BENCH COMPONENTS

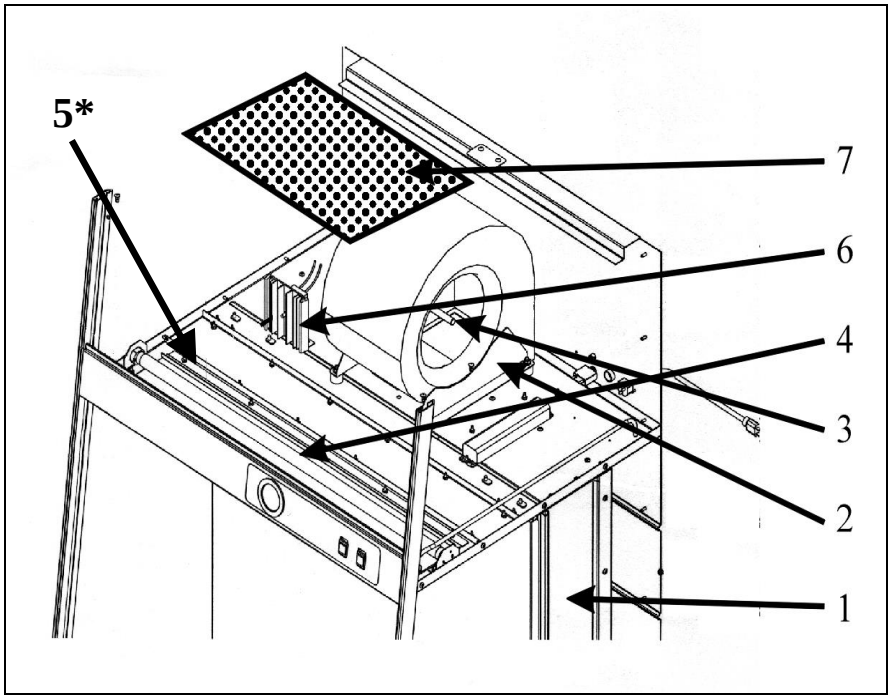
Illustration A-1 indicates the location of the following service parts:

Purifier Horizontal Clean Bench Replacement Parts

Item	Quantity	Part No.	Description
1	1	1489003	HEPA Filter 3-foot
1A	1	1489005	HEPA Filter 4-foot
1B	1	1489006	HEPA Filter 5-foot
1C	1	1489004	HEPA Filter 6-foot
1D	2	1489005	HEPA Filter 8-foot
2	1	3765800	Motor/Blower Assembly, 115 VAC 3-foot
2A	1	3765801	Motor/Blower Assembly, 115 VAC 4-foot
2B	2	3765802	Motor/Blower Assembly, 115 VAC 5 & 6-foot
2C	2	3765801	Motor/Blower Assembly, 115 VAC 8-foot
2D	1	3765900	Motor/Blower Assembly, 230 VAC 3-foot
2E	1	3765901	Motor/Blower Assembly, 230 VAC 4-foot
2F	2	3765901	Motor/Blower Assembly, 230 VAC 5, 6 & 8-foot
3	1	1211200	Motor, 115 VAC 3-foot
3A	1	1210501	Motor, 115 VAC 4-foot
3B	2	1211200	Motor, 115 VAC 5 & 6-foot
3C	2	1210501	Motor, 115 VAC 8-foot
3D	1	1210502	Motor, 230 VAC 3- and 4-foot
3E	2	1210502	Motor, 230 VAC 5, 6 & 8-foot
4	1	9721901	Lamp, Fluorescent, 3-foot
4A	1	9721900	Lamp, Fluorescent, 4-foot & 5-foot
4B	1	1278400	Lamp, Fluorescent, 6-foot
4C	2	9721900	Lamp, Fluorescent, 8-foot
5*	1	1271300	Lamp, UV (3 , 4 & 5-foot)
5A*	1	1231900	Lamp, UV (6 & 8-foot)
6	1	3704400	Speed Control, 115V
6A	1	3704401	Speed Control, 230V
7	2	3768900	Prefilter, 3-foot
7A	2	3768901	Prefilter, 4-foot
7B	3	3768901	Prefilter, 6-foot
7C	4	3768901	Prefilter, 8-foot
7D	2	3768900	Prefilter, 5-foot
	1	3768901	

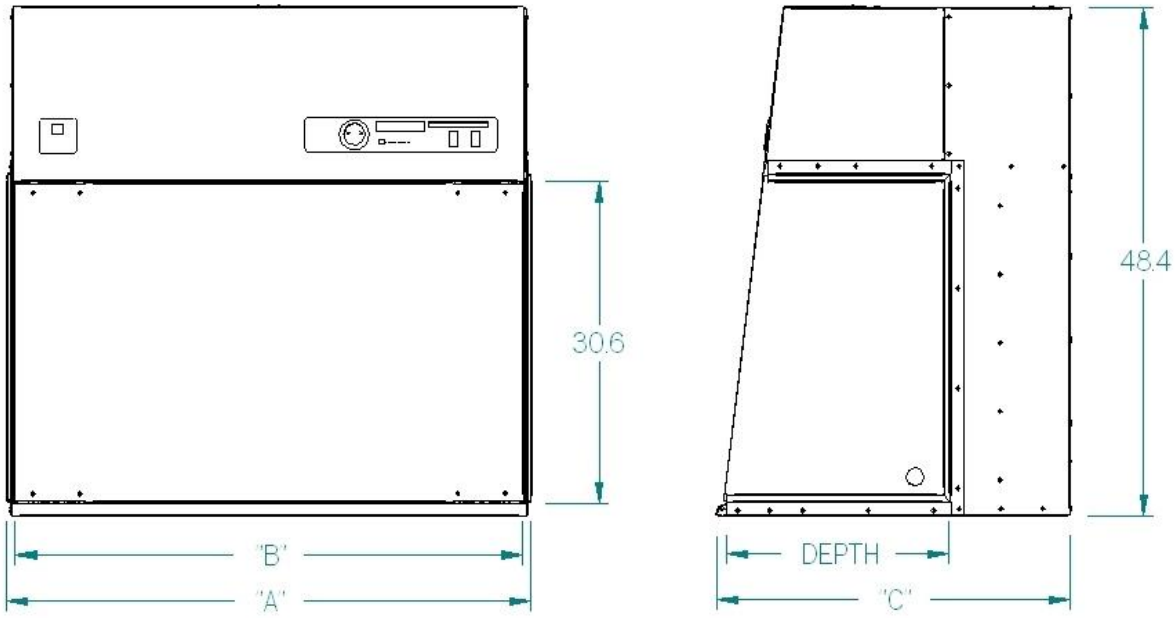
*Item 5 - UV Lamp is an option.

A-1



APPENDIX B
DIMENSIONS

B-1



	3-foot		4-foot		5-foot		6-foot		8-foot	
DEPTH	21.0	26.0	21.0	26.0	21.0	26.0	21.0	26.0	21.0	26.0
“A”**	38.0	38.0	50.0	50.0	62.0	62.0	74.0	74.0	99.0	99.0
“B”	37.0	37.0	49.0	49.0	61.0	61.0	73.0	73.0	98.1	98.1
“C”	34.0	39.0	34.0	39.0	34.0	39.0	34.0	39.0	34.0	39.0

**For models with UV option, add 1.0" to overall width.

APPENDIX C
CLEAN BENCH
SPECIFICATIONS

Electrical Data

Bench Model	Electrical Requirements
3889700, -01, -20, -21 (3-foot)	115 VAC – 60 Hz, 1 Phase – 7 Amps
3888400, -01, -20, -21 (4-foot)	115 VAC – 60 Hz, 1 Phase – 7 Amps
3250000, -01, -20, -21 (5-foot)	115 VAC – 60 Hz, 1 Phase – 10 Amps
3873000, -01, -20, -21 (6-foot)	115 VAC – 60 Hz, 1 Phase – 10 Amps
3818500, -01, -20, -21 (8-foot)	115 VAC – 60 Hz, 1 Phase – 16 Amps

Bench Model	Electrical Requirements
3889702 to -12 & -22 to -32 (3-foot)	230 VAC – 50/60 Hz, 1 Phase – 4 Amps
3888402 to -12 & -22 to -32 (4-foot)	230 VAC – 50/60 Hz, 1 Phase – 4 Amps
3250002 to -12 & -22 to -32 (5-foot)	230 VAC – 50/60 Hz, 1 Phase – 5 Amps
3873002 to -12 & -22 to -32 (6-foot)	230 VAC – 50/60 Hz, 1 Phase – 5 Amps
3818502 to -12 & -22 to -32 (8-foot)	230 VAC – 50/60 Hz, 1 Phase – 8 Amps

Motor Specifications

Bench Model	Electrical Requirements
3873000, -01, -20, -21 3889700, -01, -20, -21	115 VAC – 50/60 Hz, 3.8 Full Load Amps 1/3 H.P. 1625 RPM Automatic Thermal Protection

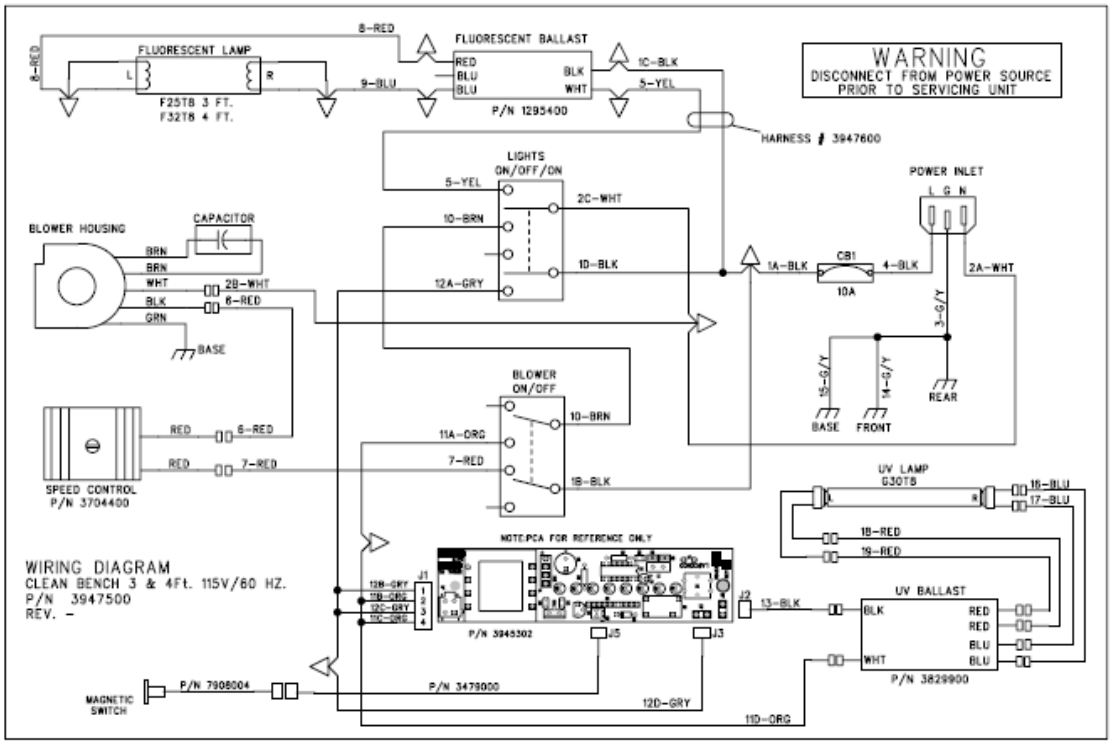
Bench Model	Electrical Requirements
3250000, -01, -20, -21 3818500, -01, -20, -21 3888400, -01, -20, -21	115 VAC – 50/60 Hz, 6.0 Full Load Amps 1/2 H.P. 1625 RPM Automatic Thermal Protection

Bench Model	Electrical Requirements
3873002 to -12 & -22 to -32 3818502 to -12 & -22 to -32 3250002 to -12 & -22 to -32 3888402 to -12 & -22 to -32 3889702 to -12 & -22 to -32	230 VAC – 50/60 Hz, 1.9 Full Load Amps 1/3 H.P. 1625 RPM Automatic Thermal Protection

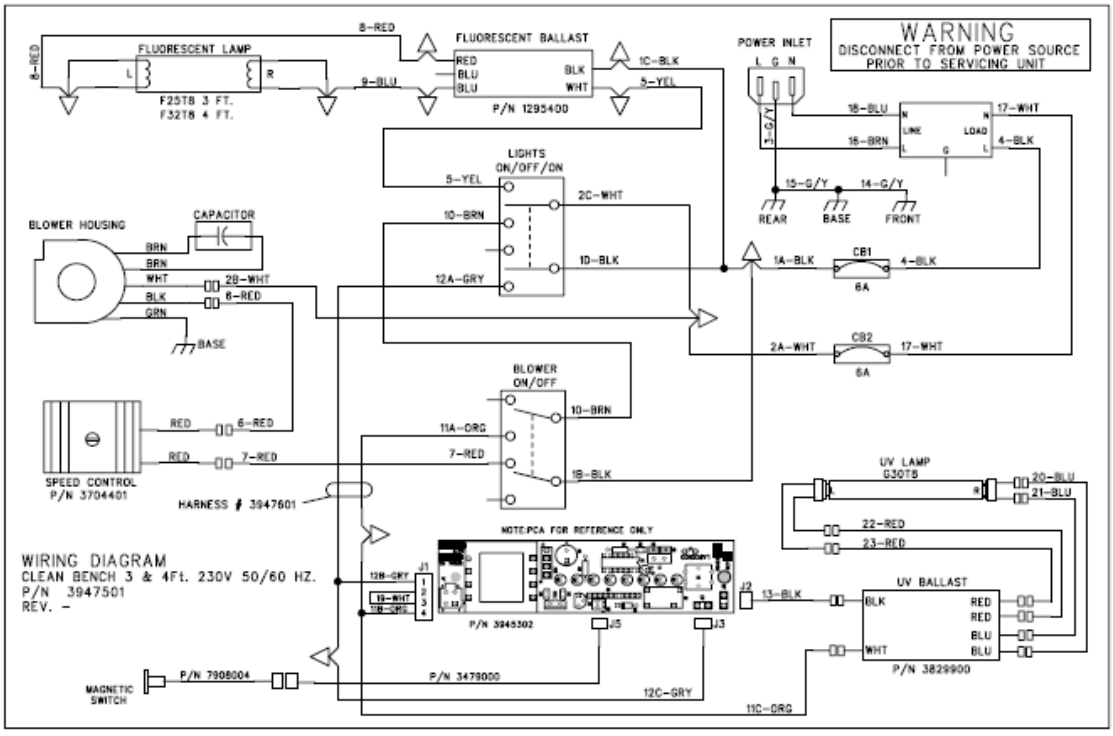
Environmental Conditions

- 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 ±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.

C-1


WARNING
DISCONNECT FROM POWER SOURCE
PRIOR TO SERVICING UNIT
FLUORESCENT LAMP
F25T8 3 FT.
F32T8 4 FT.
FLUORESCENT BALLAST
P/N 1295400
HARNESS # 3947600
LIGHTS ON/OFF/ON
BLOWER HOUSING
CAPACITOR
BASE
SPEED CONTROL P/N 3704400
BLOWER ON/OFF
POWER INLET
CB1
10A
REAR
BASE
FRONT
UV LAMP G30T8
UV BALLAST
P/N 3829900
NOTE:PCA FOR REFERENCE ONLY
P/N 3945302
WIRING DIAGRAM
CLEAN BENCH 3 & 4Ft. 115V/60 HZ.
P/N 3947500
REV. –
MAGNETIC SWITCH
P/N 7908004
P/N 3479000

C-2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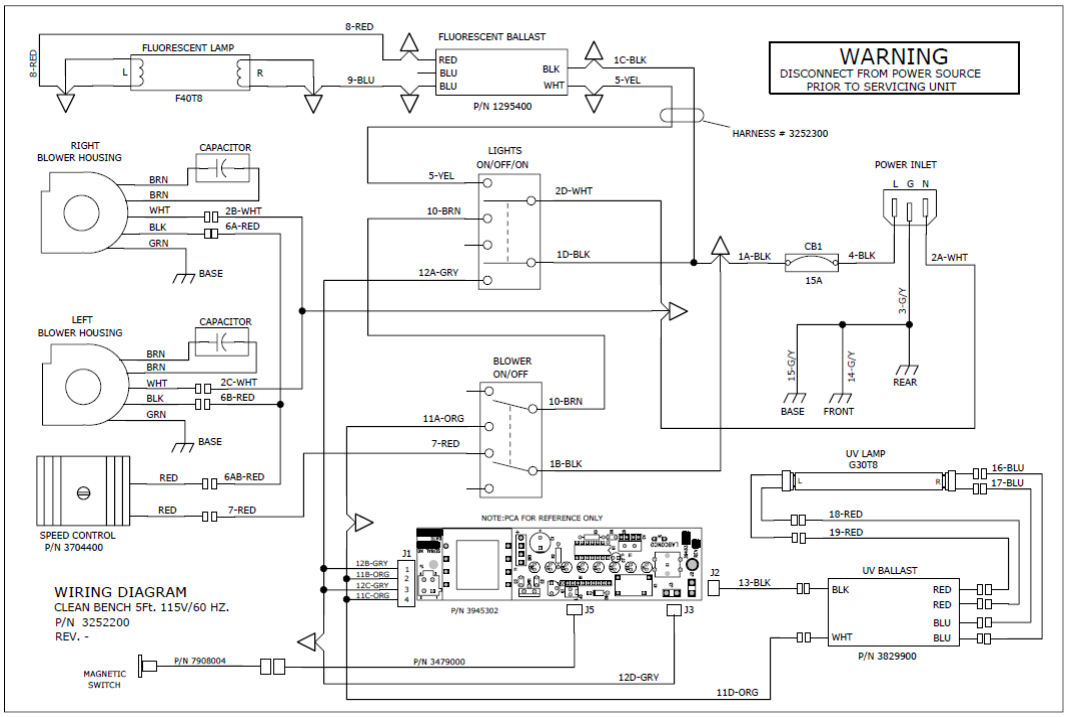
DISCONNECT FROM POWER SOURCE
PRIOR TO SERVICING UNIT
FLUORESCENT LAMP
F25T8 3 FT.
F32T8 4 FT.
FLUORESCENT BALLAST
P/N 1295400
POWER INLET
LIGHTS ON/OFF/ON
BLOWER HOUSING
CAPACITOR
BASE
SPEED CONTROL P/N 3704401
HARNESS # 3947601
BLOWER ON/OFF
CB1
6A
CB2
6A
REAR
BASE
FRONT
UV LAMP G30T8
UV BALLAST
P/N 3829900
NOTE:PCA FOR REFERENCE ONLY
P/N 3945302
WIRING DIAGRAM
CLEAN BENCH 3 & 4Ft. 230V 50/60 HZ.
P/N 3947501
REV. –
MAGNETIC SWITCH
P/N 7908004
P/N 3479000

C-2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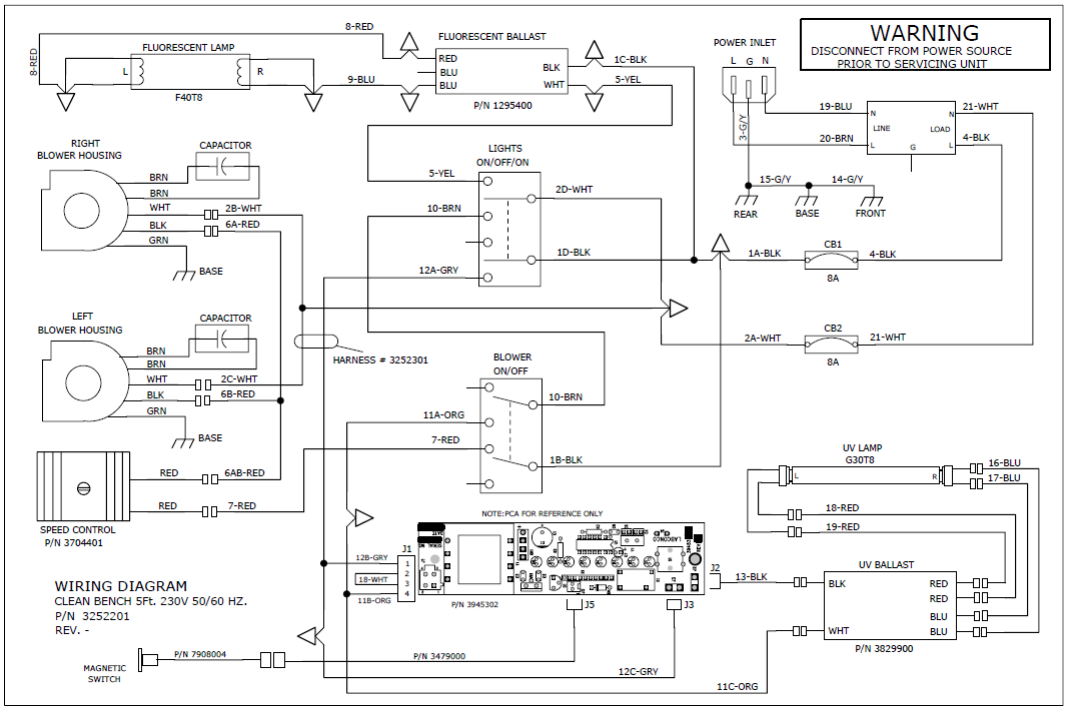
PRIOR TO SERVICING UNIT
FLUORESCENT LAMP
F40T8
FLUORESCENT BALLAST
P/N 1295400
HARNESS # 3252300
RIGHT BLOWER HOUSING
LEFT BLOWER HOUSING
CAPACITOR
BASE
LIGHTS ON/OFF/ON
BLOWER ON/OFF
POWER INLET
L G N
CB1
15A
REAR
FRONT
UV LAMP G30T8
UV BALLAST
P/N 3829900
SPEED CONTROL P/N 3704400
NOTE:PCA FOR REFERENCE ONLY
P/N 3945302
MAGNETIC SWITCH
P/N 7908004
P/N 3479000
WIRING DIAGRAM
CLEAN BENCH 5Ft. 115V/60 HZ.
P/N 3252200
REV. -

C-3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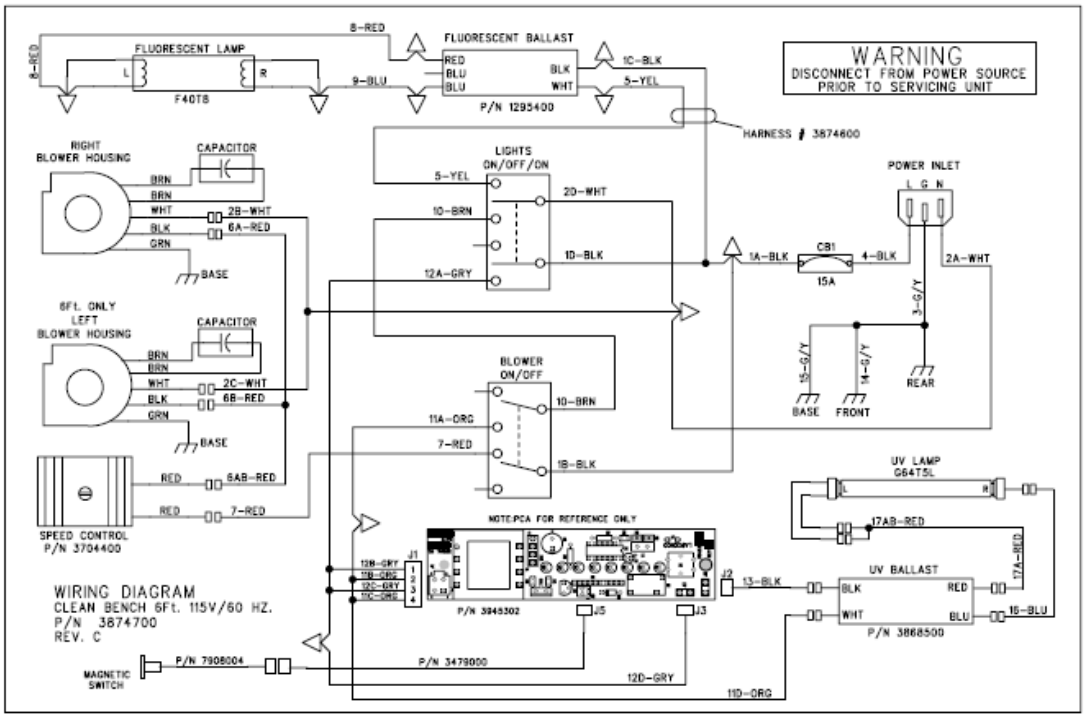
DISCONNECT FROM POWER SOURCE
PRIOR TO SERVICING UNIT
FLUORESCENT LAMP
F40T8
FLUORESCENT BALLAST
P/N 1295400
HARNESS # 3252301
RIGHT BLOWER HOUSING
LEFT BLOWER HOUSING
CAPACITOR
BASE
LIGHTS ON/OFF/ON
BLOWER ON/OFF
POWER INLET
L G N
LINE
LOAD
CB1
8A
CB2
8A
REAR
BASE
FRONT
UV LAMP G30T8
UV BALLAST
P/N 3829900
SPEED CONTROL P/N 3704401
NOTE:PCA FOR REFERENCE ONLY
P/N 3945302
MAGNETIC SWITCH
P/N 7908004
P/N 3479000
WIRING DIAGRAM
CLEAN BENCH 5Ft. 230V 50/60 HZ.
P/N 3252201
REV. -

C-4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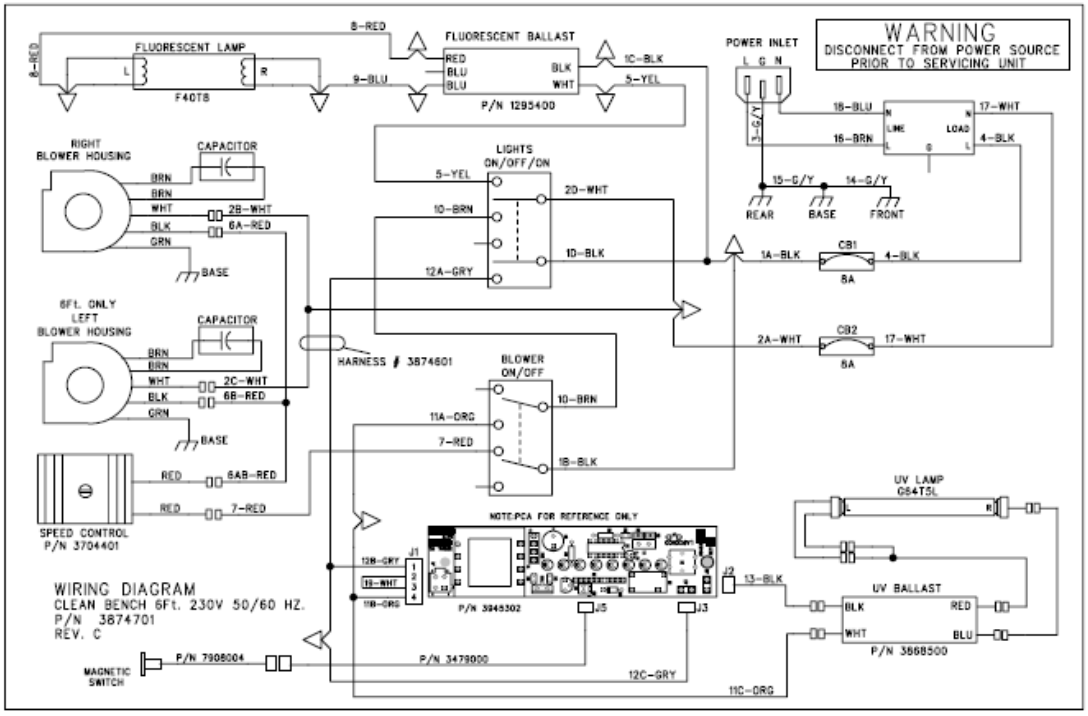
PRIOR TO SERVICING UNIT
FLUORESCENT LAMP
F40T8
FLUORESCENT BALLAST
P/N 1295400
HARNESS # 3874600
RIGHT BLOWER HOUSING
CAPACITOR
BASE
LIGHTS ON/OFF/ON
POWER INLET
L G N
CB1
15A
6ft. ONLY LEFT BLOWER HOUSING
BLOWER ON/OFF
REAR
FRONT
SPEED CONTROL P/N 3704400
NOTE:PCA FOR REFERENCE ONLY
P/N 3845302
UV LAMP G64T5L
UV BALLAST
P/N 3868500
WIRING DIAGRAM
CLEAN BENCH 6Ft. 115V/60 HZ.
P/N 3874700
REV. C
MAGNETIC SWITCH
P/N 7908004
P/N 3479000

C-5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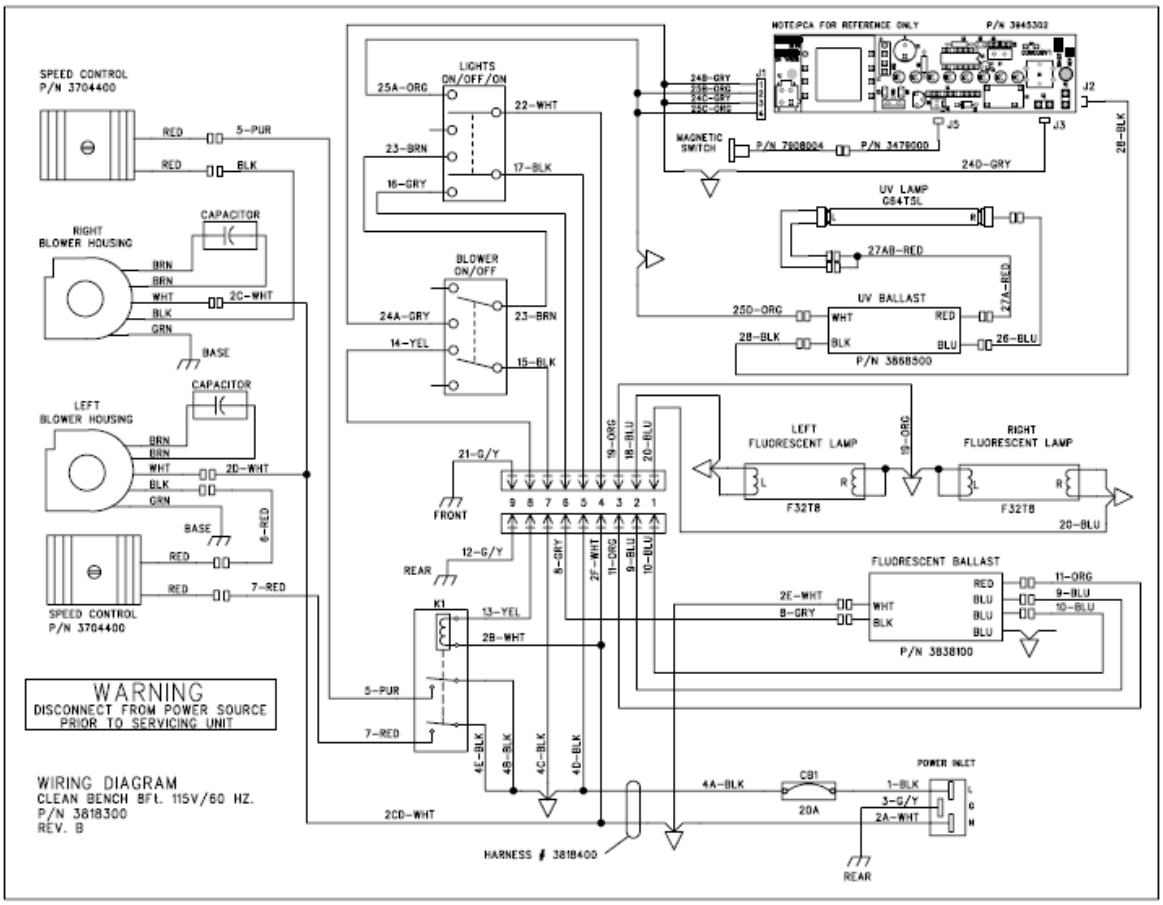
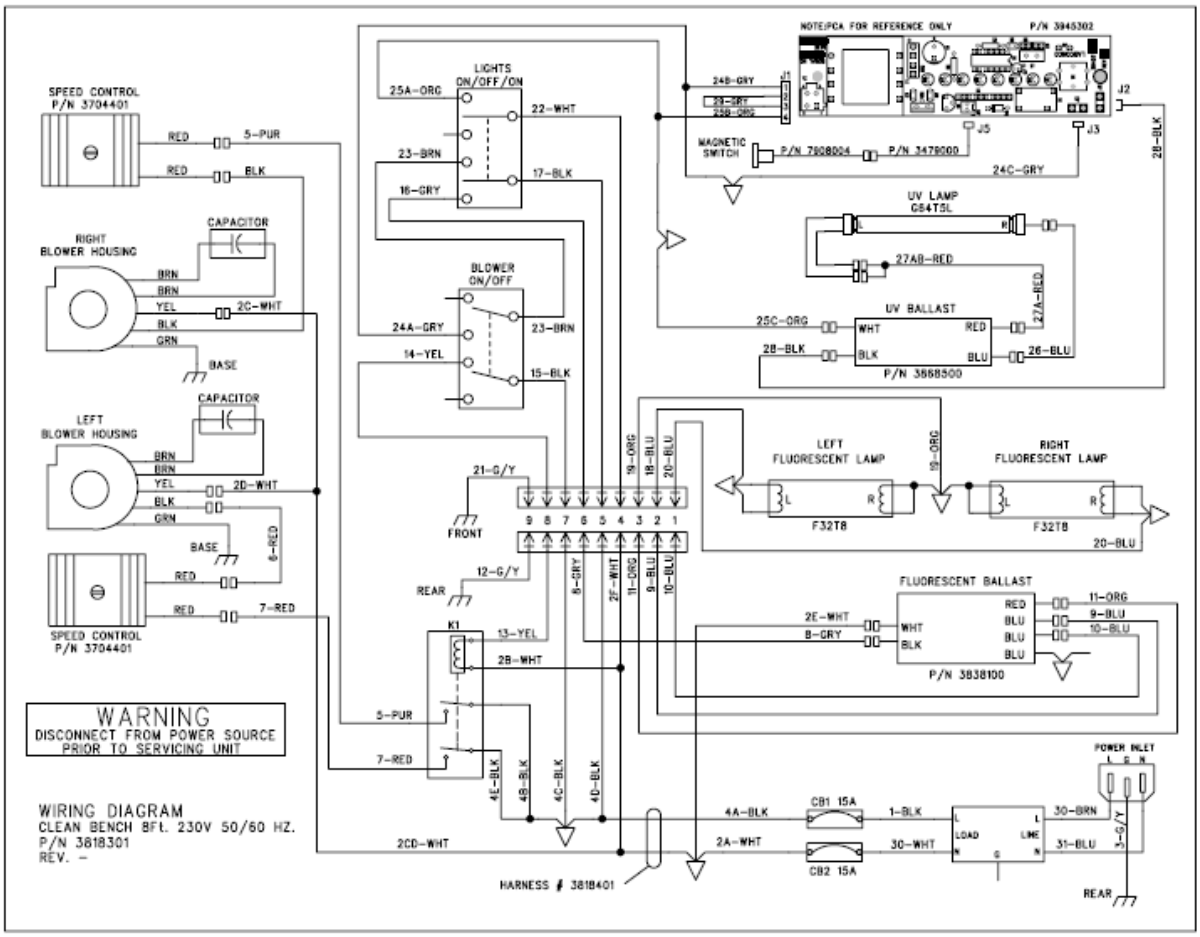
DISCONNECT FROM POWER SOURCE
PRIOR TO SERVICING UNIT
FLUORESCENT LAMP
F40T8
FLUORESCENT BALLAST
P/N 1295400
POWER INLET
L G N
RIGHT BLOWER HOUSING
CAPACITOR
BASE
LIGHTS ON/OFF/ON
CB1
8A
CB2
8A
HARNESS # 3874601
6ft. ONLY LEFT BLOWER HOUSING
BLOWER ON/OFF
REAR
BASE
FRONT
SPEED CONTROL P/N 3704401
NOTE:PCA FOR REFERENCE ONLY
P/N 3845302
UV LAMP G64T5L
UV BALLAST
P/N 3868500
WIRING DIAGRAM
CLEAN BENCH 6Ft. 230V 50/60 HZ.
P/N 3874701
REV. C
MAGNETIC SWITCH
P/N 7908004
P/N 3479000

C-6


SPEED CONTROL
P/N 3704400
RED
5-PUR
RED
BLK
RIGHT
BLOWER HOUSING
CAPACITOR
BRN
BRN
WHT
BLK
GRN
2C-WHT
BASE
LEFT
BLOWER HOUSING
CAPACITOR
BRN
BRN
WHT
BLK
GRN
2D-WHT
BASE
6-RED
RED
7-RED
SPEED CONTROL
P/N 3704400
WARNING
DISCONNECT FROM POWER SOURCE
PRIOR TO SERVICING UNIT
WIRING DIAGRAM
CLEAN BENCH 8Ft. 115V/60 HZ.
P/N 3818300
REV. B
LIGHTS
ON/OFF/ON
25A-ORG
22-WHT
23-BRN
17-BLK
16-GRY
BLOWER
ON/OFF
24A-GRY
23-BRN
14-YEL
15-BLK
21-G/Y
FRONT
REAR
12-G/Y
K1
13-YEL
28-WHT
5-PUR
7-RED
4E-BLK
4B-BLK
4C-BLK
4D-BLK
2CD-WHT
HARNESS # 3818400
NOTE:PCA FOR REFERENCE ONLY
P/N 3845302
24B-GRY
24C-GRY
24D-GRY
MAGNETIC
SWITCH
P/N 7928024
P/N 3479000
J1
J2
J3
J5
28-BLK
UV LAMP
G64T5L
27AB-RED
27A-RED
UV BALLAST
25D-ORG
28-BLK
WHT
BLK
RED
BLU
26-BLU
P/N 3868500
LEFT
FLUORESCENT LAMP
RIGHT
FLUORESCENT LAMP
F32T8
F32T8
19-ORG
18-BLU
20-BLU
9 8 7 6 5 4 3 2 1
8-GRY
2F-WHT
11-ORG
9-BLU
10-BLU
FLUORESCENT BALLAST
2E-WHT
8-GRY
WHT
BLK
RED
BLU
BLU
BLU
11-ORG
9-BLU
10-BLU
P/N 3838100
4A-BLK
CB1
20A
POWER INLET
1-BLK
3-G/Y
2A-WHT
L
G
N
REAR

C-7


SPEED CONTROL P/N 3704401
RED
5-PUR
RED
BLK
RIGHT BLOWER HOUSING
CAPACITOR
BRN
BRN
YEL
2C-WHT
BLK
GRN
BASE
LEFT BLOWER HOUSING
CAPACITOR
BRN
BRN
YEL
2D-WHT
BLK
GRN
BASE
6-RED
RED
7-RED
SPEED CONTROL P/N 3704401
WARNING
DISCONNECT FROM POWER SOURCE PRIOR TO SERVICING UNIT
WIRING DIAGRAM
CLEAN BENCH 8Ft. 230V 50/60 HZ.
P/N 3818301
REV. –
LIGHTS ON/OFF/ON
25A-ORG
23-BRN
16-GRY
22-WHT
17-BLK
BLOWER ON/OFF
24A-GRY
14-YEL
23-BRN
15-BLK
21-G/Y
FRONT
REAR
12-G/Y
K1
13-YEL
2B-WHT
5-PUR
7-RED
4E-BLK
4B-BLK
4C-BLK
4D-BLK
2CD-WHT
HARNESS # 3818401
NOTE:PCA FOR REFERENCE ONLY
P/N 3845302
24B-GRY
23-GRY
25B-ORG
J1
J2
J5
J3
MAGNETIC SWITCH
P/N 7908004
P/N 3479000
24C-GRY
28-BLK
UV LAMP G84T5L
27AB-RED
27A-RED
UV BALLAST
25C-ORG
WHT
RED
28-BLK
BLK
BLU
26-BLU
P/N 3868500
19-ORG
18-BLU
20-BLU
LEFT FLUORESCENT LAMP
RIGHT FLUORESCENT LAMP
F32T8
F32T8
20-BLU
FLUORESCENT BALLAST
2E-WHT
8-GRY
WHT
BLK
RED
BLU
BLU
BLU
11-ORG
9-BLU
10-BLU
P/N 3838100
POWER INLET
L G N
4A-BLK
2A-WHT
CB1 15A
CB2 15A
1-BLK
30-WHT
LOAD
LINE
30-BRN
31-BLU
3-G/Y
REAR

APPENDIX D
CLEAN BENCH ACCESSORIES

Telescoping Base Stands

Epoxy-coated steel, height can be set at 27.5 to 34.5 inches in 1-inch intervals, giving a work surface height of 28.75 to 35.75 inches.

Model # w/feet	Model # w/wheels	For use with	Shipping Weight
3613200	3613201	3-foot Purifier Clean Bench	95 lbs. (43kg)
3888700	3888701	4-foot Purifier Clean Bench	110 lbs. (50kg)
3255000	3255001	5-foot Purifier Clean Bench	125 lbs. (57 kg)
3857700	3857701	6-foot Purifier Clean Bench	125 lbs. (57 kg)
3857300	3857301	8-foot Purifier Clean Bench	150 lbs. (68 kg)

Ergonomic Chair with Armrests (# 3744000)

Chair has 6-way articulating seat and back control for personalized adjustment. Pneumatic mechanism adjusts seat height from 18.25" to 25.75". Five-leg black reinforced composite base rests on 2" ball bearing casters. Aluminum support ring. Removable arm rests. Black vinyl upholstery. Shipping weight 35 lbs. (15.9 kg).

Adjustable Footrest (# 3746000)

Elevates feet and permits angle repositioning while in use. 18.5" w x 11.5" d x 8" h. Shipping weight 6 lbs. (2.7 kg).

Vibration Isolation Table (#3618000)

Provides an isolated work surface for conducting procedures with vibration-sensitive equipment such as microscopes and balances. The table never makes contact with the clean bench so vibration from the motor/blower is not transmitted to the table. Epoxy-coated steel frame, adjust in 1" increments to provide a working height from 29.5 to 36". ADA-compliant. Four leveling feet. Work surface is laminated hard board, 30.4" w x 18" d. Overall dimensions 32.5" w x 25" d x 29.5" to 36" high. Shipping weight 110 lbs. (49.9 kg).

I.V. Bar Kit (See Table for P/Ns)

Supports intravenous solution bottles and bags. Kit includes IV bar, mounting hardware, four hangers and instructions for installation. 3-Foot and 4-Foot Clean Benches accommodate one standard length bar, while the 6-Foot and 8-Foot Clean Benches accommodate two standard length bars. 5-Foot Clean Benches accommodate one long IV bar. See table below for kit part numbers. Shipping weight 5 lbs. (2.3 kg).

Clean Bench Size	I.V. Bar Kit P/N	I.V. Bars per Clean Bench
3-Foot	3697500	1
4-Foot	3697500	1
5-Foot	3697501	1
6-Foot	3697500	2
8-Foot	3697500	2

APPENDIX E
QUICK CHART FOR PURIFIER HORIZONTAL CLEAN BENCHES

Width (feet)	3	4	5	6	8
HEPA Filter Dims. (in.)	36 x 30 x 3	48 x 30 x 3	60 x 30 x 3	72 x 30 x 3	48 x 30 x 3
Avg. Velocity Reading Grid (inches)	12 x 12	12 x 12	12 x 12	12 x 12	12 x 12
Grid Distance from Diffuser (inches)	6	6	6	6	6
Grid Distance from Sidewalls (inches)	6.5	6.5	6.5	6.5	6.5
Grid Distance from Worksurface (inches)	3.0	3.0	3.0	3.0	3.0
Total number of test points	9	12	15	18	24
Average Velocity (FPM)	90 ±10	90 ±10	90 ±10	90 ±10	90 ±10
Work Area (ft^2)	7.5	10	12.5	15	20
Exhaust Volume Range (CFM)	600-750	800-1000	1025-1225	1200-1500	1600-2000
Number of Laskin Nozzles needed	2	2	2	2	2
Motor HP	(1) 1/2	(1) 1/2	(2) 1/3	(2) 1/3	(2) 1/2
Speed Winding used	High	High	High	High	High
Motor Capacitator	15	15	15	15	15
Ultraviolet Light(s) OPTIONAL	G30T8	G30T8	G30T8	G64T5	G64T5
Fluorescent Light(s)	F25T8/ TL741	F32T8/ TL741	F32T8/ TL741	F40T8/ TL741	F32T8/ TL741