# Hart Engineering Corporation

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Additional Notes:

**Status Codes**
1-APP – No Exceptions Taken
2-ANR – Make Corrections Noted
3-R&R – Revise and Resubmit
4-REJ – Rejected
5-IPO – For Information Purposes Only
6-NRR – Not Required for Review
ENG – Submitted to Engineer

Sincerely,
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_____ DATE: 03/28/2023

Original instructions

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# User's Manual

## Protector® XStream® Laboratory Fume Hoods

### Models

11041 Series
11051 Series
11061 Series
11081 Series

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.**

## 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 Protector® XStream® Laboratory Fume Hoods 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.

**Part #9410600, Rev. N**
**ECO N868**

# TABLE OF CONTENTS

# CHAPTER 1
# INTRODUCTION

Congratulations on your purchase of a Labconco Protector® XStream® Laboratory Fume Hood. Your Protector Laboratory Fume Hood is designed to protect you by providing superior containment while conserving energy at OSHA approved "low flow" velocities as low as 50-60 feet per minute, with test limits as low as 40 fpm. It is the result of Labconco's commitment to developing a high performance fume hood and more than 60 years experience in manufacturing fume hoods.

The Labconco Protector XStream Fume Hood has been engineered to provide maximum containment in a laboratory, and effectively contain toxic, noxious, or other harmful materials when properly installed. The Protector XStream offers many unique features to enhance safety, performance, and energy savings. 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 high performance fume hoods operate, please review *Chapter 4: High Performance Features and Safety Precautions* before you begin working in the fume hood. Even if you are an experienced fume hood user, please review *Chapter 5: Using Your Protector XStream,* which describes your Protector XStream Hood's features so that you can use the hood efficiently.

**Figure 1-1**

# About This Manual

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

*Chapter 1: Introduction* provides a brief overview of the laboratory fume hood, 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 laboratory fume hood. Electrical and service requirements are discussed.

*Chapter 3: Getting Started* contains the information you need to properly unpack, inspect, install, and certify your laboratory fume hood.

*Chapter 4: Performance Features and Safety Precautions* explains how the Protector XStream operates and the appropriate precautions you should take when using the fume hood.

*Chapter 5: Using Your Protector XStream* discusses the basic operation of your fume hood. Information on how to prepare, use and shut down your Protector XStream Hood are included.

*Chapter 6: Maintaining Your Protector XStream* explains how to perform routine maintenance on your fume hood.

*Chapter 7: Modifying Your Protector XStream* explains how to modify the fume hood or add accessories.

*Chapter 8: Troubleshooting* contains a table of problems you may encounter while using your laboratory fume hood including the probable causes of the problems and suggested corrective actions.

*Appendix A: Protector XStream Components* contains labeled diagrams of all of the components of the fume hoods.

*Appendix B: Protector XStream Dimensions* contains comprehensive diagrams showing all of the dimensions for the laboratory fume hoods.

*Appendix C: Protector XStream Specifications* contains the electrical requirements for laboratory fume hood. Wiring diagrams are also included.

*Appendix D: Protector I-S Hood* provides information relating to the automatic Intelli-Sense Blower 3-speed operation.

*Appendix E: Serial Number Tag Description* provides current rating code used on serial number tag.

*Appendix F: References* lists the various resources available that deal with laboratory fume hoods.

*Appendix G: VAV Open Area Guidelines* to properly assess fume hood effective area whenever variable air volume (VAV) mechanical systems are installed.

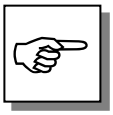
# Typographical Conventions

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

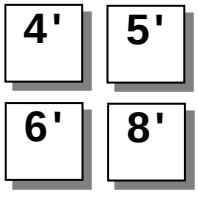
- Book, chapter, and section titles are shown in italic type (e.g., *Chapter 3: Getting Started*).
- Steps required to perform a task are presented in a numbered format.
- Comments located in the margins provide suggestions, reminders, and references.

- Critical information is presented in boldface type in paragraphs that are preceded by the exclamation icon. Failure to comply with the information following an exclamation icon may result in injury to the user or permanent damage to fume hood.
- Les informations critiques sont présentées en gras dans les paragraphes qui sont précédés par l'icône d'exclamation. Ne pas se conformer aux informations qui suivent une icône d'exclamation peut résulter à la blessure de l'utilisateur ou à des dommages irréversibles de la hotte aspirante.

- 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 hood.
- Les informations critiques sont présentées en gras dans les paragraphes qui sont précédés par l'icône de clé plate. Ces opérations devraient être seulement exécutées par un professionnel agrée. L'échec pour se conformer aux informations qui suivent une icône de clé plate peut résulter à la blessure de l'utilisateur ou à des dommages irréversibles de la hotte.



- 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.




- A number icon precedes information that is specific to a particular model of laboratory fume hood. The 4' icon indicates the text is specific to the 4-foot wide model. The 5' icon indicates the text is specific to the 5-foot model, etc.


- The S icon indicates the text is specific to the standard model.


- The A icon indicates the text is specific to the A-Style Combination Sash Model.

- CAUTION – See Manual. When this symbol is on a fume hood it indicates a caution that is detailed in this manual.
- PRUDENCE – Consulter le Manuel. Quand ce symbole est sur une hotte aspirante, il indique une prudence qui est détaillée dans ce manuel.

- CAUTION – Hot Surface.
- AVERTIR – Surface Chaude

- CAUTION – See Manual. This symbol on the fume hood indicates the possibility of a pinch hazard.
- PRUDENCE – Consulter le Manuel. Ce symbole sur la hotte indique la possibilité d'un risque de pincement.

# Your Next Step

If your Fume Hood needs to be installed, proceed to *Chapter 2: Prerequisites* to ensure your installation site meets all of the requirements. Then, go to *Chapter 3: Getting Started* for instructions on how to install your laboratory fume hood and make all of the necessary connections.

If you would like to review how Labconco's high performance laboratory fume hoods operate, go to *Chapter 4: Performance Features and Safety Precautions*.

For information on the operational characteristics of your laboratory fume hood, go to *Chapter 5: Using Your Protector XStream*.

If your laboratory fume hood is installed and you need to perform routine maintenance on the cabinet, proceed to *Chapter 6: Maintaining Your Protector XStream*.

For information on making modifications to the configuration of your fume hood, go to *Chapter 7: Modifying Your Protector XStream*.

Refer to *Chapter 8: Troubleshooting* if you are experiencing problems with your fume hood.

# CHAPTER 2
# PREREQUISITES

Before you install your laboratory fume hood, you need to prepare your site for installation. Carefully examine the location where you intend to install your hood. 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 requirements for your installation site:

- The location requirements.
- The support requirements.
- The exhaust requirements.
- The electrical power requirements.
- The service line requirements.
- The space requirements.

Refer to *Appendix B: Protector XStream Dimensions* for complete fume hood dimensions.

Refer to *Appendix C: Protector XStream Specifications* for complete laboratory fume hood electrical and environmental conditions, specifications and requirements.

# Location Requirements

**The fume hood should be located away from traffic patterns, doors, windows, fans, ventilation registers, and any other air-handling device that could disrupt its airflow patterns. All windows in the room should be closed.**

**La hotte aspirante devrait être localisé loin des voies de circulation, des portes, des fenêtres, des ventilateurs, des bouches de ventilation, et de tout appareil qui pourrait interrompre ses voies de flux d'air. Toutes les fenêtres dans la pièce devraient être fermées.**

# Support Requirements

**DO NOT install the fume hood on a cart, dolly, or mobile bench. ALL Protector XStream Hood installations must be permanent and stationary. The supporting structure usually consists of a base cabinet and chemically resistant work surface.**

**NE PAS installer la hotte aspirante sur un chariot ou un banc mobile. TOUTES les installations de la Hotte Protecteur doivent être permanentes et fixes. La structure de soutien consiste habituellement en un meuble doté d'une surface de travail chimiquement résistante.**

# Exhaust Requirements

The exhaust duct connection has been designed for 12" nominal duct (12.75" OD) to allow for minimum static pressure loss while operating at 50 to 100 fpm face velocities. The 12" diameter exhaust duct also allows for proper transport velocities away from the hood with minimal static pressure loss. Should higher transport velocities of 1000 fpm to 2500 fpm be required, simply install a reducer after the exhaust outlet. The exhaust volume and fume hood static pressure loss are listed for each hood model at two sash heights and for face velocities from 40 to 100 fpm. When sizing the exhaust requirements, the choice must be made for air foil, sash height and face velocity.

Projected Airflows and Static Pressure

| Hood Type | Face Velocity (fpm) | | Eco Energy Saving Air Foil Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water) | | | | Flush Air Foil Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sash at Full open at 28" | Sash at 62.5% open at 18" | 4' Hood | 5' Hood | 6' Hood | 8' Hood | 4' Hood | 5' Hood | 6' Hood | 8' Hood |
| **XSTREAM** | 100 | 160 | 705, 0.26" | 930, 0.32" | 1150, 0.41" | 1600, 0.29" | 740, 0.28" | 975, 0.34" | 1205, 0.44" | 1675, 0.31" |
| | 80 | 128 | 565, 0.17" | 745, 0.20" | 920, 0.26" | 1280, 0.19" | 590, 0.18" | 780, 0.22" | 965, 0.28" | 1340, 0.20" |
| | 60 | 96 | 425, 0.09" | 560, 0.12" | 690, 0.15" | 960, 0.10" | 445, 0.10" | 585, 0.12" | 725, 0.16" | 1005, 0.11" |
| | 50 | 80 | 350, 0.06" | 465, 0.08" | 575, 0.10" | 800, 0.07" | 370, 0.07" | 490, 0.08" | 605, 0.11" | 840, 0.08" |
| | 40 | 64 | 280, 0.04" | 370, 0.05" | 460, 0.07" | 640, 0.05" | 295, 0.05" | 390, 0.06" | 480, 0.07" | 670, 0.05" |

| Hood Type | Face Velocity (fpm) | | Eco Energy Saving Air Foil Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water) | | | | Flush Air Foil Airflow Volumetric Rate (CFM) @ Static Pressure (inches of water) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sash at 62.50% open at 18" | Sash at Full open at 28" | 4' Hood | 5' Hood | 6' Hood | 8' Hood | 4' Hood | 5' Hood | 6' Hood | 8' Hood |
| **XSTREAM** | 100 | 62 | 440, 0.10" | 580, 0.12" | 720, 0.16" | 1000, 0.11" | 475, 0.11" | 625, 0.13" | 775, 0.17" | 1075, 0.12" |
| | 80 | 50 | 350, 0.06" | 465, 0.08" | 575, 0.10" | 800, 0.07" | 380, 0.07" | 500, 0.08" | 620, 0.11" | 860, 0.08" |
| | 60 | 38 | 265, 0.04" | 350, 0.05" | 430, 0.06" | 600, 0.04" | 285, 0.04" | 375, 0.05" | 465, 0.06" | 645, 0.04" |

Proper blower selection can be determined from these exhaust requirements and the total system static pressure loss. Contact Labconco Customer Service for assistance in sizing a remote blower system. Refer to *Appendix G: VAV Open Area Guidelines* to properly assess the fume hood area opening, allowing the variable air volume (VAV) mechanical system to be programmed at various sash positions.

# Electrical Requirements

The Protector XStream Hood models feature internal wiring for the LED light assembly and light switch. All internal wiring is terminated at the single point wiring junction box for hook-up by a qualified electrician. The blower switch, and light switch wires are also terminated at the single point wiring junction box for hook-up by a qualified electrician. Refer to *Chapter 3: Getting Started* and *Appendix* C*: Protector XStream Specifications* for the wiring diagram for proper electrical installation.

Les modèles Protector XStream Hood sont dotés d'un câblage interne pour l'éclairage LED et l'interrupteur. Tout le câblage interne est terminé à la boîte de jonction point de câblage unique pour le raccordement par un électricien qualifié. Le bouton du ventilateur, et fils de l'interrupteur de lumière sont également mis fin à la boîte de jonction point de câblage unique pour le raccordement par un électricien qualifié. Reportez-vous au Chapitre 3: Mise en route et à l'Annexe C: Spécifications Premier Protector pour le schéma de câblage pour l'installation électrique correcte.

# Service Line Requirements

All service lines to the laboratory fume hood should be ¼ inch outside diameter, copper (brass for natural gas), and equipped with an easily accessible shut-off valve, should disconnection be required. Recommended operating pressure is 40 PSI, with a maximum allowable pressure of 200 PSI. Consider a pressure regulator to reduce line pressure to 40 PSI. Please check with local codes for other requirements.

# Space Requirements

The dimensions for the different models are shown in *Appendix B: Protector XStream Dimensions*.

# CHAPTER 3
# GETTING STARTED

Now that the site for your laboratory fume hood 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 Protector Hood.
- Set up the fume hood with the supporting structure and work surface.
- Connect to an exhaust system.
- Connect the electrical supply source.
- Connect the service lines.
- Seal the Protector Hood to the work surface.
- Arrange certification of your Protector Hood.

Depending upon which model you are installing, you may need common plumbing and electrical installation tools in addition to 5/16", 3/8", 7/16", and 1/2" wrenches, ratchets, sockets, a nut driver set, a flat-blade screwdriver, a Phillips screwdriver, and a carpenter level to complete the instructions in the chapter.

**The Protector XStream Hood models weigh between 400 to 800 lbs. (182-363 kg). The shipping skid allows for lifting with a mechanical lift truck or floor jack. If you must lift the fume hood manually, follow safe-lifting guidelines. Normally, the fume hood can be slid off a hydraulic lift table and be placed into position on top of the work surface. Do not lift by the front air foil.**

**Les XStream modèles de la Hotte Protecteur pèsent entre 400 à 800 livres. (182-363 Kg). La palette bois d'envoi permet le soulèvement par un camion muni d'un élévateur mécanique ou par un cric rouleur. Si vous devez soulever manuellement la hotte aspirante, respectez les règles de sécurité du soulèvement. Normalement, la hotte aspirante peut être glissée d'une table munie d'un élévateur hydraulique et être placée en position sur**

**la surface de travail. Ne pas soulever par l'écoulement d'air du devant.**

# Unpacking Your Laboratory Fume Hood

Carefully remove the shrink-wrap or carton on your fume hood 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.

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

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

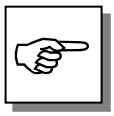
IF YOUR HOOD WAS DAMAGED IN TRANSIT, YOU MUST FILE A CLAIM DIRECTLY WITH THE FREIGHT CARRIER. LABCONCO CORPORATION AND ITS DEALERS ARE NOT RESPONSIBLE FOR SHIPPING DAMAGES.

Do not discard the shipping skid or packing material for your fume hood until you have checked all of the components and installed and tested the unit. **The XStream fume hood baffles are shipped loose behind the hood and do not discard. The lower baffle is 12.9" tall and the middle baffle is 27.4" tall. See Figure 1-1, Figure 3-1 and Figure B-1 that shows proper XStream baffle installation.** Do not remove the fume hood 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 hood by tilting it onto a hand truck.**

**Ne pas déplacer la hotte en le penchant sur un diable.**

# Removing the Shipping Skid



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

After you verify the fume hood components, move your hood to the location where you want to install it. Follow the steps listed next to remove the shipping skid from your unit.

1. Remove the side panels by unscrewing the concealed screw. Then lift off the side panels.

2. Find the hardware (lag screws, etc.) that attach the fume hood to the skid and remove the hardware. Some hardware is on the sides and some is on the back.

# Sash Weight Release

To protect the fume hood from damage in shipment, the sash weight has been secured to the back of the fume hood with screws. Simply remove the screws and make sure the sash cables or chains are on the pulleys or sprockets before operating the sash. On models with more than one sash, the sash weights have been secured to the shipping skid with lag screws. Remove the weights from the skid and attach them to the respective sash cables or chains using the threaded connectors provided.

**NOTE**: THE SASH WEIGHT ITSELF WAS INDIVIDUALLY MATCHED FOR THIS SPECIFIC HOOD AND SHOULD NOT BE EXCHANGED ON ANY OTHER UNIT.

# Installing the Hood on a Supporting Structure and Work Surface

**The Protector Hood is heavy! Use caution when lifting or moving the unit.**

**La Hotte Protecteur est lourd ! Prudence en soulevant ou en déplaçant l'objet.**

When installing the Protector XStream Fume Hood onto a chemically-resistant work surface or benchtop, ensure that the structure can safely support the combined weight of the fume hood and any related equipment. The work surface should be at least as wide as the hood to properly support it. **The work surface is aligned flush with the back of the fume hood for good airflow: this will provide the correct spacing under the air foil for proper bypass airflow**. The Protector XStream with Eco-Foil performs best with a work surface having a large 1.0" leading radius to promote aerodynamic airflow at low velocities. The high performance XStream work surface should have a 36" deep dimension. The lower base cabinets are placed flush with the front of the work surface as shown in Figure 3-1.

**WARNING: It is important to: 1). Support the rear of the work surface and fume hood. 2). The cross support provides support for the bottom of the work surface. 3). Install the cross support after the base cabinets and work surface are leveled and before installing the hood.**

**AVERTISSEMENT : Il est important de soutenir l'arrière de la surface de travail et la hotte aspirante. Le support**

**tranversal soutient le bas de la surface de travail. Installer le support transversal après que les meubles et la surface de travail soient nivelés et avant d'installer la hotte.**

The following are instructions for mounting a cross support:

1. Level the base cabinets and the work surface. Work surface should be placed flush with the back of the fume hood as shown in Figure 3-1.
2. Scribe a line on the wall or back of the base cabinet to locate the support under the work surface.
3. Mount the support by attaching it to the wall or base cabinet.
4. Place the hood on top of the work surface and cross support.

The work surface should be smooth and durable, such as a chemical-resistant epoxy resin. The surface should be nonporous and resistant to the acids, solvents, and chemicals used in conjunction with the Protector XStream Fume Hood. The work surface should also contain a dished recessed area for containing primary spills.

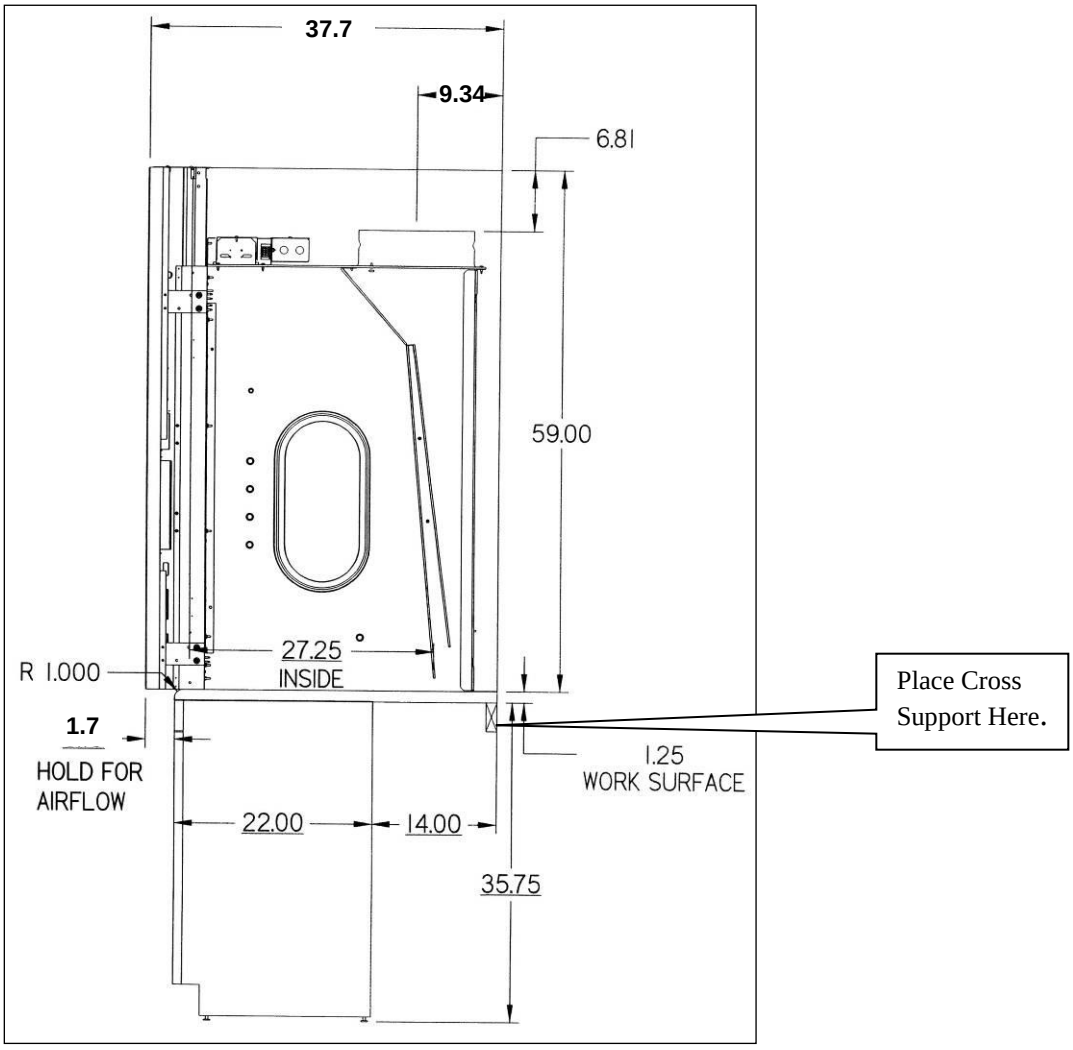



**Figure 3-1**

# Connecting to the Hood Exhaust System

**WARNING: The weight of the exhaust ductwork system must be supported independently of the hood superstructure. Do not allow this weight to be supported by the hood structure as damage to the hood may occur.**

**AVERTISSEMENT : Le poids du système d'aspiration de ductwork doit être soutenu d'une manière indépendante de la superstructure de la hotte. Au cas où ce poids est supporté par la structure de la hotte, des dommages à la hotte peuvent arriver.**

**The exhaust connection should be installed by a qualified HVAC contractor. The exhaust connection on your hood has been designed for 12" nominal pipe (12.75" OD) to allow for minimum static pressure loss with proper transport velocities away from the hood. Should higher transport velocities be required, simply install a reducer after the hood exhaust outlet. Consult Labconco Customer Service should you require help sizing your blower for the exhaust volume and total system static pressure loss.**

**La connexion d'échappement devrait être installée par un professionnel de CVC agrée. La connexion d'aspiration sur votre hotte a été conçue pour un tuyau nominal de 12 pouces (12,75 pouces de diamètre externe) afin d'avoir une perte minimale de pression statique avec les correctes flux de transport loin de la hotte. Consulter le Service Clientèle de Labconco si la calibration de votre soufflerie pour le volume d'aspiration et la perte de pression statique du système le requiert.**

**The selected exhaust duct material should match the hood procedures and chemicals used to ensure compatibility.**

**Le matériel de conduit d'aspiration choisi devrait être en conformité avec les procédures de la hotte et les produits chimiques qui sont utilisés pour garantir la compatibilité.**

# Connecting the Electrical Supply Source to the Protector Fume Hood

Prior to connecting any electrical wiring to the fume hood structure, refer to the hood identification plate for the proper electrical requirements of your specific model.

**WARNING**: **The building electrical supply system for Protector XStream Hoods should include overload protection. A switch or circuit breaker should be in close proximity to the equipment and within easy reach of the operator. The switch or circuit breaker is to be marked as the disconnecting device for the equipment. Consult the NEC-2002 for proper installation.**

**AVERTISSEMENT : Le système d'alimentation électrique de la Hotte Protecteur doit inclure la protection contre la surcharge. Un commutateur ou disjoncteur doit être tout près de l'équipement et à portée facile de l'opérateur. Le commutateur ou le disjoncteur doit être marqué comme l'appareil débranchant pour l'équipement. Consulter le NEC-2002 pour une installation correcte.**

The identification plate, model number, serial number, and electrical connection boxes are accessible from the front of the fume hood by removing the front panel.

The Protector XStream Hood is wired for 115 Volt, 50/60 Hz, 20 Amp or 230Volt, 50/60 Hz, 10 Amp electrical service. Check the I.D. plate behind the front panel for voltage verification. The number of circuits varies depending on the model. All of the electrical connections are terminated at the field wiring terminal box for hook-up by a qualified electrician. We recommend each circuit be a dedicated branch circuit. However, if wired together the maximum load allowed is the sum of individual outlets plus the rating of the unit (i.e. 2 Amps). The single point internal junction box is used for the connection of the lights, blower, and duplex outlets. Refer to the wiring diagram for your Protector XStream in *Appendix C: Protector XStream Fume Hood Specifications.*

The fume hood is required to be grounded to the MAINS protective earthing ground for safe operation. Using a ring terminal sized for a 10-24 machine screw, connect the MAINS ground conductor to the grounding lug marked with the protective earthing symbol, ⏚. Only MAINS ground conductors should be connected to the protective earthing ground lug, no other conductors should be connected to this grounding lug. Using wire nuts connect the MAINS supply conductors to the fume hood supply wires. Insure that the wires are connected as per the appropriate wire color codes for the input voltage. For 115V Phase (Hot) is black and Neutral is

white, for 230V Phase1 is brown and Phase2 is blue. Refer to the wiring diagram for your Protector XStream in *Appendix C: Protector XStream Specifications.*

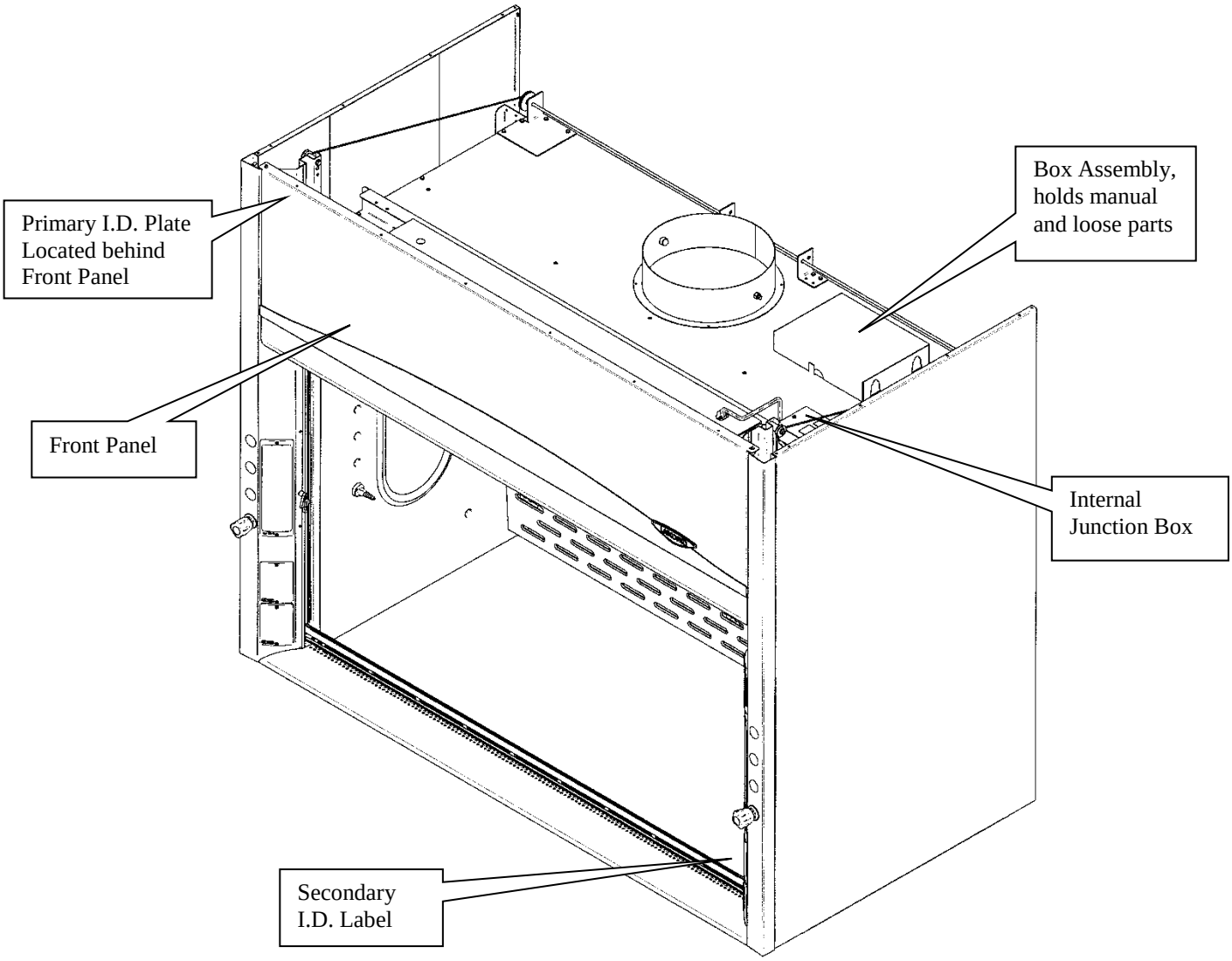



**Figure 3-2**

**All wiring for the fume hood SHOULD be performed by a licensed electrician and conform to all local codes. In most cases, the hood will require the use of shielded conduit to protect the wiring into the hood. The grounding connection shall not be made to the terminal box cover.**

**Tout le câblage électrique pour la hotte aspirante devrait être exécuté par un électricien agrée et être conforme à tous les règles en vigueur. Dans la plupart des cas, la hotte exigera l'usage de conduit blindé pour protéger le câblage électrique dans la hotte. La prise de terre ne sera pas faite à la couverture de la boîte du terminal.**

The LED light has been mounted outside the top liner panel and is sealed from vapors inside the hood structure. To change the LED light bulbs in your hood, you must first remove the front panel from the hood. Next remove the knock out plugs holding the light fixture in place. Lift fixture up and replace any defective bulbs. Reverse order to reassemble.

# Connecting the Service Lines to the Protector Fume Hood

The hoods with service fixtures have been plumbed from the valve to the hose connector or gooseneck for your installation convenience. A qualified installer shall provide the tubing. Tubing can enter the hood from above, through the back, or through the work surface to make these connections to the service fixtures.

**NOTE: Inspect all fittings for leakage. Tighten the fittings slightly if needed.**

**NOTE : Inspecter toutes les installations à la recherche de fuite. Resserrer les installations légèrement si nécessaires.**

**CAUTION**: **Do not use oxygen with any standard service fixture. Contact Labconco Customer Service for oxygen fixture information.**

**PRUDENCE : Ne pas utiliser de l'oxygène avec l'accessoire de service standard. Contacter le Service Clientèle de Labconco pour les informations d'accessoire d'oxygène.**

Should access to the hood plumbing fixture bodies be required, remove the service access plate on the hood front corner posts by loosening their individual screws (see item 11, Figure A-1 in *Appendix A*). The valve body will now be fully exposed for any service work that may be necessary. The service fixtures supplied on your laboratory hood are designed for use with the following services:

- Air
- Cold Water
- Hot Water
- Natural Gas – See Caution Below
- Vacuum

**WARNING**: **Contact Labconco Customer Service directly before using any service other than those listed above in these valves to assure full compatibility.**

**AVERTISSEMENT : Contacter le Service Clientèle de Labconco directement avant d'utiliser n'importe quel service autre que ceux énumérés au-dessus dans ces soupapes pour assurer une pleine compatibilité.**

**CAUTION: Natural gas should be used only in the service fixture that has been pre-plumbed with brass tubing. Sulfur content of the gas could cause deterioration of standard copper supply lines.**

**PRUDENCE : Le gaz naturel devrait être seulement utilisé dans l'accessoire de service qui a été pré soudé avec des tuyaux de cuivre. Le contenu soufré du gaz pourrait causer la détérioration des lignes d'alimentation en cuivre standard.**

# Sealing the Protector Hood to the Work Surface

When the hood has been set in place, ducted, wired, and plumbed, it should be sealed at the work surface to prevent spilled materials from collecting under the walls of the hood. Materials such as silicone sealants are recommended to seal the hood structure. Note: Cupsinks are sealed with silicone sealant to the work surface to prevent leaks.

# Certifying the Protector Fume Hood

The combination of your laboratory hood, exhaust ductwork, and exhaust blower gives you the flexibility to change the airflow at the sash opening of your hood. To determine the actual face velocity at the sash opening, airflow velocity readings will need to be taken. This should be done across the sash opening of the hood in accordance with the *Industrial Ventilation Manual* section on laboratory hoods (see *Appendix E: References*). Labconco recommends an average face velocity at the sash opening of 50 to 100 feet per minute for Protector XStream high performance fume hoods. Consult Chapter 2 for proper airflow volumes for your particular model. To ensure the performance at 50-60 feet per minute, Labconco researchers successfully challenged the Protector XStream at face velocities lower than 50 feet per minute, under various adverse conditions.

Your Protector Fume Hood has been tested at the factory per ASHRAE 110-1995. All hoods achieve an "as manufactured rating" of less than 0.05 part per million (ppm) at 4 liters per minute (lpm); AM <0.05 (consult Labconco for individual fume hood ratings). For "field use" ASHRAE testing contact Labconco Sales Engineering Team or Customer Service for a certified on-site contractor.

**NOTE: Face velocity profiles and smoke testing should be done periodically to ensure safe performance**.

**NOTE : Les profils de flux frontal et les tests de fumée devraient être régulièrement faits pour garantir une utilisation en toute securité.**

# CHAPTER 4
# PERFORMANCE FEATURES AND SAFETY PRECAUTIONS

## Performance Features

The Protector XStream High Performance Laboratory Hood is designed to meet the needs of the laboratory scientist, and provide superior containment while conserving energy at OSHA approved “low flow” velocities as low as 50-60 feet per minute. The Protector XStream laboratory fume hood has been designed to effectively contain toxic, noxious, or other harmful materials when properly installed. What makes the Protector XStream so unique is the revolutionary way it directs air into and through the contaminated air chamber. Labconco engineered the Protector XStream to minimize the effects of turbulence. The innovative and aerodynamic designs of the sash handle, air foil, upper dilution air supply, and rear downflow baffle all work in concert to produce horizontal airflow patterns that significantly reduce chemical concentrations through the work area. Depending on sash position, air turbulence, vortexing and “the roll” frequently observed during fume hood smoke tests are virtually eliminated by the Protector XStream high performance system. Optional A-Style Combination Sash models are also available upon request. The hood features a by-pass airflow design that promotes full containment as the sash is moved. Airflow is diverted behind the front panel and under the air foil to help control fluctuations in face velocity, which occur as the sash is moved.

1. **Unique sash provides maximum visibility of 37.5" high while conserving energy by limiting sash travel to 28"**. Vertical-rising sash may be raised from a closed to 28" operating height. Exhaust volume, and blower sizing is based on the 18" height to maximize energy usage. Sash stops are included to limit sash height to 18" and reduce energy usage.

2. **Containment-Enhancing Sash Handle** includes a perforated air passage directly atop the handle to bleed air into the hood chamber and direct chemical fume concentrations away from the user breathing zone. The large radiused handle sweeps airflow into the hood with minimal turbulence.
3. **Large usable interior work depth and interior height of 48"** provides ample working space and directs contaminants away from the operator.
4. **Opti-Zone™ Rear Downflow Dual Baffle System** directs horizontal streams of airflow to the rear slots of the primary baffle in a single pass. Baffles are removable for cleaning. The secondary baffle, located between the primary baffle and the back wall, counteracts the upward air streams that create roll in traditional hoods.
5. **Exterior access cover plates** are removable for easy access to plumbing valves and sash adjustment hardware when servicing through the sides is not possible.
6. **Lift-Away™ front panel** provides easy access to electrical wiring, sash weights, and lighting fixtures.
7. **Energy efficient LED lighting** is located behind a laminated safety glass shield mounted to the top of the hood. The factory-wired instant start T8 lighting is serviceable from outside the hood cavity. Additionally, the long lasting 50,000 hour direct wired LED T8 bulbs are more energy efficient, utilizing approximately ½ the power of fluorescent bulbs. See Appendix A for wattage.
8. **Low mounted, factory-wired light and blower switches** are ADA compliant.
9. **Eco Energy Conservation Air Foil and Flush Foil** allow air to sweep the work surface for maximum containment. The perforated Clean-Sweep™ openings create a constant protective barrier from contaminants. In addition, should the operator inadvertently block the airflow entering, the air continues to enter from under the air foil and through the Clean-Sweep openings. See Appendix A for alternate PVC Eco-Air Foil as PVC material resists corrosion from mineral acids.
10. **Streamlined corner posts** provide maximum visibility and the flexibility to add services after installation.
11. **All hoods are factory prepared for up to 8 service fixtures**.
12. **Duplex electrical receptacles** are mounted on the right and left corner posts as requested. Receptacles are factory-wired to hood single point junction box.
13. **Upper Dilution Air Supply** (not shown) provides bypass air from above the work area. This feature constantly bathes the sash interior with clean air and reduces chemical fumes along the sash plane, near the critical breathing zone. The upper dilution air supply perforations sweep the upper interior to reduce stagnant pockets of air in the upper interior.
14. **Shipped fully assembled** and eliminates the need for costly onsite assembly. If needed, the fume hood easily breaks down for transport through doorways.

15. **Accessory Guardian™ Digital Airflow Monitor or Guardian Airflow Monitor** continuously monitors face velocity. An audio/visual alarm alerts the user to low airflow conditions. The right corner post is factory prepared to accommodate the Guardian Monitor (sold separately).
16. **Optional Sash Models.** Sashes are offered in smooth anti-racking cable, chain, auto-return, or Intelli-Sash.
17. **Frame of Epoxy-Coated Steel and Aluminum** is durable and corrosion resistant.
18. **Exhaust Connection**. The hood features 12" (12.75" OD pipe) exhaust connections sized to allow for a minimum static pressure loss through the hood structure while providing a good transport velocity through the exhaust system.
19. **Spillstopper™ Solid Epoxy Work Surface** is dished to contain spills. Hoods with Eco-Foil utilize a large 1.0" radiused leading edge to promote aerodynamic airflow. (Work surface is sold separately).
20. **Optional Ceiling Enclosure Kits** are available for a decorative facade between the hood and the ceiling.
21. **Sash Stops** located 18" off the work surface provide a means of controlling the operating height of the sash, and further reducing energy requirements if so desired.

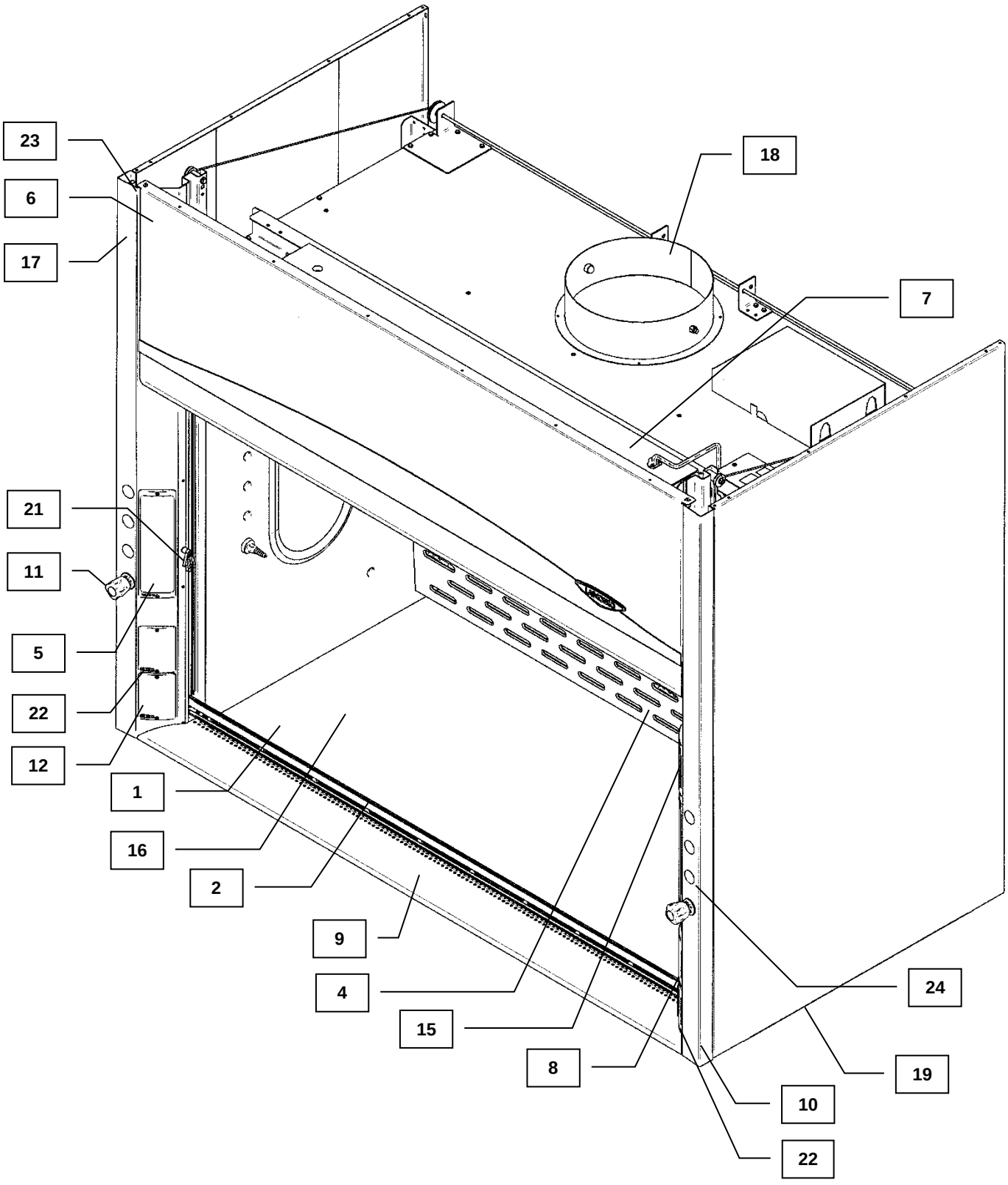



**Figure 4-1**

See Diagram on Page 22.

22. **CAUTION –** Current rating of receptacle is specified in *Appendix D*.

    **AVERTIR –** Classification des prises de courant est spécifié dans l'Annexe D.

23. **CAUTION –** See Appendix C and D for complete current rating.

    **AVERTIR –** Voir Annexe C et D pour la classification complete du courant.

24. **CAUTION –** Flammable Gas.

    **AVERTIR –** Gaz Inflammable.

# Safety Precautions

**Although the laboratory hood has been engineered to maintain optimum operator safety, caution should always be used while working in the hood. Prior to using the hood, check to make sure that the exhaust blower is operating and that air is entering the hood at its specified face velocity.**

**Bien que la hotte de laboratoire ait été réglée pour maintenir la sécurité optimale de l'opérateur, la prudence devrait toujours être utilisée en travaillant sous la hotte. Avant utiliser la hotte, le contrôle pour s'assurer que la soufflerie d'aspiration fonctionne et que cet air entre dans la hotte au flux spécifié.**

USE GOOD HOUSEKEEPING IN THE HOOD AT ALL TIMES. CLEAN UP SPILLS IMMEDIATELY WITH A MILD DETERGENT. PERIODICALLY CLEAN HOOD INTERIOR, INCLUDING LED LIGHT GLASS PANEL. REPLACE BURNED OUT LIGHT BULBS TO MAINTAIN MAXIMUM ILLUMINATION.

DO NOT OVERLOAD THE WORK SURFACE WITH APPARATUS OR WORK MATERIAL. THE SAFE OPERATION OF THE LABORATORY HOOD IS BASED UPON HAVING PROPER AIRFLOW THROUGH THE STRUCTURE. DO NOT PLACE LARGE, BULKY OBJECTS SUCH AS BLOCK HEATERS, DIRECTLY ON THE HOOD WORK SURFACE. INSTEAD, ELEVATE THE OBJECT 2" TO 3" ON BLOCKS TO ALLOW A FLOW OF AIR UNDER THE OBJECT AND INTO THE LOWER REAR BAFFLE EXHAUST SLOT. ENSURE BLOCKS ARE LEVEL AND SECURED IN PLACE.

**Blocking the bottom of the baffle at rear of hood will change the airflow pattern in the hood causing turbulence and possible leakage at the face of the hood. (Don't store containers or supplies against baffles, as this will affect airflow through the hood).**

**Avoid placing your head inside hood. Keep hands out of hood as much as possible.**

**Bloquer le fond du déflecteur à l'arrière de la hotte changera le modèle du flux d'air dans la hotte causant de la turbulence et une fuite possible devant la hotte. (Ne pas emmagasiner des récipients ou des provisions contre les déflecteurs, car ceci affectera le flux d'air à travers la hotte).**

**Eviter de placer votre tête à l'intérieur de la hotte. Garder les mains à l'extérieur de la hotte le plus possible.**

**Always work as far back in hood as possible. It is best to keep all chemicals and apparatus 6" inside the front of the hood.**

**Toujours travailler aussi loin que possible de la hotte. Il est recommandé de garder tous les produits chimiques et appareils à 6 pouces à l'intérieur de l'avant de la hotte.**

**This hood does not feature explosion-proof electrical components, unless ordered separately. Therefore, use of flammable or explosive materials in quantities above the explosive limit are not recommended.**

**Cette hotte ne possède pas de composants électriques anti-explosion, à moins que commandé séparément. Donc, l'usage de matériels inflammables ou explosifs dans les quantités au-dessus de la limite explosive n'est pas recommandé.**

**Do not work with chemicals in this hood without the exhaust system running. Do not store chemicals in a fume hood.**

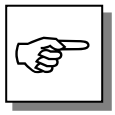
**Ne pas travailler avec les produits chimiques sous cette hotte sans le système de d'aspiration en marche. Ne pas stocker des produits chimiques sous une hotte aspirante.**

**Perchloric acid use in this hood is prohibited.**

**L'usage d'acide perchlorique sous cette hotte est interdit.**

**High level radioisotope materials are prohibited for usage in this hood.**

**Les matériels d'isotope radioactif de haut niveau sont interdits à l'usage sous cette hotte.**



AVOID CROSS DRAFTS AND LIMIT TRAFFIC IN FRONT OF THE HOOD. AIR DISTURBANCES CREATED MAY DRAW FUMES OUT OF THE HOOD.

**The use of heat-generating equipment in this hood without the exhaust system operating properly can cause damage to the hood.**

**L'usage d'équipement chaleur-produiant dans ce capuchon sans l'opération de système d'aspiration peut causer convenablement des dommages à la hotte.**

**The Laboratory Hood should be certified by a qualified certification technician before it is initially used. The hood should be re-certified whenever it is relocated, serviced or at least annually thereafter.**

**La Hotte de Laboratoire Protecteur devrait être certifié par un technicien de certification qualifié avant qu'elle soit utilisée au début. La hotte devrait être re-certifiée quand elle est réinstallée, entretenue ou du moins annuellement par la suite.**

**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 hood from electrical service.**

**Garantir que l'unité est connectée au service électrique conformément aux règles électriques en vigueur. Le non-respect peut créer un feu ou un risque d'origine électrique. Ne pas enlever ou entretenir des composants électriques sans débrancher premièrement l'alimentation électrique de la hotte.**

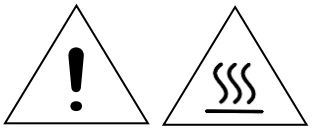
**Proper operation of the fume hood depends largely upon the hood's location and the operator's work habits. Consult the Reference Manual in *Appendix E*.**

**Le correct fonctionnement de la hotte d'aspiration dépend principalement de son emplacement et les habitudes de travail**

**de l'opérateur. Consulter le Manuel de Référence dans l'Annexe E.**

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

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



**Do not touch the blower motor. The surfaces of the motor can become hot and could cause burns.**

**Ne pas toucher le moteur de soufflerie. Les surfaces du moteur peuvent devenir chaudes et pourrait causer des brûlures.**

**Do not position the fume hood so that it is difficult to operate the main disconnect device.**

**Ne pas positionner la hotte de sorte qu'il est difficile de faire fonctionner le dispositif principal de déconnexion.**

**To prevent the possibility of minor injury keep hands and fingers clear of sprockets at the top of the four corners.**

**Pour éviter les risques de blessures mineures garder les mains et les doigts de pignons en haut de la quatre coins.**

# CHAPTER 5
# USING YOUR PROTECTOR XSTREAM

S

## Operating the Vertical-Rising Sash

Because of the Protector XStream Hood counterbalanced sash mechanism, it will take only a few pounds of force to move the sash up or down, and you can operate the sash smoothly with one or two hands positioned any where along the handle. The vertical-rising sash may be raised to a maximum 28" operating height. The airflow requirements should be sized for the 28" operating height; if using sash stops provided at 18", then the airflow requirements can be reduced by approximately 40%. See Chapter 2 for airflows. Optional models with auto-return to 18" or electric Intelli-Sash are available.

A

## Operating the A-Style Combination Sash

Some other hood models have sashes called A-Style Combination Sashes in place of vertical-rising sashes. These combination sashes allow the operator to use the hood with sashes either half open horizontally or vertically to conserve energy. The horizontal sashes are used in normal operating mode. Optional sets of sash stops can be installed to prevent raising the vertical sash above the half-open and fully closed positions unless manually defeated by the operator. The airflow requirements are sized for the 50% open sash condition.

S A

## Operating the Blower

Your Protector XStream Fume Hood utilizes a remote style blower, which can be activated by turning the blower switch to “ON.” You can validate the hood performance by watching smoke drawn into the hood face opening.

S A

# Operating the Lights

Your Protector XStream Fume Hood utilizes a factory-wired LED light to illuminate the hood interior (see Appendix A). Simply turn the light switch to "ON" to operate.

# Working in your Protector Fume Hood

**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 hood is in use.

**Start-up**

Labconco follows the recommendations of the American National Standard Institute with regards to fume hood exhaust systems. A full list of requirements can be found in the ANSI Standard No. Z9.5 *Laboratory Ventilation*. If you are unsure of the proper use of the exhaust blower for your fume hood, contact your safety officer or industrial hygienist before making any modifications to the blower's operational status (on/off/low, etc.). Keeping the exhaust system under constant negative pressure is an excellent way to ensure hazardous fumes in the fume hood do not enter the laboratory space inadvertently.

- Turn on the light.
- Slowly raise the sash and verify the fume hood has proper airflow.
- Check the baffle air slots for obstructions.
- Allow the hood to operate unobstructed for two minutes.
- Wear a long sleeved lab coat and rubber gloves. Use protective eyewear. Wear a protective mask if appropriate.

**Loading Materials and Equipment**

- Only load the materials required for the procedure. Do not overload the hood.
- Do not obstruct the front air foil (sill), or rear baffle slots.
- Large objects should not be placed close together and spaced above the work surface to permit airflow to sweep under the equipment.
- After loading the hood, wait one minute to purge airborne contaminants from the work area.

**Work Techniques**

- Keep all materials at least 6 inches inside of the sash and at least two inches from the side walls and perform all contaminated operations as far to the rear of the work area as possible.
- Keep all clean and contaminated materials in the work area separate for clear identification.
- Avoid using techniques or procedures that disrupt the airflow patterns of the hood.

**Final Purging**

- Upon completion of the work, the hood should be allowed to operate for two minutes undisturbed, to purge airborne contaminants from the work area before closing the sash.

**Unloading Materials and Equipment**

- Objects in contact with contaminated material should be surface decontaminated before removal from the hood.
- All open trays or containers should be covered before being removed from the hood.

**Shutdown**

- Turn off the light and close the sash.

# CHAPTER 6
# MAINTAINING YOUR PROTECTOR XSTREAM

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

## Service Safety Precautions

- If performing any electrical maintenance, always disconnect the power at the main disconnect.
- If performing decontamination inside the fume hood, consult your safety officer for proper personal protective equipment and procedure.
- Since some service operations require a step ladder, always use proper safety and consult your safety officer
- If performing maintenance on any service lines, always shut off the supply first.
- Some removable components may be heavy, follow safe-lifting guidelines.
- Verify all components are installed correctly with performance verified before conducting normal operations.

## Précautions de Sécurité pour l'Entretien

- Lors de l'entretien électrique, toujours débrancher le courant du secteur principal.
- Durant la décontamination sous la hotte d'aspiration, consulter votre responsable de sécurité pour le correct équipement de protection du personnel et la procédure.
- Puisque certaines opérations d'entretien exigent plusieurs étapes, toujours

utiliser la correcte sécurité  et consulter votre responsable de sécurité
- Lors de l'entretien sur n'importe quelles lignes de secteur, toujours éteindre premièrement l'alimentation.
- Quelques composants détachables peuvent être lourds, respecter les règles de sécurité du soulèvement.
- Vérifier tous les composants sont correctement installés avec un fonctionnement vérifié avant de faire des opérations normales.

- **Only trained and experienced certification technicians should perform some of the service operations after the fume hood has been properly decontaminated. DO NOT attempt to perform these operations if you are not properly trained. The wrench icon precedes the service operations that require qualified technicians.**
- **Seulement les techniciens de certification expérimentés et entraînés devraient exécuter certaines des opérations d'entretien après que la hotte d'aspiration ait été convenablement décontaminée. NE PAS tenter d'exécuter ces opérations si vous n'êtes pas convenablement entraîné. L'icône de clé plate précède les opérations d'entretien qui exigent des techniciens qualifiés.**

# Routine Maintenance Schedule

**Weekly**
- Using ordinary dish soap to clean the surface inside of the fume hood, and the work surface.
- Using an appropriate glass cleaner, clean the sash and all glass surfaces.
- Operate the fume hood blower, noting the airflow velocity through the hood using a source of visible smoke.

**Monthly (or more often as required)**
**Mensuellement (ou plus régulièrement si nécessaire)**
- Determine the actual face velocity through the sash opening of the hood where the average reading should be at the specified velocity. (Use calibrated thermal anemometer or other approved apparatus).
- Déterminer l'actuel flux d'aspiration à travers le sas d'entrée de la hotte où la valeur moyenne doit être égale à la valeur spécifiée. (Utiliser un anémomètre thermique calibré ou d'autres appareils approuvés).
- Using a damp cloth, clean the exterior surfaces of the hood, particularly the front of the hood, to remove any accumulated dust.
- En utilisant un chiffon humidifié, nettoyer les parties extérieures de la hotte, en particulier le devant de la hotte pour enlever la poussière accumulée.
- Check all service valves, if so equipped, for proper operation.
- Contrôler toutes les soupapes, si présentes, pour le bon fonctionnement.
- The hood baffles should be checked for blockages behind them to ensure that the hood is maintaining proper airflow.

- Les déflecteurs de hotte devraient être contrôlés pour leur blocage arrière afin d'assurer que la hotte maintient un flux d'air correct.
- All weekly activities.
- Toutes les activités hebdomadaires.

**Annually**
**Annuellement**

- Replace the lamps if needed.
- Remplacer les lampes, si nécessaire.
- Have the fume hood recertified by a qualified certification technician. See "Certifying the Protector Fume Hood" in *Chapter 3*.
- Recertifier la hotte aspirante par un technicien agréé en certification.Voir au Chapitre 3 « Certifier la Hotte Aspirante Protecteur ».
- All monthly activities.
- Toutes les activités mensuelles.

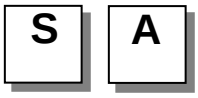
**Biannually**

- The sash assembly should be checked to ensure proper operation and to make sure there are no signs of abnormal wear on the sash pulleys, cables and clamps.

# Routine Service Operations

## Front Panel Removal:

1. Simply lift the front panel up and then away from the hood to provide access to the top.




## Changing the Lamp:

1. Turn light switch to "OFF".
2. Remove the front panel as noted earlier.
3. Reach over the front header of the hood and remove the knock out plugs at both ends of fixture. Lift fixture up.
4. Remove the lamp by pushing it out of the spring-loaded lamp socket and swinging it out of the other lamp socket.
5. Install the new lamp by reversing the removal procedure.

# CHAPTER 7
# MODIFYING YOUR PROTECTOR XSTREAM

There are several ways to modify the fume hood for your individual requirements. These include the addition of work surfaces, service fixtures, air monitor, distillation grids, electrical duplex outlets, ceiling enclosures, and rear panels.

## Installing Work Surfaces

Your Protector XStream Fume Hood with Eco-Foil requires a large 1.0" leading edge radiused work surface to work properly, and achieve high performance. The work surface used for the Flush Foil also has precise dimensions for optimal performance. Contact Labconco Customer Service for ordering information.

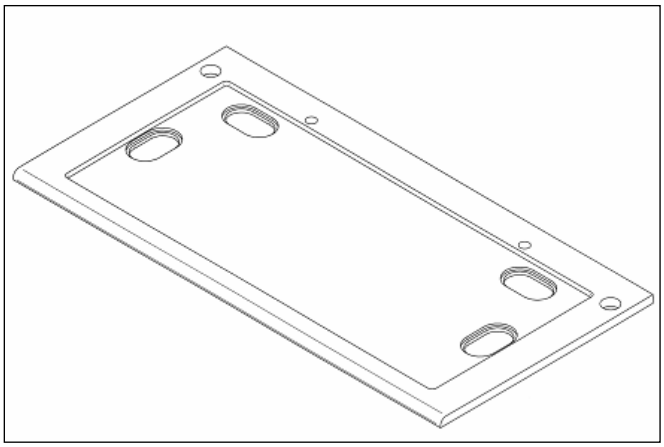


**Figure 7-1**

# Installing Ceiling Enclosures Above the Fume Hood

Your Protector XStream Fume Hood has mounting holes to accept a ceiling enclosure to close off the area between the top of the hood and the ceiling. Contact Labconco Customer Service for ordering information. Labconco offers both non-adjustable fixed height ceiling enclosures as well as adjustable height ceiling enclosures per the charts below. Other special sizes are available upon request.

**3-Sided Ceiling Enclosure Kits**
The panels extend above the top of the hood to the ceiling to hide exposed ductwork, plumbing and wiring. For any 3 ft to 8 ft Protector XL Benchtop, Premier, XStream, Stainless Steel or PVC Fume Hood. Each kit includes three glacier white powder-coated steel ceiling enclosure panels, one for the front of the hood and one for each side of the hood.

**Configure Your Non-Adjustable Fixed Height Ceiling Enclosure Kit Catalog Number**
Use this key to configure the seven digit catalog number to order your 3-Sided **Fixed Height** Ceiling Enclosure Kit. For example, **9550511** is a 3-Sided Ceiling Enclosure Kit for a 5' Protector XStream Hood with a fixed height of 12".

**9 5 5 0**

**STEP 1.** Select the **nominal width** of your fume hood. This number is the fifth digit of your catalog number.
**3** = 3' (XL Benchtop only)
**4** = 4'
**5** = 5'
**6** = 6'
**7** = 7' (XL Benchtop only)
**8** = 8'

**STEP 2.** Select the **depth** based on the model chosen. Choose 0 for Premier and 1 for XStream. Choose 1 for PVC. Choose 0, 1 or 2 for the correct depth of the XL Benchtop model. Choose 0 or 1 for the correct depth of Stainless Steel. This is the sixth digit of your catalog number.

| No. | Ext. Depth | Model |
|---|---|---|
| 0 | 31.7" | Premier, XL Benchtop, Stainless Steel |
| 1 | 37.7" | XStream, XL Benchtop, XL Floor-Mounted, Stainless Steel, PVC |
| 2 | 43.7" | XL Benchtop, XL Floor-Mounted |

**STEP 3.** Choose the correct **height** that matches the number. This height should match the height between the top of the hood and the building ceiling. This is the seventh digit of your catalog number.

| No. | Height |
|---|---|
| 0 | 6" |
| 1 | 12" |
| 2 | 18" |
| 3 | 24" |
| 4 | 30" |
| 5 | 36" |

**Configure Your Adjustable Height Ceiling Enclosure Kit Catalog Number**
Use this key to configure the seven digit catalog number to order your 3-Sided **Adjustable Height** Ceiling Enclosure Kit. For example, **9425511** is a 3-Sided Ceiling Enclosure Kit for a 5' Protector XStream Hood with a height range of 14-19".

**9 4 2 5**

**STEP 1.** Select the **nominal width** of your fume hood. This number is the fifth digit of your catalog number.
**3** = 3' (XL Benchtop only)
**4** = 4'
**5** = 5'
**6** = 6'
**7** = 7' (XL Benchtop only)
**8** = 8'

**STEP 2.** Select the **depth** based on the model chosen. Choose 0 for Premier and 1 for XStream. Choose 1 for PVC. Choose 0, 1 or 2 for the correct depth of the XL Benchtop model. Choose 0 or 1 for the correct depth of Stainless Steel. This is the sixth digit of your catalog number.

| No. | Ext. Depth | Model |
|---|---|---|
| 0 | 31.7" | Premier, XL Benchtop, Stainless Steel |
| 1 | 37.7" | XStream, XL Benchtop, XL Floor-Mounted, Stainless Steel, PVC |
| 2 | 43.7" | XL Benchtop, XL Floor-Mounted |

**STEP 3.** Choose the correct **height range** that matches the number. This height range should match the height between the top of the hood and the building ceiling. This is the seventh digit of your catalog number.

| No. | Height Range |
|---|---|
| 0 | 11-14" |
| 1 | 14-18.6" |
| 2 | 18.6-24.4" |

**Note:** The previous generation listed as 9414-W-D-H is presented below to aid product service.

**9 4 1 4 W D H**

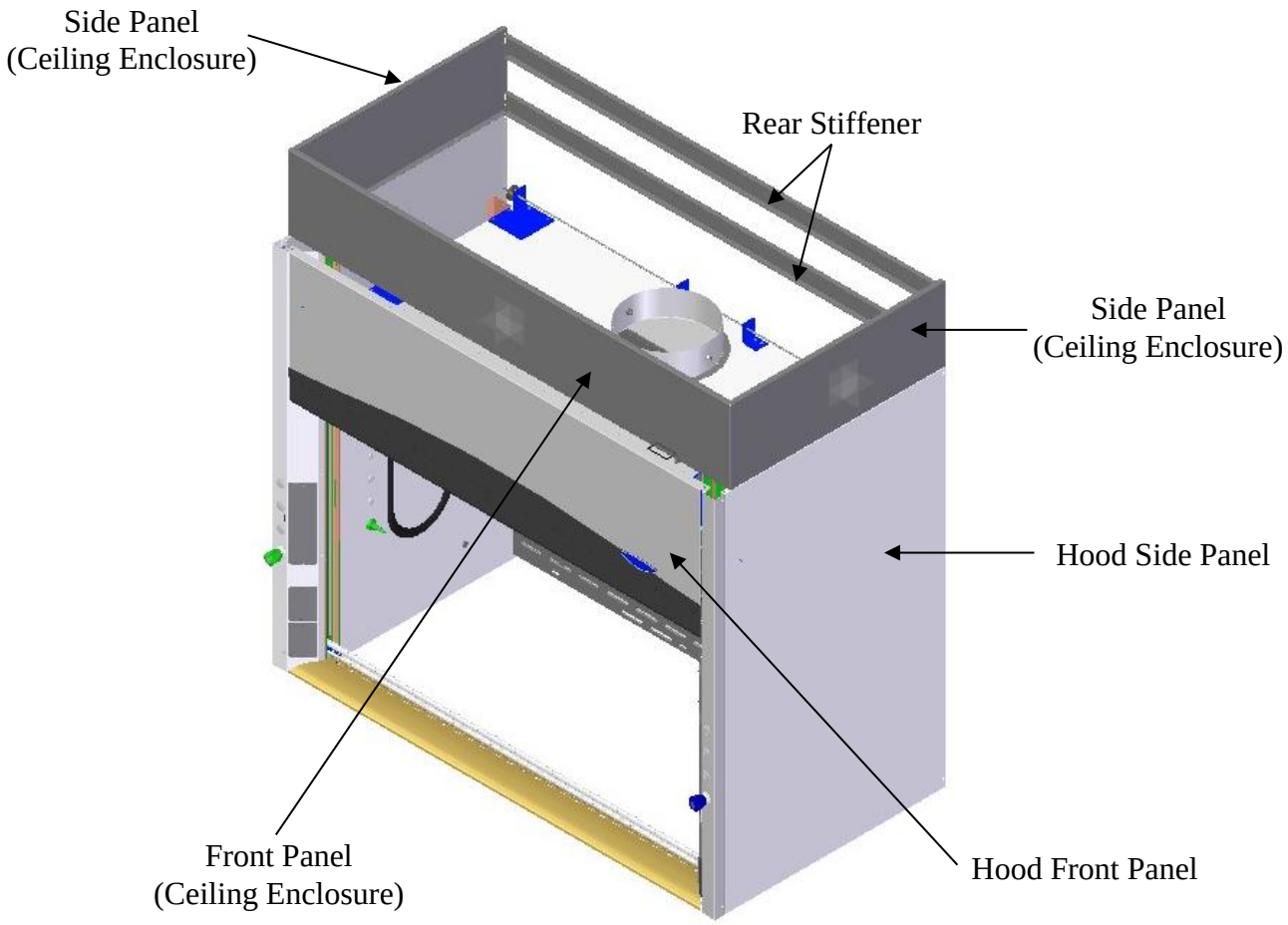



**Figure 7-2**

# Installing Rear Panels Behind the Fume Hood

Your Protector XStream Fume Hood can be modified to add a rear panel behind the fume hood when the fume hood is placed on an island. Contact Labconco Customer Service for ordering information.

# Installing Additional Service Fixtures

Additional service fixtures can be installed in the available service fixture holes in both sidewalls and corner posts. The fume hood is factory set to accept up to four valves per side. Contact Labconco Customer Service for information.

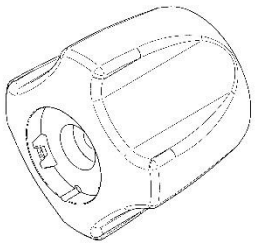


**Figure 7-3 Knob**

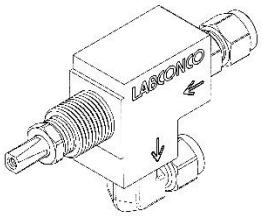



**Figure 7-4 Valve**

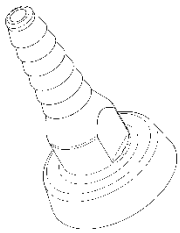


**Figure 7-5 Hose Connector**

# Installing Guardian™ Digital Airflow Monitor or Guardian™ Airflow Monitor

The Guardian Airflow Monitors continuously monitor face velocity through the fume hood opening. The fume hood right corner post is factory prepared to mount either monitor. Contact Labconco Customer Service to order.

# Distillation Grids – Field Installation

The distillation grids have been strategically placed with the vertical rod center lines in front of the lower baffle and middle baffle. The distillation grids allow the hood user to mount glassware, motors, stirrers, and other apparatus. Contact Labconco Customer Service for ordering information.

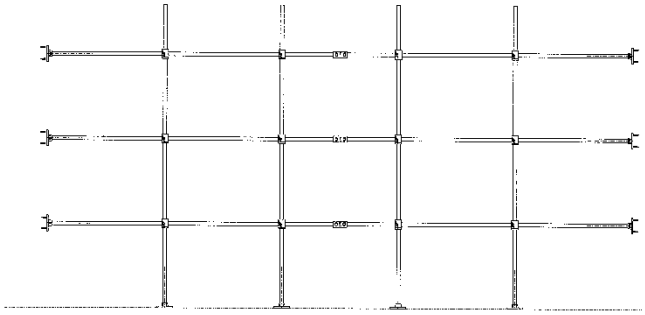


**Figure 7-8**

# Installing an Electrical Duplex Outlet

Your Protector Fume Hood can be ordered with duplex outlets, however, if you ordered a model without an electrical duplex outlet you can have one installed in the field by a qualified electrician. Contact Labconco Customer Service for ordering information. (Not acceptable on explosion-proof hoods).

Votre Protège-capot de fumées peut être commandé avec prises doubles, cependant, si vous avez commandé un modèle sans prise de courant duplex, vous pouvez en faire installer sur le terrain par un électricien qualifié. Contactez le service clientèle Labconco pour commander. (Non acceptable sur antidéflagrants hottes).

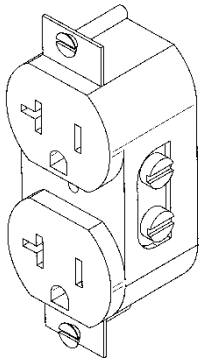
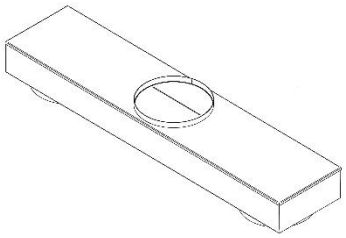


**Figure 7-9**

# 8' Dual Exhaust Adapters – Field Installation



The Type 304 stainless steel single exhaust adapter allows 8' Protector Hoods to be exhausted from two fume hood exhaust collars spaced 48" apart to a single 12" (12.81 ID) exhaust, centered on the hood. The single centered exhaust outlet is located 9.3" from the rear of the hood for all 8' Protector Hoods.

For other special sizes, consult Labconco. The performance specifications for the 8' Dual Exhaust Adapters are listed below.

| Catalog No. | Description | Dimensions (w x d x h) | Height Above Hood (inches) | Equivalent Resistance (feet) | Shipping Wt. (lbs.) |
|---|---|---|---|---|---|
| **9595108** | Dual Exhaust 12 x 12 x 12 x 6 High Flush | 63" x 14.2" x 8.5" | 0 | 150 | 60 |
| **9595109** | Dual Exhaust 12 x 12 x 12 x 9 High | 63" x 14.2" x 11.5" | 3 | 120 | 70 |

# CHAPTER 8
# TROUBLESHOOTING

Refer to the following table if your fume hood fails to operate properly. If the suggested corrective actions do not solve your problem, contact Labconco for additional assistance.

| PROBLEM | CAUSE | CORRECTIVE ACTION |
|---|---|---|
| **Remote blower and lights won't operate** | Wires not connected at junction boxes or switches. | Check connection of switches. |
| | | Check connection to control box on top of unit. |
| | Circuit breakers tripped in building electrical supply. | Reset circuit breakers. |
| **Remote blower won't operate, but lights work** | Blower wiring is disconnected. | Inspect blower wiring and switch. |
| | Belt broken. | Replace belt. |
| | Blower motor is defective. | Replace blower motor. |
| **Fume hood blower operates but lights will not operate** | Lamp not installed correctly. | Inspect lamp installation. |
| | Lamp is defective. | Replace lamp. |
| | Lamp circuit breaker in building is tripped. | Reset the lamp circuit breaker. |

| PROBLEM | CAUSE | CORRECTIVE ACTION |
|---|---|---|
| **Fume hood blower operates, but lights will not operate** | Lamp wiring is disconnected. | Inspect lamp wiring. |
| | Defective lamp ballasts. | Replace lamp ballasts. |
| **Contaminants outside of fume hood** | Improper user techniques for the fume hood. | See “Certifying the Hood” Chapter 3 and “Safety Precautions” Chapter 4 sections in the manual. (Ref. Appendix E) |
| | Restriction of the baffle air slots or – blockage of the exhaust outlet. | Remove baffles to ensure that all air slots, and the exhaust outlet are unobstructed. |
| | External factors are disrupting the fume hood airflow patterns or acting as a source of contamination. | See “Location Requirements” Chapter 2, “Certifying the Hood” Chapter 3, and “Safety Precautions” Chapter 4 sections of this manual. (Ref. Appendix E) |
| | XStream Fume hood has improper face velocity. | Have fume hood re-certified and check remote blower exhaust system. XStream Hood should have average face velocity of 50-100 fpm. |
| **Vertical sash no longer operates smoothly** | Cable is frayed or plastic protection is damaged. | Inspect cable and replace cable if worn or damaged immediately; otherwise injury could result. |
| | Pulley bearing is damaged. | Replace pulley, bearing or add grease. |
| | Cable or chain has slipped off the pulleys or sprockets. | Re-install, cable or chain must be replaced immediately if damaged. |
| | Weight has broken pulleys or sprockets. | Replace pulleys or sprockets. |
| **Combination A-Style Sash no longer operates smoothly** | Horizontal glass panels have come off the tracks. | Re-install horizontal glass on tracks. |

| PROBLEM | CAUSE | CORRECTIVE ACTION |
|---|---|---|
| | Vertical sash frame is distorted. | Place horizontal glass symmetrically and pull sash down to air foil. Straighten damaged frame. |
| | Cable is frayed or has slipped off the pulleys. | Re-install, cable must be replaced immediately if damaged. |
| **Electrical duplex outlets no longer have power** | Wires not connected or faulty duplex. | Check wire connection or replace duplex. |
| | Circuit breakers tripped in building electrical supply. | Reset circuit breakers. |
| **Service valves no longer operate** | Faulty building supply. | Inspect building supply shut off valves and appropriate pressures below the recommended 40 PSI. |
| | Valve no longer operates. | Replace valve and check for leaks. |
| | Supply line or outlet line has leaks. | Inspect line for leaks and fix any leaking plumbing connections. |

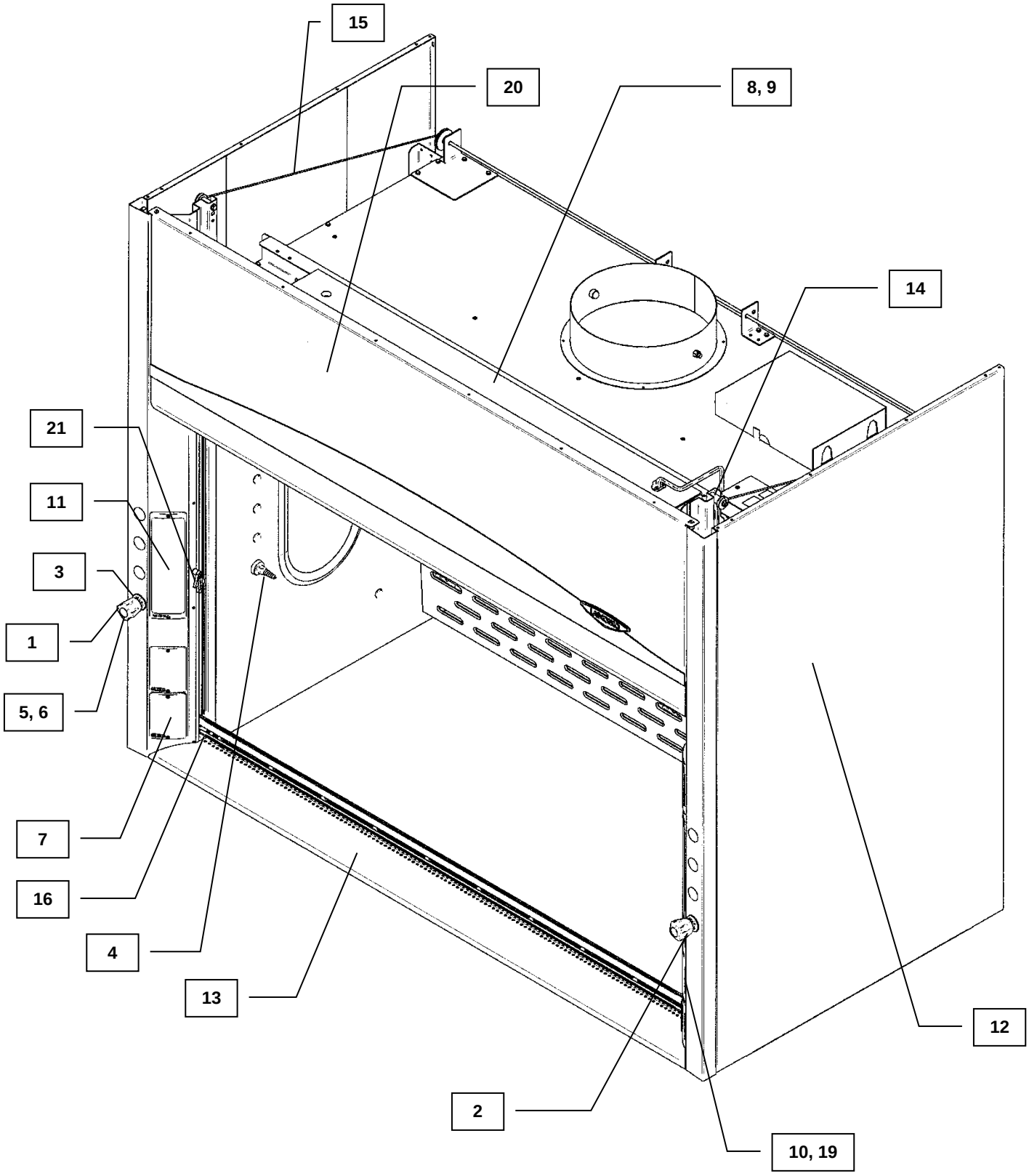
# APPENDIX A
# PROTECTOR XSTREAM
# COMPONENTS

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

## Protector XStream Replacement Parts

| Item | Quantity | Part No. | Description |
|---|---|---|---|
| 1A | 1 | 9823700 | Valve, Labconco (Water) 1/4" Compression Fitting |
| 1B | 1 | 9823701 | Valve, Labconco (Water) 3/8" Compression Fitting |
| 1C | 1 | 9817000 | Valve, Labconco 1/4" Compression Fitting (AIR, GAS, VAC, NIT, etc.) |
| 1D | 1 | 9817001 | Valve, Labconco 3/8" Compression Fitting (AIR, GAS, VAC, NIT, etc.) |
| 1E | 1 | 9823702 | Valve, Labconco Deionized 1/4" Compression Fitting |
| 1F | 1 | 9823703 | Valve, Labconco Deionized 3/8" Compression Fitting |
| 1G | 1 | 9818000 | Nut, Valve Mtg. (Labconco) |
| 2A | 1 | 9826800 | WaterSaver Valve/Gooseneck – GRN |
| 2B | 1 | 9826801 | WaterSaver Valve/Connector (VAC) – YEL |
| 2C | 1 | 9826802 | WaterSaver Valve/Connector (AIR) – ORG |
| 2D | 1 | 9826803 | WaterSaver Valve/Connector (GAS) – BLU |
| 2E | 1 | 9826805 | WaterSaver Valve/Connector (HOT WATER) – RED |
| 2F | 1 | 9826806 | WaterSaver Valve/Connector (CW) – GRN |
| 2G | 1 | 9826807 | WaterSaver Valve/Connector (STEAM) – BLK |
| 2H | 1 | 9826808 | WaterSaver Valve/Connector (NITROGEN) – BRN |
| 2I | 1 | 9826809 | WaterSaver Valve/Connector (OXYGEN) – LIGHT GREEN |
| 2J | 1 | 9826810 | Swivel Gooseneck only – GRN |
| 2K | 1 | 9826812 | Swivel Gooseneck only – WHITE |
| 3 | 1 | 9818700 thru 08 | Knobs (GRAY, GRN, BLU, ORG, YEL, RED, WHT, BLK, BRN) |
| 4A | 1 | 9818800 | Hose Barb, GRAY (NEUTRAL OR ARGON) – NOT SHOWN |
| 4B | 1 | 9818801 | Hose Barb, GREEN (COLD WATER) – NOT SHOWN |
| 4C | 1 | 9818802 | Hose Barb, BLUE (GAS) – NOT SHOWN |
| 4D | 1 | 9818803 | Hose Barb, ORANGE (AIR) – NOT SHOWN |
| 4E | 1 | 9818804 | Hose Barb, YELLOW (VACUUM) – NOT SHOWN |
| 4F | 1 | 9818805 | Hose Barb, RED (HOT WATER) – NOT SHOWN |
| 4G | 1 | 9818806 | Hose Barb, WHITE (DEIONIZED WATER) – NOT SHOWN |
| 4H | 1 | 9818807 | Hose Barb, BLACK (NEUTRAL OR STEAM) – NOT SHOWN |
| 4I | 1 | 9818808 | Hose Barb, BROWN (NITROGEN) – NOT SHOWN |
| 4J | 1 | 9819000 | Nut, Hose Barb – NOT SHOWN |
| 5 | 1 | 9825500 | Label, Knob (contains all the labels) |
| 6 | 1 | 9818900 | Lens, Knob |

| Item | Quantity | Part No. | Description |
|---|---|---|---|
| 7A | 1 | 9947100, 01, 02 | 115V Duplex Receptacle (GRAY) Right, Left 4' - 6', Left 8' w/ wires |
| 7B | 1 | 9818200 | Cover Plate 115V Duplex |
| 7C | 1 | 9947103, 04, 05 | 115V GFCI Duplex Receptacle (GRAY) Right, 4' - 6', Left 8' w/ wires |
| 7D | 1 | 9818100 | Cover Plate, 115V GFCI |
| 7E | 1 | 9818300 | Cover Plate, Blank |
| 8A | 1 | 1297503 | LED, Direct Wired T8 x 3' – newest models use on 4' & 8' Hoods – 12 watts each |
| 8B | 1 | 1297504 | LED, Direct Wired T8 x 4' – newest models use on 5' & 6' Hoods – 22 watts each |
| 9A | 1 | 9945300 | LED Light Fixture, 36" – use on 4' Hoods |
| 9B | 1 | 9945301 | LED Light Fixture, 48" – use on 5', 6' Hoods |
| 9C | 1 | 9945302 | LED Light Fixture, 36" Combo – use in 8' Hoods |
| 10A | 1 | 1302301 | Switch, Rocker |
| 10B | 1 | 1327500 | Switch, Plug (Fills cutout when switch is not used) |
| 11A | 1 | 9818400 | Access Cover |
| 12A | 1 | 9409801 | Side Panel, 30" internal deep hoods – NOT SHOWN |
| 12B | 4 | 1885308 | Screw, Machine #10-24 x .50 Phillips |
| 13A | 1 | 9436501 | Eco-Foil 4' |
| 13B | 1 | 9436502 | Eco-Foil 5' |
| 13C | 1 | 9436503 | Eco-Foil 6' |
| 13D | 1 | 9436505 | Eco-Foil 8' |
| 13E | 1 | 9436521 | PVC Eco-Foil, 4' |
| 13F | 1 | 9436522 | PVC Eco-Foil, 5' |
| 13G | 1 | 9436523 | PVC Eco-Foil, 6' |
| 13H | 1 | 9436525 | PVC Eco-Foil, 8' |
| 14A | 2 | 1850000 | Pulley, Front, 2" Dia. Nylon |
| 14B | 2 | 9709300 | Plastic Pulley (Rear 2") |
| 15A | 2 | 4949902 | Cable, Sash 130" – NOT SHOWN |
| 15B | 2 | 9414011 | Cable Replacement Kit 30" |
| 15C | 1 | 9545800 | Weight Support Bracket Kit |
| 16 | 2 | 9713300 | Bumper, Rubber (lower sash bumper) |
| 17 | 4 | 1920100 | Clamp, Cable Replacement (use two each side) – NOT SHOWN |
| 18 | 2 | 9935800 | Threaded Connector (to attach weight to cable) – NOT SHOWN |
| 19 | 1 | 9946300 or 01 | Wiring Harness, Main |
| 20 | 1 | 9409601, 02, 03, 05 | Front Panel, 4', 5', 6', 8' |
| 21 | 1 | 9410300 | Sash Stop Kit (XStream) |
| 22 | 1 | 1598500 | Hinged Screw Cap Cover – NOT SHOWN |


15
20
8, 9
14
21
11
3
1
5, 6
7
16
4
13
12
2
10, 19

# APPENDIX B
# PROTECTOR XSTREAM
# DIMENSIONS

| HOOD SIZE | HOOD WIDTH | INTERNAL HOOD WIDTH |
|---|---|---|
| 4' | 48.00" | 38.25" |
| 5' | 60.00" | 50.25" |
| 6' | 72.00" | 62.25" |
| 8' | 96.00" | 86.25" |

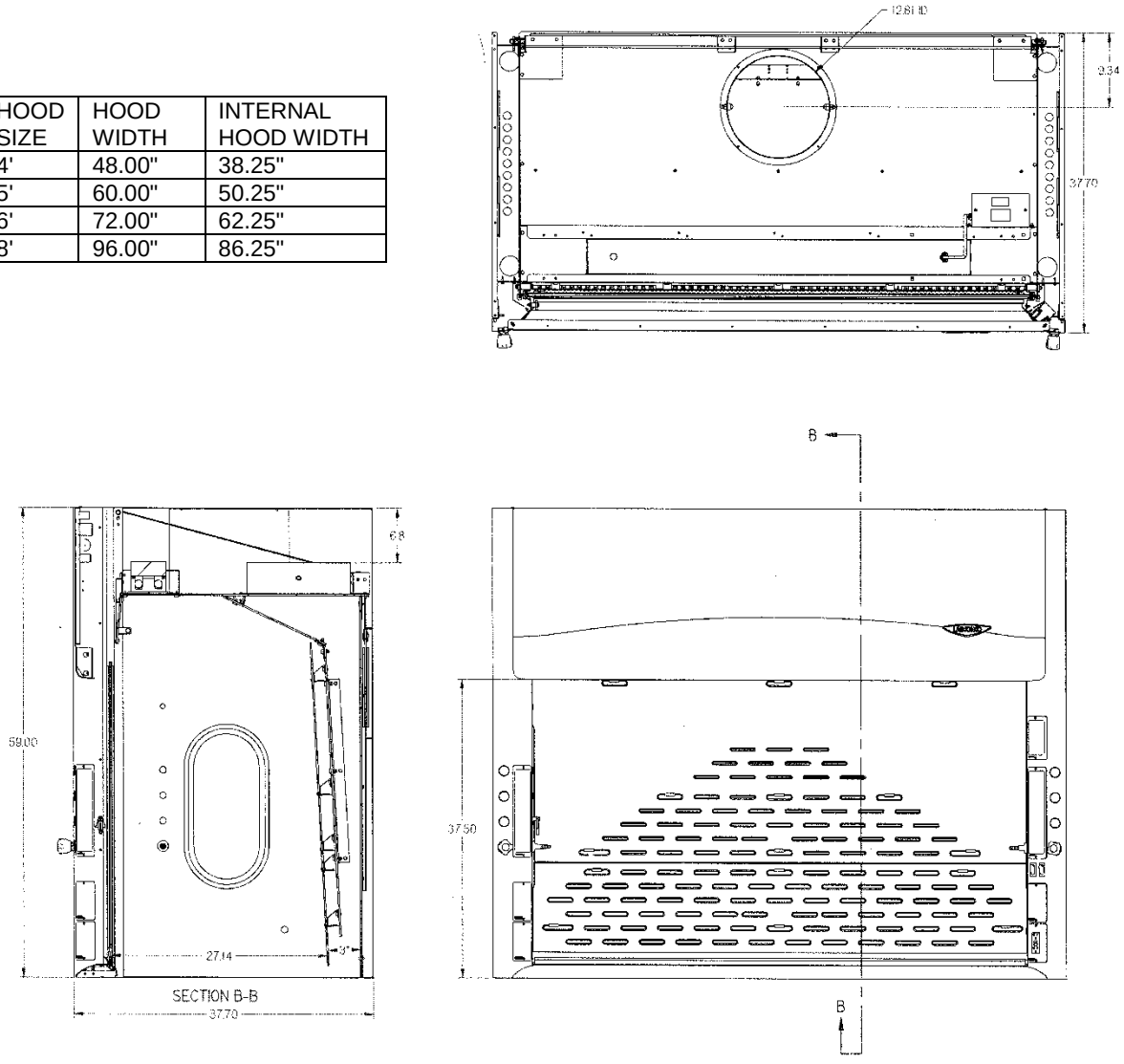



**Figure B-1**

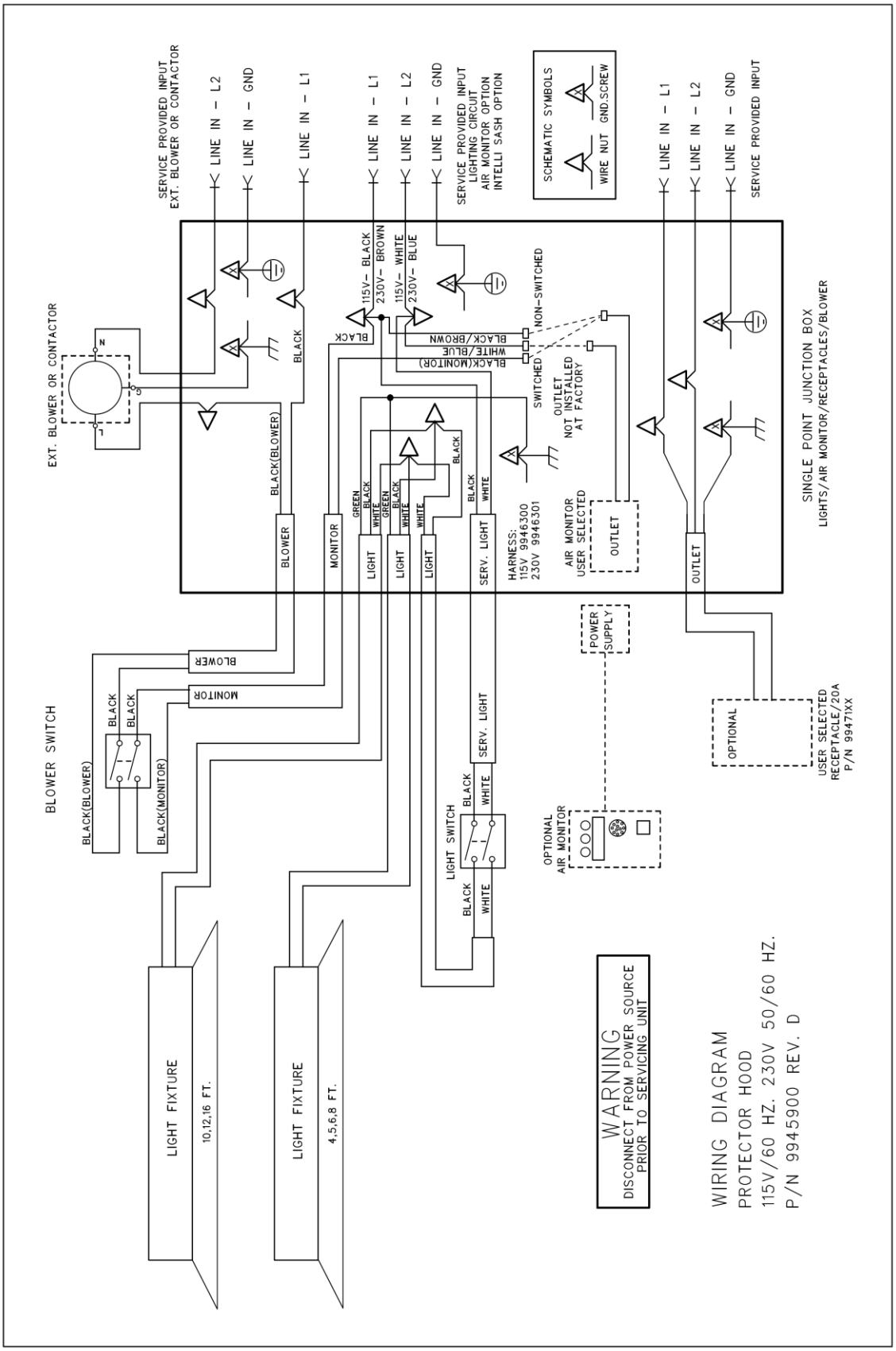
# APPENDIX C
# PROTECTOR XSTREAM
# SPECIFICATIONS

### Environmental Conditions

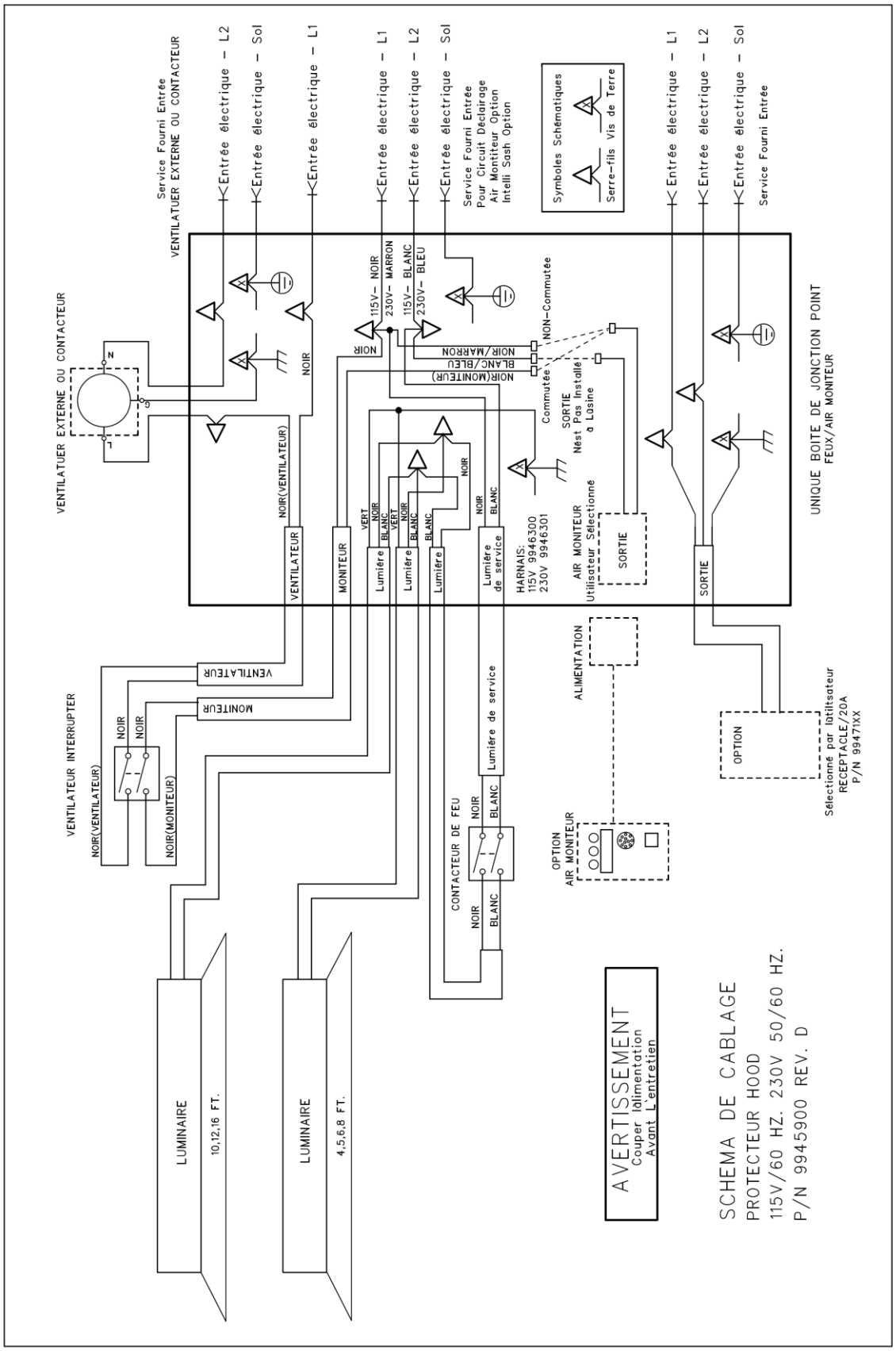
- Indoor use only.
- Maximum altitude: 10,000 feet (3,048 meters).
- Ambient temperature range: 41° to 104°F (5° to 40°C).
- Maximum relative humidity: 80% for temperatures up to 88°F (31°C), decreasing linearly to 50% relative humidity at 104°F (40°C).
- Main supply voltage fluctuations not to exceed ±10% of the nominal voltage.
- Transient over-voltages according to Installation Categories II (Over-voltage 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.
- Electrical Ratings

| Volts AC | Phase | Cycle | AMP* |
|---|---|---|---|
| 115 | 1 | 50/60 | 10 |
| 115 | 1 | 50 | 10 |
| 115 | 1 | 60 | 10 |
| 230 | 1 | 50/60 | 5 |
| 230 | 1 | 50 | 5 |
| 230 | 1 | 60 | 5 |

*Does not include current rating of receptacles.


SERVICE PROVIDED INPUT
EXT. BLOWER OR CONTACTOR
LINE IN – L2
LINE IN – GND
LINE IN – L1
LINE IN – L1
LINE IN – L2
LINE IN – GND
SERVICE PROVIDED INPUT
LIGHTING CIRCUIT
AIR MONITOR OPTION
INTELLI SASH OPTION
SCHEMATIC SYMBOLS
WIRE NUT
GND.SCREW
LINE IN – L1
LINE IN – L2
LINE IN – GND
SERVICE PROVIDED INPUT
EXT. BLOWER OR CONTACTOR
115V– BLACK
230V– BROWN
115V– WHITE
230V– BLUE
BLACK
BLACK/BROWN
WHITE/BLUE
BLACK(MONITOR)
NON–SWITCHED
SWITCHED
OUTLET
NOT INSTALLED
AT FACTORY
BLACK(BLOWER)
BLACK
GREEN
BLACK
WHITE
GREEN
BLACK
WHITE
WHITE
BLACK
BLACK
WHITE
BLOWER
MONITOR
LIGHT
LIGHT
LIGHT
SERV. LIGHT
HARNESS:
115V 9946300
230V 9946301
AIR MONITOR
USER SELECTED
OUTLET
OUTLET
SINGLE POINT JUNCTION BOX
LIGHTS/AIR MONITOR/RECEPTACLES/BLOWER
POWER
SUPPLY
BLOWER SWITCH
BLACK
BLACK
BLACK(BLOWER)
BLACK(MONITOR)
BLOWER
MONITOR
OPTIONAL
USER SELECTED
RECEPTACLE/20A
P/N 9947XX
LIGHT SWITCH
BLACK
WHITE
SERV. LIGHT
BLACK
WHITE
OPTIONAL
AIR MONITOR
LIGHT FIXTURE
10,12,16 FT.
LIGHT FIXTURE
4,5,6,8 FT.
WARNING
DISCONNECT FROM POWER SOURCE
PRIOR TO SERVICING UNIT
WIRING DIAGRAM
PROTECTOR HOOD
115V/60 HZ. 230V 50/60 HZ.
P/N 9945900 REV. D

## Appendix C: Protector XStream Specifications



# APPENDIX D
# PROTECTOR I-S HOOD

Labconco offers Protector® I-S™ Fume Hood models installed with limit switches for automatic Intelli-Sense Blower operation that change 3 speeds automatically based off the sash position. The Intelli-Sense Blower low speed runs with the rising sash from 0"-3", with the medium speed sash from 4"-19" and the high speed sash from 20"-28"; the medium and high speed sash height positions can be altered by 1" increments in the field between 15" and 20". The limit switches are installed and wired per the automatic operation wiring diagrams in Appendix C. The limit switches replace the manually operated 3-position switch. A Digital Airflow Monitor on the Protector I-S Hood constantly monitors face velocity at all speeds and sash positions to ensure proper hood operation. Note: The integrated Protector I-S Hoods with limit switches are only available from the factory due to the wiring complexity.

The integrated Protector I-S Hood models with limit switches automatically regulate the Intelli-Sense Blower, but independent of any room controls. Room controls such as room pressurization controls depicted in Appendix E are sold separately and are not sold by Labconco. The Protector I-S Hood is primarily used for small hood projects when the number of fume hoods cannot justify a complete variable airflow volume system or VAV. The Protector I-S Hood alters the (RPM) speed of the electronically commutated motor (ECM) blower wheel automatically with the sash position to change speeds. Some VAV systems can degrade and usually have annual service issues, but the Protector I-S Hood with Intelli-Sense Blower is reliable with little maintenance as it has no belts, valves or sophisticated controls systems. The reliable Intelli-Sense Blower has a rated bearing life of 50,000 hours (6 years) at full speed and a test life of over 150,000 hours (over 17 years).

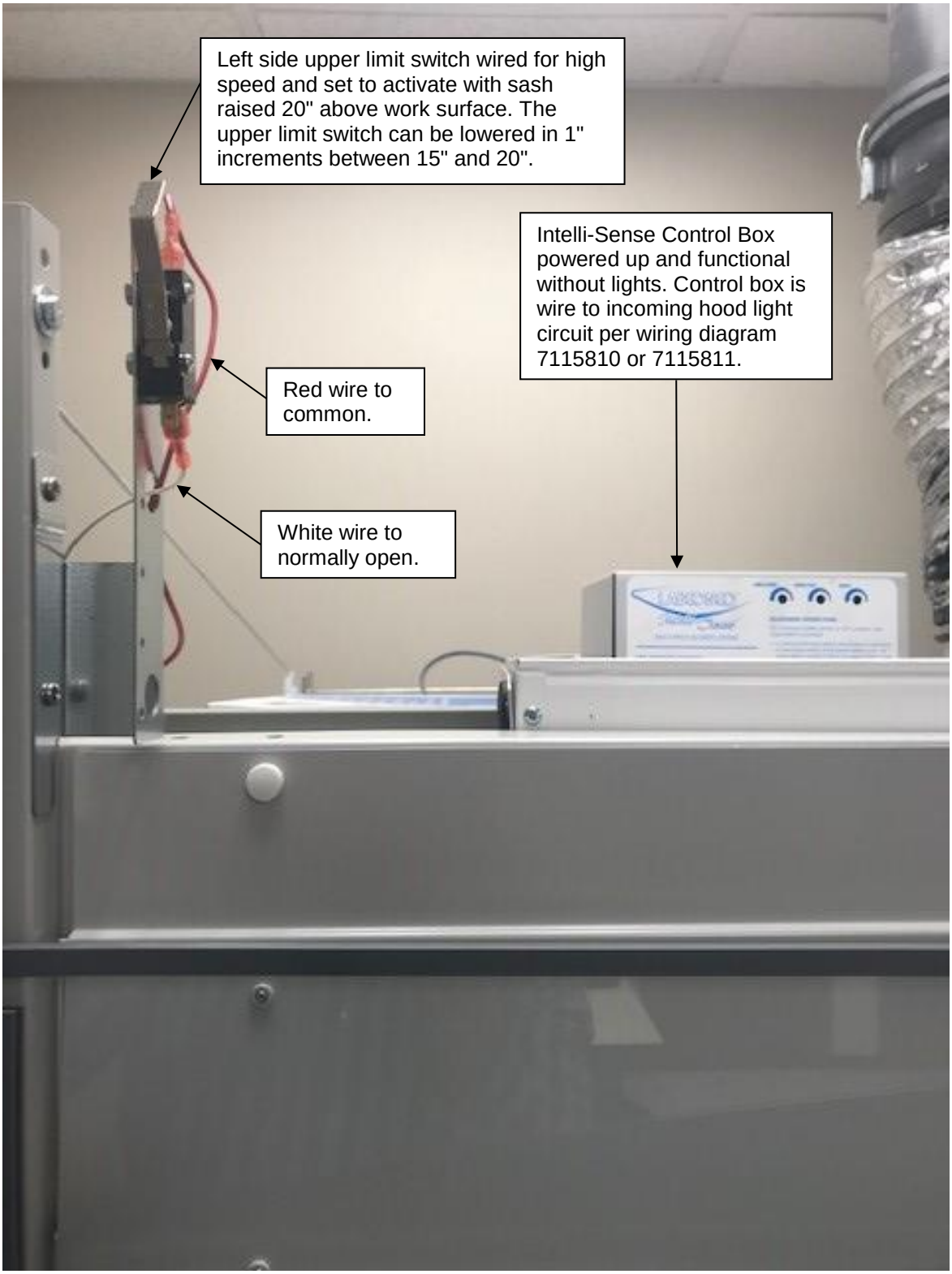
Please keep in mind that room controls such as room pressurization controls (Appendix E), duct sensors, or hood exhaust volume controls are not included. The variety of room controls MUST BE selected by the building controls engineering department. Note: Room controls are not sold by Labconco. In typical environments the room controls are set to a negative pressure with a range of -0.01" to -0.05" depending on the application.

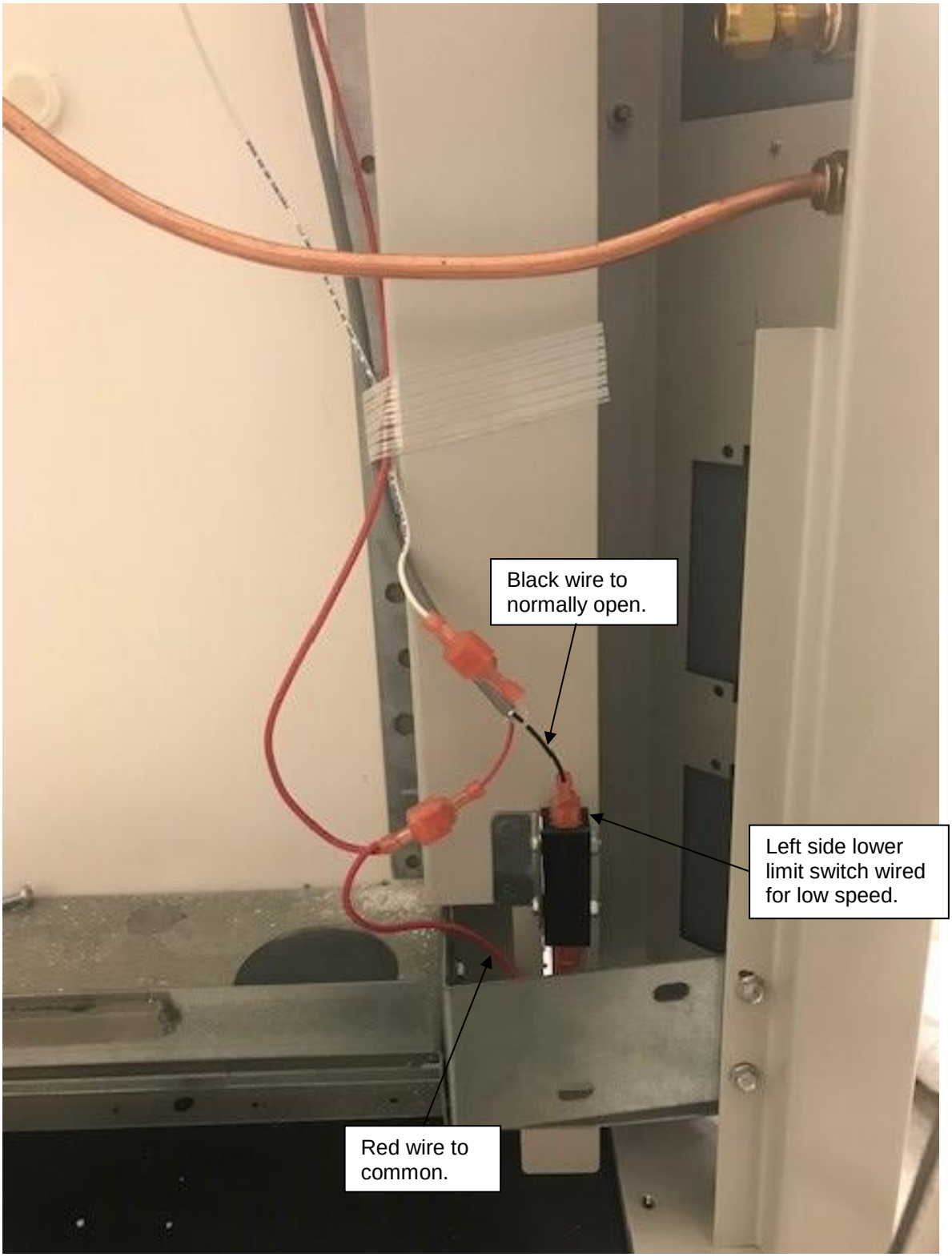
The following summarizes the Protector I-S Hood installed with limit switches for automatic Intelli-Sense Blower operation.

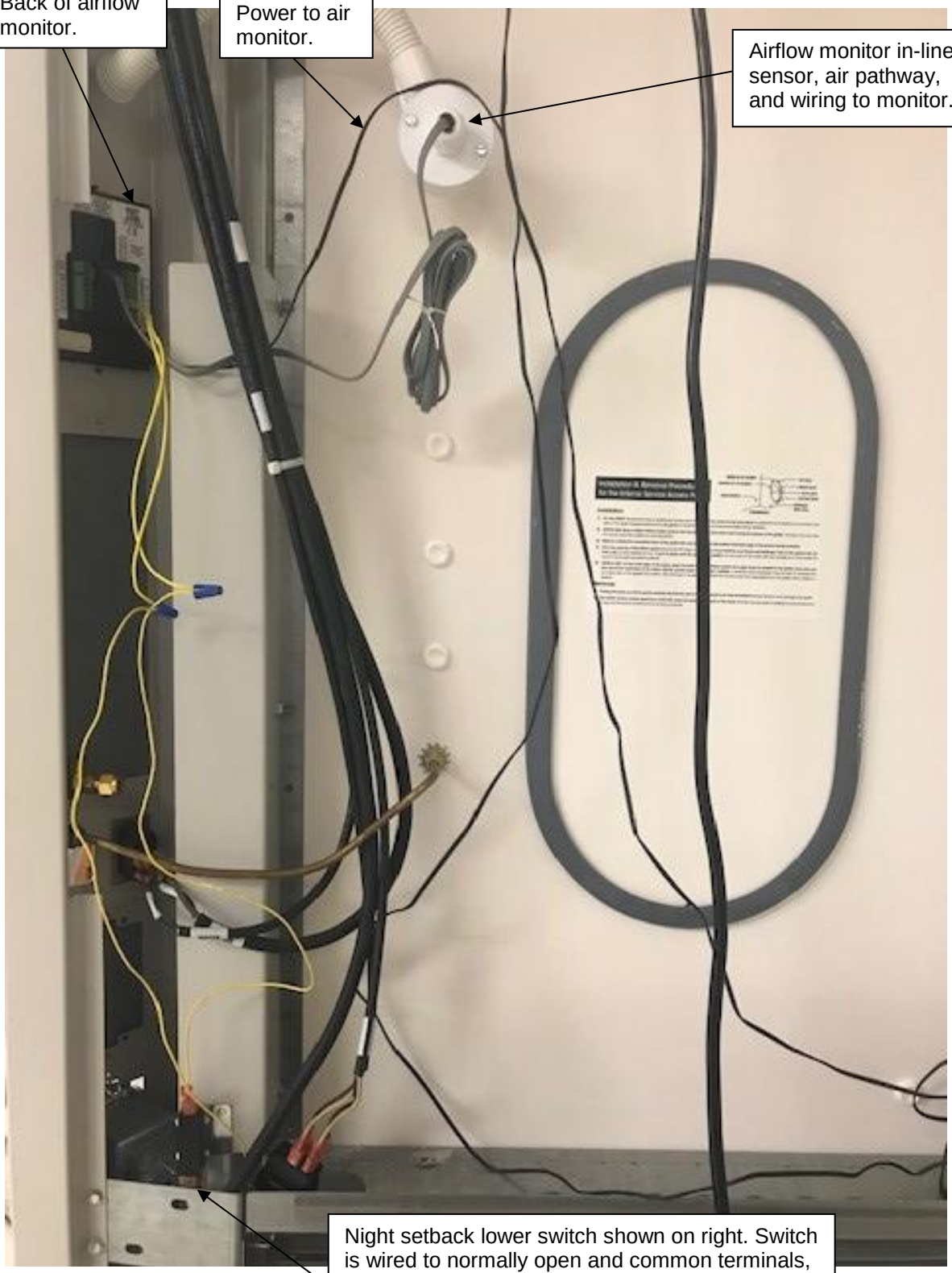
- INTEGRATED – Minimal set up, pre-mounted, multi-speed MSB controller, and pre-wired limit switches.
- INDEPENDENT – No conscious control as blower speeds change automatically with sash position and room controls work independently. Room controls are sold separate and not sold by Labconco.
- INTELLIGENT – The Integrated Intelli-Sense Hood becomes a Smart Hood that adjusts 3 speeds automatically based off sash position, has built-in over-amperage adjustment to prevent overheating, provides simple blower sizing, and provides 3 easy speed adjustments (MIN, MED, MAX) based off MIN sash height of 0"-3", MED sash height of 4"-19", and MAX sash height of 20"-28"; the MED and MAX sash heights can be altered by 1" increments in the field between 15" and 20".

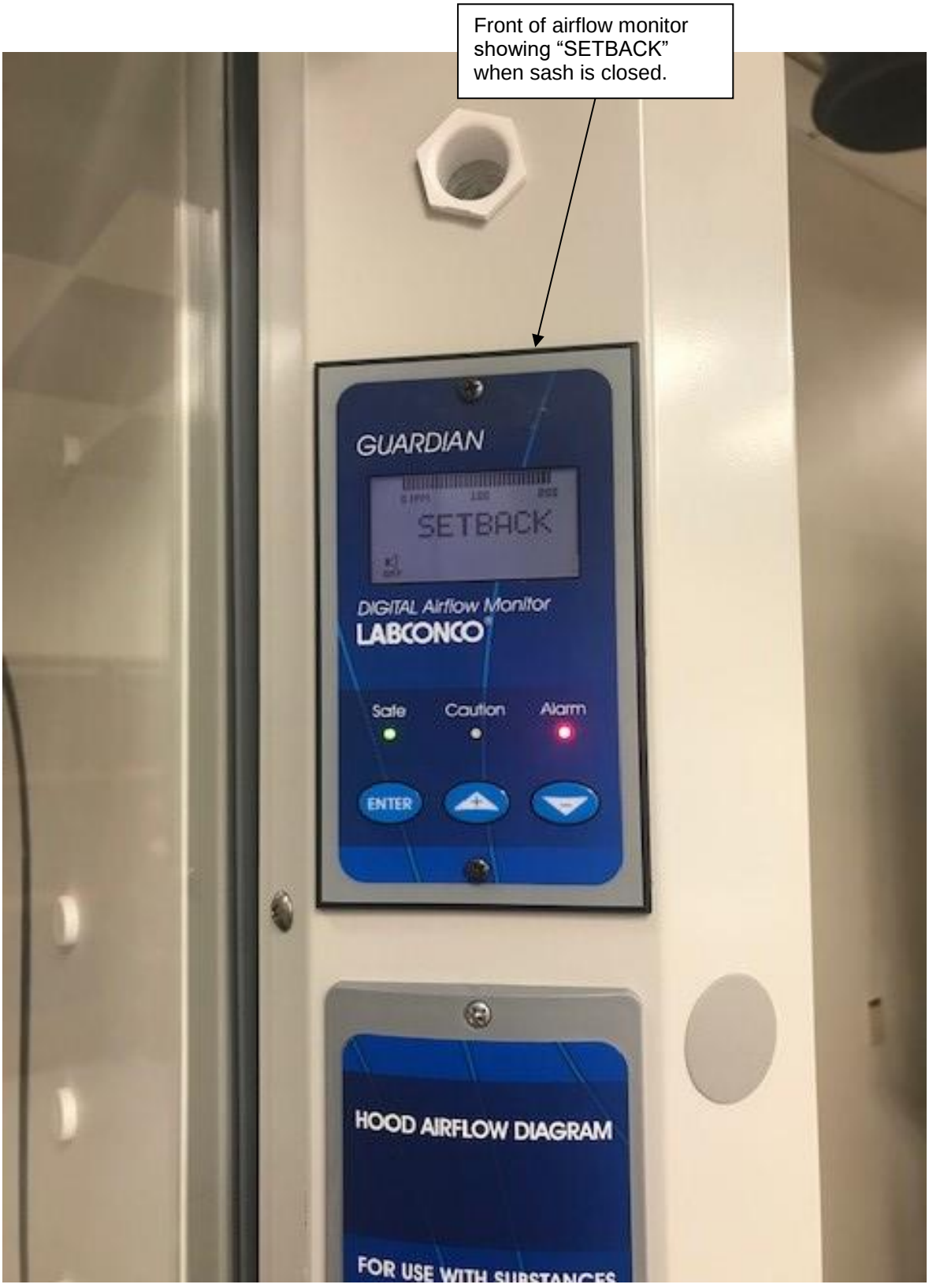
# Protector I-S Service Parts Only

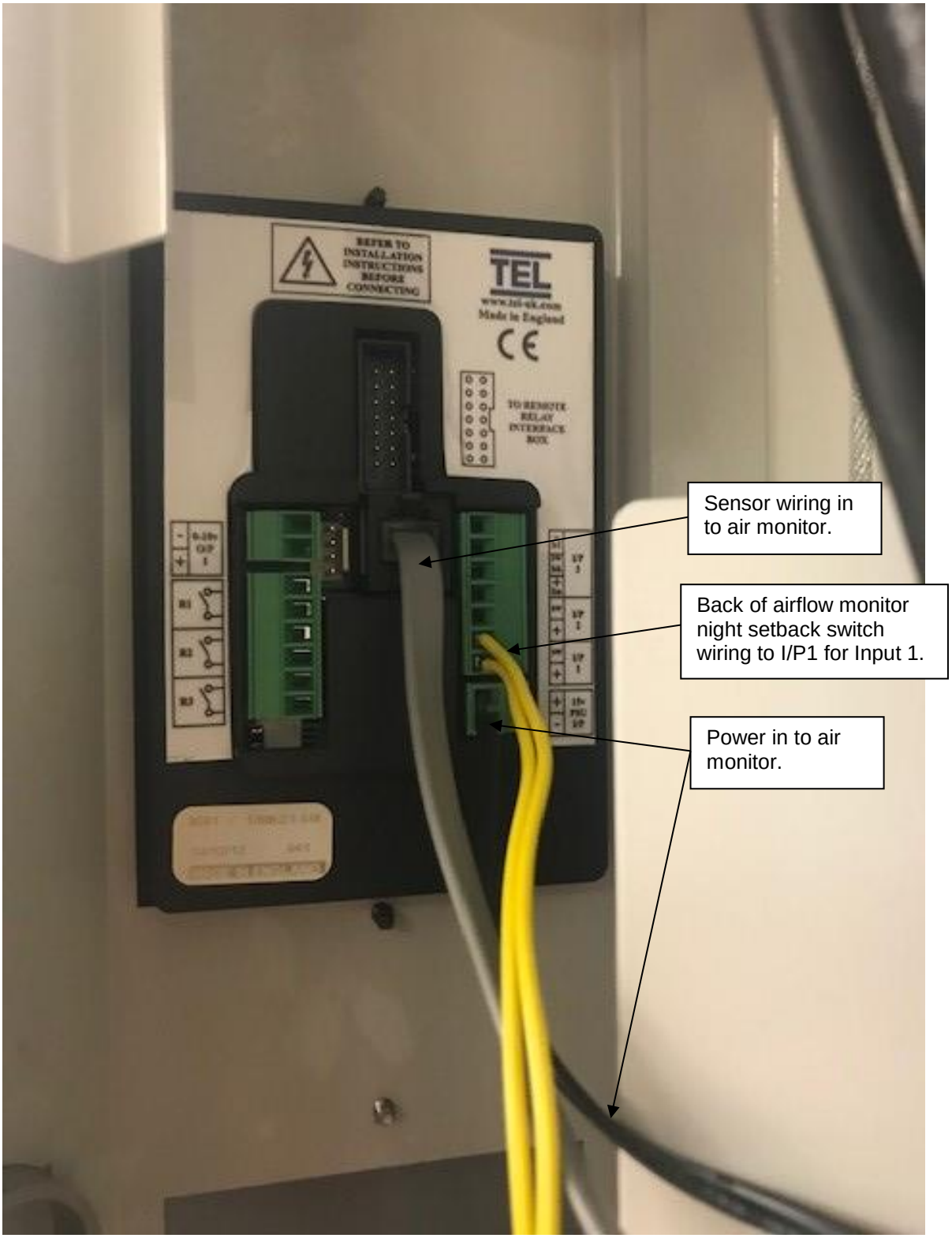
| Item | Qty. | Part No. | Description – Protector I-S Unique Components |
|---|---|---|---|
| 1A | 1 | 7115010 | MSB Control Box, 115V Automatic |
| 1B | 1 | 7115020 | MSB Control Box, 230V Automatic |
| 2 | 3 | 3832400 | Limit Switch, Automatic Blower Operation |
| 3 | 1 | 7117700 | Accessory Cable, Airflow Monitor for Night Setback (when programmed) |
| 4 | 1 | 7116000 | Power Cable, Control Box Inlet Power (from hood lighting junction box) |


Left side upper limit switch wired for high speed and set to activate with sash raised 20" above work surface. The upper limit switch can be lowered in 1" increments between 15" and 20".
Intelli-Sense Control Box powered up and functional without lights. Control box is wire to incoming hood light circuit per wiring diagram 7115810 or 7115811.
Red wire to common.
White wire to normally open.

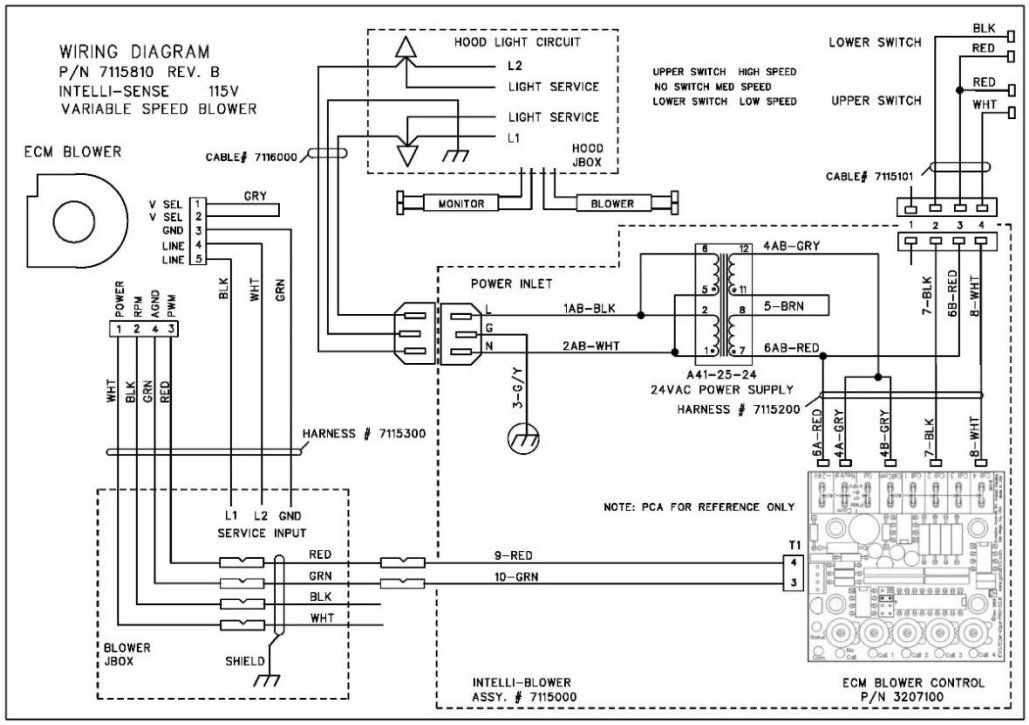

Black wire to normally open.
Left side lower limit switch wired for low speed.
Red wire to common.


Back of airflow monitor.
Power to air monitor.
Airflow monitor in-line sensor, air pathway, and wiring to monitor.
Night setback lower switch shown on right. Switch is wired to normally open and common terminals, and wired to air monitor input I/P1. Programmed for “Night Setback – Input 1.”

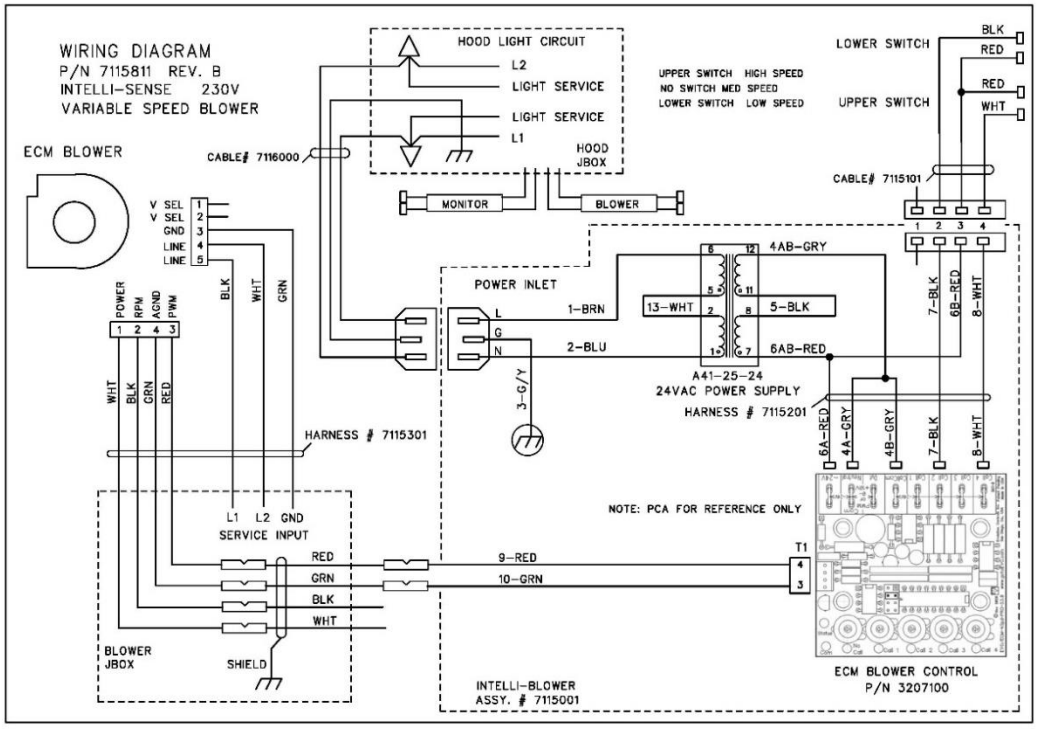

Front of airflow monitor showing “SETBACK” when sash is closed.
GUARDIAN
SETBACK
DIGITAL Airflow Monitor
LABCONCO
Safe
Caution
Alarm
ENTER
HOOD AIRFLOW DIAGRAM
FOR USE WITH SUBSTANCES


Sensor wiring in to air monitor.
Back of airflow monitor night setback switch wiring to I/P1 for Input 1.
Power in to air monitor.

# 115V Wiring Diagram – Automatic Operation




# 230V Wiring Diagram – Automatic Operation



# APPENDIX E
# SERIAL NUMBER TAG DESCRIPTION

Serial tag includes standard information with the following changes:

The portion of the tag for electrical information is labeled with the following units: Volts AC, Phase, Cycle, AMP.

Each hood will include one of the following:

| Volts AC | Phase | Cycle | AMP ⚠ |
|---|---|---|---|
| 115 | 1 | 50/60 | 10X |
| 115 | 1 | 50 | 10X |
| 115 | 1 | 60 | 10X |
| 230 | 1 | 50/60 | 5X |
| 230 | 1 | 50 | 5X |
| 230 | 1 | 60 | 5X |

Where ⚠ may be a separate label indicating: Caution, See Manual.

The X above will be one of several possible alpha characters as defined in the manual as follows:

X: No additional duplexes on hood, noted amperage applies.

B: This fume hood includes **one** additional electrical receptacle, individually wired to the field wired box and individually rated as 115V, single phase, 60Hz, 20 Amps. Each duplex can be wired on a dedicated circuit rated at 20A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 20A electrical service they are wired to.

C: This fume hood includes **two** additional electrical receptacles, individually wired to the field wired box and individually rated as 115V, single phase, 60Hz, 20 Amps. Each duplex can be wired on a dedicated circuit rated at 20A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 20A electrical service they are wired to.

D: This fume hood includes **three** additional electrical receptacles, individually wired to the field wired box and individually rated as 115V, single phase, 60Hz, 20 Amps. Each duplex can be wired on a dedicated circuit rated at 20A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 20A electrical service they are wired to.

E: This fume hood includes **four** additional electrical receptacles, individually wired to the field wired box and individually rated as 115V, single phase, 60Hz, 20 Amps. Each duplex can be wired on a dedicated circuit rated at 20A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 20A electrical service they are wired to.

F: This fume hood includes **one** additional electrical receptacle, individually wired to the field wired box and individually rated as 230V, single phase, **60Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

G: This fume hood includes **two** additional electrical receptacles, individually wired to the field wired box and individually rated as 230V, single phase, **60Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

H: This fume hood includes **three** additional electrical receptacles, individually wired to the field wired box and individually rated as 230V, single phase, **60Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

J: This fume hood includes **four** additional electrical receptacles, individually wired to the field wired box and individually rated as 230V, single phase, **60Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

K: This fume hood includes **one** additional electrical receptacle, individually wired to the field wired box and individually rated as 230V, single phase, **50Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

L: This fume hood includes **two** additional electrical receptacles, individually wired to the field wired box and individually rated as 230V, single phase, **50Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

M: This fume hood includes **three** additional electrical receptacles, individually wired to the field wired box and individually rated as 230V, single phase, **50Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

N: This fume hood includes **four** additional electrical receptacles, individually wired to the field wired box and individually rated as 230V, single phase, **50Hz**, 10 Amps. Each duplex can be wired on a dedicated circuit rated at 10A or the duplexes may be ganged together on the same circuit with the total load of the ganged duplexes not exceeding the 10A electrical service they are wired to.

# ANNEXE E
# DESCRIPTION DE SÉRIE TAG NUMBER

Étiquette de série comprend des informations standard avec les modifications suivantes:

La partie de l'étiquette d'information électrique est étiqueté avec les unités suivantes: Volts AC, phase, cycle, AMP.

Chaque hotte comprendra une des opérations suivantes:

| Volts AC | Phase | Cycle | AMP ⚠ |
|---|---|---|---|
| 115 | 1 | 50/60 | 10X |
| 115 | 1 | 50 | 10X |
| 115 | 1 | 60 | 10X |
| 230 | 1 | 50/60 | 5X |
| 230 | 1 | 50 | 5X |
| 230 | 1 | 60 | 5X |

Où ⚠ peut-être une étiquette distincte indiquant: Attention, consultez le manuel.

Le X ci-dessus sera l'un des plusieurs caractères alphabétiques possibles telles que définies dans le manuel comme suit:

X: Pas de duplex supplémentaires sur le capot, noté ampérage s'applique.

B: Cette hotte comprend un réceptacle électrique supplémentaire, individuellement raccordés aux boîtiers câblées individuellement et classé comme 115V, monophasé, 60 Hz, 20 ampères. Chaque duplex peut être branché sur un circuit dédié évalué à 20A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 20A ils sont câblés.

C: Cette hotte comprend deux autres prises électriques, individuellement câblés à la boîte câblées individuellement et classé comme 115V, monophasé, 60 Hz, 20 A. Chaque duplex peut être branché sur un circuit dédié évalué à 20A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 20A ils sont câblés.

D: Cette hotte comporte trois prises électriques supplémentaires, individuellement câblés à la boîte câblées individuellement et classé comme 115V, monophasé, 60 Hz, 20 A. Chaque duplex peut être branché sur un circuit dédié évalué à 20A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 20A ils sont câblés.

E: Cette hotte comprend quatre autres prises électriques, individuellement câblés à la boîte câblées individuellement et classé comme 115V, monophasé, 60 Hz, 20 A. Chaque duplex peut être branché sur un circuit dédié évalué à 20A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 20A ils sont câblés.

F: Cette hotte comprend un réceptacle électrique supplémentaire, individuellement raccordés aux boîtiers câblées individuellement et classé comme 230V, monophasé, 60 Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

G: Cette hotte comprend deux autres prises électriques, individuellement câblés à la boîte câblées individuellement et classé comme 230V, monophasé, 60 Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

H: Cette hotte comporte trois prises électriques supplémentaires, individuellement câblés à la boîte câblées individuellement et classé comme 230V, monophasé, 60 Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

J: Cette hotte comprend quatre autres prises électriques, individuellement câblés à la boîte câblées individuellement et classé comme 230V, monophasé, 60 Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

K: Cette hotte comprend un réceptacle électrique supplémentaire, individuellement raccordés aux boîtiers câblées individuellement et classé comme 230V, monophasé, 50 Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

L: Cette hotte comprend deux autres prises électriques, individuellement câblés à la boîte câblées individuellement et classé comme 230V, monophasé, 50Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

M: Cette hotte comporte trois prises électriques supplémentaires, individuellement câblés à la boîte câblées individuellement et classé

comme 230V, monophasé, 50Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

N: Cette hotte comprend quatre autres prises électriques, individuellement câblés à la boîte câblées individuellement et classé comme 230V, monophasé, 50Hz, 10 ampères. Chaque duplex peut être branché sur un circuit dédié classé au 10A ou les duplex peuvent être groupés ensemble sur le même circuit que la charge totale des duplex couplées ne dépassant pas le service électrique 10A ils sont câblés.

# APPENDIX F
# REFERENCES

Many excellent reference texts and booklets are currently available. The following is a brief listing:

### Laboratory Ventilation Standards

**Federal Register 29 CFR Part 1910**
*Non-mandatory recommendations from "Prudent Practices".*

- Fume hoods should have a continuous monitoring device
- Face velocities should be between 60-100 linear feet per minute (lfpm)
- Average 2.5 linear feet of hood space per person

**Occupational Health and Safety**
**U.S. Department of Labor**
**200 Constitution Avenue N.W.**
**Washington, DC 20210**
**(202) 523-1452**

**Industrial Ventilation-ACGIH**

- Fume hood face velocities between 60-100 lfpm
- Maximum of 125 lfpm for radioisotope hoods
- Duct velocities of 1000-2000 fpm for vapors, gasses and smoke
- Stack discharge height 1.3-2.0 x building height
- Well designed fume hood containment loss, <0.10 ppm

***Industrial Ventilation, A Manual of Recommended Practice.***
**24th Edition, 2001**
**American Conference of Governmental Industrial Hygienists**
**1330 Kemper Meadow drive**
**Cincinnati, OH 45240-1634**
**(513) 742-2020**

**ASHRAE 110-1995 Method of Testing Performance of Fume Hoods**
*Evaluates fume hood's containment characteristics*

- Three part test: Smoke generation, Face velocity profile, Tracer gas release @ 4 liters per minute
- Rated As Manufactured (AM), As Installed (AI) and As Used (AU)

**American Society of Heating, Refrigerating, and Air Conditioning Engineers**
**1791 Tullie Circle N.E.**
**Atlanta, GA 30329**
**(404) 636-8400**

**ANSI Z9.5-2011 Laboratory Standard**
*Covers entire laboratory ventilation system.*

- New and remodeled hoods shall have a monitoring device
- Ductless hoods should only be used with non-hazardous materials

**American Industrial Hygiene Association**
**2700 Prosperity Avenue, Suite 250**
**Fairfax, VA 22031**
**(703) 849-8888**

**SEFA 1-2002**

- Fume hood face velocities based on toxicity levels of chemicals
  Class A – 125 to 150 fpm
  Class B – 80 to100 fpm
  Class C – 75-to 80 fpm
- Test method – face velocity profile and smoke generation

**Scientific Equipment & Furniture Association**
**1028 Duchess Drive**
**McLean, VA 22102**
**(703) 538-6007**

**NFPA 45 – 2002 Fire Protection for Laboratories Using Chemicals**

- Laboratory hoods should not be relied on for explosion protection
- Exhaust air from fume hoods should not be recirculated
- Services should be external to the hood
- Canopy hoods only for non-hazardous applications
- Materials of construction should have flame spread of 25 or less
- 80 to 120 fpm to prevent escape

**NFPA 30 – 2000 Flammable and Combustible Liquids Code**

- Approved cabinets may be metal or wood
- Vent location on cabinets are required
- Venting of cabinets not a requirement

**National Fire Protection Association**
**1 Batterymarch Park**
**P.O. Box 9101**
**Quincy, MA 02269-9101**
**(800) 344-3555**

**General References**

American Conference of Governmental Industrial Hygienists. *Industrial Ventilation, A Manual of Recommended Practice,* Cincinnati, OH

ASHRAE Standard Committee. *ASHRAE Standard* Atlanta: ASHRAE Publications Sales Department, 1995

British Standards Institution, *Laboratory Fume Cupboards*. Parts 1, 2 and 3, London: 1990

Department of Labor, Occupational Safety and Health Administration, *29 CFR Part 1910, Occupational Exposures to Hazardous Chemicals in Laboratories, Final Rule*. Vol. 55, No. 21. Washington D.C.:1990

DiBerardinis. L. et al. *Guides for Laboratory Design, Health and Safety Considerations*. Wiley & Sons, 1987

McDermott, Henry, *Handbook of Ventilation for Contaminant Control, 2nd Edition*. Butterworth Publishers, 1985.

Miller, Brinton M. et al. *Laboratory Safety: Principles and Practices.* American Society for Microbiology, Washington, D.C.: 1986

*NIH Guidelines for the Laboratory Use of Chemical Carcinogens*. NIH Publication No. 81-2385.

Rayburn, Stephen R. *The Foundation of Laboratory Safety, A Guide for the Biomedical Laboratory*. Springer-Verlag, New York: 1990

Sax, N. Irving and Lewis, JR., Richard J. *Rapid Guide to Hazardous Chemicals in the Workplace*. Van Nostrand Reinhold, 1987.

Schilt, Alfred A. *Perchloric Acid and Perchlorates*. The G. Frederick Smith Chemical Company, Columbus, OH: 1979.

Steere, Norman. *CRC Handbook of Laboratory Safety, 2nd Edition*. CRC Press, 1971.

# APPENDIX G
# VAV OPEN AREA GUIDELINES

When integrating a Labconco fume hood into a variable air volume (VAV) mechanical system, properly assessing the area opening of the fume hood is critical to ensure correct controller calibration for maintaining face velocity across all sash positions. Depending on your brand of VAV controller, you may be prompted to enter different information to arrive at this correct area.

To simplify this requirement, Labconco offers the following step-by-step procedure to ensure you have the correct information.

1. Locate the serial tag for your fume hood; usually on the lower right of the sash glass.
2. Move to the section of the document below specific to your model number.

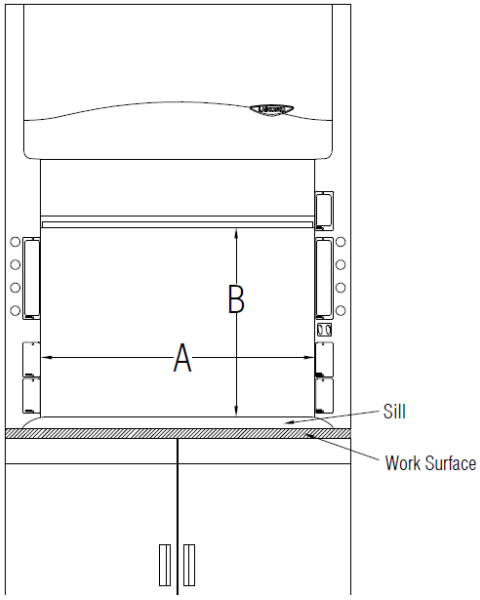
## Model numbers beginning 111, 110, 100

1. Determine the free opening area
    a. Width
        i. Measure the interior width of the fume hood just behind the plane of the sash glass and enter that here:

        Width Opening _____ inches = A

    b. Height*
        i. Measure the vertical distance between the top of the lower airfoil sill and the bottom of the sash handle, and enter that here:

        Vertical Opening _____ inches = B



c. Free opening area
    i. Multiply the width opening times the vertical opening (A x B), and enter that here:

    Free opening area = _____ square inches = C (sq.in)

    ii. Divide this by 144 to arrive at square feet, and enter that here:

    Free opening area = _____ square feet = C (sq.ft)

2. Determining bypass or "leakage" area
    a. This is the opening width (A) times 0.34 inches (A x 0.34 = bypass area).

    Bypass area = _____ square inches = D (sq in)

    b. Divide this by 144 to arrive at square feet

    Bypass area = _____ square feet = D (sq ft)

3. Determining Total Effective Opening Area
    a. This is the Free Opening Area plus the Bypass Opening Area (C + D = Total Effective Opening Area)

    Total Effective Area = _____ square inches

    Total Effective Area = _____ square feet

* Industry standards call for sash height to be measured from the work surface, however, for the purposes of determining free opening height, measurement is to be taken from the top of the lower airfoil sill to the bottom of the sash handle.

LABCONCO CORPORATION
8811 Prospect Avenue
Kansas City, MO 64132
(800) 821-5525, (816) 333-8811
(816) 363-0130 fax
labconco@labconco.com

# User's Manual

## Protector® Storage Cabinets – Standard, Acid, Solvent and Vacuum Pump

### Models

| | | | | |
|---|---|---|---|---|
| 9900000 | 9901000 | 9902000 | 9903000 | 9904000 |
| 9900100 | 9901100 | 9902100 | 9903100 | 9904100 |
| 9900200 | 9901200 | 9902200 | 9903200 | 9904200 |
| 9900300 | 9901300 | 9902300 | 9903300 | 9904300 |
| 9900400 | 9901400 | 9902400 | 9903400 | 9904400 |
| 9900500 | 9901500 | | | 9904500 |
| 9900600 | 9901600 | | | |
| 9900700 | | | | |
| 9900800 | | | | |

| | | |
|---|---|---|
| 9905000 | 9906000 | 9907000 |
| 9905100 | 9906100 | 9907100 |
| 9905200 | 9906200 | |
| 9905300 | 9906300 | |

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.**

## 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 Protector® Storage Cabinets 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 7:00 a.m. and 6:00 p.m., Central Standard Time.

# TABLE OF CONTENTS

# CHAPTER 1
# INTRODUCTION

Congratulations on your purchase of a Protector® Storage Cabinet. Labconco manufacturers four types of Storage Cabinets – Acid, Solvent, Standard Base, and Vacuum Pump.

Protector® Acid Storage Cabinets have been engineered to efficiently store and ventilate corrosive materials and include an interior plastic liner to protect the metal from corrosion.

Protector Solvent Storage Cabinets are designed to efficiently store flammable materials and includes a 1-1/2" double wall construction for fire protection.

Protector Standard Base Storage Cabinets are utilized for general storage and are not recommended for corrosive or flammable materials.

Protector Vacuum Pump Storage Cabinets are utilized for vacuum pump storage.

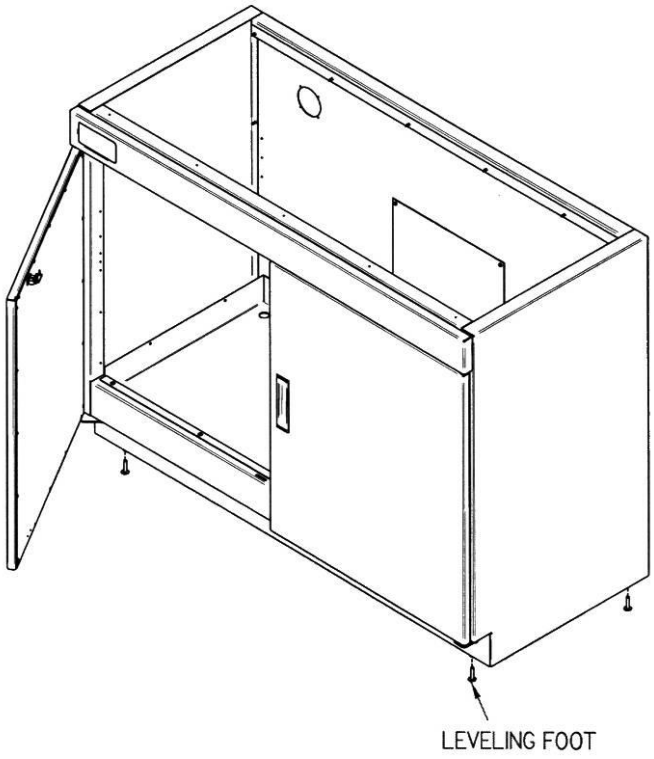
All cabinets feature 18 gauge steel construction with epoxy coated paint, to give you both a durable and chemically resistant finish that ensures many years of quality service.

The Labconco Protector Storage Cabinets has been engineered in accordance with NFPA 30, OSHA 1910-62, and all pertinent SEFA regulations. The cabinets are available in several configurations to meet your various requirements.

All Protector Storage Cabinets are designed with provisions for venting to the exterior of your laboratory. Vent connections are located on the back wall of the cabinet and can be used at the discretion of the customer.

The vent connection on the Solvent Storage Cabinet is supplied with a closure plug on both sides, and is diametrically opposed on the back wall of the cabinet for optimum airflow throughout its interior.

The vent connection on the Acid Cabinet and Standard Base Cabinet is located on the back wall of the cabinet and does not include a closure plug.




# About This Manual

This manual will help you learn how to install, use, and maintain your Storage Cabinet. Instructions for performing routine maintenance and for minor modifications to your Storage Cabinet are included.

*Chapter 1: Introduction* provides a brief overview of the Storage Cabinets, 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 the Storage Cabinet.

*Chapter 3: Getting Started* contains the information you need to properly unpack, inspect, and install the Storage Cabinet.

*Chapter 4: Using Your Storage Cabinet* discusses the normal operation of the Storage Cabinet.

*Chapter 5: Maintaining Your Storage Cabinet* explains how to perform routine maintenance on the Storage Cabinet.

*Appendix A: Storage Cabinet Dimensions* contains comprehensive diagrams showing the dimensions for the Storage Cabinets.

*Appendix B: Storage Cabinet Replacement Parts* contains a list of service parts for the Storage Cabinets.

*Appendix C: Storage Cabinet Accessories* lists the part numbers and descriptions of the accessories available for the Storage Cabinet.

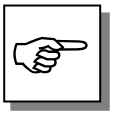
*Appendix D: Storage Cabinet Quick Reference* lists sizes and part numbers for Solvent, Acid, Standard Base, and Vacuum Pump Cabinets.

# Typographical Conventions

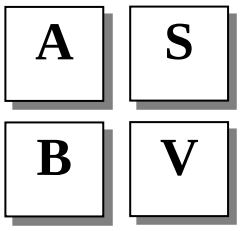
Recognizing the following typographical conventions will help you understand and use this manual:

- 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 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 the Storage Cabinet.



- 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.




- Information that is specific to a particular model of Storage Cabinet. The A icon indicates text specific to the Acid Storage Cabinet, the S icon indicates text specific to the Solvent Storage Cabinet, the B icon indicates text specific to the Standard Base Storage Cabinet, and the V icon indicates text specific to the Vacuum Pump Storage Cabinet.

# CHAPTER 2
# PREREQUISITES

Before you install your Storage Cabinet, you need to prepare your site for installation. Carefully examine the location where you intend to install the Storage Cabinet. You must be certain that the area is level and of solid construction. In addition, your Storage Cabinet should be adjacent to a vent connection to allow for venting to the exterior of the building, if so desired. Otherwise, it is typical to vent the Storage Cabinet through the work surface and fume hood, which is supported by the Storage Cabinet.

## Space Requirements

Refer to *Appendix A: Storage Cabinet Dimensions* for complete Storage Cabinet dimensional specifications.

# CHAPTER 3
# GETTING STARTED

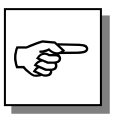
Now that the site for your Storage Cabinet is properly prepared, you are ready to unpack, inspect, and install, the Storage Cabinet. Read this chapter to learn how to:

- Unpack and move the Storage Cabinet.
- Set up the Storage Cabinet – Acid, Solvent, Standard Base, and Vacuum Pump.
- Properly level the Storage Cabinet.
- Properly install the accessory work surface.
- Attach the filler panel for additional aesthetics.
- Properly vent the Storage Cabinet.
- Properly ground the Solvent Cabinet.
- Connect the electrical supply source to the Vacuum Pump Cabinet.

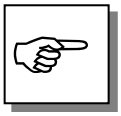
Depending upon which model of Storage Cabinet you are installing, you will need common hand tools, including a Phillips head screwdriver, a flat blade screwdriver, a ¾" open end wrench, and pliers to complete the instructions in this chapter.

## Unpacking Your Storage Cabinets

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



DO NOT RETURN ANY STORAGE CABINET WITHOUT THE PRIOR AUTHORIZATION OF LABCONCO. UNAUTHORIZED RETURNS WILL NOT BE ACCEPTED.



IF YOUR STORAGE CABINET WAS DAMAGED IN TRANSIT, YOU MUST FILE A CLAIM DIRECTLY WITH THE FREIGHT CARRIER. LABCONCO CORPORATION AND ITS DEALERS ARE NOT RESPONSIBLE FOR SHIPPING DAMAGE.

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

# Storage Cabinet Components

As previously mentioned Labconco manufactures four types of Storage Cabinets, Acid, Solvent, Standard Base, and Vacuum Pump.

The different Storage Cabinet models require different assembly components. Locate the model of Storage Cabinet you received in the following tables. Verify that the components listed are present and undamaged.

| Model Number | Description |
|---|---|
| 9900000 | 48" Standard Base Cabinet |
| 9900100 | 36" Standard Base Cabinet |
| 9900200 | 30" Standard Base Cabinet |
| 9900300 | 24" Standard Base Cabinet – Right Hinged |
| 9900400 | 18" Standard Base Cabinet – Right Hinged |
| 9900500 | 12" Standard Base Cabinet – Right Hinged |
| 9900600 | 24" Standard Base Cabinet – Left Hinged |
| 9900700 | 18" Standard Base Cabinet – Left Hinged |
| 9900800 | 12" Standard Base Cabinet – Left Hinged |
| 9904000 | 24" ADA Standard Base Cabinet – Right Hinged |
| 9904100 | 18" ADA Standard Base Cabinet – Right Hinged |
| 9904200 | 12" ADA Standard Base Cabinet – Right Hinged |
| 9904300 | 24" ADA Standard Base Cabinet – Left Hinged |
| 9904400 | 18" ADA Standard Base Cabinet – Left Hinged |
| 9904500 | 12" ADA Standard Base Cabinet – Left Hinged |
| 9901000 | 48" Acid Cabinet |
| 9901100 | 36" Acid Cabinet |
| 9901200 | 30" Acid Cabinet |
| 9901300 | 24" Acid Cabinet – Right Hinged |
| 9901400 | 18" Acid Cabinet – Right Hinged |
| 9901500 | 24" Acid Cabinet – Left Hinged |
| 9901600 | 18" Acid Cabinet – Left Hinged |
| 9905000 | 24" ADA Acid Cabinet – Right Hinged |
| 9905100 | 18" ADA Acid Cabinet – Right Hinged |
| 9905200 | 24" ADA Acid Cabinet – Left Hinged |
| 9905300 | 18” ADA Acid Cabinet – Left Hinged |
| 9902000 | 48" Manual Closing/Self Latching Solvent Cabinet |
| 9902100 | 36" Manual Closing/Self Latching Solvent Cabinet |
| 9902200 | 30" Manual Closing/Self Latching Solvent Cabinet |

| Model Number | Description |
|---|---|
| 9902300 | 24" Manual Closing/Self Latching Solvent Cabinet – Right Hinged |
| 9902400 | 24" Manual Closing/Self Latching Solvent Cabinet – Left Hinged |
| 9903000 | 48" Self Closing/Automatic Latching Solvent Cabinet |
| 9903100 | 36" Self Closing/Automatic Latching Solvent Cabinet |
| 9903200 | 30" Self Closing/Automatic Latching Solvent Cabinet |
| 9903300 | 24" Self Closing/Automatic Latching Solvent Cabinet – Right Hinged |
| 9903400 | 24" Self Closing/Automatic Latching Solvent Cabinet – Left Hinged |
| 9906000 | 24" Manual Closing/Self Latching ADA Solvent Cabinet – Right Hinged |
| 9906100 | 24" Manual Closing/Self Latching ADA Solvent Cabinet – Left Hinged |
| 9906200 | 24" ADA Self Closing Automatic Latching Solvent Cabinet – Right Hinged |
| 9906300 | 24" ADA Self Closing/Automatic Latching Solvent Cabinet – Left Hinged |
| 9907000 | 18" Vacuum Pump Cabinet – Right Hinged |
| 9907100 | 18" Vacuum Pump Cabinet – Left Hinged |

**Plus the Following**:

| Part # | Component Description |
|---|---|
| 9920301 | Panel, Filler Standard (for 30” Interior Depth Protector® XL Fume Hood) |
| or | |
| 9920304 | Panel, Filler ADA (for 30” Interior Depth Protector® XL Fume Hood) |
| 9920400 | Angle, Filler Panel (for 30” Interior Depth Protector® XL Fume Hood) |
| or | |
| 9920401 | Angle, Filler Panel ADA (for 30” Interior Depth Protector® XL Fume Hood) |
| 1928300 | Leveling Feet (4) |

Different filler panel depths are available; refer to *Appendix C: Storage Cabinet Accessories* for filler panel selection.

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

# Setting Up Your Storage Cabinet

After you verify the Storage Cabinet components listed on the following pages, move your Storage Cabinet to the location where you want to install it. Then, follow the steps for installation.

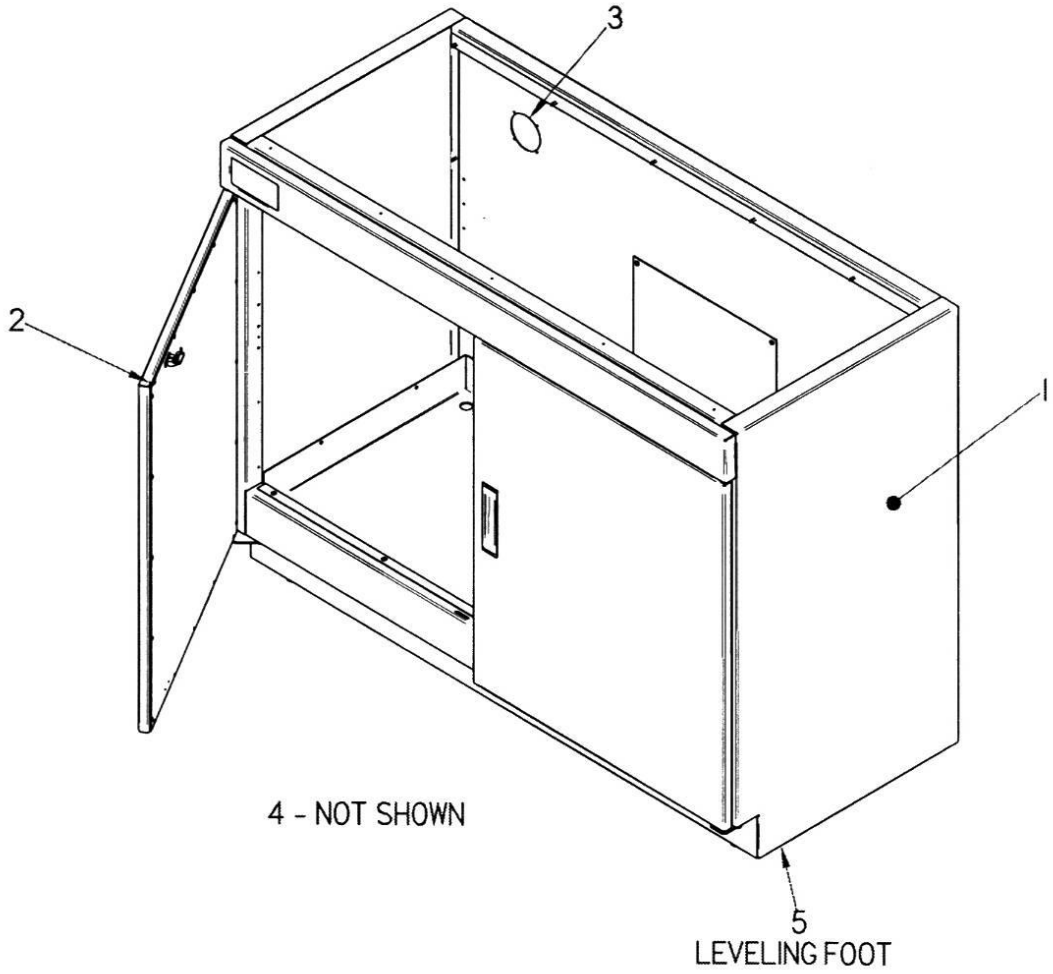
B

## Component Identification

**Protector Standard Base Storage Cabinets**
Models 9900000, 9900100, 9900200, 9900300, 9900400, 9900500, 9900600, 9900700, 9900800, 9904000, 9904100, 9904200, 9904300, 9904400, 9904500

1. **Cabinet. -** Features 18 gauge steel exterior sidewalls. The cabinet shell is epoxy coated to provide a durable chemical resistant surface.
2. **Door Assembly -** Cabinet features one or two manual closing, non-locking doors. The doors are 18 gauge epoxy coated steel and feature a strike and latch assembly to hold them in position once closed.
3. **Vent Connection** - Cabinet features two vent connections on the back wall of the cabinet. The vent openings have been left open, and venting is at the discretion of the customer. Instructions for venting can be found on page 22. For Base Vent Kit accessory see page 43.
4. **Optional – Accessory Shelf** – Features 16-gauge steel shelf to provide additional storage. Shelf support kit allows height adjustment.
5. **Leveling Feet** - Four individual leveling feet provide adjustability to level the cabinet per the requirements of your laboratory floor.

**Protector Standard Base Storage Cabinet**

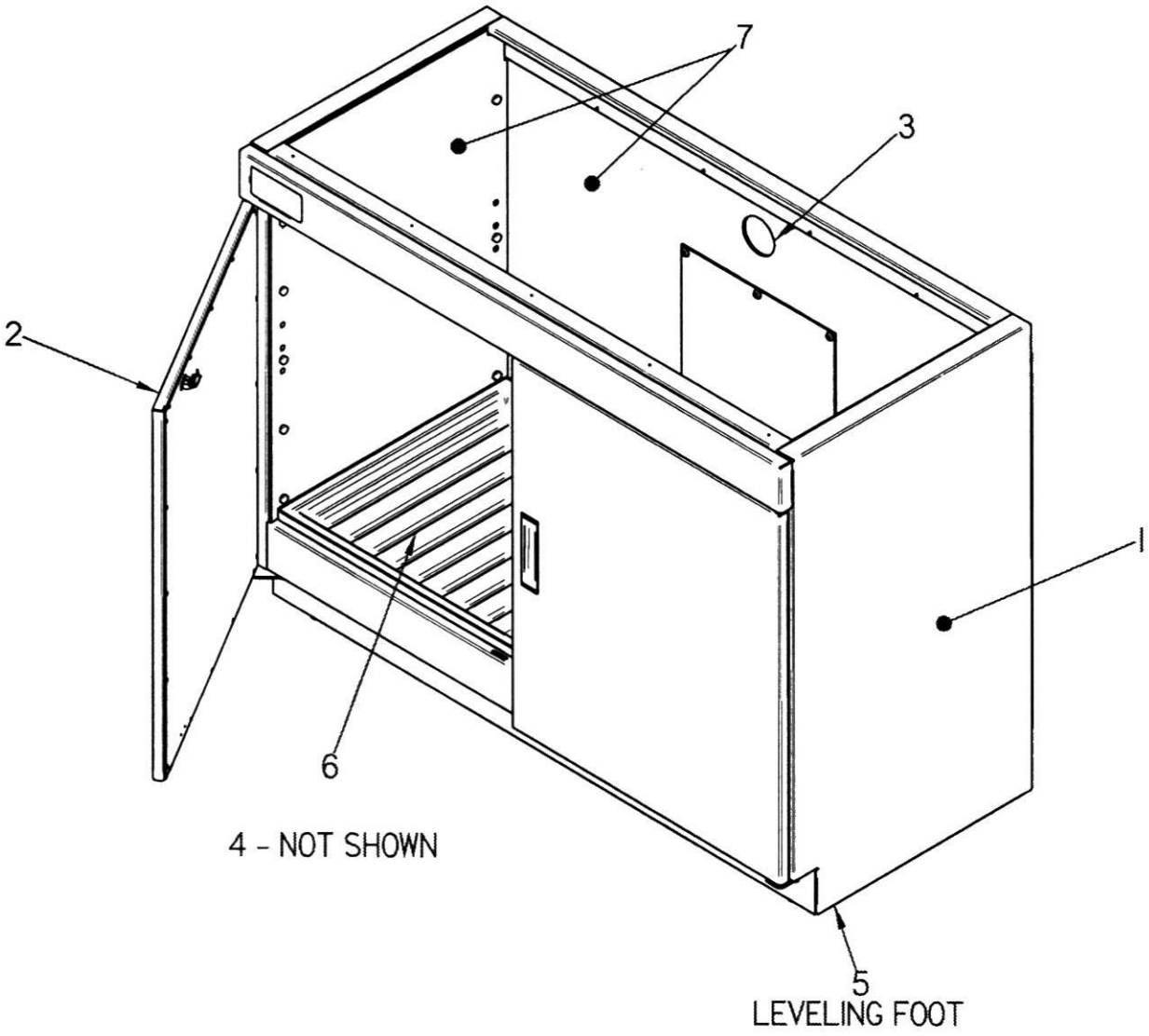


A

**Protector Acid Storage Cabinets**
Models 9901000, 9901100, 9901200, 9901300, 9901400, 9901500, 9901600, 9905000, 9905100, 9905200, 9905300

1. **Cabinet.** Features 18 gauge steel exterior sidewalls. The cabinet shell is epoxy coated to provide a durable chemical resistant surface.
2. **Door Assembly**. Depending on the width, the cabinet features one or two manual closing, non-locking doors. The doors are 18 gauge epoxy coated steel and feature a strike and latch assembly to hold them in position once closed. The backs of the doors are lined with polyethylene to provide additional corrosion protection.
3. **Vent Connection**. Cabinet features two vent connections located on the back wall of the cabinet. These vents are open. Using a Vent Kit, the cabinet may be vented to the fume hood or directly outside. Instructions for venting can be found on page 22. For Acid Vent Kit accessory see page 43.
4. **Optional – Accessory Shelf**. Features 16 gauge steel shelf with polyethylene molded tray to hold spills and provides a chemical resistant surface. The shelf support kit allows height adjustment.
5. **Leveling Feet**. Four individual leveling feet provide adjustability to level the cabinet per the requirements of your laboratory floor.
6. **Acid Shelf Liners**. Vacuum formed polyethylene liner trays fit down into both the adjustable shelf and the bottom floor of the cabinet. These liner trays give additional chemical resistance to the cabinet interior and are removable for easy cleaning. The liners are watertight in construction and will contain any minor spills and/or drips from containers stored in the cabinet.
7. **Interior Liner**. Interior sides and back are fully lined with polyethylene plastic to provide excellent corrosion resistance.

**Protector Acid Storage Cabinet**

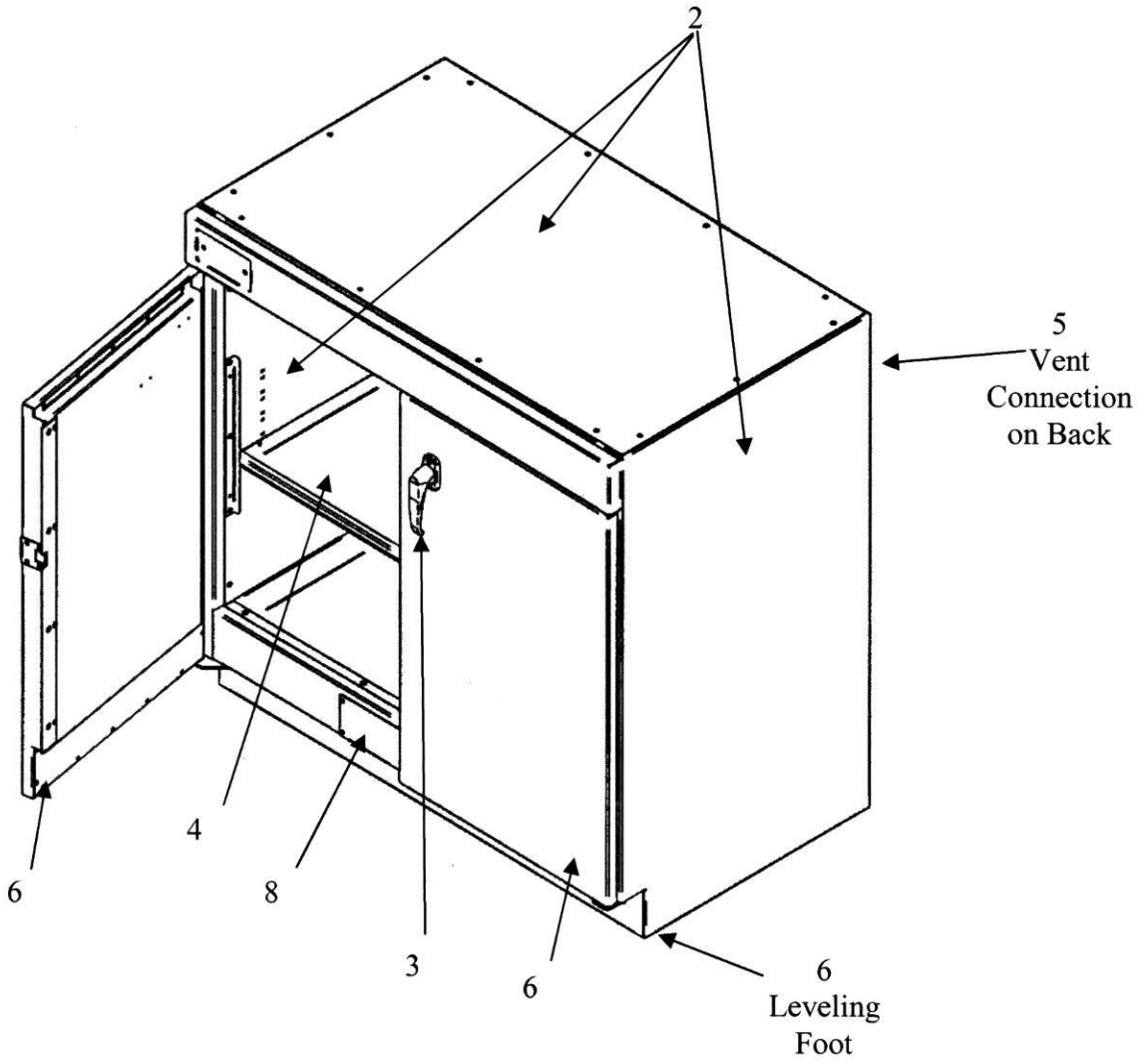


S

**Protector Solvent Storage Cabinets**
Models 9902000, 9902100, 9902200, 9902300, 9902400, 9903000, 9903100, 9903200, 9903300, 9903400, 9906000, 9906100, 9906200, 9906300

1. **Factory Mutual Approval on Models**; 9902000, 9902100, 9902300, 9903000, 9903100, 9903200
2. **Double Wall Construction**. Cabinet features 18 gauge epoxy coated steel exterior and interior liner walls with a 1-1/2" air space located between them.
3. **Locking Door Assembly**. Cabinet features one or two manual closing/self-latching doors. **NOTE**: Some models feature one or two self-closing/automatic latching doors.
4. **Shelf**. 16 gauge steel shelf features fully welded corners to hold spills and epoxy coated to provide a chemical resistant surface. The shelf supports inside the cabinet allows for height adjustment.
5. **Vent Connection**. Two vent connections are located on the back wall of the cabinet and are diametrically opposed. Each vent connection includes a threaded coupling, two flame arrestors, and closure plugs. Instructions for venting can be found on page 23.
6. **Leveling Feet** Four individual leveling feet provide adjustability to level the cabinet per the requirements of your laboratory floor.
7. **Optional Self-Closing Doors**. Some models include a self-closing door mechanism to close doors automatically in case of fire.
8. **Sequential Kit**. Allows doors with self-closing/automatic latching to be sequenced so the left door closes before the right.
   9927400 - 30" models
   9927401 - 48" models only

**Protector Solvent Storage Cabinet**

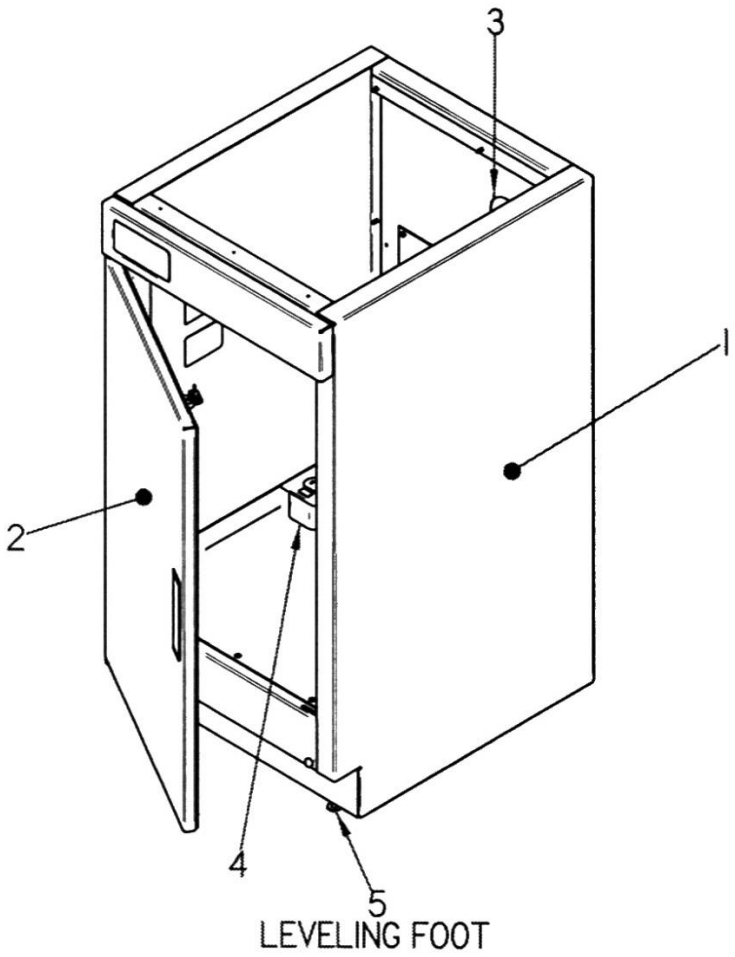


**V**

**Protector Vacuum Pump Storage Cabinets**
Models 9907000, 9907100

1. **Cabinet** – Features 18 gauge steel exterior sidewalls. The cabinet shell has been epoxy coated to provide a durable chemical resistant surface.
2. **Door Assembly** – Cabinet features one manual closing, non-locking door. The door is of 18 gauge epoxy coated steel and features a strike and latch assembly to hold it in position once closed.
3. **Vent Connection**. Cabinet features two vent connections on the back wall of the cabinet. These vent openings have been left open and venting is left to the discretion of the customer.
4. **Electrical Connection** – Cabinet features 115V, 60 Hz electrical outlet to provide power for the vacuum pump.
5. **Leveling Feet** – Four individual leveling feet provide adjustability to level the cabinet per the requirements of your laboratory floor.

**Protector Vacuum Pump Storage Cabinet**



# Installation

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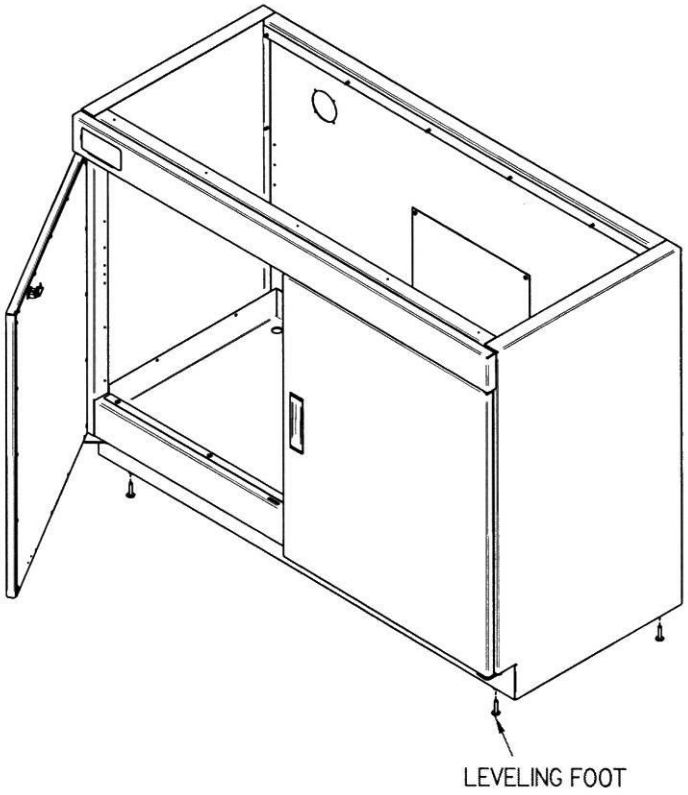
V

## Cabinet Leveling – All Cabinets

Each cabinet is supplied with four independent leveling feet. These leveling feet have been packaged separately and must be installed on the bottom of the cabinet before installation. Each leveling foot is independently adjustable by turning it by means of a crescent wrench underneath the cabinet. All of the leveling feet, with exception to the Solvent Storage Cabinet, can be adjusted with a flat blade screw driver from inside the cabinet through the access holes in the lower metal pan.

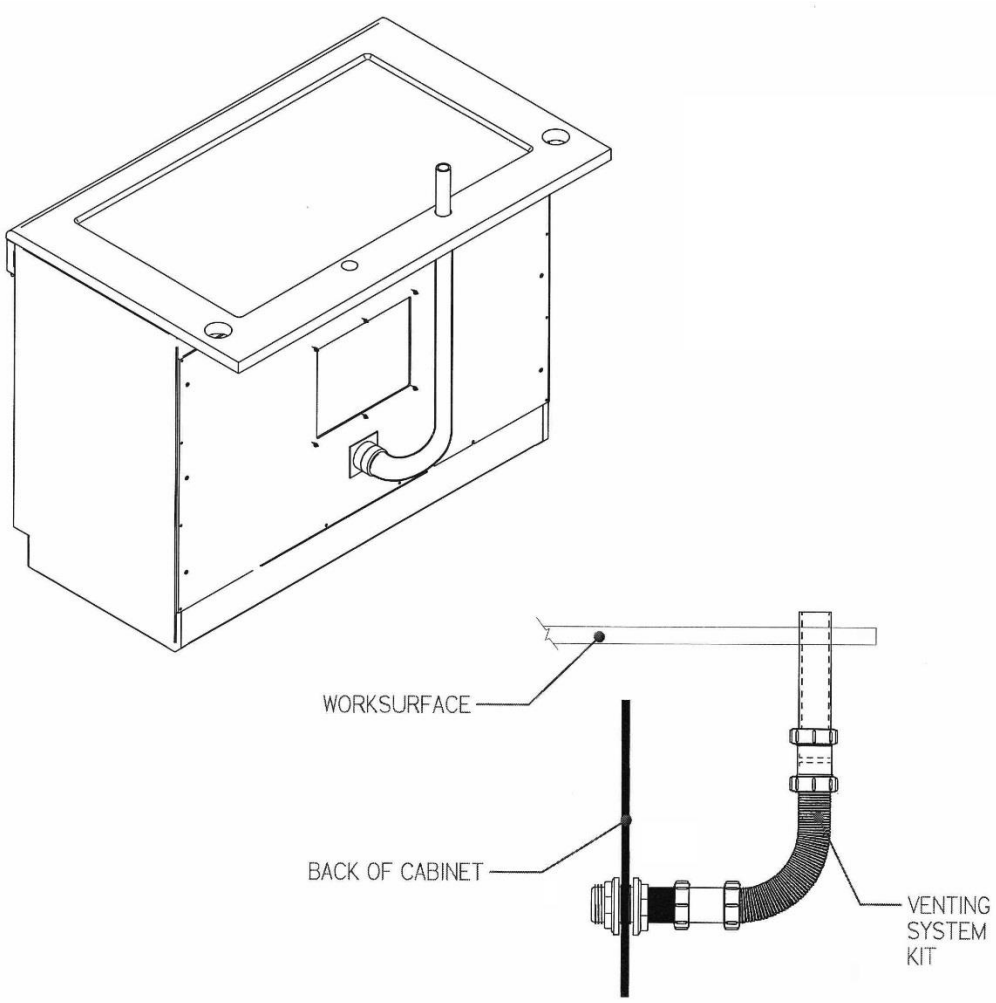


A

B

## Vent Installation – Acid and Standard Base Cabinet

To ventilate the Acid Storage Cabinet and the Standard Base Storage Cabinet properly, first decide which of the two vent connections in the back of the cabinet that you intend to use. The lower vent connection should be used for heavier than air vapors and the upper vent connection should be used for lighter than air vapors to obtain the best results within the cabinet structure. Vent Kit, P/N 35911, allows the Acid Storage Cabinet or Standard Base Cabinet to be vented directly into a Protector® Laboratory Hood. Run the vent line through the work surface into the fume hood or connect through separate duct system to the outside. The vent is sized for 2" diameter nominal plastic pipe.



S

## Vent Installation – Solvent Storage Cabinet

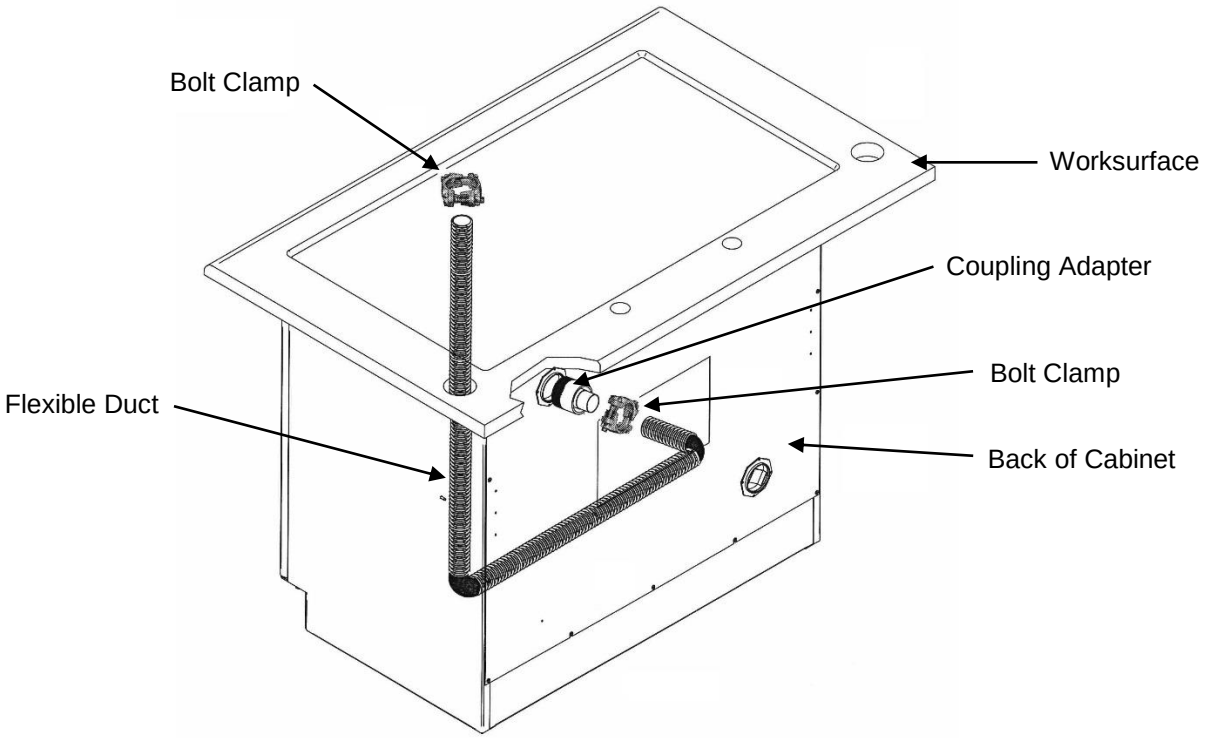
To ventilate the cabinet properly remove both the exterior and interior barrel plugs from the vent connection that you are venting.

The lower vent connection should be used for heavier than air vapors and the higher vent connection on the back wall should be used for lighter than air vapors to obtain the best fume removal within the cabinet.

The cabinet vent connections are designed to accept 2" diameter threaded metal pipe material, which can be purchased locally. Once the connection on the back of the cabinet has been completed, remove both the internal and external plugs from the remaining vent connection to allow for proper airflow from the cabinet.

!

**<u>CAUTION</u>: Retain the barrel plugs used with your vent connections should it become necessary to isolate the cabinet from the vent connection as ducted.**



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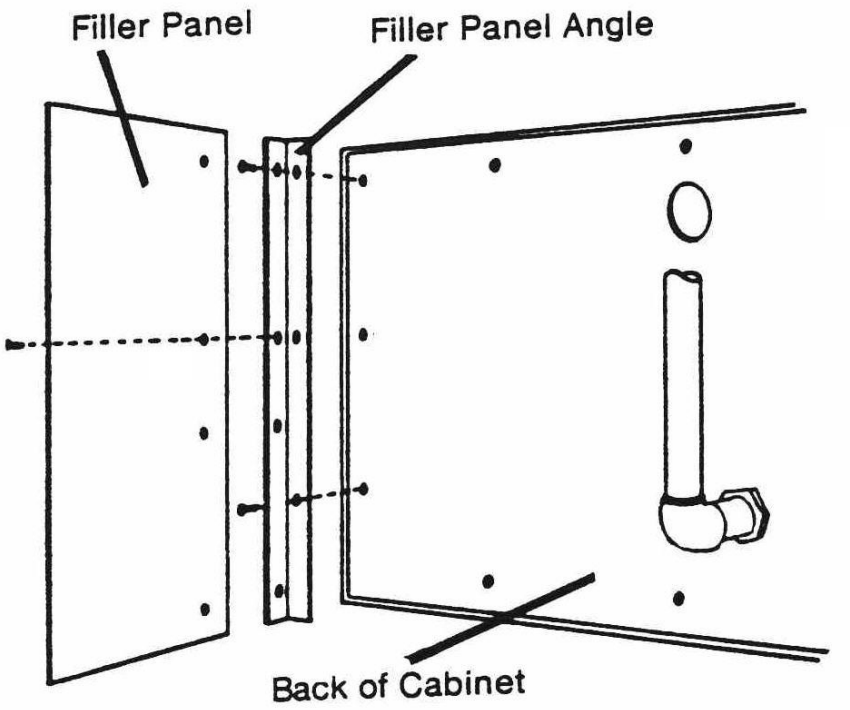
## Filler Panel – All Cabinets

One 8.0" filler panel and filler panel angle has been supplied with your cabinet to close off the plumbing access. Attach the filler panel angle directly to the back wall of the cabinet structure using the four #8 sheet metal screws that hold the back panel in position. Next, attach the filler panel to this angle by the three #8 sheet metal screws provided.

Different filler panel depths are available; refer to *Appendix C: Storage Cabinet Accessories* for filler panel selection.



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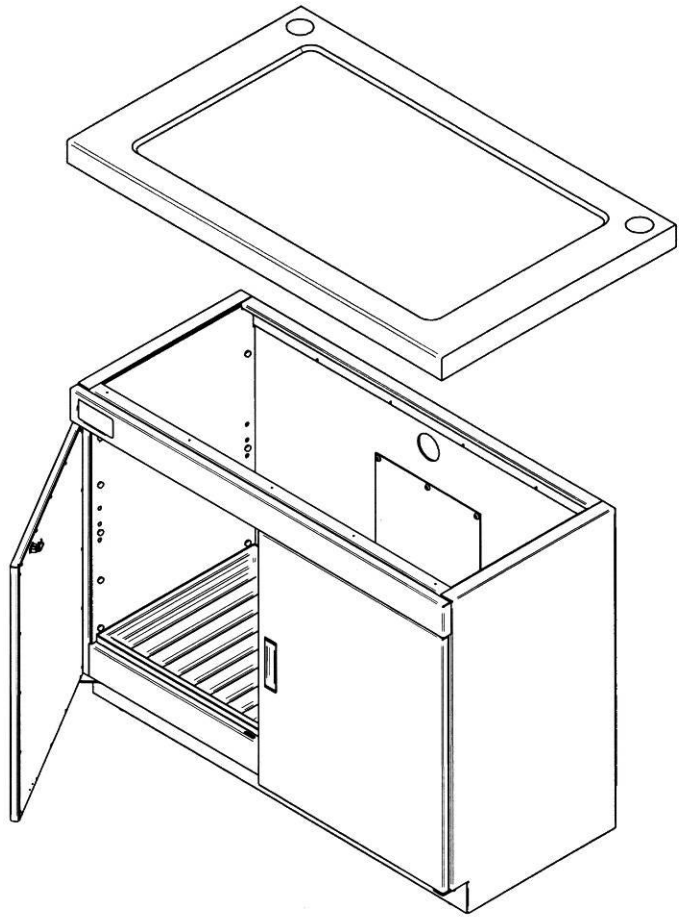
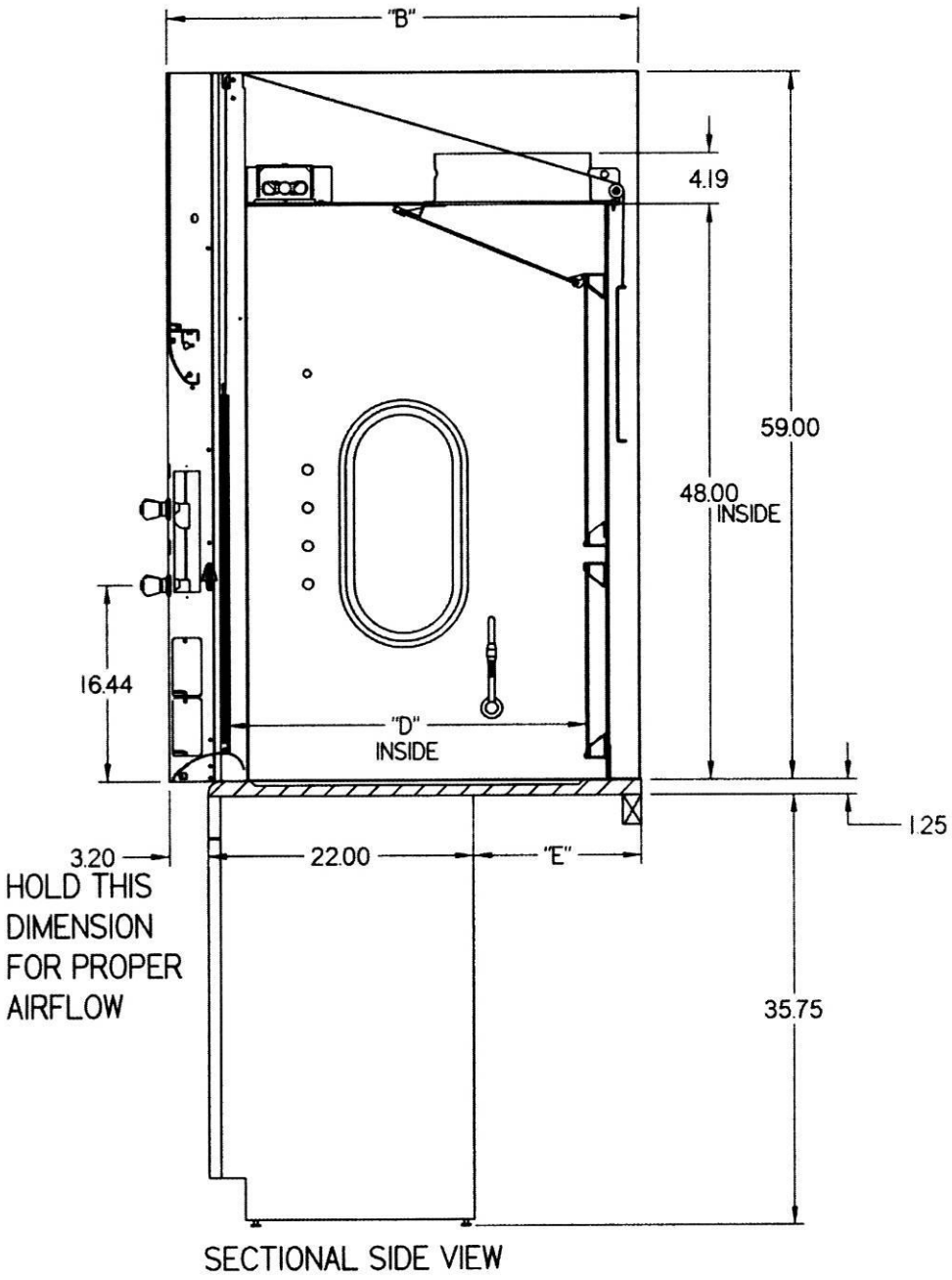
## SpillStopper™ Work Surface

Once your cabinet has been properly leveled, vented (optional), and filler panel installed, place the epoxy work surface directly on top of the cabinet. It is not necessary to attach the work surface to the cabinet. It is held in place both by its own weight and the weight of the fume hood and other equipment on top of it. Align the work surface on top of the cabinet before making plumbing or electrical connections through the work surface itself. Normally, the work surface is aligned flush with the top front of the cabinet and overhangs the back of the cabinet.

**<u>WARNING</u>: Never use screws and/or bolts to fasten the epoxy molded work surface directly to the cabinet as this can damage the work surface.**



**SpillStopper™ Work Surface Installation Detail**

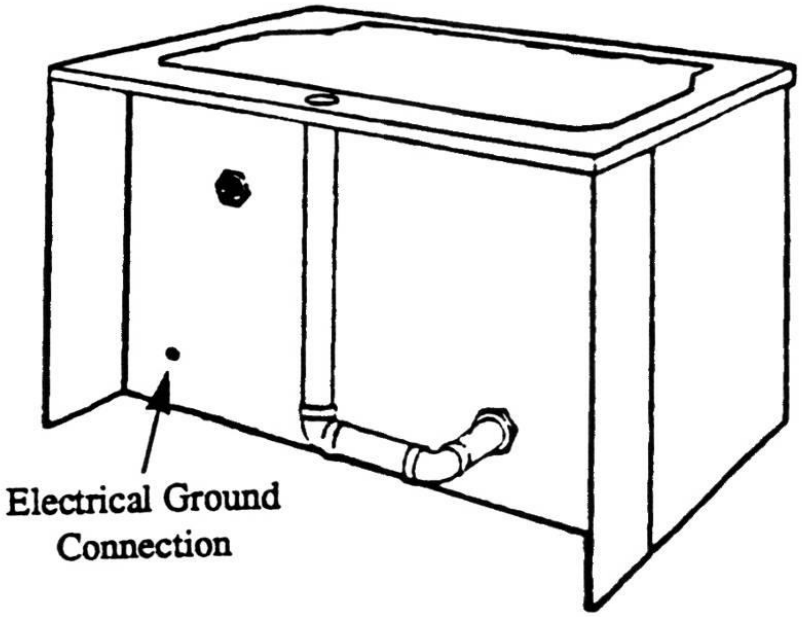



| Dimensions Shown in Inches | | | |
|---|---|---|---|
| **Hood Depth "B"** | **Hood Internal Depth "D"** | **Filler Panel Depth "E"** | **Work Surface Depth** |
| 33.19" | 24" | 8" | 30" |
| 39.19" | 30" | 14" | 36" |
| 45.19" | 36" | 20" | 42" |

S

## Electrical Ground Connection – Solvent Storage Cabinet

Use the grounding screw located in the lower right hand corner on the back panel of your solvent storage cabinet to properly ground the cabinet structure. Remove the grounding screw and attach a grounding wire directly to the back of the cabinet at this point. Make sure you have a tight bond when you retighten the grounding screw.




A

## Shelf Liner – Acid Storage Cabinet

Polyethylene liner trays have been included in your Acid Storage Cabinet for added chemical resistance. Place a shelf liner in the cabinet floor. The watertight tray collects spills and drips from bottles and containers stored within the cabinet.

S

## Adjustable Shelf – Solvent Storage Cabinet

Remove the four shelf brackets included with the cabinet's leveling feet and place one bracket in each of the shelf positions located on the interior walls of the cabinet. Make sure that the shelf brackets are located at the same height to assure that the shelf will be level when placed in its working position. To install, simply squeeze the shelf bracket with pliers and place in the shelf positions of your cabinet.

V

### Junction Box Connection – Vacuum Pump Storage Cabinet

Connect power to the electrical junction box, provided for the vacuum pump, through the back panel to the receptacle.

# Environmental Conditions

This equipment is designed to be safe under the following conditions:

- Indoor use
- Altitude up to 6562 Ft. (2000m)
- Temperature 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)
- Pollution degrees 2, in accordance with IEC 664, normally only non-conductive foreign matter, solid, liquid, or gaseous (ionized gases), that may produce a reduction of dielectric strength or surface resistivity occurs. Occasionally, however, a temporary conductivity caused by condensation must be expected

# CHAPTER 4
# USING YOUR STORAGE CABINET

After the Storage Cabinet has been installed as detailed in *Chapter 3: Getting Started*, you are ready to begin using it. Read this chapter to learn how to:

- Properly store and vent chemicals.
- Operate it in a safe manner.

## Normal Operation

Although the Storage Cabinet is engineered to maintain the optimum in operator safety, caution should always be used while working with it. Good general housekeeping procedures with the following specific recommendations should allow you to operate your cabinet safely for years to come.

- Properly vent your storage cabinet to the outside atmosphere.
- It is not recommended to store solvents and acids in the same storage cabinet. For best results, use two separate storage cabinets to safeguard or protect these materials.

S

- Do not block open the door assembly on the solvent storage cabinet. This is an unsafe practice should a fire occur.
- Do not store flammable material in excess of the individual Solvent Storage Cabinet rating. Ratings are located on the nameplate of each Solvent Storage Cabinet.
- Do not block either vent connection as it will alter the airflow pattern in the cabinet and could interfere with ventilation of the cabinet.
- Always clean up spills immediately to prolong the life of your Storage Cabinet.

# CHAPTER 5
# MAINTAINING YOUR STORAGE CABINET

Under normal conditions, the Storage Cabinet requires little maintenance. The following maintenance schedule is recommended:

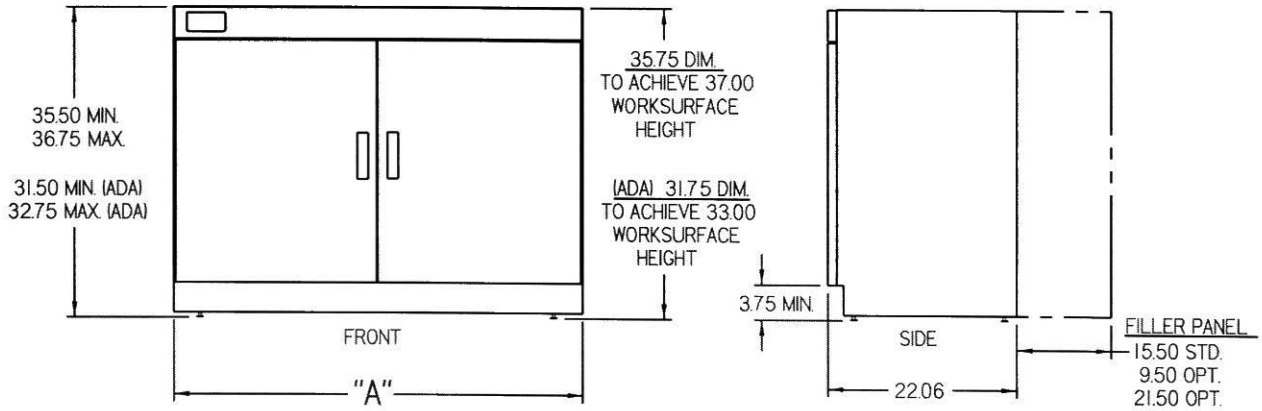
**As Needed:**

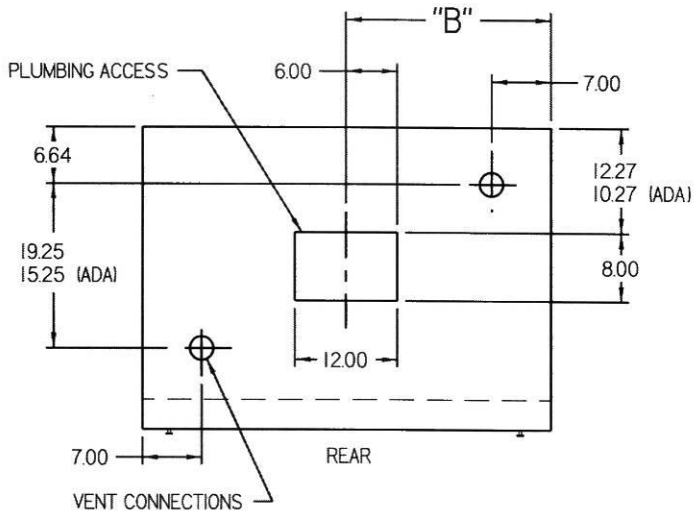
Remove liquid containers from cabinet and clean up spills.

# APPENDIX A
# STORAGE CABINET DIMENSIONS

The following drawings provide dimensions for the Standard Base Cabinet, Acid Storage Cabinet, Solvent Storage Cabinet, and the Vacuum Pump Cabinet.

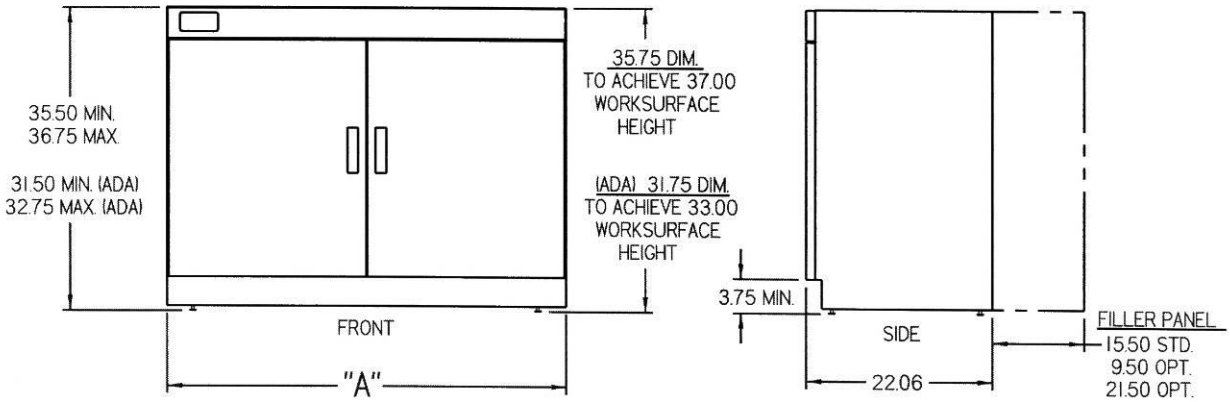
## Protector Standard Base Cabinet

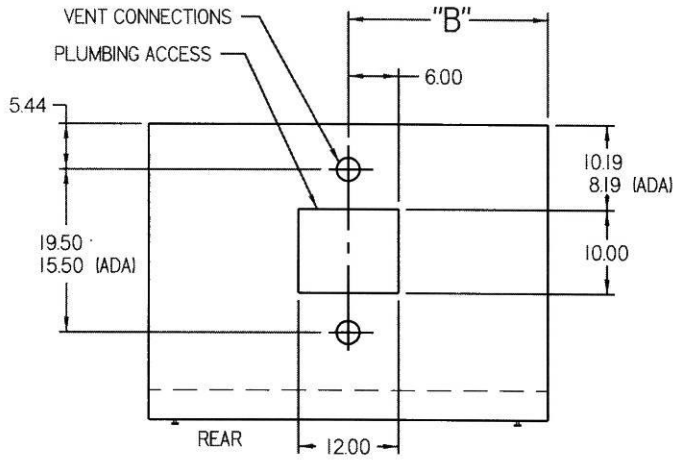



| STANDARD BASE MODEL | DIM. "A" | DIM. "B" |
|---|---|---|
| 48" | 48" | 24" |
| 36" | 36" | 18" |
| 30" | 30" | 15" |
| 24" | 24" | 12" |
| 18" | 18" | 9" |
| 12" | 12" | — |
| 24" ADA | 24" | 12" |
| 18" ADA | 18" | 9" |
| 12" ADA | 12" | — |

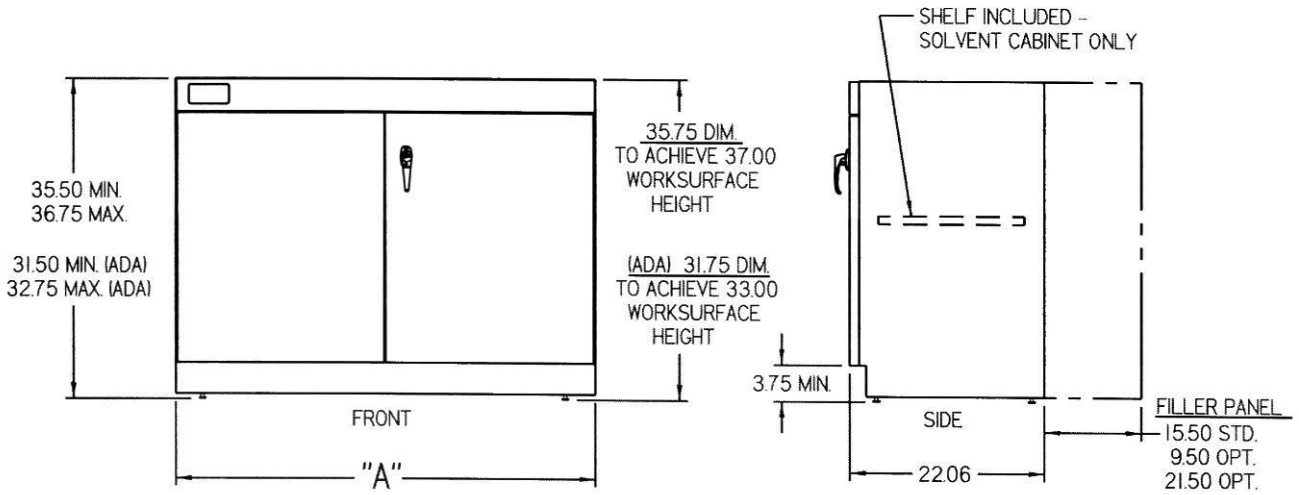
## Protector Acid Storage Cabinet

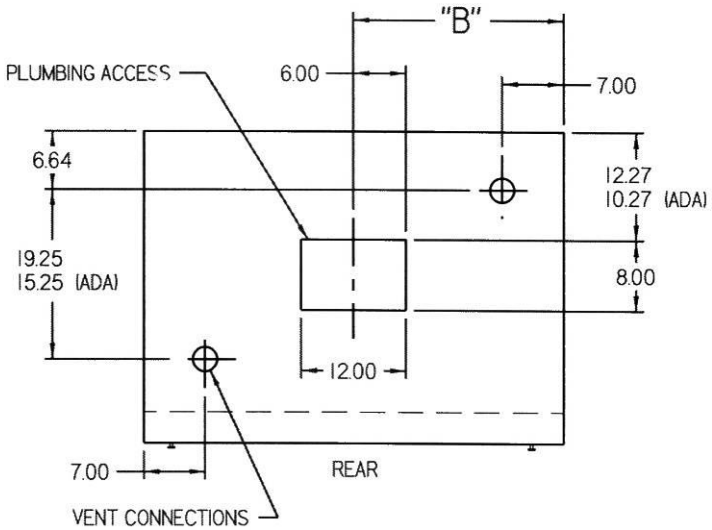



| ACID MODEL | DIM. "A" | DIM. "B" |
|---|---|---|
| 48" | 48" | 24" |
| 36" | 36" | 18" |
| 30" | 30" | 15" |
| 24" | 24" | 12" |
| 18" | 18" | 9" |
| 24" ADA | 24" | 12" |
| 18" ADA | 18" | 9" |

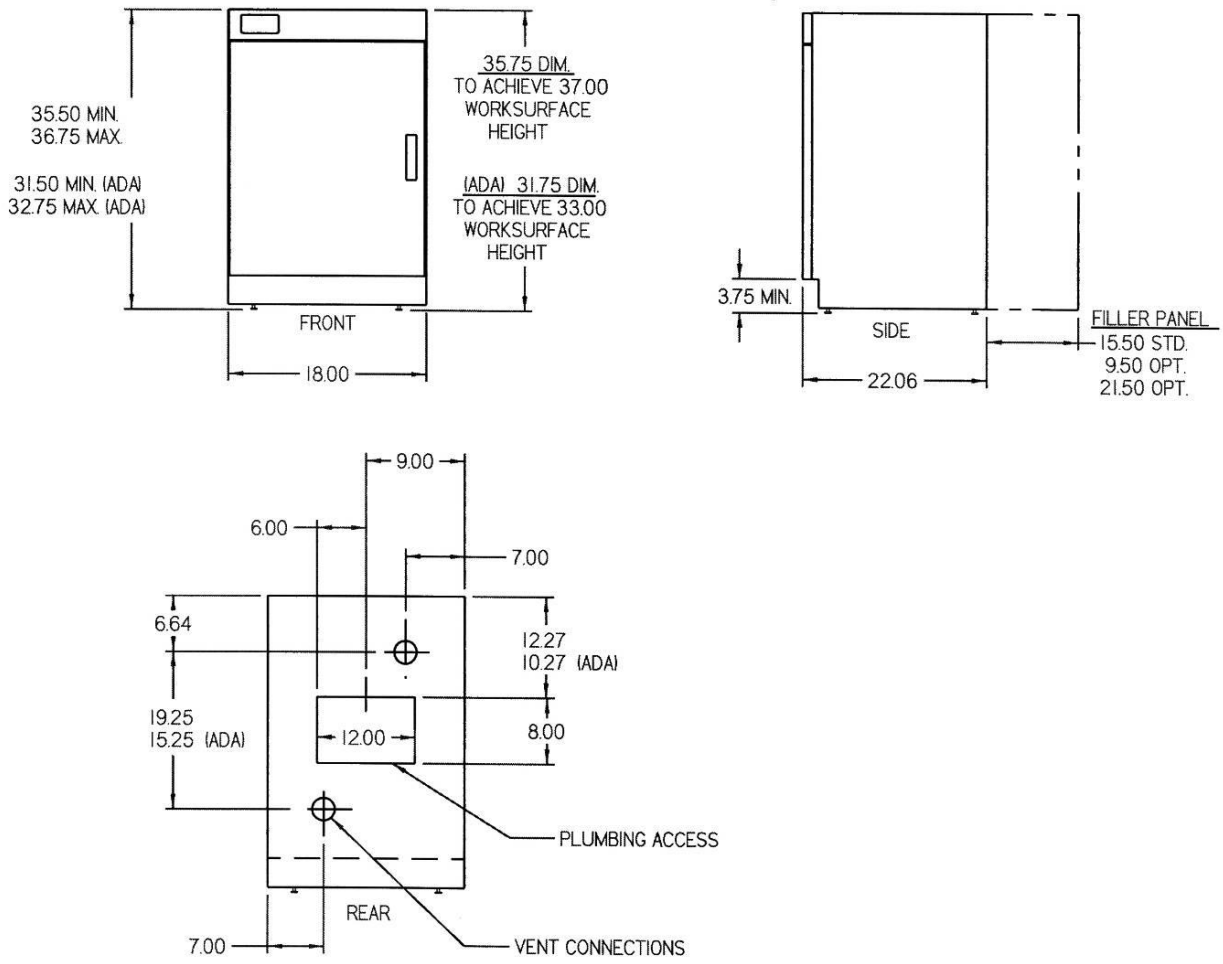
**Protector Solvent Storage Cabinet**




| SOLVENT MODEL | DIM. "A" | DIM. "B" |
|---|---|---|
| 48" | 48" | 24" |
| 36" | 36" | 18" |
| 30" | 30" | 15" |
| 24" | 24" | 12" |
| 24" ADA | 24" | 12" |

**Protector Vacuum Pump Cabinet**



# APPENDIX B
# STORAGE CABINET
# REPLACEMENT PARTS

The following pages list components that are typical replacement parts. If other parts are required, contact Product Service.

| Part # | Description | Cabinet Type |
|---|---|---|
| 1928300 | Leveling Feet | All |
| 1663600 | Door Bumpers | All |
| 1928400 | Handle, Acid | All but Solvent |
| 3598300 | Lock Handle, Solvent | Solvent Only |
| 1934500 | Rotary Catch, Door Latch | All but Solvent |
| 1930600 | Shelf Support Clip, Solvent | Solvent Only |
| 9921200 | 48" Adjusting Solvent Shelf | Solvent Only |
| 9921201 | 36" Adjusting Solvent Shelf | Solvent Only |
| 9921202 | 30" Adjusting Solvent Shelf | Solvent Only |
| 9921203 | 24" Adjusting Solvent Shelf | Solvent Only |
| 1934100 | Bushing, Brass – Door Hinge Support | All |
| 9917100 | Lower Hinge Assembly, Right | All |
| 9717101 | Lower Hinge Assembly, Left | All |
| 9920700 | Upper Hinge Pin | All |
| 9922100 | 48" Lower Acid Polyethylene Tray | Acid Only |
| 9922101 | 36" Lower Acid Polyethylene Tray | Acid Only |
| 9922102 | 30" Lower Acid Polyethylene Tray | Acid Only |
| 9922103 | 24" Lower Acid Polyethylene Tray | Acid Only |
| 9922104 | 18" Lower Acid Polyethylene Tray | Acid Only |
| 1878802 | Replacement Key, Lock Handle | All |

# APPENDIX C
# STORAGE CABINET ACCESSORIES

The following accessories are available for the Storage Cabinets.

A

B

## Vent Kit - Part No. 3591100

Includes one plastic vent tube assembly complete with 2" diameter threaded connector locknut, flexible tubing and vent extension. Vent kit is used for venting Acid Storage Cabinets through Spillstopper worksurface and into the fume hood. Shipping weight 5 lbs. (2.3 kg).

A

## Shelf Kits for Acid Storage Cabinets

These kits provide additional shelf, polyethylene tray, and mounting hardware.

| | |
|---|---|
| 48" | 9919000 |
| 36" | 9919001 |
| 30" | 9919002 |
| 24" | 9919003 |
| 18" | 9919004 |

B

## Shelf Kits for Standard Base Cabinets

These kits provide additional shelf, and mounting hardware.

| | |
|---|---|
| 48" | 9919100 |
| 36" | 9919101 |
| 30" | 9919102 |
| 24" | 9919103 |
| 18" | 9919104 |
| 12" | 9919105 |

## Work Surfaces

| | |
|---|---|
| 9727500 | 4' Work Surface Only, 30" Depth |
| 9727501 | 5' Work Surface Only, 30" Depth |
| 9727502 | 6' Work Surface Only, 30" Depth |
| 9727503 | 8' Work Surface Only, 30" Depth |
| 9727504 | 10' Work Surface Only, 30" Depth – Two Piece |
| 9727505 | 12' Work Surface Only, 30" Depth – Two Piece |
| 9727506 | 16' Work Surface Only, 30" Depth – Three Piece |
| 9727507 | 4' Work Surface Only, 36" Depth |
| 9727508 | 5' Work Surface Only, 36" Depth |
| 9727509 | 6' Work Surface Only, 36" Depth |
| 9727510 | 8' Work Surface Only, 36" Depth |
| 9727511 | 10' Work Surface Only, 36" Depth – Two Piece |
| 9727512 | 12' Work Surface Only, 36" Depth – Two Piece |
| 9727513 | 16' Work Surface Only, 36" Depth – Three Piece |
| 9727514 | 4' Work Surface Only, 42" Depth |
| 9727515 | 5' Work Surface Only, 42" Depth |
| 9727516 | 6' Work Surface Only, 42" Depth |
| 9727517 | 8' Work Surface Only, 42” Depth |
| 9727518 | 10' Work Surface Only, 42" Depth – Two Piece |
| 9727519 | 12' Work Surface Only, 42" Depth – Three Piece |
| 9727520 | 16' Work Surface Only, 42" Depth – Three Piece |
| 9732000 | 4' HOPEC Work Surface |
| 9732001 | 5' HOPEC Work Surface |
| 9732002 | 6' HOPEC Work Surface |
| 9732003 | 8' HOPEC Work Surface |
| 9732004 | 4' HOPEC Work Surface with (1) cupsink cutout |
| 9732005 | 5' HOPEC Work Surface with (1) cupsink cutout |
| 9732006 | 6' HOPEC Work Surface with (1) cupsink cutout |
| 9732007 | 8' HOPEC Work Surface with (1) cupsink cutout |

Other Work Surfaces with cutout options are available. Contact Labconco Corporation for ordering.

## Self-Closing Kit for Solvent Storage Cabinets

| | |
|---|---|
| 9914700 | Self-Closing/Automatic Latching Solvent Left Hinged Door Kit |
| 9914701 | Self-Closing/Automatic Latching Solvent Right Hinged Door Kit |
| 9914702 | Self-Closing/Automatic Latching Solvent Double Door Kit - 30", 36", and 48" units |

## Filler Panel Kits

| | |
|---|---|
| 9920300 | Panel, Filler 24" for Interior depth Protector XL Fume Hood |
| 9920301 | Panel, Filler 30" for Interior depth Protector XL Fume Hood |
| 9920302 | Panel, Filler 36" for Interior depth Protector XL Fume Hood |
| 9920303 | Panel, Filler ADA 24" for Interior depth Protector XL Fume Hood |
| 9920304 | Panel, Filler ADA 30" for Interior depth Protector XL Fume Hood |
| 9920305 | Panel, Filler ADA 36" for Interior depth Protector XL Fume Hood |
| 9920306 | Panel, Filler Protector Fume Hood |
| 9920307 | Panel, Filler ADA Protector Fume Hood |

*Individual kits contain one filler panel, filler panel angle, and mounting screws.

# APPENDIX D
# QUICK REFERENCE
# STORAGE CABINETS & BASE STANDS

**Storage Cabinets**

| | ACID | | | SOLVENT | | |
|---|---|---|---|---|---|---|
| Width/Description | Dual Doors | Right Hinge | Left Hinge | Dual Doors | Right Hinge | Left Hinge |
| 48" | 9901000 | - | - | 9902000* | - | - |
| 36" | 9901100 | - | - | 9902100* | - | - |
| 30" | 9901200 | - | - | 9902200* | - | - |
| 24" | - | 9901300 | 9901500 | - | 9902300 | 9902400 |
| 18" | - | 9901400 | 9901600 | - | - | - |
| 48" with self-closing doors | - | - | - | 9903000* | - | - |
| 36" with self-closing doors | - | - | - | 9903100* | - | - |
| 30" with self-closing doors | | - | - | 9903200* | - | - |
| 24" with self-closing doors | - | - | - | - | 9903300 | 9903400 |
| 48" ADA | 9905600 | - | - | 9906600 | - | - |
| 36" ADA | 9905500 | - | - | 9906500 | - | - |
| 30" ADA | 9905400 | - | - | 9906400 | - | - |
| 24" ADA | - | 9905000 | 9905200 | - | 9906000 | 9906100 |
| 24" ADA with self-closing doors | - | - | - | - | 9906200 | 9906300 |
| 18" ADA | - | 9905100 | 9905300 | - | - | - |

Note: Acid Cabinet models with interior liner top would be xxxxx-01 instead of xxxxx-00 as listed above.

| | STANDARD BASE | | | VACUUM PUMP | | |
|---|---|---|---|---|---|---|
| Size/Description | Dual Doors | Right Hinge | Left Hinge | Dual Doors | Right Hinge | Left Hinge |
| 48" | 9900000 | - | - | - | - | - |
| 36" | 9900100 | - | - | - | - | - |
| 30" | 9900200 | - | - | - | - | - |
| 24" | - | 9900300 | 9900600 | - | 9907200 | 9907300 |
| 18" | - | 9900400 | 9900700 | - | 9907000 | 9907100 |
| 12" | - | 9900500 | 9900800 | - | - | - |
| 48" ADA | 9904800 | - | - | - | - | - |
| 36" ADA | 9904700 | - | - | - | - | - |
| 30" ADA | 9904600 | - | - | - | - | - |
| 24" ADA | - | 9904000 | - | - | - | - |
| 18" ADA | - | 9904100 | - | - | - | - |
| 12" ADA | - | 9904200 | 9904500 | - | - | - |

**Base Stands**

| | TELESCOPING | | HYDRAULIC LIFT | | | ADA |
|---|---|---|---|---|---|---|
| Width | Fixed Feet | Casters | Electric: 115V, 60 Hz | Electric: 230V, 50 Hz | Manual | |
| 24" | 3746700 | 3746710 | - | - | - | - |
| 36" | 3746701 | 3746711 | 3780300 | 3780303 | 3780400 | - |
| 48" | 3746702 | 3746712 | 3780301 | 3780304 | 3780401 | |
| 60" | 3746703 | 3746713 | - | - | - | |
| 72" | 3746704 | 3746714 | 3780302 | 3780305 | 3780402 | |

*Denotes Factory Mutual Listed