fisherbrand

Fisherbrand Laboratory Fume Hoods

Installation, Maintenance and User Manual

fisher scientific
part of Thermo Fisher Scientific

Contents

1. Introduction

Congratulations on your purchase of a Fisherbrand™ Laboratory Fume Hood. Your Fisherbrand Laboratory Fume Hood is UL 1805 listed and designed to provide a safe working environment for users. It has been engineered to provide maximum utility in a laboratory, and effectively contain toxic, noxious, or other harmful vapors when properly installed and used. Fisherbrand hoods offer 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. If you are unfamiliar with how fume hoods operate, please review Section 4: Using your Fisherbrand Fume Hood, before you begin working in the fume hood. Even if you are an experienced fume hood user, please review Section 5: Maintaining your Fisherbrand Fume Hood, which describes your Fisherbrand Fume Hood's features so that you can use the hood safely and efficiently.

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.

Section 1: Introduction provides a brief overview of the laboratory fume hood, explains the organization of the manual, and defines the typographical conventions used in this manual.

Section 2: Prerequisites explains what you need to do to prepare your site before you install you laboratory fume hood. Electrical and service requirements are discussed.

Section 3: Preparation and Installation contains the information you need to properly unpack, inspect, install and certify your laboratory fume hood.

Section 4: Using your Fisherbrand Fume Hood discusses the basic operation of your fume hood, information on how to prepare, use and shut down your Fisherbrand hood are also included.

Section 5: Maintaining your Fisherbrand Fume Hood explains how to perform routine maintenance on your fume hood.

Section 6: Accessories for your Fisherbrand Fume Hood explains how to add and install accessories.

Section 7: 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.

Section 8: Fisherbrand Fume Hood Dimensions and Specifications contains the electrical requirements for your laboratory fume hood.

Section 9: Fume Hood Safety Checklist

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

Refer to **Section 8: Fisherbrand™ Fume Hood Dimension and Specifications** for complete fume hood dimensions and laboratory fume hood electrical and environmental conditions, specifications and requirements.

2.1 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.

2.2 Support Requirements

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

2.3 Hood Details and Exhaust Requirements

The exhaust duct connection on the Fisherbrand Fume Hoods have been designed for 10” or 12” nominal duct diameter to allow for minimum static pressure loss while operating at 60-100 fpm face velocities. The 10” or 12” diameter exhaust duct also allows for proper transport velocities away from the hood in the 1000 fpm to 1200 fpm range. Exhaust fans should be located on the roof, with a sufficient exit velocity, consult with your HVAC professional. Specific exhaust volumes and static pressure losses are listed next for each hood model.

2. Prerequisites

2.3 Hood Details and Exhaust Requirements

Standard Bench Fume Hoods

Fisherbrand™ standard chemical fume hoods are innovative and purpose driven products for the research and healthcare industries. These fume hoods are the result of extensive testing and R&D, producing the safest and most adaptable hoods. They provide a clean, bright working environment through this functional design. The expansive interior is enhanced by a 43" tall sight line with a 17" high glass observation panel.

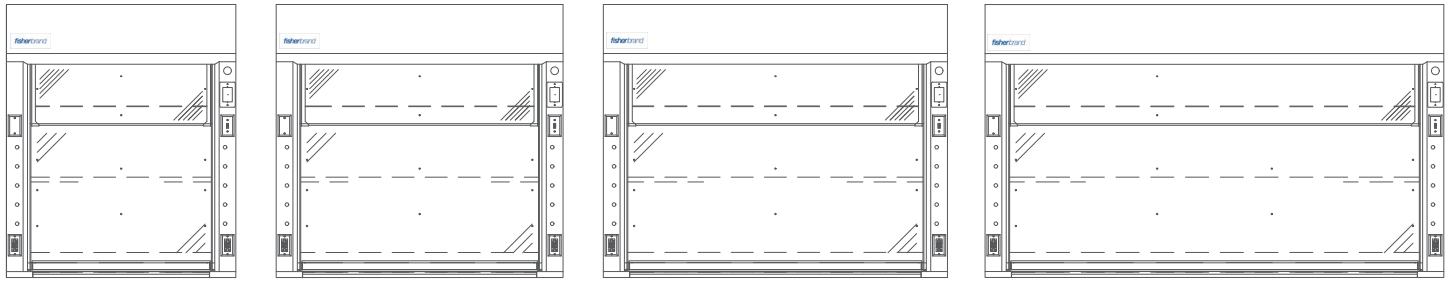
Features:

- Frameless vertical rising sash
- 24" (61 cm) deep clear interior
- 28" (71.1 cm) clear sash opening
- Standard 43" (110.5 cm) tall full view sash area
- Easy conversion from CAV to VAV use
- Chemically resistant white Polyglass liner
- Slotted rear baffle for even plenum balance
- Chain & sprocket sash mechanism for ease in operation
- Tempered glass sash with full-length formed steel handle for a neat, clean appearance and streamline air passage
- Stainless steel round duct collar(s)
- Fume hoods that are not stocked have a lead time of 6-8 weeks
- Color: Fisherbrand White

Quick delivery program furniture ships within 7 business days, these products are designated with this symbol:

Cat. No.	Hood Width	Total Open Sash Area	100 FPM @ 28" Max Sash Opening	Static Pressure Loss	100 FPM @ 18" Max Sash Opening	Static Pressure Loss	Duct Size
06000580	4' (121.9 cm)	7.4 sq. ft.	739 CFM	0.29"	475 CFM	0.12"	1: 10"
06000581	5' (152.4 cm)	9.7 sq. ft.	972 CFM	0.27"	625 CFM	0.11"	1: 12"
06000582	6' (182.9 cm)	12.1 sq. ft.	1206 CFM	0.42"	775 CFM	0.17"	1: 12"
06000583	8' (243.8 cm)	16.7 sq. ft.	1672 CFM	0.37"	1075 CFM	0.15"	2: 10"

Standard Bench Fume Hood Elevations



06000580 06000581 06000582 06000583

2. Prerequisites

2.3 Hood Details and Exhaust Requirements

High Performance Bench Fume Hoods

Fisherbrand™ High Performance Fume Hoods allow for reduced face velocities resulting in energy savings of 40-50% over standard hoods. These fume hoods are the result of extensive testing and R&D, producing the safest and most adaptable hoods. They provide superior energy savings through this functional design. The expansive interior is enhanced by a 43" tall sight line with a 17" high glass observation panel.

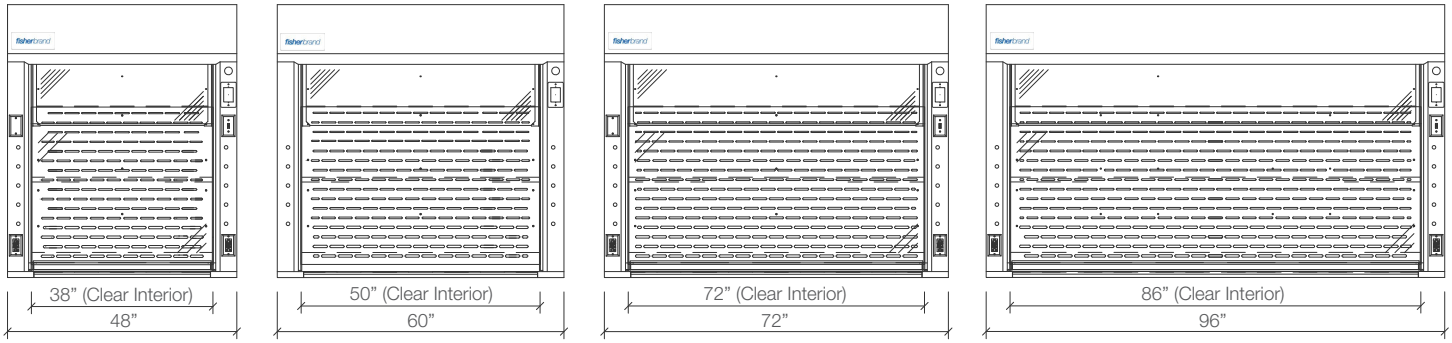
Features:

- Frameless vertical rising sash
- 24" (61 cm) deep clear interior
- 24" clear sash opening
- Standard 43" (110.5 cm) tall full view sash area
- Easy conversion from CAV to VAV use
- Chemically resistant white Polyglass liner
- High Performance perforated rear baffle
- Designed to safely capture and contain at 60-100 FPM
- Chain & sprocket sash mechanism for ease in operation
- Tempered glass sash with full-length formed steel handle for a neat, clean appearance and streamline air passage
- Stainless steel round duct collar(s) transitions
- Fume hoods that are not stocked have a lead time of 6-8 weeks.
- Color: Fisherbrand White

Quick delivery program furniture ships within 7 business days, these products are designated with this symbol:

Cat. No.	Hood Width	Total Open Sash Area	100 FPM @ 18" Max Sash Opening	Static Pressure Loss	80 FPM @ 18" Max Sash Opening	Static Pressure Loss	60 FPM @ 24" Max Sash Opening	Static Pressure Loss	Duct Size
06000584	4' (121.9 cm)	6.3 sq. ft.	475 CFM	0.15"	380 CFM	0.12"	380 CFM	0.12"	1: 12"
06000585	5' (152.4 cm)	8.3 sq. ft.	625 CFM	0.14"	500 CFM	0.11"	500 CFM	0.11"	1: 12"
06000586	6' (182.9 cm)	10.4 sq. ft.	775 CFM	0.21"	620 CFM	0.17"	620 CFM	0.17"	1: 12"
06000587	8' (243.8 cm)	14.3 sq. ft.	1075 CFM	0.19"	860 CFM	0.15"	860 CFM	0.15"	2: 12"

High Performance Bench Fume Hood Elevations



06000584 06000585 06000586 06000587

2. Prerequisites

2.3 Hood Details and Exhaust Requirements

Standard Walk-In Fume Hoods

Fisherbrand™ standard walk-in fume hoods with frameless vertical sash are similar to standard bench style hoods in design and function. The top view pass is clear tempered glass. They provide a clean, bright working environment for most any process or procedure. These hoods are normally used with tall equipment setups where maximum, entrance clearance and full view of a procedure is a priority.

Features:

- Frameless vertical rising sashes provide maximum 66 1/2" opening
- 24" or 30" (61cm or 76.2cm) deep clear interior available
- Standard 80" (203.2 cm) tall full view sash area
- Easy conversion from CAV to VAV use
- Chemically resistant white Polyglass liner
- Slotted rear baffle for even plenum balance
- Chain & sprocket sash mechanism for ease in operation
- Tempered glass sash with full-length formed steel handle for a neat, clean appearance and streamline air passage
- Can be pre-plumbed with remote control fittings
- Other sash configurations and hood styles available upon request
- Walk-in hoods are available for shipment in 6-8 weeks
- Stainless Steel round collar
- Brushed stainless steel cord pass thru
- Color: Fisherbrand White

Cat. No.	Overall Hood Width	Clear Working Depth	100 FPM @ 31 1/2" Max Sash Opening	Static Pressure Loss	100 FPM @ 18" Max Sash Opening	Static Pressure Loss	Duct Size
06000588	4' (121.9 cm)	24" (61 cm)	858 CFM	0.39"	501 CFM	0.13"	1: 10"
06000589	4' (121.9 cm)	30" (76.2 cm)	858 CFM	0.39"	501 CFM	0.13"	1: 10"
06000590	5' (152.4 cm)	24" (61 cm)	1128 CFM	0.37"	660 CFM	0.13"	1: 10"
06000591	5' (152.4 cm)	30" (76.2 cm)	1128 CFM	0.37"	660 CFM	0.13"	1: 10"
06000592	6' (182.9 cm)	24" (61 cm)	1399 CFM	0.57	818 CFM	0.19"	1: 10"
06000593	6' (182.9 cm)	30" (76.2 cm)	1399 CFM	0.57"	818 CFM	0.19"	1: 10"
06000594	8' (243.8 cm)	24" (61 cm)	1941 CFM	0.50"	1135 CFM	0.17"	2: 10"
06000595	8' (243.8 cm)	30" (76.2 cm)	1941 CFM	0.50"	1135 CFM	0.17"	2: 10"

2. Prerequisites

2.4 Electrical Requirements

The Fisherbrand™ Fume Hoods feature internal wiring for the fluorescent light assembly. Outlets, lights and light switch are provided prewired to a junction box on the roof of the hood. A qualified electrician can make connections to a one point wiring junction box on the roof of the hood. Refer to **Section 3 Preparation and Installation** and **Section 9: Fisherbrand Hood Dimensions and Specifications** for the wiring diagram for proper electrical installation.

2.5 Service Line Requirements

Depending on the model required, service fixtures could come pre-installed or shipped loose for field installation by other trades. All service lines to the laboratory fume hood should be 1/2” outside diameter copper pipe, (black iron for natural gas) and equipped with an easily accessible shut-off valve, should disconnection be required. If the service line pressure exceeds 40 PSI, it must be equipped with a pressure regulator to reduce the line pressure. Please check with local codes for other requirements.

3. Preparation and Installation

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 Fisherbrand™ Fume 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
- Sealing the Fisherbrand Fume Hood to the work surface
- Arrange certification of your Fisherbrand Fume 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. Qualified trades should be utilized to complete the installation.

WARNING: The Fisherbrand Fume Hoods 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. Please note that a hydraulic lift table can also be used to lift and position the hood so that it can be slid off on to the work surface. DO NOT LIFT THE FUME HOOD BY THE FRONT AIR FOIL.

3.1 Removing the Shipping Skid

WARNING: 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 folly 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.

1. Remove the side panels by releasing the black plastic, spring loaded slide and lifting the access panel out.

2. Locate and remove the hardware which secures the frame ends to the wood pallet. There may be more than one screw on each end, depending upon the size of the fume hood.

3.2 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 multiple fastening bolts and screws. Simply locate and remove the hardware which secures the sash weight and chain to the fume hood frame.

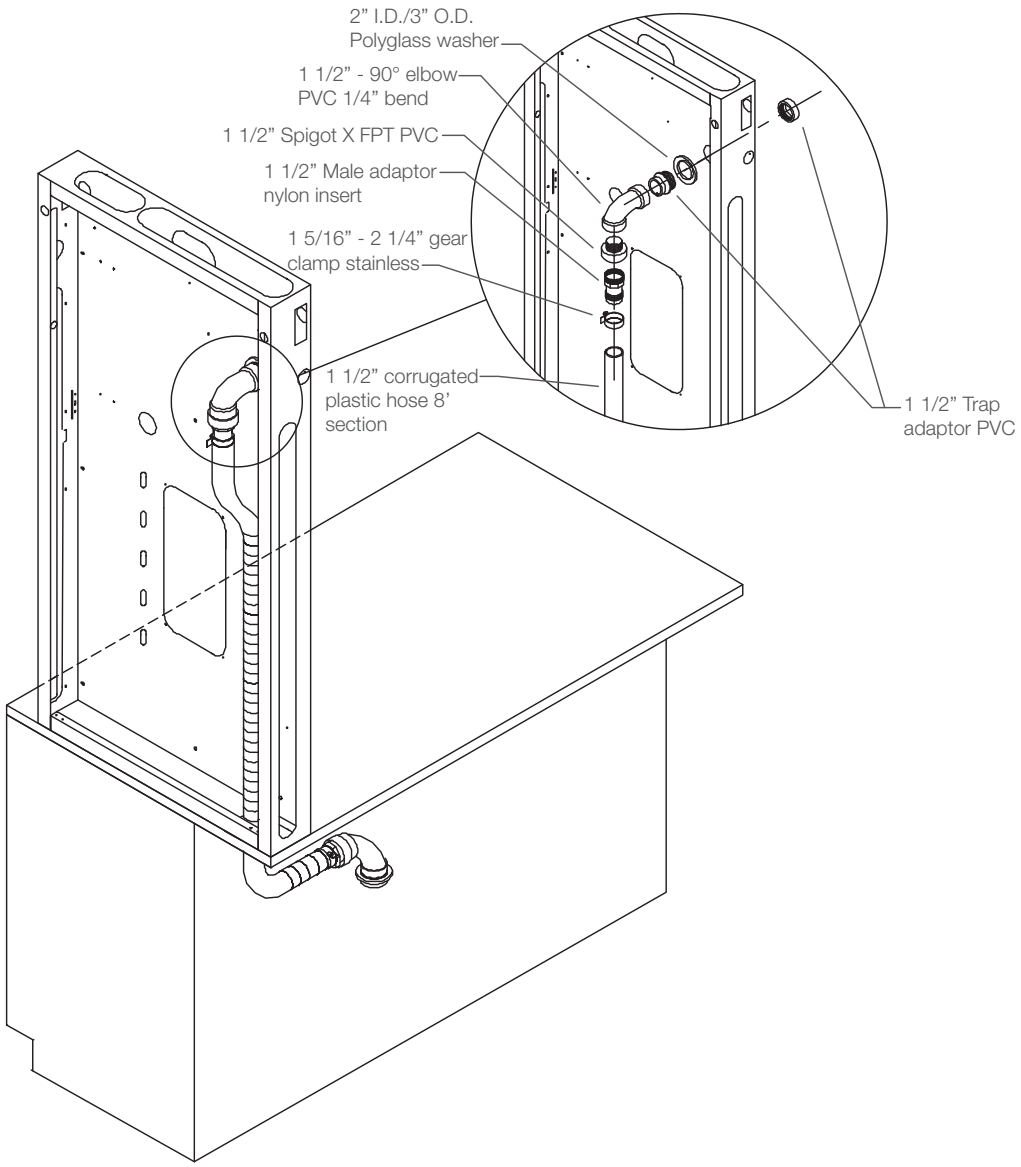
NOTE: The sash weight itself was individually matched for this specific hood and should not be exchanged with the weights from another unit.

3. Preparation and Installation

3.3 Acid Storage Cabinets

1. Screw the cabinets together through the hinges similar to standard door cabinets
2. Cabinets can be secured in rear using ¼" nuts and bolts above the acid liners
3. DO NOT Puncture Acid Liners
4. Fume hood vent kits should be used for acid cabinets under or adjacent to chemical fume hoods. See Figure 6.10A

Figure 3.3A



3. Preparation and Installation

3.4 Solvent Storage Cabinets

1. Establish the high point of the floor. From that point, the first cabinets are set and made level and plumbed in relation to the high point.

2. DO NOT Puncture sidewalls of Flammable cabinets

3. Solvent cabinets rarely require venting and should not be vented into fume hoods. If venting is required contact your EHS department for proper venting procedure.

3. Preparation and Installation

3.5 Install the Fisherbrand Fume Hood on a Supporting Structure and Work Surface

WARNING: The Fisherbrand™ Fume Hood is heavy! Use caution when lifting or moving the unit.

When installing the Fisherbrand Fume Hood onto a chemically resistant work surface or bench top, ensure that the structure can safely support the combined weight of the fume hood and any related equipment. The span of cabinets should be at least as wide as the hood to properly support it. Please note Fisherbrand Walk-In Fume Hoods follow a similar installation procedure.

The following are instruction for mounting a cross support (not included). See Figure 3.3A:

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 3-3A.

2. Scribe a line on the wall to locate the cross support under the work surface at the wall.

3. Mount the cross support by attaching it to the wall.

4. Place the hood on top of the work surface and cross support.

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

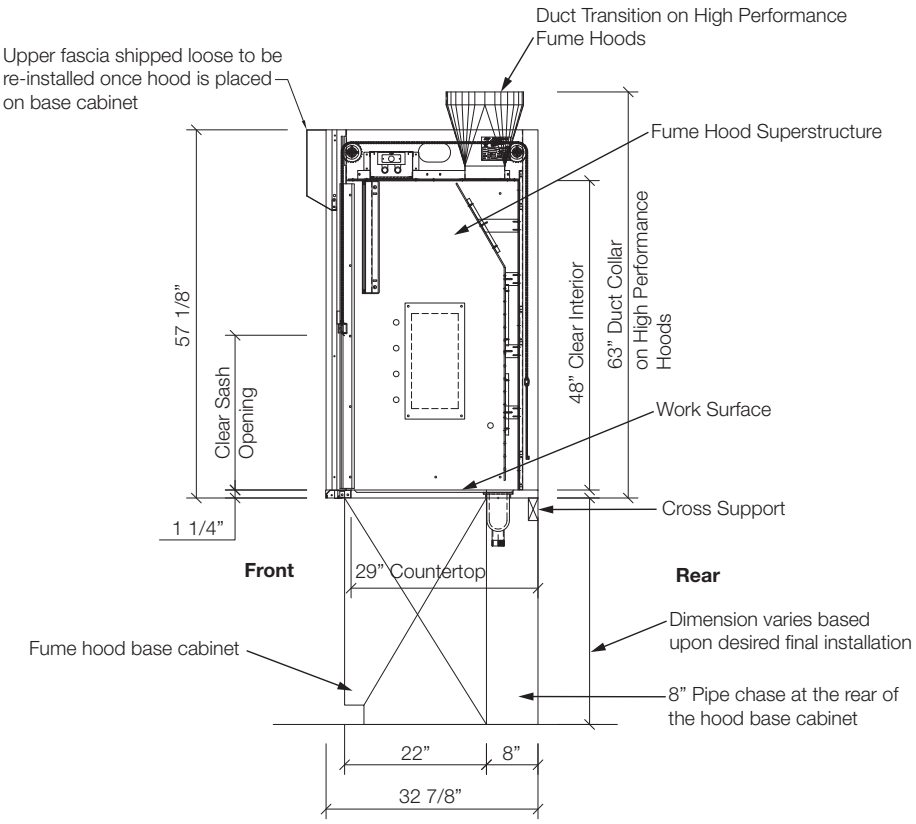


Figure 3.3A

3. Preparation and Installation

3.6 Optional Seismic Restraint Installation (order separately, as required by geographic location)

There are two seismic bracket installation locations on top of the Fisherbrand™ fume hood. On the roof of the hoods the brackets are to be mounted to each side and screwed through the top angle and the rear structure of the hood with three # 10 self tapping sheet metal screws. The brackets would also be secured to the end frame with two additional # 10 screws. See Figure 3.4A

The brackets are made of 14 gauge / #304 stainless steel and attach at the back lip of the top interior frame, see details below. The flange with the double row of oblong slots will be flat against the back wall behind the fume hood. There is a double row of multiple slots in this flange giving a range of about 12 inches in width to insure it can secure to positive structure within the wall. Positive structure would be steel studs behind drywall or furring strips in the framing of the wall. In the case of masonry or concrete walls, the addition of anchors would be drilled in and set. Anchors or specific hardware may be required for this application. Seen below are details and cut sheets.

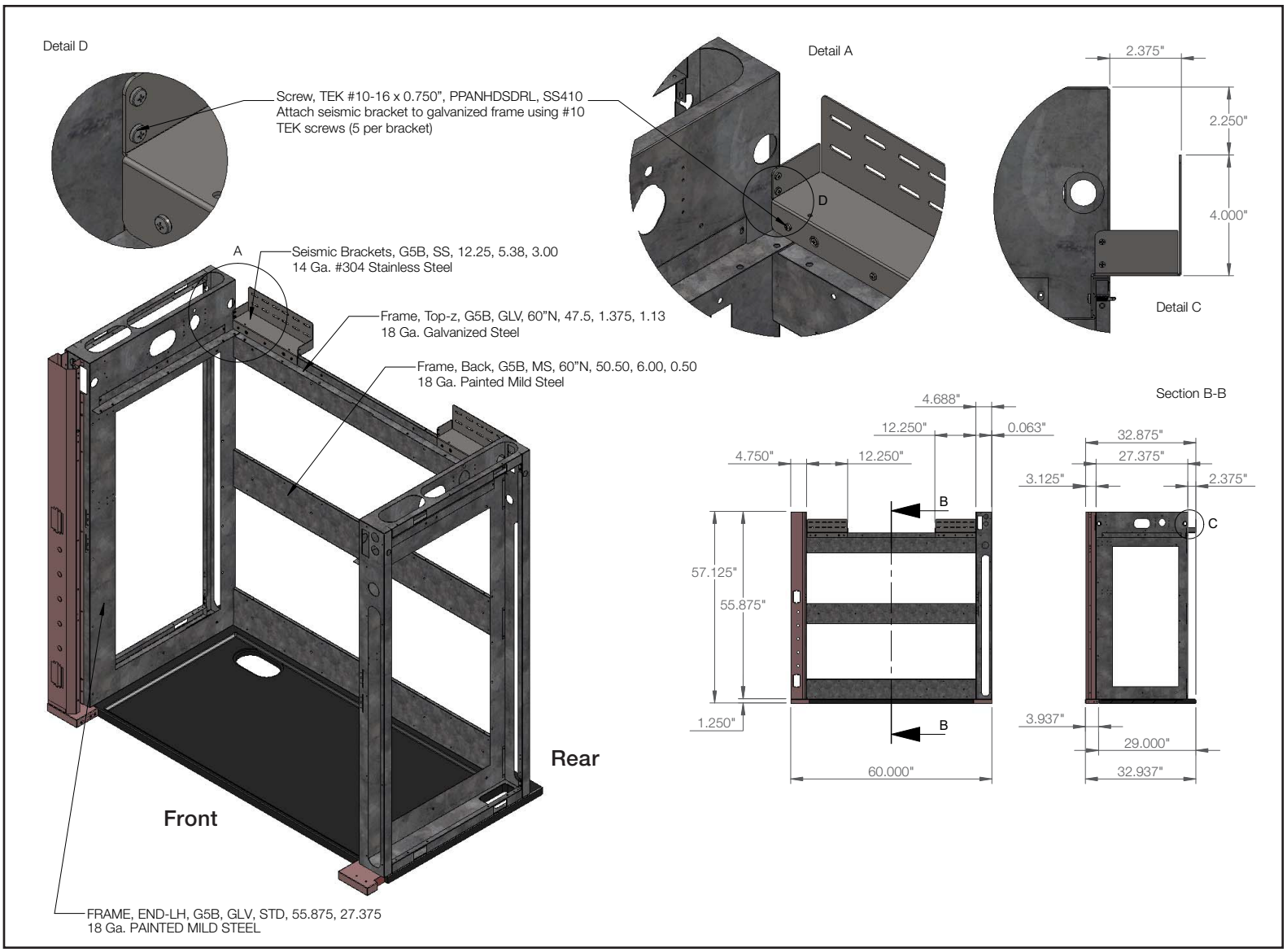


Figure 3.6A

3. Preparation and Installation

3.7 Connecting a 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.

The exhaust fan selection and final connection to the hood should be performed by a qualified HVAC contractor.

The exhaust connection on the Fisherbrand™ hoods have been designed for 10” or 12” nominal pipe to allow for minimum static pressure loss with proper transport velocities away from the hood.

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

The combination of your laboratory hood, exhaust ductwork, and exhaust blower provides a system for the safe operation of a hood. To determine the hood 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 that recommends an average face velocity at the sash opening of 60-100 feet per minute. Consult with your environmental safety officer for the recommended operating hood face velocity for your facility.

Your Fisherbrand Fume Hood has been tested at the factory per ASHRAE 110-1995. All hoods achieve an “as manufactured rating” of less that 0.05 part per million (ppm) at 4 liters per minute (lpm); AM<0.10 (consult for individual fume hood ratings). For “field use” ASHRAE testing contact your Fisher Scientific Account Manager.

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

3.8 Connecting the Electrical Supply Source to the Fisherbrand 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 Fisherbrand Fume 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 electrical code for proper installation.

The identification plate, model number, serial number, and electrical connection boxes are accessible and located on the roof of the hood.

The Fisherbrand Fume Hood is wired for 115 Volt, 60Hz. Check the serial number plate on the roof of the hood for voltage verification. The number of circuits varies depending of the model. A qualified electrician should make all final connections at the single point internal junction box on the roof of the hood. The single point internal junction box is used for the connection of the lights, blower, and duplex outlet, if so equipped.

NOTE: All the 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 ground connection shall not be made to the terminal box cover.

3. Preparation and Installation

3.9 Connecting the Service Lines to the Fisherbrand Fume Hood

Fisherbrand™ fume hoods with service fixtures may come pre-plumbed from the valve to the hose connector or gooseneck for your installation convenience. If fixtures are shipped loose a qualified installer shall provide supply 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 as they may have loosened during shipment.

CAUTION: Do not use oxygen with any standard service fixture.

Standard Services Include:

- **Air**
- **Nitrogen**
- **Vacuum**
- **Cold Water**
- **Natural Gas - See caution below**

WARNING: Contact you Fisher Scientific Account Manager before using any service other than those listed above to ensure full compatibility.

CAUTION: Natural gas should be used only with a service fixture that has been plumbed with black iron. Sulfur content of the gas could cause deterioration of standard copper supply lines.

3.10 Sealing the Fisherbrand Fume 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. A bead should be run at each side as well as the back of the hood.

4. Using your Fisherbrand Fume Hood

4.1 Operating the Vertical Rising Sash

Because of the Fisherbrand™ Fume Hood chain driven 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 anywhere along the handle. The vertical-rising sash may be raised to a maximum of 24” operating height on High Performance Hoods and 28” on Standard Benchtop Hoods.

4.2 Operating the Combination Sash

Optional hood models have additional energy saving sashes called Combination Sashes in place of only 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.

4.3 Operating the Blower

Your Fisherbrand Fume Hood is designed for a remote style blower, which can be activated, depending on the type of installation, by turning the blower switch to “ON”, if so equiped.

4.4 Operating the Lights (Included with Standard Electrical Package)

Your Fisherbrand Fume Hood utilizes a factory-wired fluorescent light to illuminate the hood interior. Simply turn the light switch to “ON” to operate.

4. Using your Fisherbrand Fume Hood

4.5 Recommended Work Practices

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.

Initial Start Up

- Turn on fluorescent light and hood blower switch if equipped with one
- Slowly raise the sash
- Check the baffle air slots for obstructions
- Allow the hood to operate unobstructed for 2-3 minutes if equipped with blower switch
- Wear a long sleeved lab coat and rummer gloves. Use protective eye wear. Wear a protective mask if appropriate.

Maintaining a Protective Air Barrier for a Safe Fume Hood Work Space

When you stand in front of a laboratory fume hood, the air passing your body to enter the hood forms a zone of low air pressure directly in front of you which extends into the hood for about four inches. Since contaminates may enter this turbulent area from inside the hood, you should keep all hazardous materials at least six inches inside the hood, behind the protective air barrier.

The Farther behind the fume hood protective air barrier you place the source of contaminates, the greater the protection the hood provides you. Therefore, you should place the equipment and contaminates you're using as far back inside the hood as you can, being careful not to block the lower slot in the rear baffle. You should never place apparatus so far back that you have to put your head into the hood while your procedure is generating contaminates.

Large containers or equipment such as furnaces, incubators and oil baths often interfere with air flow inside the fume hood by causing reverse flows and dead spots which may allow contaminates to escape from the hood. Putting large, bulky equipment you are using on legs will help reduce reverse air flows by allowing air to circulate beneath the equipment.

The fume hood should not be used for storage of chemicals and apparatus. You should remove all but the containers and equipment you're actually using from the hood. The air velocities used to provide containment in fume hoods are relatively low (in the range of 100 feet per minute) and the air flow patterns are easily disrupted. You should avoid making rapid movements while working at the hood or walking past the hood.

When you're working at your fume hood, you should always open the sash only as far as you need to for access to your work area. The lowered sash increases the distance between your breathing zone and the area where contaminates may escape. Also, the smaller hood face area makes the hood less susceptible to room drafts and other external air disturbances. The sash also protects you by replacing part of the protective air barrier with a solid barrier against contaminates and splashing chemicals.

5. Maintaining your Fisherbrand Fume Hood

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.

WARNING: 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.

5.1 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)

- 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).
- Using a damp cloth, clean the exterior surfaces of the hood, particularly the front of the hood, to remove any accumulated dust.
- Check all service valves, if so equipped, for proper operation.
- The hood baffles should be checked for blockages behind them to ensure that the hood is maintaining proper airflow.
- All weekly activities.

Annually

- Replace the fluorescent light bulbs.
- Have the fume hood rebalanced by a qualified certification technician
- Recalibrate the hood monitor
- All monthly activities

Biannually

- The sash assembly or assemblies should be checked to ensure proper operation and to make sure there are no signs of abnormal wear on the sash chain mechanism, links, sprockets and ball bearing assemblies.

Side Panel Removal:

1. Remove the side panels by releasing the black plastic, spring loaded slide and lifting the access panel out.

Changing the Fluorescent Lamp:

1. Turn light switch to “OFF”
2. Remove the #10 TEK screws that secure the fluorescent light fixture.
3. Lift fluorescent light fixture up and away from hood to access bulbs.
4. Reverse this process to reinstall fluorescent light fixture (replace the knockout plugs).

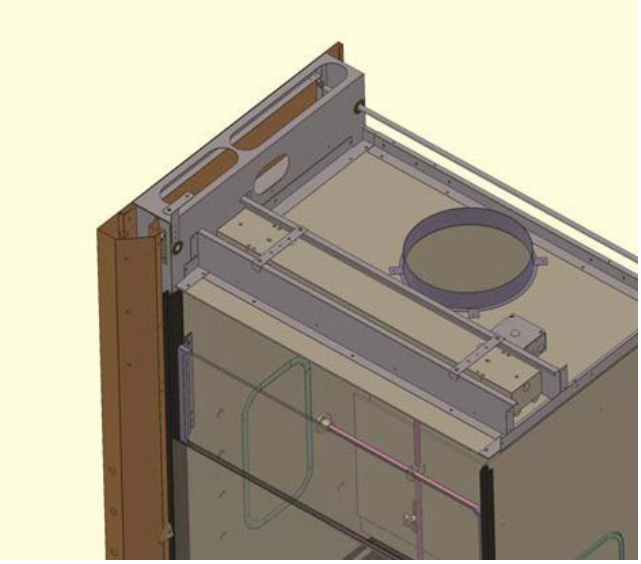


Figure 5.1A

6. Accessories for your Fisherbrand Fume Hood

There are several accessories available for your Fisherbrand Fume Hood. These include the addition of work surfaces, service fixtures, air monitor, distillation grids, electrical duplex outlets, ceiling enclosure, and rear panels. Contact your Fisher Scientific Account Manager for part numbers and pricing.

6.1 Installing Work Surfaces

Your Fisherbrand™ Fume Hood requires a work surface to work properly. Shown below in Figure 6-1 is a typical epoxy work surface which can be screwed or glued in place to the cabinets or table frame beneath the fume hood. See Section 3 for specifics.

Figure 6.1A

6. Accessories for your Fisherbrand Fume Hood

6.2 Installing Ceiling Enclosures above the Fume Hood

Your Fisherbrand™ Fume Hood has mounting holes to accept a ceiling enclosure to close off the area between the top of the hood and the ceiling. This enclosure is trimmable in height and includes slip angles to cover the cut ends. Attach side panels to hood roof with screws provided and secure to wall behind hood. Then attached the front panel to the side panels with the screws provided.

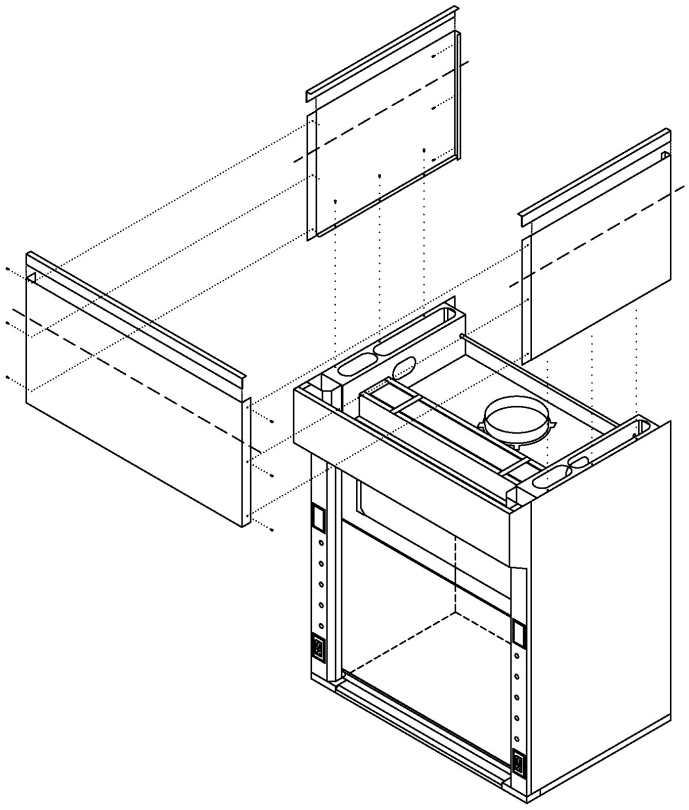


Figure 6.2A

6.3 Installing Rear Panels behind the Fume Hood

Your Fisherbrand Fume Hood can be modified to add a rear panel behind the fume hood when the fume hood is placed on an island. Contact your Fisher Scientific Account Manager to add this feature.

6.4 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.

6. Accessories for your Fisherbrand Fume Hood

6.5 Installing Airflow Monitors

The TEL 4000 Airflow Monitor allows you to continuously monitor face velocity through the fume hood opening. This is optional and requires factory installation. Please see instructions provided within the box containing the alarm.

6.6 Sash Stop Kit - Field Installation

The sash stop restricts how far a vertical rising sash may be opened. This small rubber device may be easily field installed on the fixture corner post of any fume hood.

Figure 6.6A

7. Troubleshooting

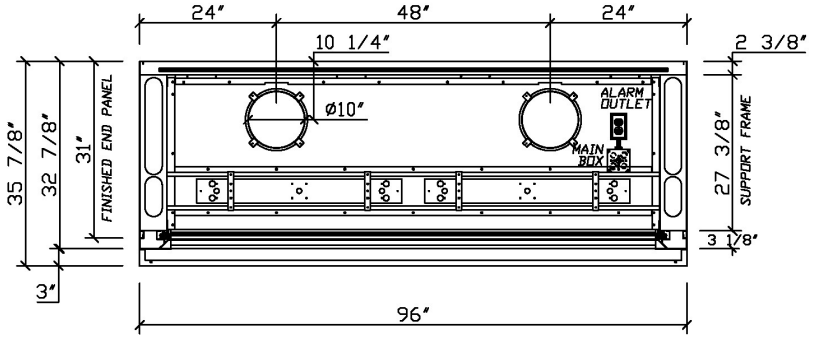
Refer to the following table if your fume hood fails to operate properly. If the suggested corrective actions do not solve your problem, contact your Fisher Scientific Account Manager for additional assistance.

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
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" Section 3 and "Safety Precautions" Section 4 in the manual
	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" Section 2, "Certifying the Hood" Section 3, and "Safety Precautions" Section 4 of this manual
	Fume hood has improper face velocity	Have fume hood re-certified and check remote blower exhaust system. Hood should have average face velocity of 60fpm at 24" sash opening
Vertical sash no longer operates smoothly	Chain has slipped off the sprockets	Re-install chain into sprockets
Combination Sash no longer operates smoothly	Vertical sash frame is distorted	Place horizontal glass symmetrically and pull sash down to airfoil.
		Straighten damaged frame

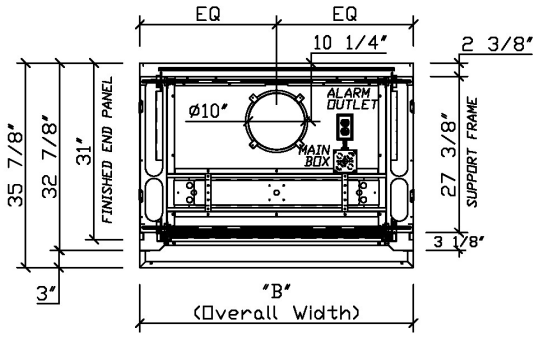
Problem	Cause	Corrective Action
Electrical duplex outlets no longer have power	Wires not connected or faulty duplex	Check wire connection or replace duplex
	Circuit breakers tripped in building electrical supply	Reset circuit breakers
Service valves no longer operate	Faulty building supply	Inspect building supply shut off valves and appropriate pressures below 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

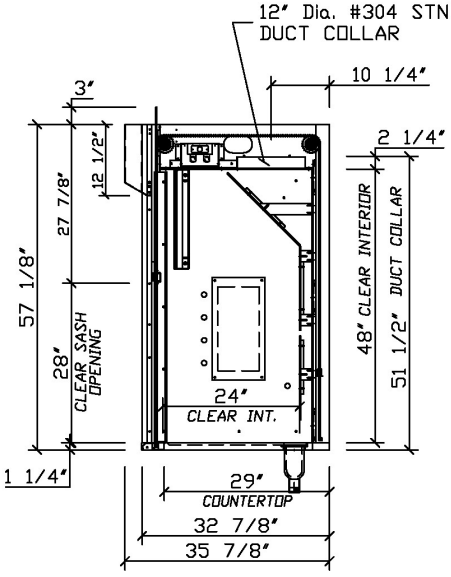
8. Fisherbrand Fume Hood Dimensions and Specifications

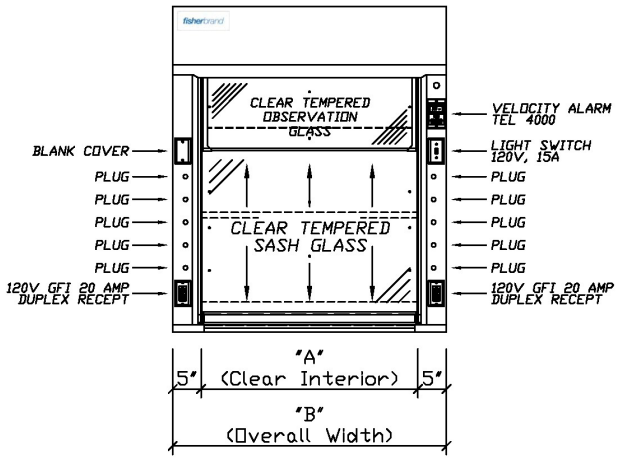
8.1 Standard Fume Hood



FUMEHOOD DIMENSIONS			
MODEL #	DIM "A"	DIM "B"	Ø DUCT
F-100-48G7	38″	48″	1 – Ø10″
F-100-60G7	50″	60″	1 – Ø12″
F-100-72G7	62″	72″	1 – Ø12″
F-100-96G7	86″	96″	2 – Ø10″

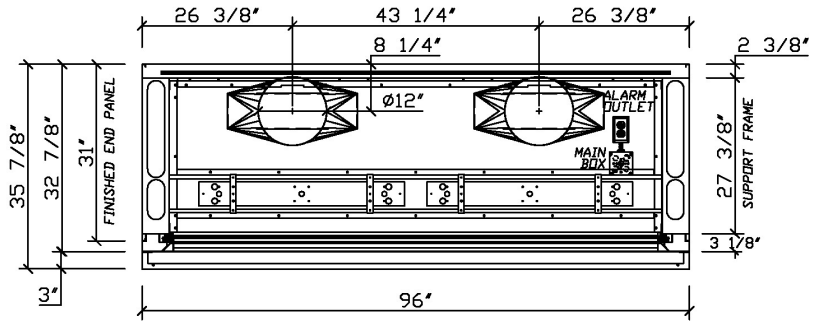




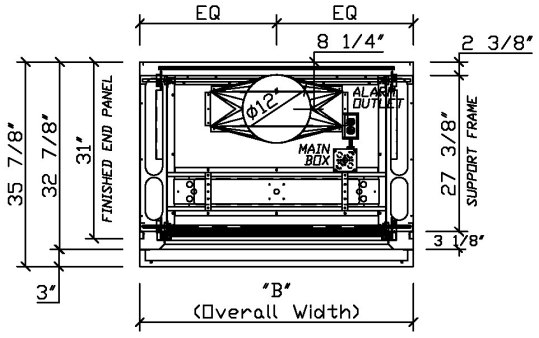


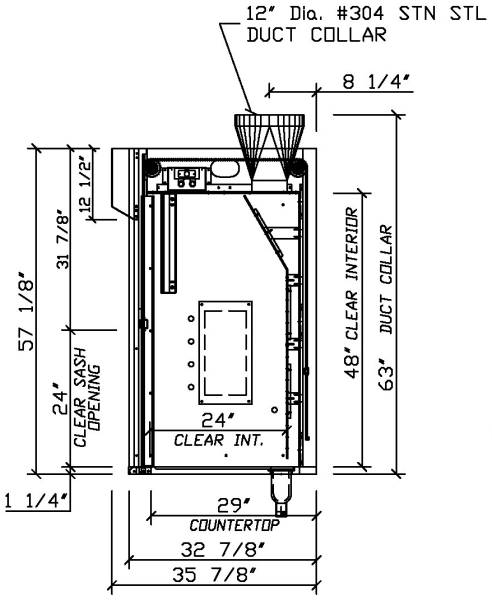
8. Fisherbrand Fume Hood Dimensions and Specifications

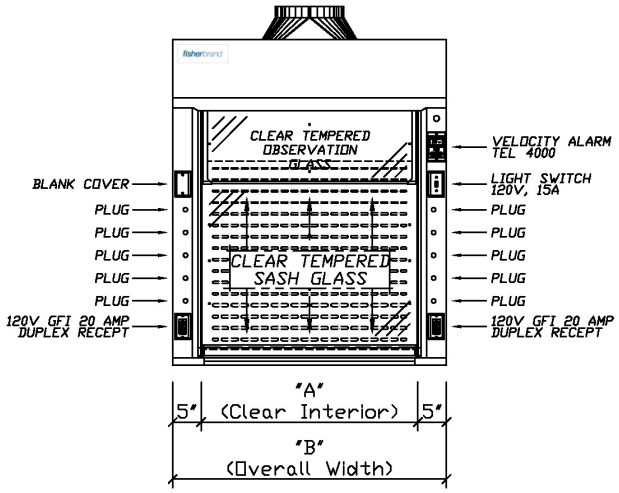
8.2 High Performance Fume Hood



FUMEHOOD DIMENSIONS			
MODEL #	DIM "A"	DIM "B"	ø DUCT
F-350-48G7	38"	48"	1 - ø12"
F-350-60G7	50"	60"	1 - ø12"
F-350-72G7	62"	72"	1 - ø12"
F-350-96G7	86"	96"	2 - ø12"

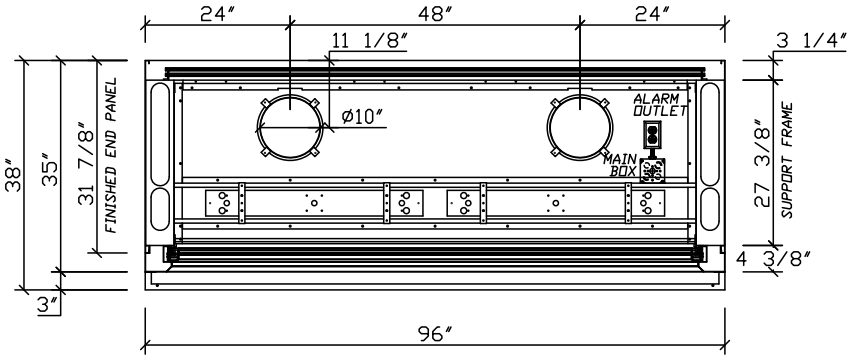




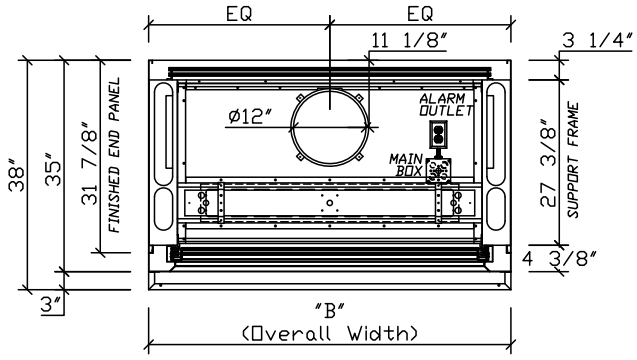


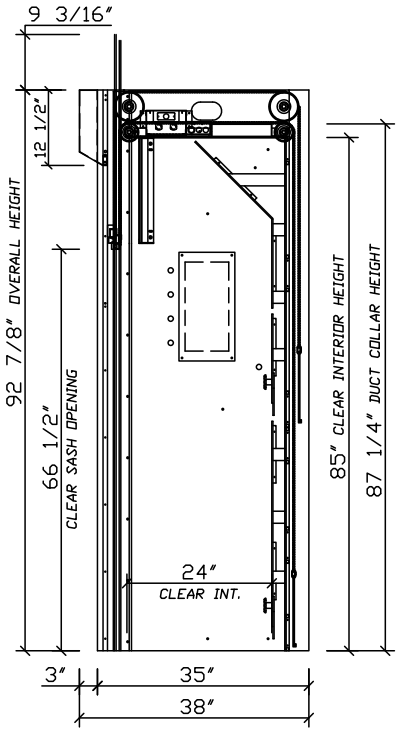
8. Fisherbrand Fume Hood Dimensions and Specifications

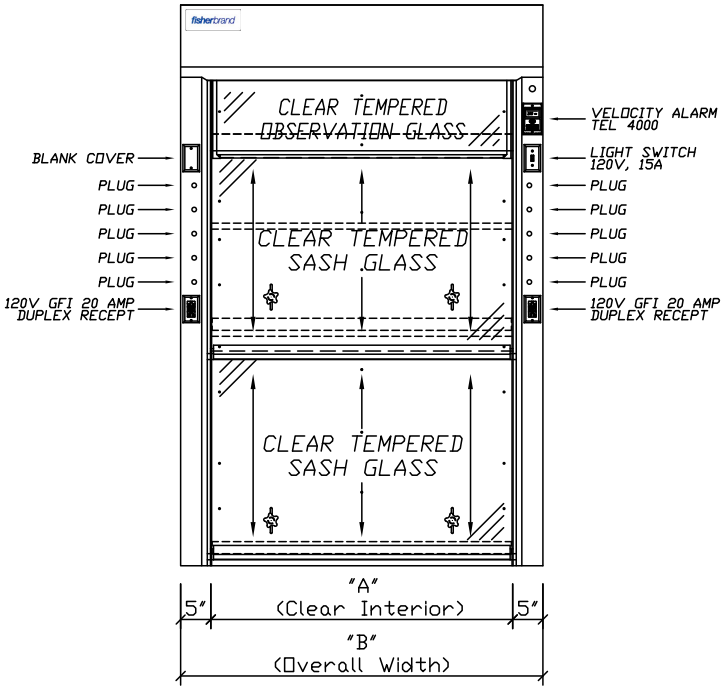
8.3 Standard Walk-In Fume Hood



FUMEHOOD DIMENSIONS			
MODEL #	DIM "A"	DIM "B"	ø DUCT
F-350-48G7	38″	48″	1 - Ø10″
F-350-60G7	50″	60″	1 - Ø12″
F-350-72G7	62″	72″	1 - Ø12″
F-350-96G7	86″	96″	2 - Ø10″







8. Fisherbrand Fume Hood Dimensions and Specifications

8.4 Fisherbrand Fume Hood Specifications

Environmental Conditions

- Indoor use only
- 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.

9. Fume Hood Safety Checklist

- The hood is the correct type for the work to be performed.
- The hood monitoring device indicates adequate air flow.
- There are no unnecessary chemicals in the hood.
- All equipment is at least six inches behind the hood face.
- All procedures are performed with the laboratory tech head remaining outside the hood.
- Equipment with large flat surfaces parallel to the hood face is placed on stands with legs.
- The sash is lowered to the minimum possible height.
- All safety equipment is close to the hood in case of fire or explosion.
- All laboratory workers are following the procedures outlined in this manual, as well as any additional fume hood safety guidelines supplied by the hood manufacturer.

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