FISHER AMERICAN

FUME HOODS

Installation, Operation, and Maintenance Manual

Version 4.8 Jan 2025

Congratulations on your purchase of a Fisher American® Fume Hood. Your Hood is engineered to protect you. It is the result of Fisher American's many years of experience designing and manufacturing fume hoods.

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LIMITED WARRANTY

FISHER AMERICAN LLC LIMITED WARRANTY

1. Products Manufactured by Fisher American LLC: Fisher American LLC, warrants products that it manufactures to be free from defects for a period of 12 months commencing from the date of shipment. This limited warranty covers parts, but not labor, transportation or insurance charges. Fisher American LLC's sole responsibility is to replace any part of the product that proves defective or malfunctioning during this time limit. In some cases, components incorporated in Fisher American LLC products are covered by additional warranties from component manufacturers; obtain specific information from Fisher American LLC sales representatives. This warranty is void if the equipment is abused or modified by the customer, is operated outside Fisher American LLC's operating instructions or specifications, or is used in any application other than that for which it is specified. This warranty does not include routine maintenance or service procedures, shipping damage, nor damage from misuse, intentional or unintentional abuse, neglect, natural disasters, or acts of God.

2. Products Manufactured by Others: Fisher American LLC, warrants that, to the best of its ability, Fisher American LLC's representations of products that are manufactured by others reflect the manufacturer's representations, subject to change without notice. Sole warranty for these products is the original manufacturer's warranty that is passed forward to the purchaser and constitutes the customer's sole remedy for these products. Detailed warranties for distributed products are available through Fisher American LLC sales representatives.

3. All Claims: Fisher American LLC expressly disclaims all other warranties, expressed or implied or implied by statute, including the warranties of merchantability or fitness for intended use. Fisher American LLC is not responsible for consequential or incidental damages arising out of the purchase or use of the products supplied by Fisher American LLC. Fisher American LLC is not liable for damage to facilities other equipment, products, property or personnel of others, or of their agents, suppliers, or affiliated parties, which is caused or alleged to have been caused by products supplied by Fisher American LLC. In any event or series of events, Fisher American LLC's total liability for all damages whatsoever is limited to the lesser of the actual damages or the original invoice cost of the items alleged to have caused the damage.

4. Severability: If any portion of Limited Warranty is found to be invalid or unenforceable, the invalid or unenforceable term shall be severed from the Limited Warranty, and the remaining Limited Warranty shall be valid and fully enforceable as written.

Updated 1-24-2021

Fisher American LLC
2501 9th Street
Rockford, IL 61104
(800) 419-1900

ENVIRONMENTAL LIABILITY

The disposal and/or emission of substances used in connection with this equipment may be governed by various federal, state, and/or local regulations. All users of this equipment are required to be familiar with handling chemical material regulations. Our company is held harmless with respect to the user's compliance with such regulations.

CONTACTING US

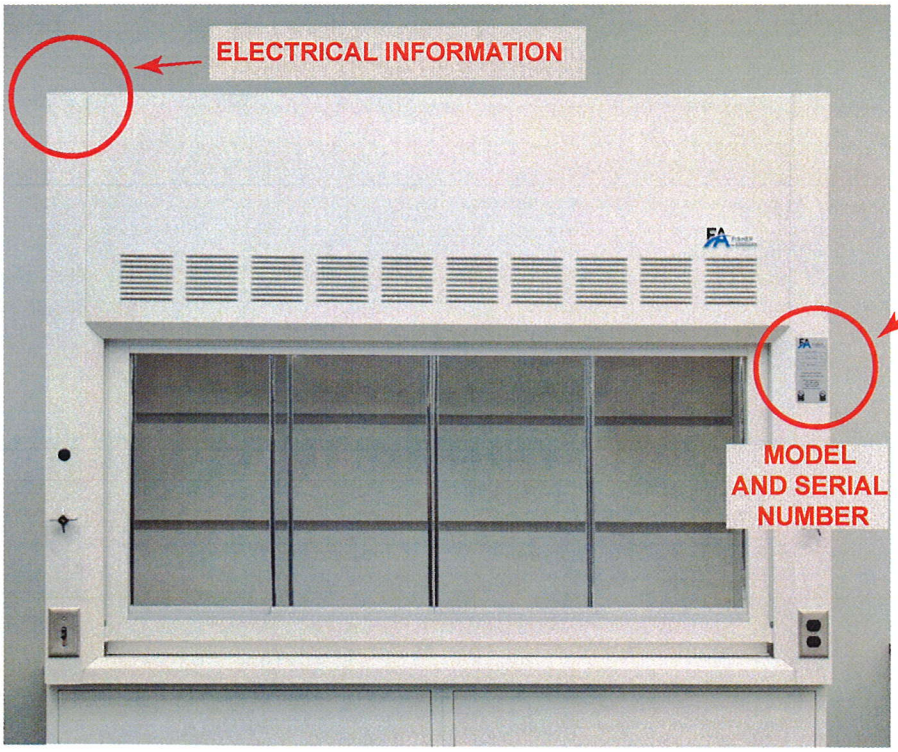
Should you need more information, or a digital copy of this manual, contact Fisher American Customer Service at **(800) 419-1900, Monday through Friday, between 9:00 AM and 5 PM, Central Standard Time.**

HOOD IDENTIFICATION

All Fisher American hoods bear two identification labels located on the top, next to the junction box.

See samples below:

1. MODEL AND SERIAL NUMBER



FISHER AMERICAN

Model Number:

Serial Number:

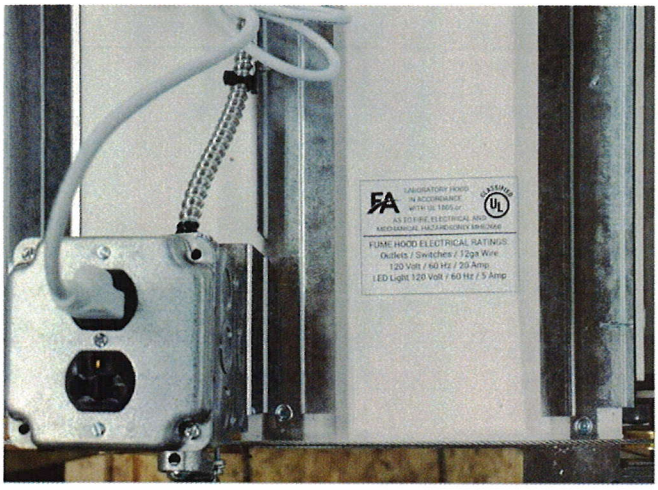
MFG Date:

Laboratory Fume Hood
Voltage: 120 Hz: 60 Amp: 20

Fisher American LLC
2501 9th Street
Rockford IL 61104
800-419-1900
Fisheramerican.com

UL CERTIFIED MH62660 UL CERTIFIED MH62660

2. ELECTRICAL INFORMATION



IN ACCORDANCE WITH UL 1805

FISHER AMERICAN

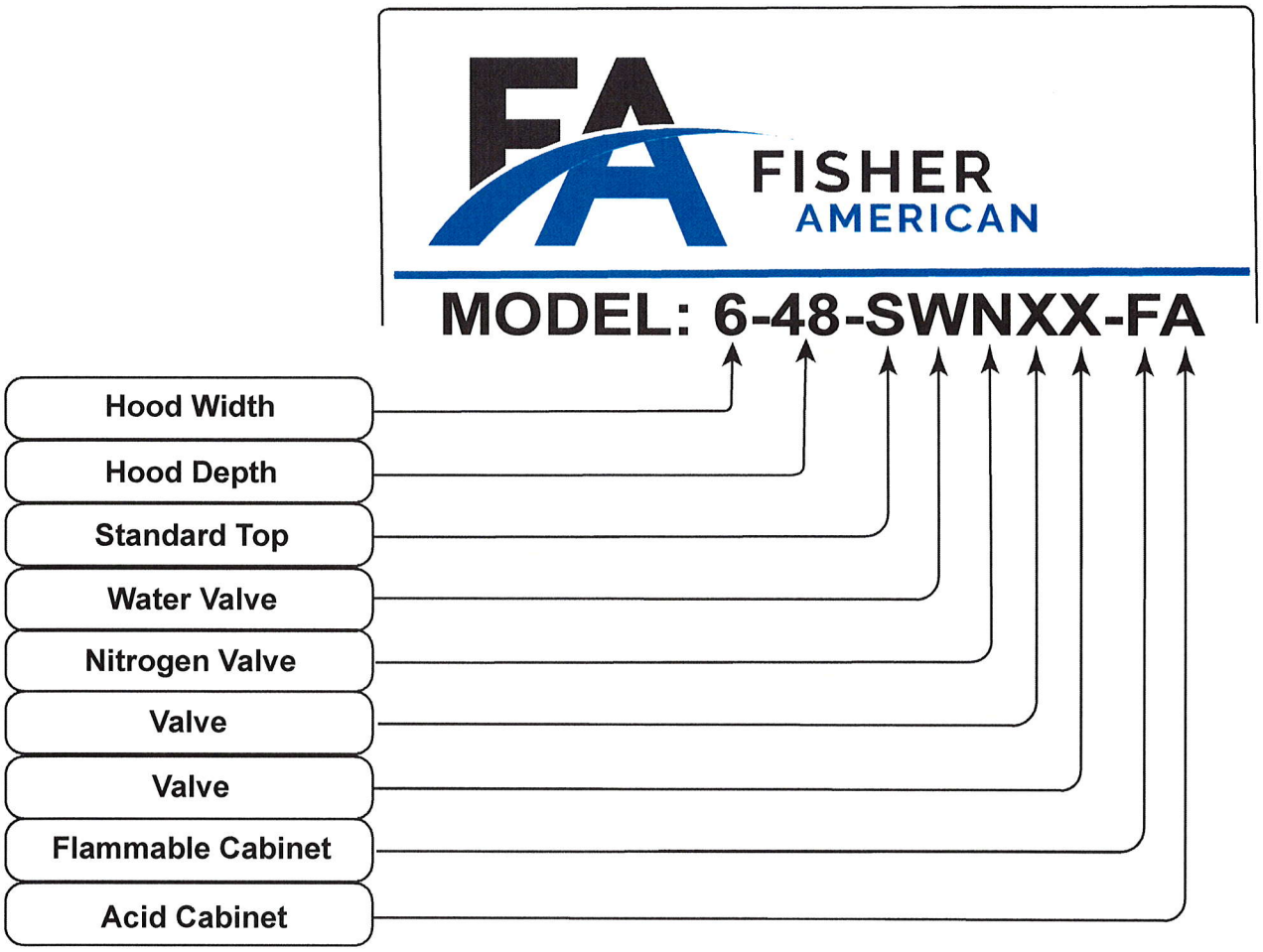
CLASSIFIED UL

2501 9th St, Rockford, IL 61104, (815) 670-6400

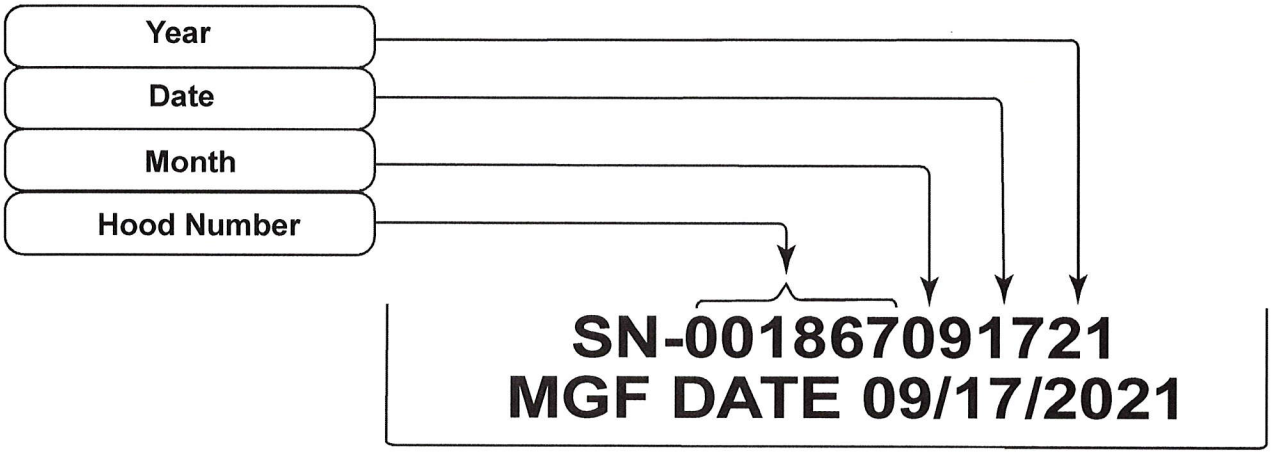
FUME HOOD ELECTRICAL RATINGS:
Outlets / Switches / 12ga Wire
120 Volt / 60 Hz / 20 Amp
LED Light 120 Volt / 60 Hz / 5 Amp

LOCATION OF ELECTRIC LABEL: ON THE LEFT SIDE OF THE ROOF, NEXT TO THE JUNCTION BOX

HOW TO READ MODEL NUMBER



HOW TO READ SERIAL NUMBER



INTRODUCTION

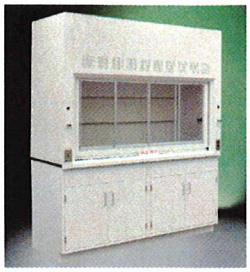
The Fisher American Fume Hoods have been designed to effectively contain toxic, noxious, or other harmful materials when professionally installed, operated, and maintained. This hood offers many unique features to enhance safety, performance, and visibility. To take full advantage of them, please acquaint yourself with this manual and keep it handy for future reference.

Fume hoods are exposed to harsh conditions: high temperatures, reagent fumes and working surface abuse. Regular care will prolong service life and insure safe working conditions.

Note: Handling of Perchloric Acid requires special fume hoods!

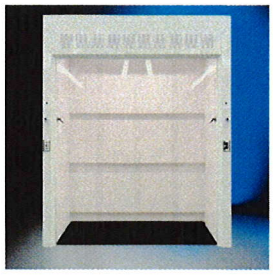
Fisher American offers a large variety of standard products, including, but not limited to:

- **Bench top Fume** Hoods 3, 4, 5, 6, 8, 10, 12 ft wide, with 31" or 48" depths
  - On base cabinets
  - Separate



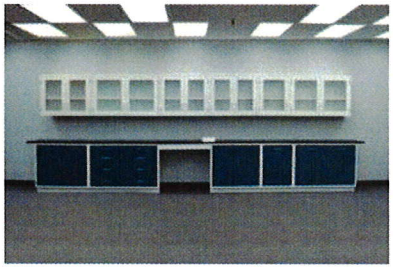
Our Standard Bench Top Fume Hoods are preinstalled on a work surface, but, upon request, can be shipped without one.

- **Walk-In Fume Hoods** 4, 6, 8, 10, 12 ft wide, with 31", 48" or 72" depths



An optional height extension of 31" is available, increasing height to 120"

- **Laboratory Cabinets**, generic or with specific purpose:
  - Base cabinets
  - Wall cabinets
  - Island cabinets



Besides standard sizes, Fisher American also offers custom made fume hoods of different sizes. All standard fume hoods are equipped with lights, light switch, duplex outlet, and two service valves.

Many options are available upon request.
Note: Fume Hoods require both a remote blower/fan and ducting to the exterior of the building.

INSTALLATION

Carefully read this chapter to learn the requirements for your installation:

Selecting your Hood Location

- DO NOT install the fume hood on any mobile device. ALL hood installations must be stable, permanent, and stationary.
- Carefully examine the future location of the hood. The area must be level and of solid construction.
- Before you install your laboratory fume hood, you should prepare the site.
- A dedicated source of electrical power, service utilities, and a ducting / ventilation system must be located near the installation site.
- 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 when the hood is in operation.

Bench Top Hoods

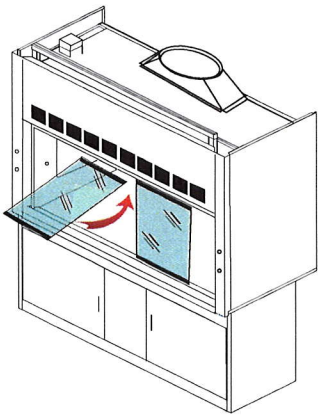
Remove crate and any other wood elements used for shipping and handling purpose only.

When removing crate sides, you will see the side panels & sash parts in front of the hood, and the sash counterweight on the side, with clamp and 2 Screws.
Set side panels aside for now.

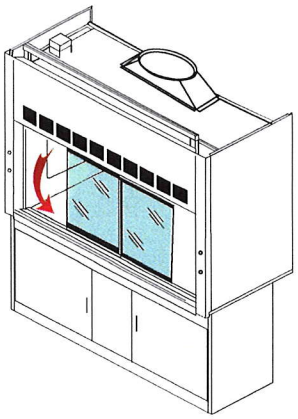
Note: THE 2X4 PIECE OF WOOD ON THE BACK OF THE HOOD IS FOR SHIPPING PURPOSES ONLY. PLEASE REMOVE WHEN UNPACKING!

Installing the Sash Glass (4' and Larger Bench Top Hoods)

Note: *The 3 ft wide Bench Top hood has a different style sash!*



INCLINE AND PUSH INTO THE UPPER GUIDE

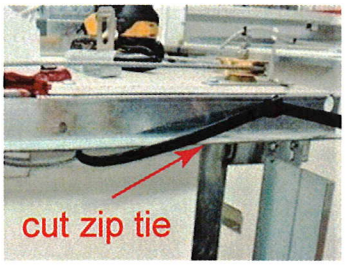


BRING TO VERTICAL AND DROP INTO THE BOTTOM RAIL

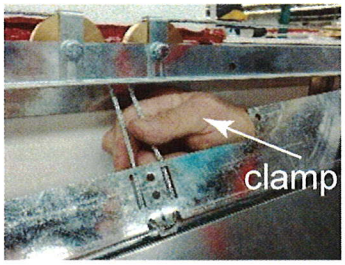
Before attaching the weight, be sure the glass is installed in the sash!!!

Attaching the Weight

First, *check if sash cable is running correctly on all pulleys!*

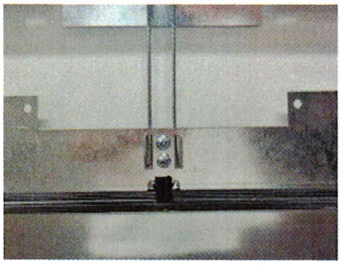


CUT THE ZIP TIE HOLDING THE CABLE LOOP (DON'T CUT ELECTRICAL TIES!)

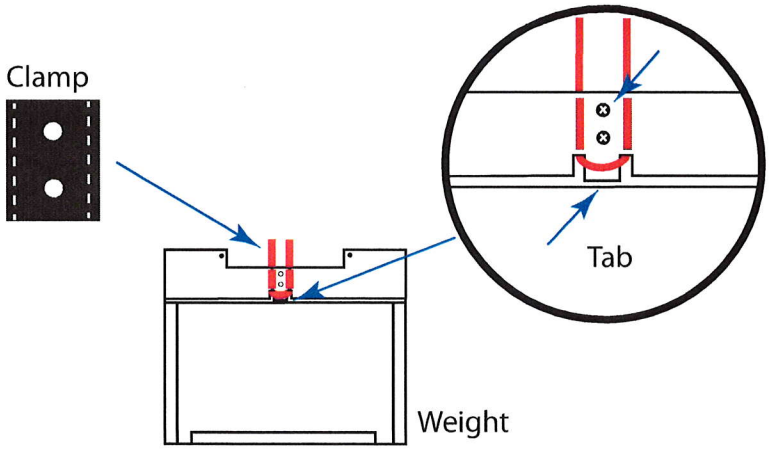


BRING CABLE LOOP FROM BEHIND AND HOOK TO TAB

INSERT CLAMP THROUGH BACK AND SECURE WITH 2 SCREWS



WEIGHT ATTACHED



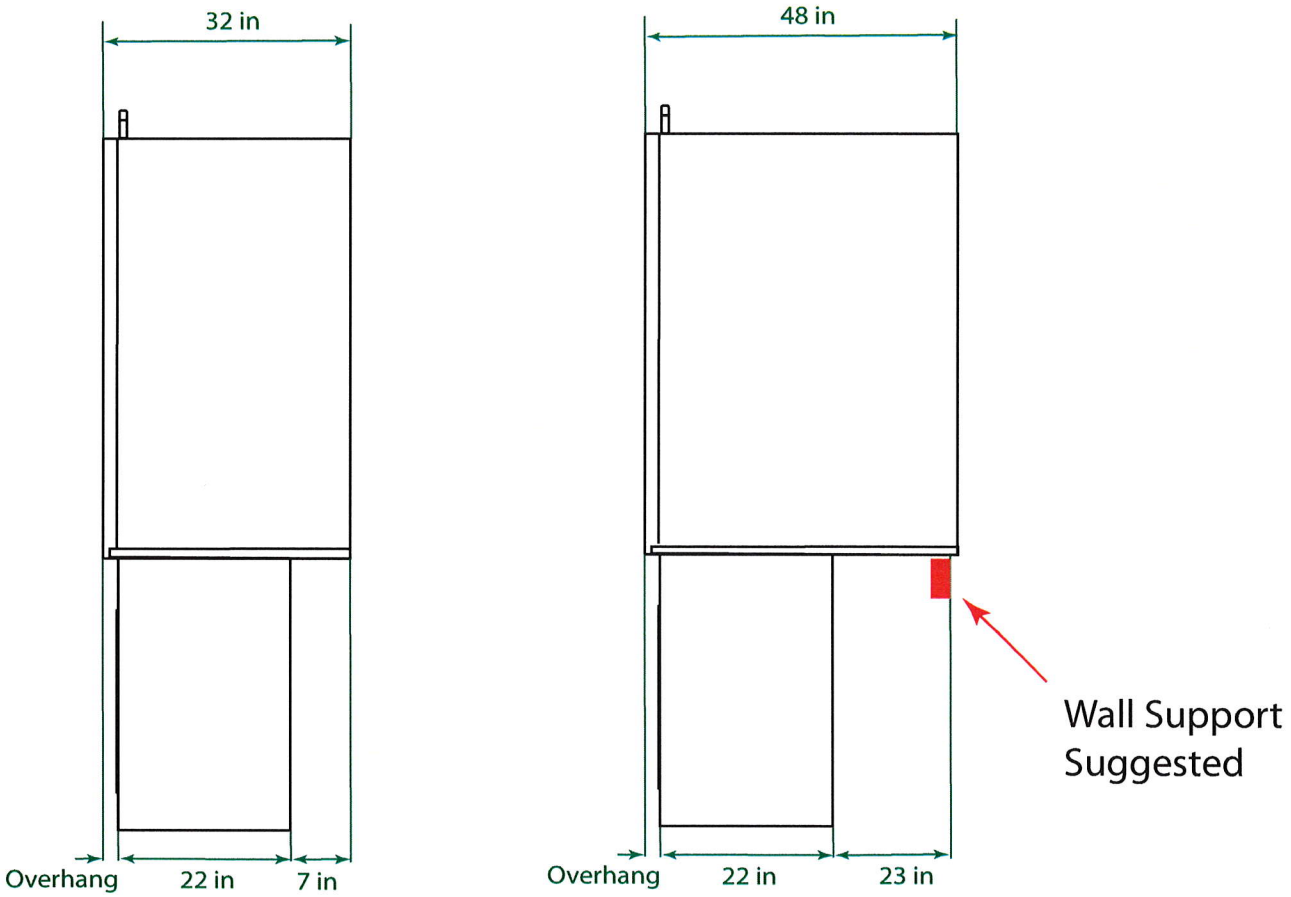
Setting the Fume Hood on Cabinets

Before the fume hood can be set on the cabinet(s), each of the cabinet(s) needs to be leveled. All the cabinets have four leveling lugs on each bottom corner. The lug can be screwed in or out to level the cabinet. Cabinet location is determined based on the depth of the fume hood. Reference cabinet location on the cabinet placement drawings below.

Once the cabinets are in the correct location and level, the fume hood can be lifted into place. It's important that the fume hood and the attached work surface remain together. All lifting should occur from the bottom of the work surface to support the hood weight evenly.

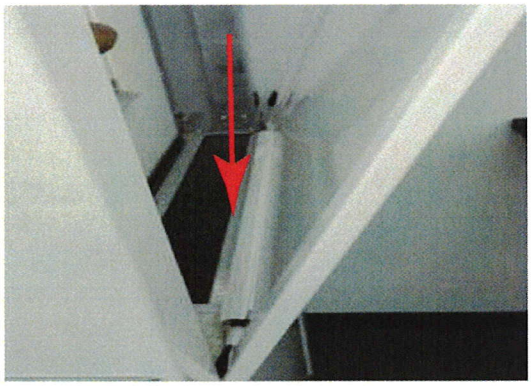
Fume hoods weigh between 400 to 800+ lbs. The shipping skid allows for lifting with a mechanical lift truck or floor jack. If you must lift the fume hood manually, follow the safe-lifting guidelines. Normally, the fume hood can be slid off a hydraulic lift table and be placed into position on top of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

Fume Hood / Cabinet Placement Drawings

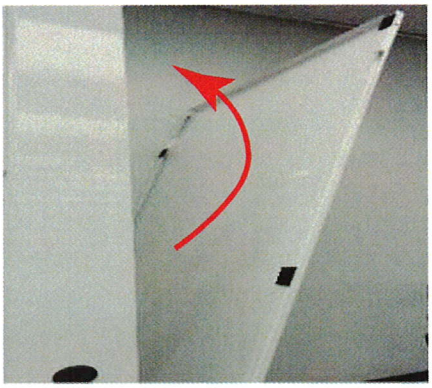


Installing the Side Panels

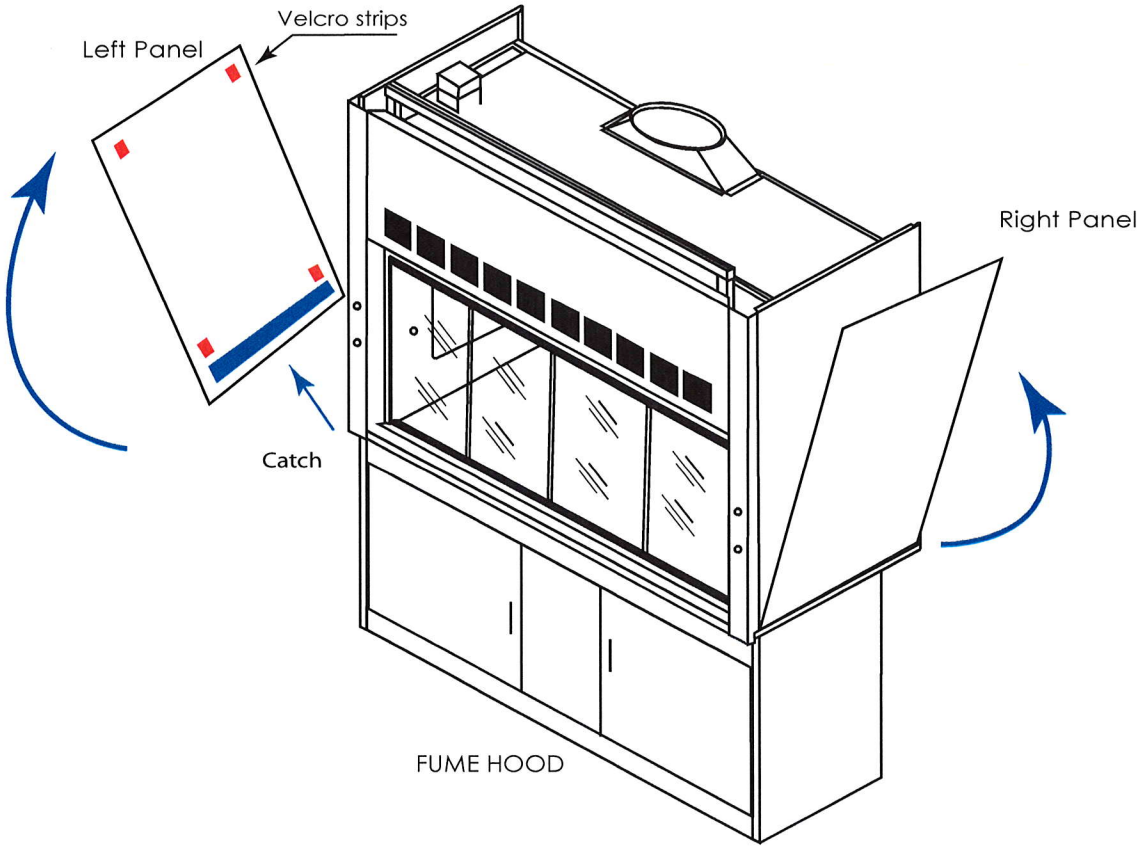
Note: *Side panels are different for Left/Right sides. There are marks for selection of the appropriate side*



INCLINE AND INSERT PANEL BOTTOM CATCH INTO THE STRUC-TURE LOWER LIP



BRING PANEL TO VERTICAL AND PRESS ONTO THE FRAME FOR 30 SEC OR MORE

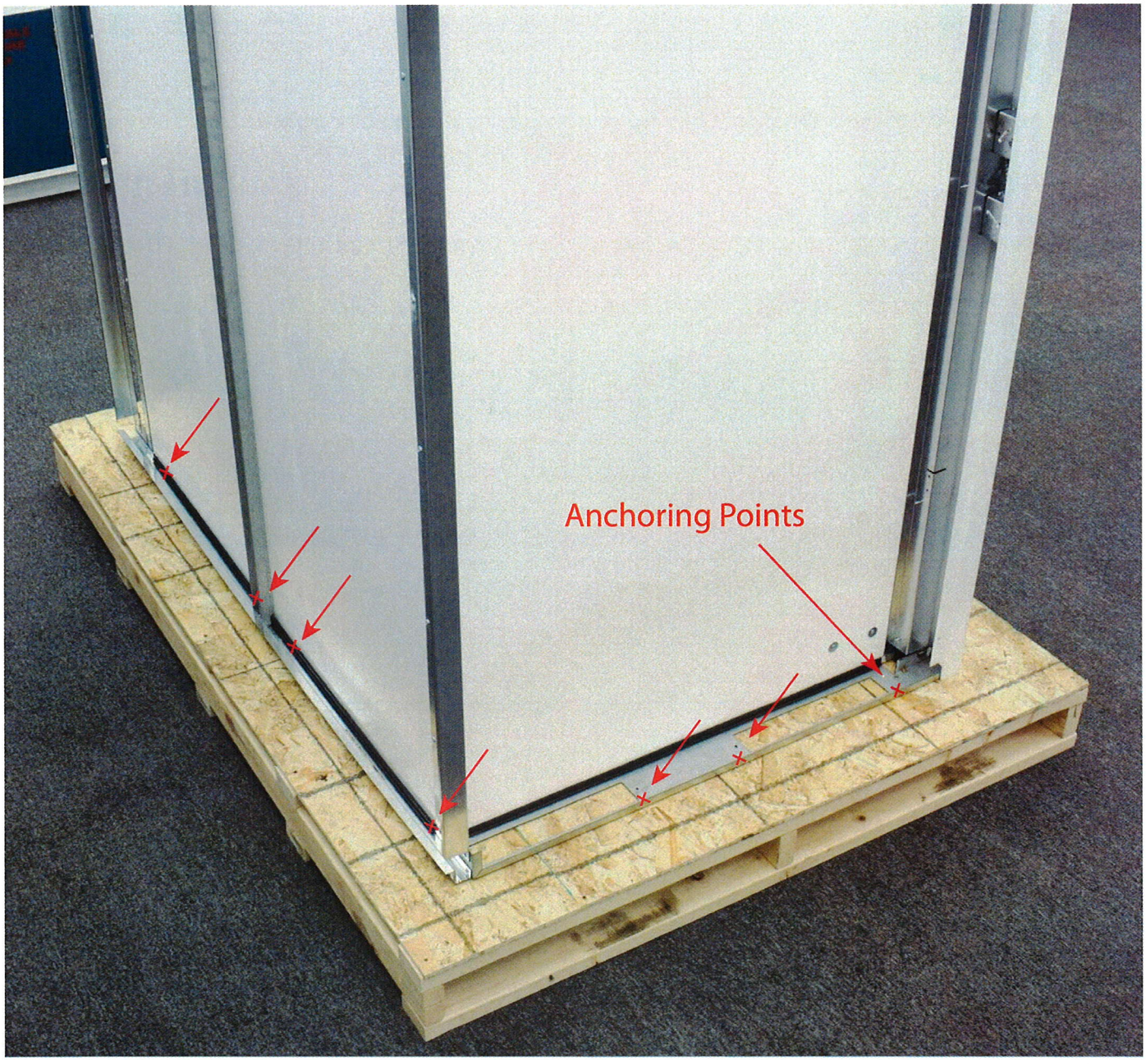


Walk-In Hoods

Setting the Walk-In Fume Hood

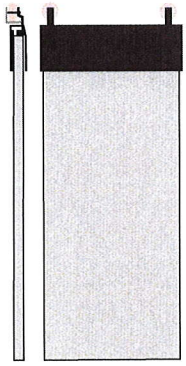
Before the fume hood can be secured to the floor, the hood needs to be level. Once the hood has been leveled and is square, the hood can be anchored to the floor. We recommend a sleeve anchor style that will require a hole to be drilled into the floor and a bolt with washer to hold the fume hood in place. There are numerous locations for anchoring the hood to the floor. This would include the two sides and along the back of the hood's galvanized frame.

Fume hoods weigh between 400 to 800+ lbs. The shipping skid allows for lifting with a mechanical lift truck to move the hood into place. Another option is to use multiple furniture dollies to move the hood into place. If you must lift the fume hood manually follow safe-lifting guidelines.

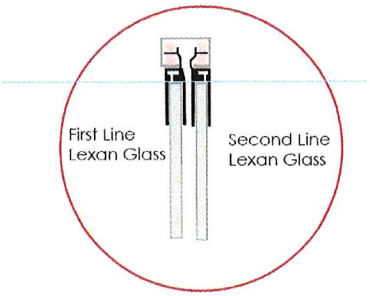


Installing the Curtain Sash

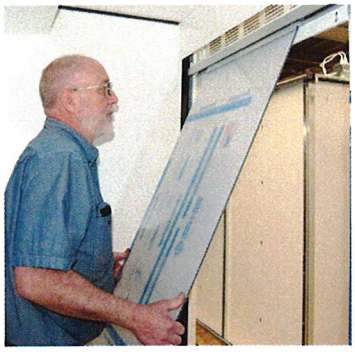
First, notice there are two parallel rails, to allow sliding one curtain over the other for hood access

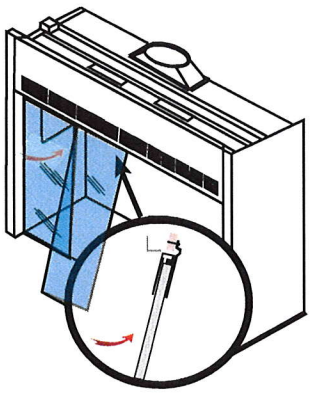


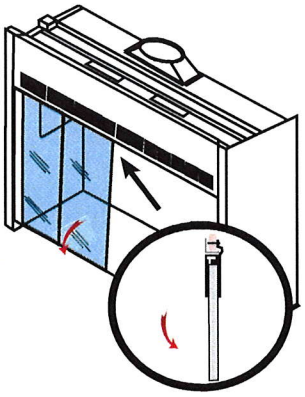
CURTAIN SASH



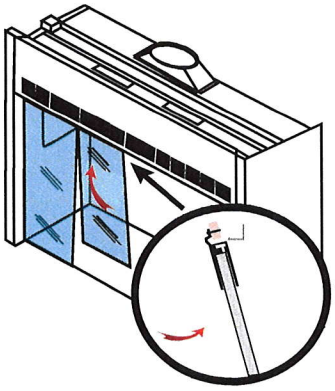
BEFORE INSTALLATION NOTE THAT THERE ARE
TWO DIFFERENT ATTACHMENTS

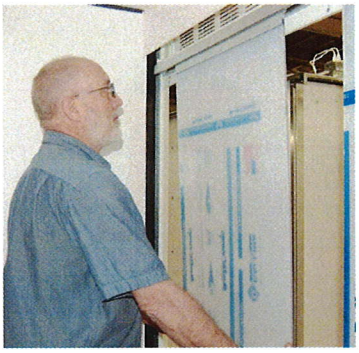


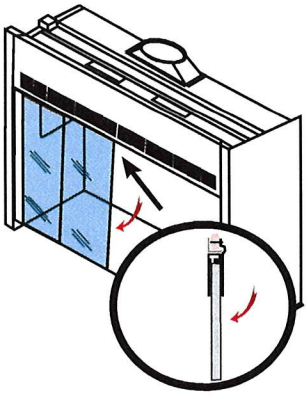




FIRST LINE SASH
INSTALL DOOR FROM OUTSIDE THE HOOD:
LOWER THE CURTAIN IN FRONT OF THE RAIL UNTIL THE WHEELS CLICK IN, THEN RELEASE







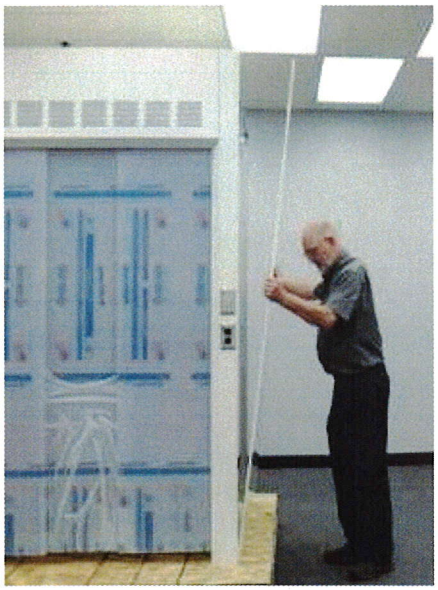
SECOND LINE SASH
INSTALL DOOR FROM INSIDE THE HOOD:
LIFT THE CURTAIN IN FRONT OF THE RAIL UNTIL THE WHEELS CLICK IN, THEN RELEASE

Installing the Side Panel

Remove crate and any other wood elements used for shipping and handling purposes only.

For shipping purposes, the side panels are in the front of the hood, together with lexan sliding doors.

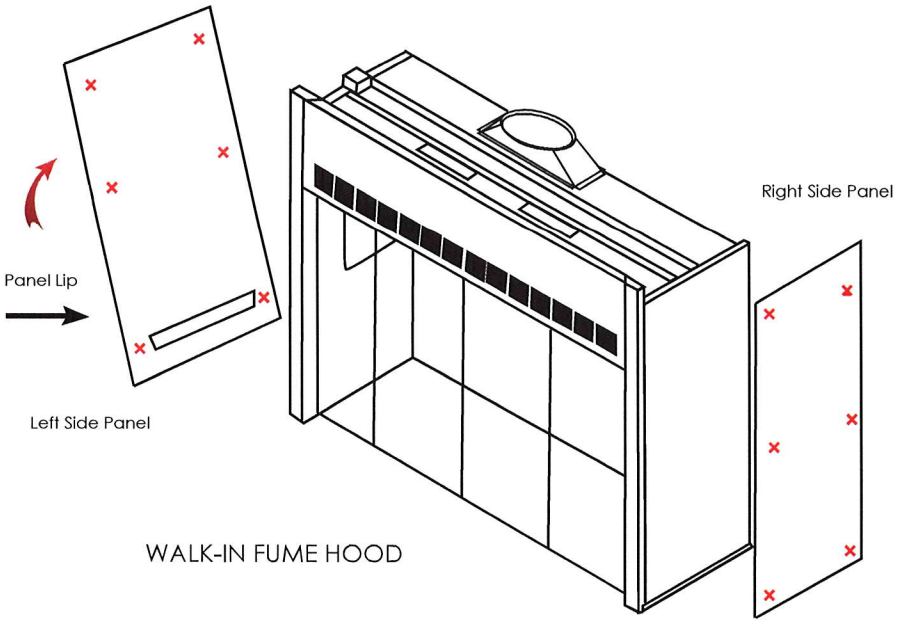
Install side panels.
Note: *Side panels are different for Left/Right sides. There are marks to facilitate selection for the appropriate side.*



INCLINE AND INSERT PANEL BOTTOM CATCH INTO THE STRUCTURE LOWER LIP

BRING PANEL TO VERTICAL AND LOCATE SCREW HOLES

INSERT AND TIGHTEN PROVIDED SCREWS



WALK-IN FUME HOOD

All Hoods

Electrical Requirements

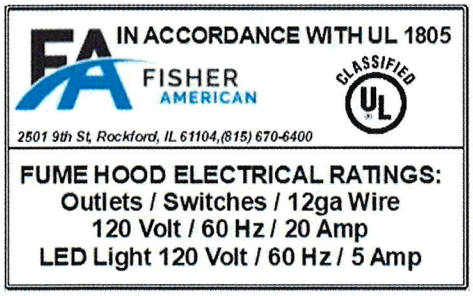
The identification plate, model number, serial number, and electrical connection information are located on the top of the fume hood, on the left side. Fume hoods are normally wired for 120 Volt, 60 Hz, or/and 20 Amp electrical service. Check the I.D. plate for voltage verification. The number of circuits varies depending on the model.

We recommend each circuit be a dedicated branch circuit (each outlet, blower, etc.), this will allow for 20A service to each device. However, if wired together, the maximum load allowed is the sum of individual outlets plus the rating of the unit (i.e. 12 Amps outlet(s), 8 Amps remote blower) not to exceed the 20A electrical service. The single point internal junction box is used for the connection of the lights, blower, and duplex outlets.

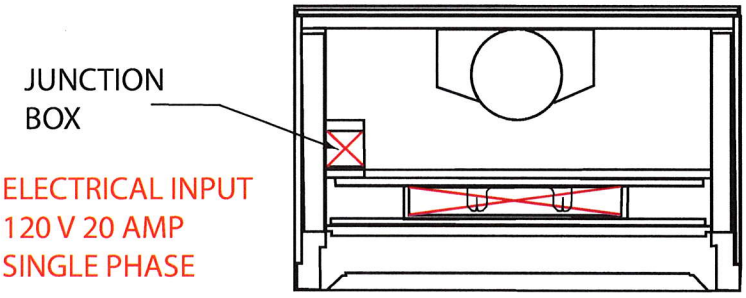
All wiring for the fume hood should conform to all local codes. In most cases, the hood will require the use of shielded conduit (i.e. BX Cable or rigid conduit) to protect the wiring into the hood. The grounding connection shall not be made to the terminal box cover.

All electrical wiring including outlets, switches, and LED lights have been mounted outside of the hood. No modifications to the electrical components should be made that would have any electrical wiring or devices inside the hood structure.

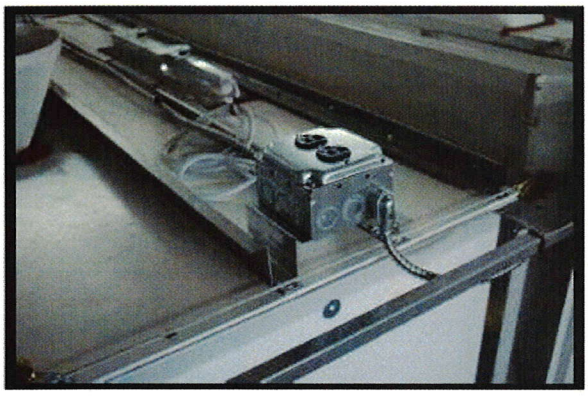
ELECTRICAL IDENTIFICATION PLATE



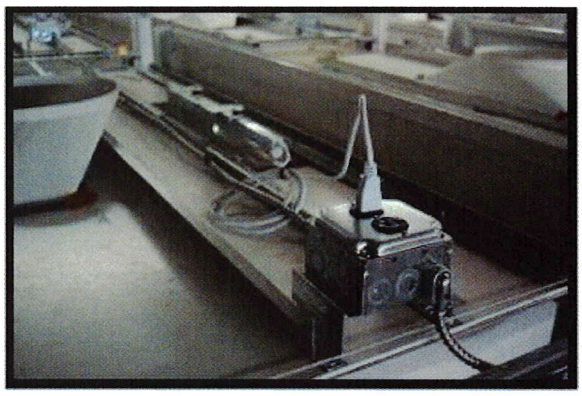
ELECTRICAL CONNECTION BOX



Light Connection



LIGHTS HAD TO BE UNPLUGGED FOR SHIPPING

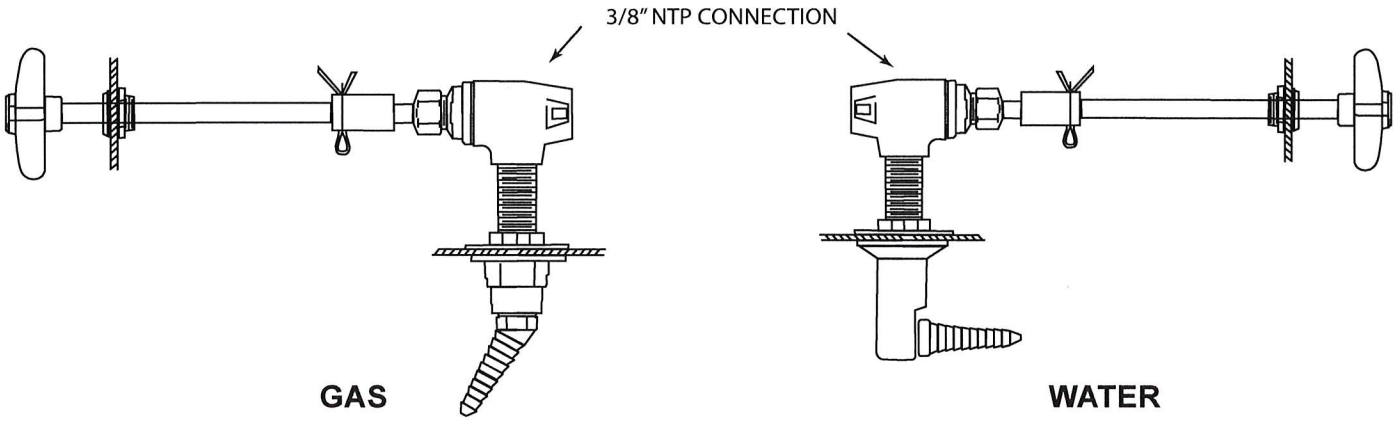


BEFORE PUTTING THE HOOD IN OPERATION, PLUG LIGHTS BACK IN

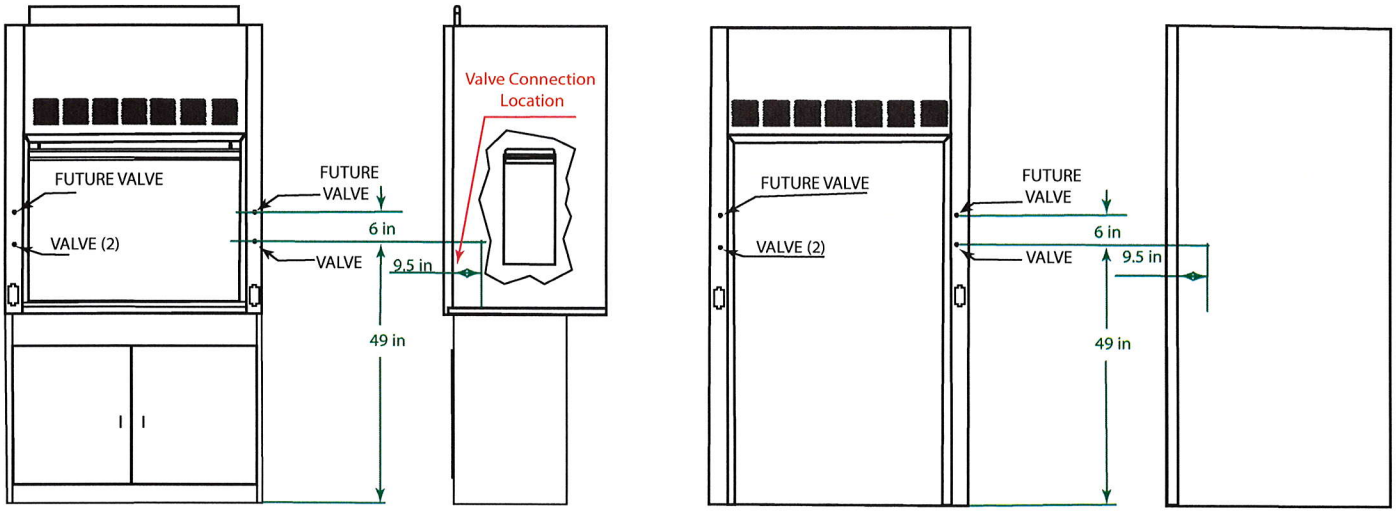
Service Valve Requirements (Air, Gas, Vac, Nit, Water, etc.)

All service valve lines to the laboratory fume hood should be ¼ inch or larger outside diameter and equipped with an easily accessible shut-off valve, should disconnection be required.
The connection point for the supply is on the back of the valve assembly. The connection is a 3/8 NTP. Drawing of the valve assembly is below.

Valve Assembly



Valve Location



EXHAUST SYSTEM

Each hood must be equipped with an exhaust fan(s) and ducting to eliminate the fumes from the fume hood to outside the building, while allowing fresh air from the building into the work area. The Fisher American exhaust duct transition is designed to allow for minimum static pressure loss while the hood is operating at 100 FPM (feet per minute) face velocity.

The installer shall provide the appropriate fan and duct designed for a velocity range of 80 FPM to 120 FPM. **Note:** 100 FPM is most common.

If in doubt, contact Customer Support for sizing at +1 (800) 419-1900

WARNINGS:

- **The weight of the exhaust system (fan & ductwork) must be supported independently of the hood.**
- **Severe damage may occur if it rests on the hood.**
- **Before operating the unit, make sure the exhaust system is connected and operational.**

Airflow Requirements: Bench Top Hoods

The numbers below will provide 100 FPM of face velocity across an 18" high sash opening.

3' x 32" = 325 CFM	3' x 48" = 345 CFM
4' x 32" = 475 CFM	4' x 48" = 500 CFM
5' x 32" = 625 CFM	5' x 48" = 675 CFM
6' x 32" = 850 CFM	6' x 48" = 890 CFM
8' x 32" = 1100 CFM	8' x 48" = 1160 CFM
10' x 32" = 1400 CFM	10' x 48" = 1475 CFM
12' x 32" = 1675 CFM	12' x 48" = 1750 CFM

Note: For duct sizes and location please reference the fume hood drawing in the rear of this manual.

Airflow Requirements: Walk-In Hoods

Numbers below will provide 100 FPM of face velocity across a half open sash

4' x 32" = 950 CFM	4' x 48" = 1000 CFM
6' x 32" = 1600 CFM	6' x 48" = 1675 CFM
8' x 32" = 2150 CFM	8' x 48" = 2250 CFM
10' x 32" = 2750 CFMT	10' x 48" = 2875 CFM
12' x 32" = 3350 CFM	12' x 48" = 3517 CFM

- All hoods (bench top and walk-in) have ¼" (0.25") static pressure at the hood duct connection.
- **Note:** This does not account for the static pressure (pressure drop) the exhaust system (ducting/blower) will create.
- **For any hood not listed above, please contact Fisher American for airflow requirements.**

USING YOUR FUME HOOD

Planning

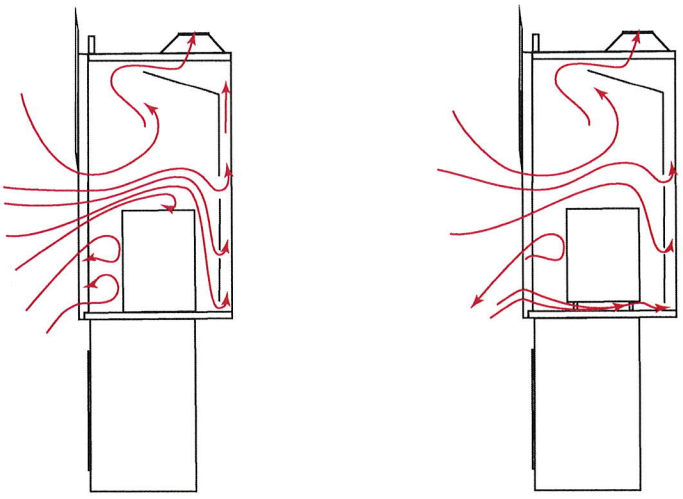
- The disposal and/or emission of substances used in connection with this equipment may be governed by various federal, state, and/or local regulations. All users of this equipment are required to be familiar with handling chemical material regulations.
- Thoroughly understand the equipment before beginning work.
- Familiarize yourself with the task procedure.
- Arrange for minimal room traffic, entry into the room or exit while the hood is in use. Eliminate draft sources around hood before starting, and for the duration of the task.

Start-up

- Turn on LED lights and hood blower.
- Slowly raise sash door.
- Check the baffle air slots and eliminate obstructions if found.
- Allow the hood to operate unobstructed for 2 minutes.
- Use protective gear: long-sleeved lab coat, rubber gloves, protective eyewear, and mask when necessary.

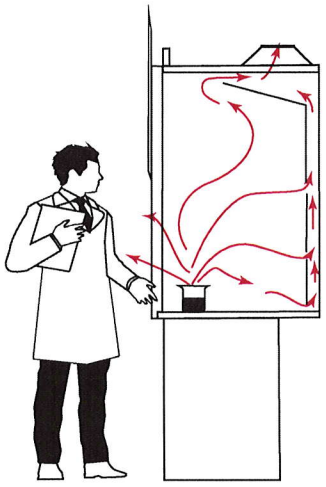
Loading Materials and Equipment

- Only load the materials required for the procedure. Do not overload the hood, it may restrict air circulation.
- Do not obstruct the front air foil (Bench Top), or rear baffle slots.
- Allow space between large objects and add spacers to permit airflow to sweep under the equipment as shown below.
- Before starting the operation, purge the work area for one minute to eliminate airborne contaminants.

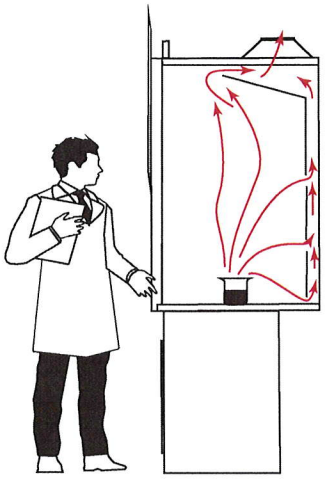


Work Techniques

- Keep all materials at least 6 inches inside of the sash/door
- Perform all contaminating operations as far to the rear of the work area as possible, as shown below.
- In the work area segregate clean materials from contaminated ones.
- Avoid disruption of the airflow patterns of the hood.



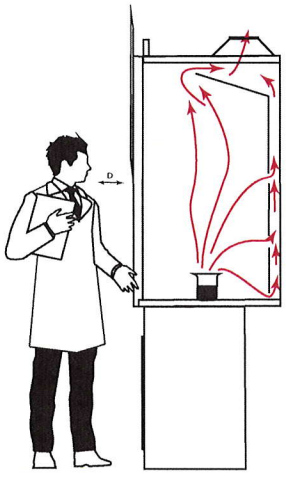
BAD



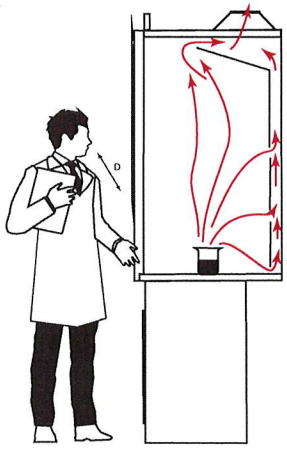
BETTER

BEST

It's best to keep the sash lowered as much as possible during operation and for the operator to be as far back as possible to avoid any contaminants that might escape the hood, as shown below.



GOOD



BEST

Unloading Materials and Equipment

• Objects that have been in contact with contaminated material should be decontaminated before removal from the hood.

• All open trays or containers should be covered before being removed from the hood.

Shutdown

• Upon completion of work, the hood exhaust system must operate for five minutes undisturbed, to purge airborne contaminants from the work area before shutting down blower

• Turn off the lights and hood exhaust fan, then close the sash.

• No chemicals should be stored in the fume hood when the hood is not in operation.

• Turn the Disconnect Switch off to avoid accidents.

SAFETY

All service valve lines to the laboratory fume hood should be ¼ inch or larger outside diameter and equipped with an easily accessible shut-off valve, should disconnection be required.
The connection point for the supply is on the back of the valve assembly. The connection is a 3/8 NPT. Drawing of the valve assembly - page15.

The safe operation of the fume hood is based upon having proper airflow through the hood area.

- Prior to using the hood, check to make sure that the exhaust blower is operating, and that air is entering the hood at its nominal 100 fpm face velocity.

- Do not work in this hood without the exhaust system running!

- Using heat-generating equipment in this hood without the exhaust operating would do damage to the hood.

- Avoid cross drafts (open doors, windows, etc.) and limit traffic in front of the hood. Air disturbances created may draw fumes out of the hood.

- Do not overload the work surface with unnecessary apparatus or material.

- Do not store containers or supplies against baffles, as this will affect airflow through the hood.

- Do not place large, bulky elements 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.

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

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

- Use good housekeeping in the hood.

- Clean up spills immediately by thoroughly wiping the work surface with proper neutralizing agent followed by a mild detergent.

- Periodically clean hood interior, including the light glass panel(s) and replace immediately burned out LED lights to ensure maximum illumination.

- Do not service any electrical components without first disconnecting the hood from electrical service.

MAINTENANCE

Suggested maintenance schedule and common service operations necessary for peak performance of your hood:

Weekly

- Use ordinary dish soap to clean all surfaces inside of the fume hood, including the work surface.

- Clean the sash, doors and all glass or polycarbonate surfaces. For glass use only glass cleaner, while for polycarbonate use only appropriate cleaner. Using general purpose solutions may reduce door/sash transparency!

- Operate the fume hood blower, noting the airflow velocity through the hood using a source of visible smoke.

Monthly (or more often as required)

- All weekly activities, plus:

- Using a damp cloth, clean the exterior surfaces of the hood, particularly the front of the hood, to remove any accumulated dust.

- Determine the actual face velocity through the sash opening of the hood where the average reading should beat the specified velocity of 100 FPM. (Use calibrated digital anemometer or other approved apparatus).

- Check all service valves, if so equipped, for proper operation.

- Remove any air blockage of the hood baffle slots to ensure that the hood is maintaining proper airflow.

Annually

- Check the sash/doors assembly to ensure smooth operation and make sure there are no signs of abnormal wear on the guides, rails, sash pulleys, cables, and clamps.

ANNEX: PROPERTIES OF MATERIALS IN CONTACT WITH HOOD INTERIOR ATMOSPHERE

Fiber Reinforced Plastic (FRP) sheets – *used as inside walls, ceiling, and air baffles*

Polyply Composites U.L. Listed ChemBlok CR-900 laminates are glass reinforced, UV inhibited composite sheets that offer excellent chemical and flame resistance wherever a cost effective general-purpose corrosion material is required.

TYPICAL PROPERTIES

General Information		ASTM
Polyply Composites LLC Grade	CR-900	
U.L. Recognition File Number	E31703	
Meets U.L. Standards 1805		
Color (Standard)	White	
Sheet Size	48" x 96" length	
Sheet Thickness	3/16"	Other sizes on request
Specific Gravity	1.8	D-792
Water Absorption (%by weight)	0.093	D-792
Flame Spread	20.2	UL 723/E-84
Smoke Generation, Tunnel Test	166	E-84
Flame Resistance	Self Extinguishing	
Tensile Strength, psi	8,300	D-638
Flexural Strength, psi	20,400	D-790
Compressive Strength (flat), psi	29,200	D-695
IZOD Impact Strength (Notched)	8.1	D-256
Barcol	50	

REAGENT RESISTANCE - PANEL CR900 LOT 07-1087,88

No.	Reagent	Rating	No.	Reagent	Rating
1	Amyl Acetate	0	26	Iodine, Tincture	2
2	Ethyl Acetate	0	27	Methyl Ethyl Ketone	1
3	Acetic Acid 98%	1	28	Methylene Chloride	2
4	Acetone	1	29	Mono Chlorobenzene	0
5	Acid Dichromate 5%	2	30	Naphthalene	0
6	Butyl Alcohol	0	31	Nitric Acid 20%	0
7	Ethyl Alcohol	0	32	Nitric Acid 30%	0
8	Methyl Alcohol	0	33	Nitric Acid 70%	2
9	Ammonium Hydroxide 28%	0	34	Phenol 90%	0
10	Benzene	1	35	Phosphoric Acid 85%	0
11	Carbon Tetrachloride	1	36	Silver Nitrate, Saturated	0
12	Chloroform	1	37	Sodium Hydroxide 10%	0
13	Chromic Acid 60%	2	38	Sodium Hydroxide 30%	0
14	Cresol	1	39	Sodium Hydroxide 40%	0
15	Dichloroacetic Acid	1	40	Sodium Hydroxide, Flake	0
16	Dimethyl Formamide	1	41	Sodium Sulfide, Saturated	0
17	1,4-Dioxane	0	42	Sulfuric Acid 33%	0
18	Ethyl Ether	0	43	Sulfuric Acid 77%	1
19	Formaldehyde 37%	0	44	Sulfuric Acid 96%	3
20	Formic Acid 90%	1	45	Sulfuric Acid 77% + Nitric Acid 70% (50/50)	2
21	Furfural	2	46	Toluene	0
22	Gasoline	0	47	Trichloroethylene	0
23	Hydrochloric Acid 37%	0	48	Xylenes	0
24	Hydrofluoric Acid 48%	3	49	Zinc Chloride, Saturated	0
25	Hydrogen Peroxide 3%	0			

Number of Level 3 Ratings	Disposition
2	Pass
Specification per SEFA 8, 1999	4 or less occurrences of Level 3 ratings

Unless otherwise indicated, all properties are based on tests performed on standard ASTM test samples and according to ASTM test methods. Values shown are for test samples made from production materials and are believed to be typical. No warranty is expressed or implied.

Laminated glass – *used for sash window*

Trulite GLASS & ALUMINUM SOLUTIONS™	Quality Standards GG 002 - 2015-02-23	Technical Bulletin

Trulite Glass & Aluminum Solutions™ meet the following standards and specifications:

Laminated Glass - Meets the requirement of ASTM C 1172 *Standard Specification for Laminated Architectural Flat Glass*. When comprised of two plies of glass and a 0.030" or thicker Interlayer, Trulite's laminated glass also meets the safety criteria of CPSC 16 CFR 1201, Category II; and ANSI Z97.1, Class A. Laminated glass also complies with ASTM C 1036, and when heat-treated, with ASTM C 1048. A Limited Warranty for a period of Five (5) Years is available for laminated glass with a PVB interlayer.