

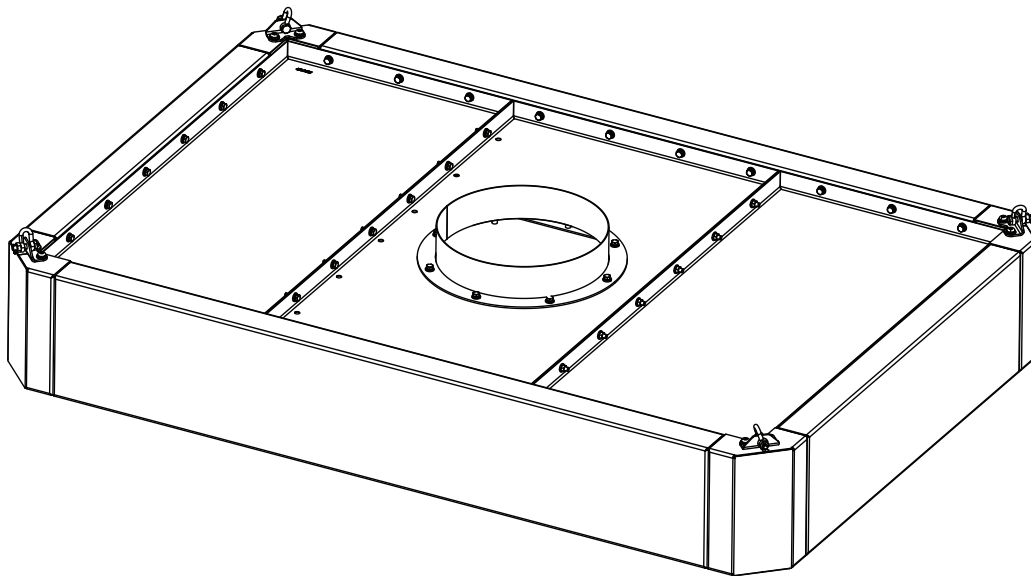


## Torit® Fume Hood

TFH 4x6, 6x6, 8x8 and 10x10

### Installation and Operation Manual

Installation, Operation, and Service Information



This manual contains specific precautions related to worker safety. The hazard alert image denotes safety related instructions and warnings in this manual. DO NOT install, operate, or perform maintenance on this equipment until you have read and understood the instructions, precautions and warnings contained within this manual.

## IMPORTANT NOTES

This manual has been supplied to assist with the installation, operation and maintenance for the equipment purchased. Please read the manual before installing, operating, or performing maintenance on the equipment as it contains specific precautions for worker safety. It is the owner's responsibility to ensure that this manual is available for use by installers, operators and maintenance personnel that will be working with this equipment. This manual is the property of the owner and should be left with the equipment when installation has been completed. **DO NOT** operate this equipment until you have read and understood the instructions and warnings located in this manual.

For additional copies of this manual, contact Donaldson Torit.



The Safety Alert Symbol indicates a hazardous situation which, if not avoided could result in death or serious injury. Obey all safety messages following this symbol to avoid possible injury or death. The possible hazards are explained in the associated text messages.

### **NOTICE**

**NOTICE** indicates a potential situation or practice which is not expected to result in personal injury, but which if not avoided, may result in damage to equipment.

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## 1 Safety Communication



Improper operation of dust collectors and/or dust control systems may contribute to conditions in a work area or facility which could result in severe personal injury, and product or property damage. All dust collection equipment should be used only for its intended purpose and should be properly selected and sized for its intended use.

Process owners have important responsibilities relating to identifying and addressing potential hazards in their processes. When the potential for handling combustible dust exists within a process the process owner should include combustion hazards in their risk management activities and should comply with applicable codes and standards related to combustible dust.

Electrical installation must be performed by a qualified electrician.

This equipment is not designed to support site ducts, piping, or electrical services. All ducts, piping, or electrical services must be adequately supported to prevent injury and/or property damage.

Site selection must account for wind, seismic zone, and other load conditions.

Equipment may reach peak sound pressure levels above 80 dB (A). Noise levels should be considered when selecting collector location.

Most dusts present safety and health hazards that require precautions. Wear eye, respiratory, head and other protection equipment suitable for the type of dust.

Some components may be heavier than they appear. Use appropriate lifting methods to avoid personal injury and/or property damage.

## Combustible Dust Hazards

Among other considerations, the current NFPA standards require owners whose processes involve potentially combustible materials to have a current Dust Hazard Analysis, which can serve as the foundation for their process hazard mitigation strategy. Mitigation may include but is not limited to:

- Prevention of all ignition sources from entering any dust collection equipment.
- Selection and implementation of fire and explosion mitigation, suppression, and isolation strategies appropriate for the risks in their process.
- Development and use of work practices to maintain safe operating conditions, and to ensure combustible dust does not accumulate within their plant or process equipment.

Donaldson designs, manufactures, and sells industrial air filtration products for a wide variety of applications. Some applications may include processes or materials with inherent fire and explosion hazards. Donaldson is neither an expert nor a certified consultant in fire, spark, or explosion detection, suppression, or control. Donaldson does not provide engineering consulting services related to process or dust hazard analyses, or code and standard compliance. Complying with applicable codes and standards and managing the risks associated with the process or materials remains the responsibility of the process owner/operator. Donaldson may provide referrals to consultants, suppliers of equipment or services related to the detection and/or mitigation of sparks, fires and/or explosions, but Donaldson does not assume responsibility for any such referrals, nor does Donaldson assume any liability for the fitness of a mitigation strategy or product for a particular installation or application. The process owner's final selection of dust collectors and risk mitigation strategies should be based on the outcome of a Dust Hazard / Process Hazard Analysis performed by the process owner. Although early engagement of a dust collector supplier provides helpful insights on the availability and features of various products, process owners should consult with a combustible dust expert and/or a process safety expert before making actual product and mitigation strategy selections.

Donaldson recommends that all industrial air filtration system designs be reviewed and approved by an expert consultant who is responsible for the integrity of the system design and compliance with applicable codes and standards. It is the process owner's responsibility to understand the risks in their process and mitigate those risks in accordance with all applicable laws, regulations and standards, including those published by the NFPA. Donaldson also recommends that proper maintenance and housekeeping procedures and work practices be evaluated, developed, and followed to maintain any industrial air filtration products in safe operating condition.

Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the Donaldson products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, and data (airflow, capacity, dimensions, or availability) are subject to change without notice, and may vary by region or country.

## 2 Product Description

The Torit® Fume Hood (TFH) is designed to collect fumes from welding and allied processes in conjunction with a suitable dust collector. When employed with optional weld curtains and applied using an air exchange method, the hood allows for highly efficient capture of weld fume with minimized airflow and static pressure resulting in energy savings. This hood is suitable for continuous and intermittent processes when paired with the appropriately sized dust collector. The standard configuration allows for ceiling mounting and options include leg packs, interior light kits, curtains, and an airflow distribution channel

### Intended Use

The Fume Hood's low-profile provides greater installation flexibility than traditional canopy-style hoods and its engineered design provides effective weld fume collection in the most challenging environments. When paired with the optional weld curtains, the Fume Hood can be sized to reduce airflow requirements, ultimately lowering the overall cost of the entire dust collection system. Whether connected to an existing system or a dedicated cartridge collector, the Fume Hood brings added extraction capabilities to any operation.

### Rating and Specification Information

General rating and specification information can be found in the product literature provided with the equipment and is available on the Donaldson website. For specific load values for a collector, see the Specification Control Drawing shipped with the collector.

### 3 Operation



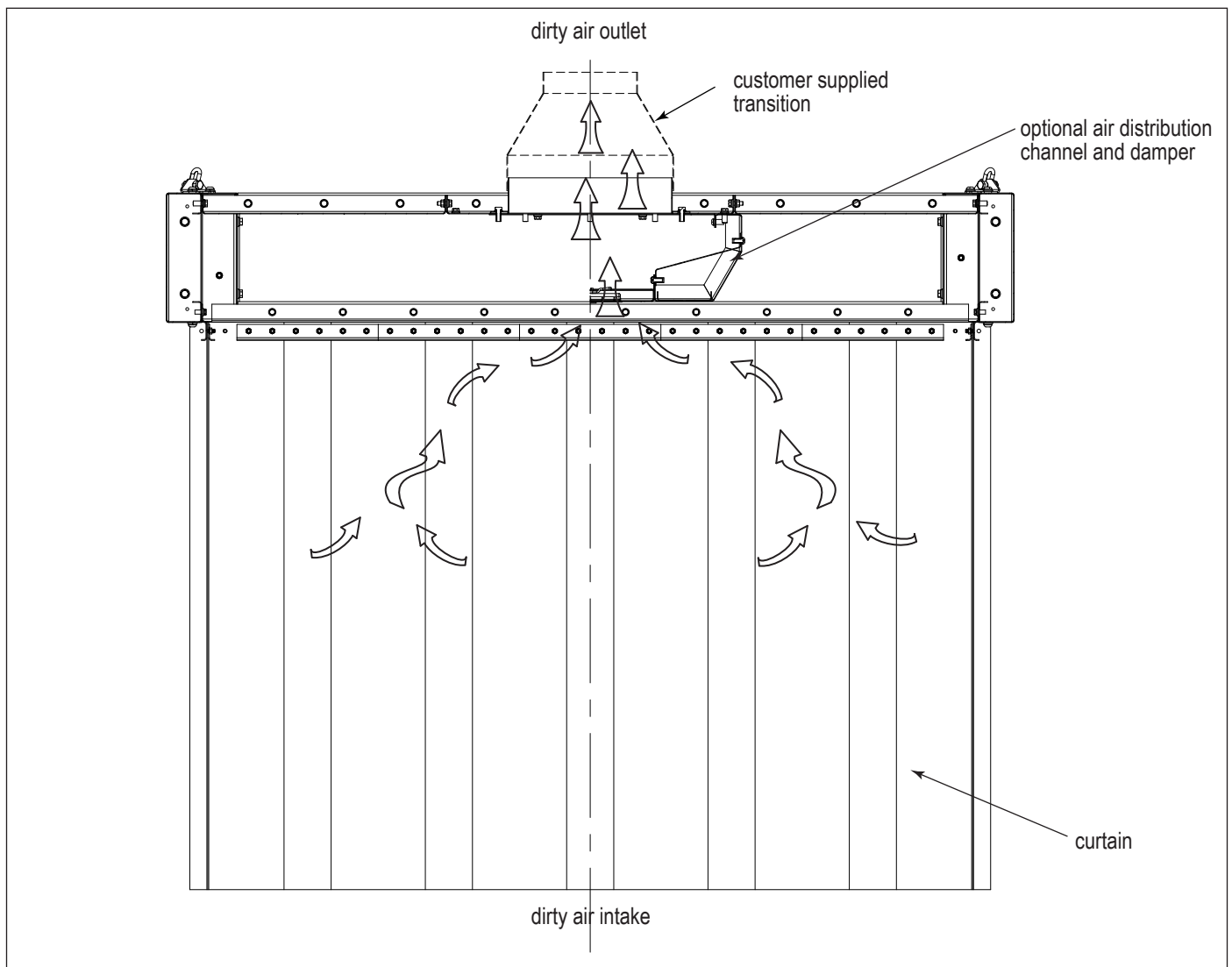
Electrical work during installation, service or maintenance must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn all power off and lock out all power before performing service or maintenance work.

Check that the collector is clear and free of all debris before starting.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

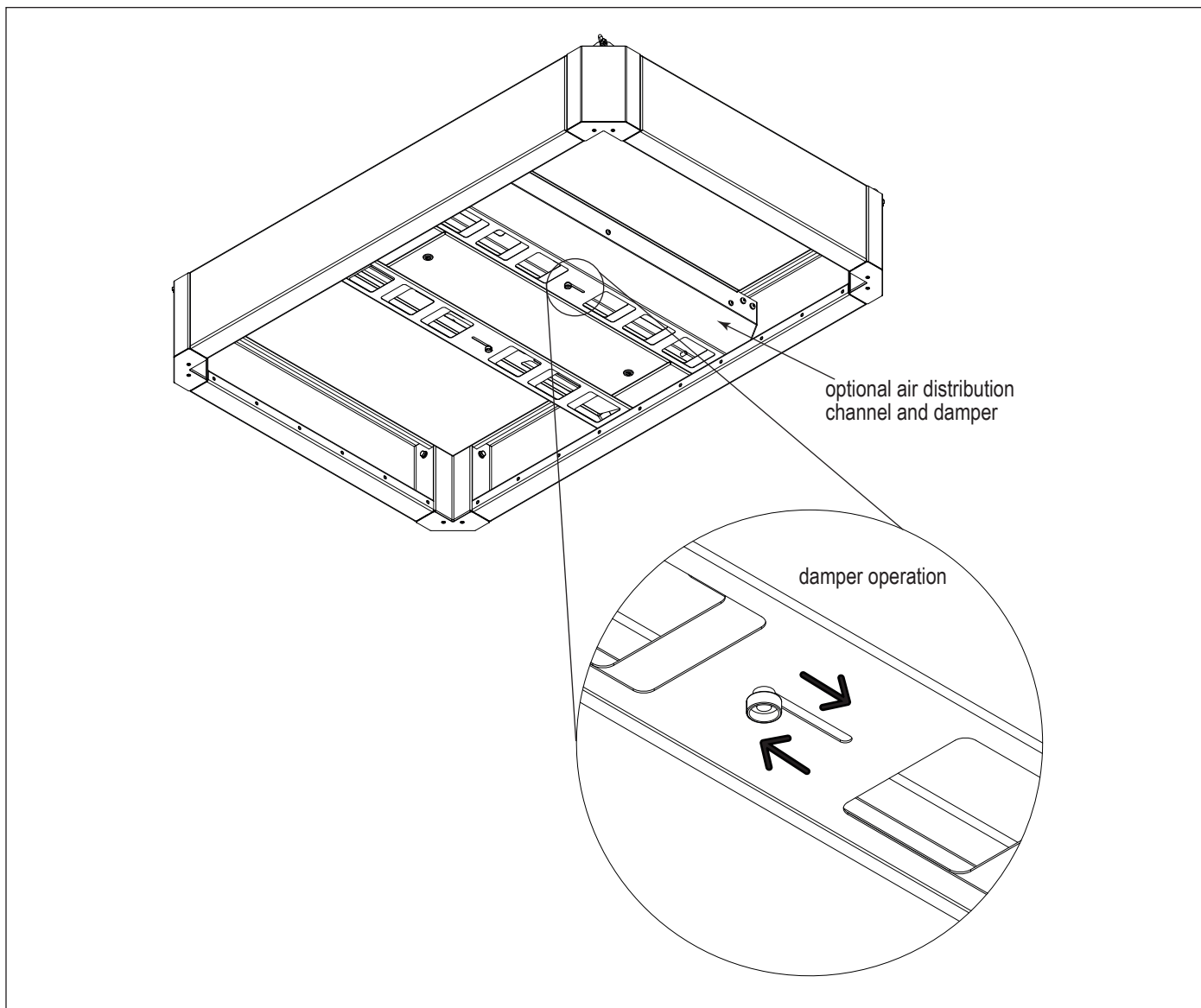
During normal operation, dust-laden air enters the unit through the dirty-air inlet. The inlet can be configured with an optional distribution channel shown below. Airflow is directed to the outlet of the hood and into the dust collection system ducting (provided by others). When the optional distribution channel is employed, an access cover is provided to allow for periodic inspection of the plenum for dust accumulation and subsequent cleaning of the plenum when required.



Hood Operation

## Damper Operation

Close or open the hatch depending on the extraction flow required as shown below.





## 4 Product Service



During service activities there is some potential for exposure to the dust that has been collected. Most dusts present safety and health hazards that require precautions. Wear eye, respiratory, head and other protection equipment suitable for the type of dust when performing any service activities.

Use appropriate access equipment and procedures.

LOCK-OUT all energy sources prior to performing any service or maintenance on the equipment.

Electrical service or maintenance work must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn all power off and lock out all power before performing service or maintenance work. It is not unusual for the equipment to be operated from a remote location, so equipment may start or stop unexpectedly.

### NOTICE

Regular hood maintenance should include the following:

Check the Torit Fume Hood for any accumulation of dust. Clean the equipment as required.

Periodically inspect the Torit Fume Hood components for any dirt buildup, corrosion and signs of excess stress or fatigue. Check also the Torit Fume Hood suction chamber at least every 3 months to ensure it is kept clean. Any dirt or debris in the suction chamber may result in a loss of performance and result in severe personal injury and/or property damage.

### Service Checklist

1. Turn all power to the Fume Hood OFF.
2. Inspect the hood and support system for any loose hardware, corrosion, damaged components, damage to optional lights and wiring, or gasket damage. Tighten and replace as necessary.
3. Clean and/or replace any gaskets as necessary.

### NOTICE

Clean dust from gasket sealing area to ensure a positive gasket seal.

4. Check the system airflow and compare to the commissioned flow.

### NOTICE

A sudden change in airflow or capture effectiveness could indicate a clog or change to the dust collection system downstream (refer to troubleshooting guide).

5. Check for any accumulation of dust on the top and interior of the hood. Remove the dust and clean as necessary..
6. The hood can now be returned to service.

Maintenance Activity	Welding Process		
	Light	Moderate	Heavy
Inspect and clean Fume Hood frame and roof	6 months	3 months	1 month
Inspect and clean hanging hardware	6 months	3 months	1 month
Inspect and clean optional central distribution channel	6 months	3 months	1 month
Inspect and clean optional lighting fixture	6 months	3 months	1 month
Inspect and clean optional legs and anchors	6 months	3 months	1 month
Inspect and clean optional curtains	6 months	3 months	1 month

**Notes:**  
 Replace or repair any parts/issues found during inspection immediately.  
 Adjust maintenance activity frequency as needed once typical use is evaluated.  
 Electrical inspections must be performed by a qualified electrician.

**Optional Central Distribution Channel Cleaning:**

1. Using the included key, carefully open the access panel.
2. Inspect the fasteners and joints for any loose hardware or gasket damage. Tighten and replace as necessary.
3. Clean and/or replace any gaskets as necessary.

**NOTICE**

Clean dust from gasket sealing area to ensure a positive gasket seal.

4. Check for any accumulation of dust in the internal parts of the distribution channel. Remove the dust and clean as necessary
5. Close the access panel.
6. The distribution channel can now be returned to service.

## Troubleshooting

Problem	Probable Cause	Remedy
Poor extraction	Obstruction in ducting	Inspect ducting for anything inside that might be obstructing the flow to the dust collection system.
	Accumulation of dust	Clean out any dust build-up inside the hood components per the periodic service instructions.
	Process location	Welding process is occurring in a location that is not optimal for the system design. Relocate the process to the ideal location.

# **Appendix A - Installation**

## Installation



Electrical Installation (including bonding and grounding of the collector) must be performed by a qualified electrician.

This equipment is not designed to support site ducts, piping, or electrical services. All ducts, piping, or electrical services must be adequately supported to prevent injury and/or property damage.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

Service must be performed by trained and qualified maintenance personnel.

Turn all power off and lock out all power before performing service or maintenance work. It is not unusual for the equipment to be operated from a remote location, so equipment may start or stop unexpectedly.

## Location and Site Selection



Codes may regulate recirculating filtered air in your facility. Consult with the appropriate authorities having jurisdiction to ensure compliance with all national and local codes regarding recirculating filtered air.

Equipment location must conform to all codes and standards, should be suitable for the type of dust being handled and should ensure easy access for service and utility connections. Site selection must account for wind, seismic zone and other load conditions.

The equipment must be anchored once in final position. Anchors must comply with local code requirements. Anchors, foundation or support framing must be capable of supporting dead, live, wind, seismic, and other applicable loads. Consult a qualified engineer for final selection of foundation or support framing.

Note: Ensure at least five diameters of straight duct prior to the collector inlet including a transition to the full inlet dimensions. Inlet transition should have a taper with a maximum of a 90-degree included angle.

## Delivery and Inspection

Upon arrival inspect equipment and report any damage to delivery carrier. File any damage claims with the delivery carrier. Request a written inspection report from the Claims Inspector to substantiate all damage claims.

Compare the equipment received with the description of product ordered. Report any incomplete shipments to the delivery carrier and your Donaldson Torit representative.

## Unloading and Positioning



Equipment should be lifted only by qualified crane or fork truck operators.

Failure to lift the equipment correctly can result in severe personal injury and/or property damage.

1. Remove any crates or shipping straps.
2. Lift the packaged collector from transport container.
3. Inspect for any damage and/or missing parts and report to freight carrier.
4. Check for any hardware which may have become loose during shipment and tighten as necessary.

## Lifting Information

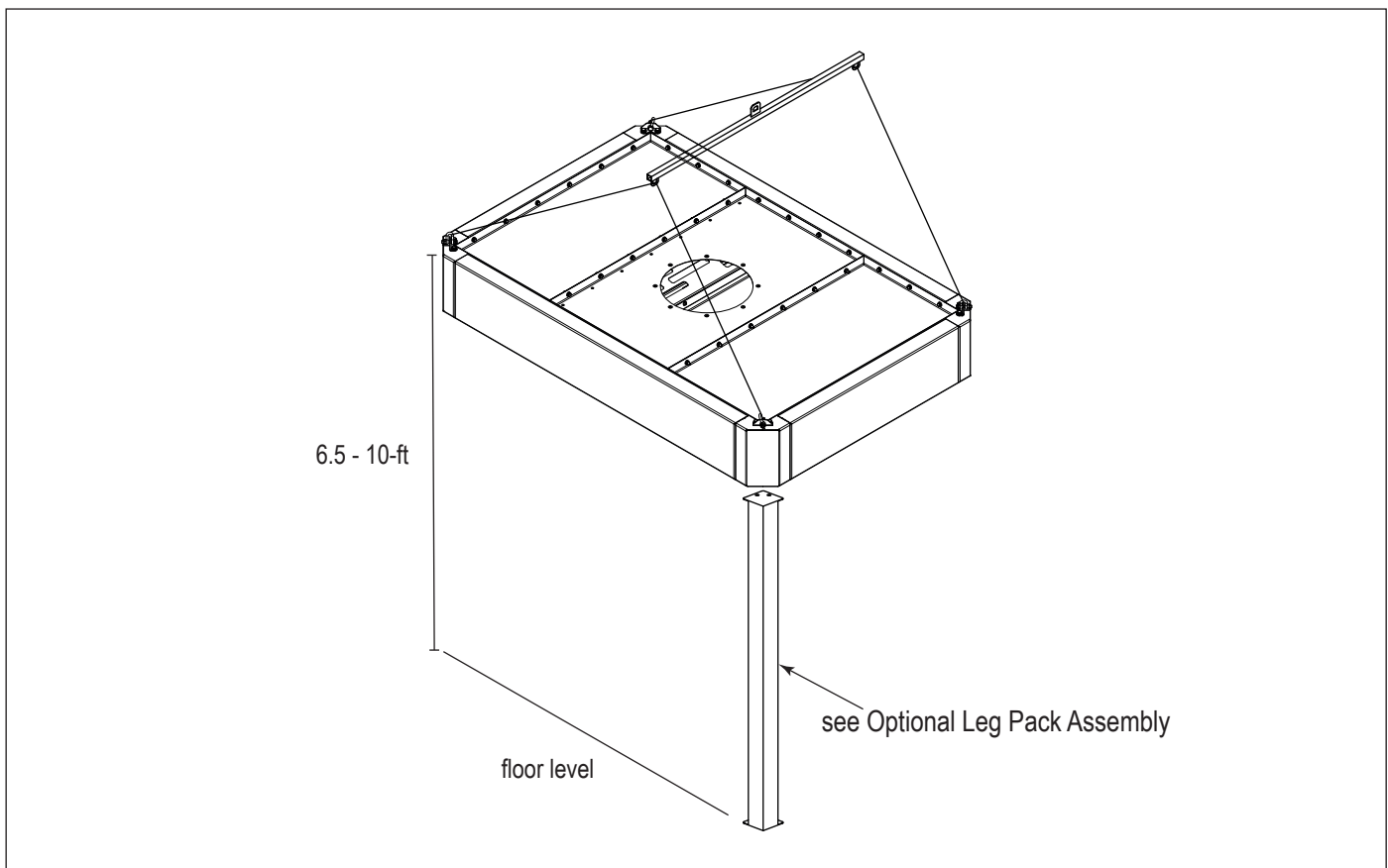


Failure to lift the equipment or sub-assemblies correctly can result in severe personal injury and/or property damage. Only qualified crane or forklift operators should be allowed to lift equipment.

1. Use all lifting points provided.
2. Use clevis connectors, not hooks, on lifting slings.
3. Use spreader bars to prevent damage to equipment.
4. Check the Specification Control drawing for weight and dimensions of the hood and components to ensure adequate crane capacity.
5. Lift hood and accessories separately and assemble after hood is in place.

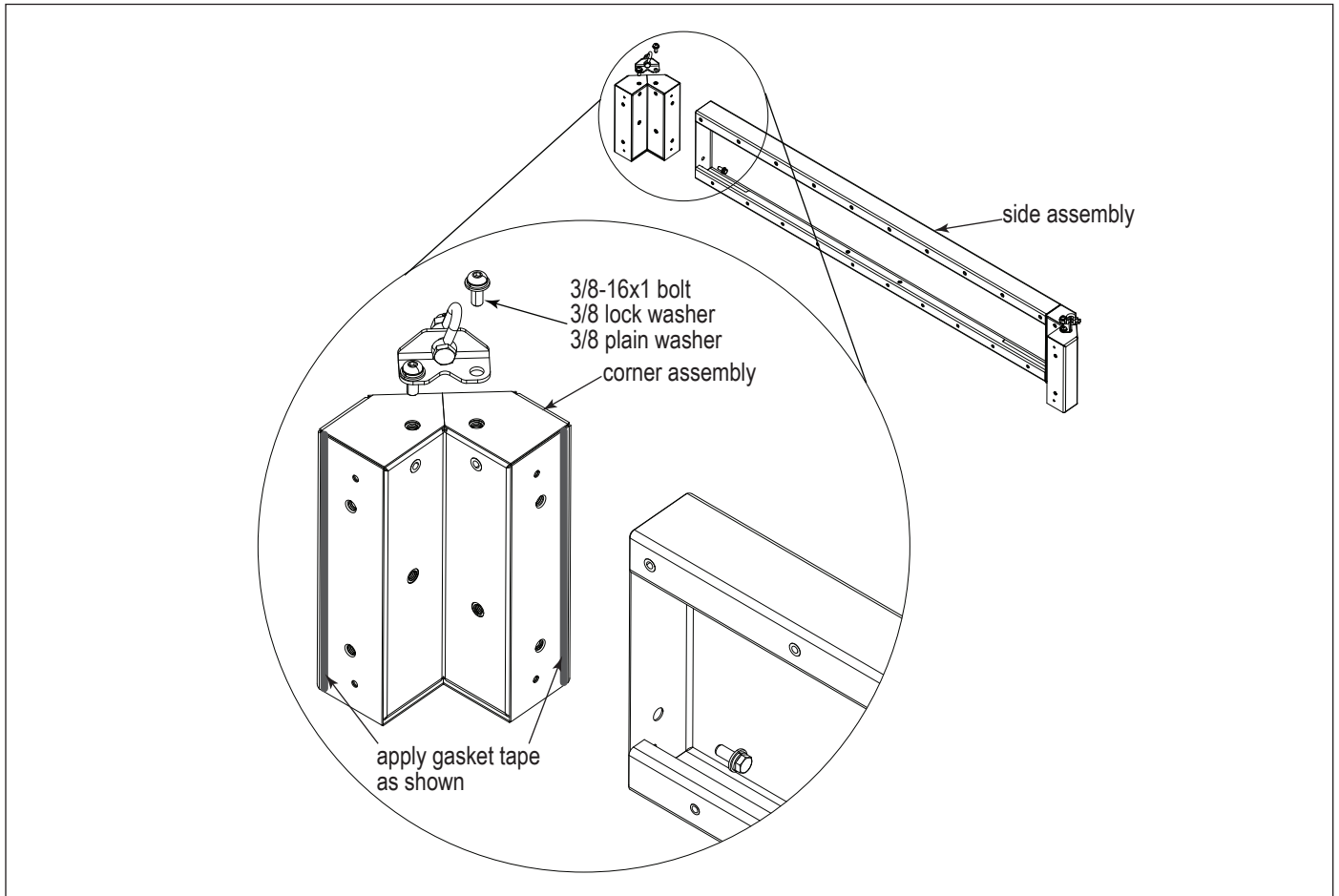
## Ceiling Mount

1. Use cable or chain attached to each eyebolt to suspend the collector from the ceiling.
2. Position the chain vertically on eye bolt.
3. Level collector in all directions.



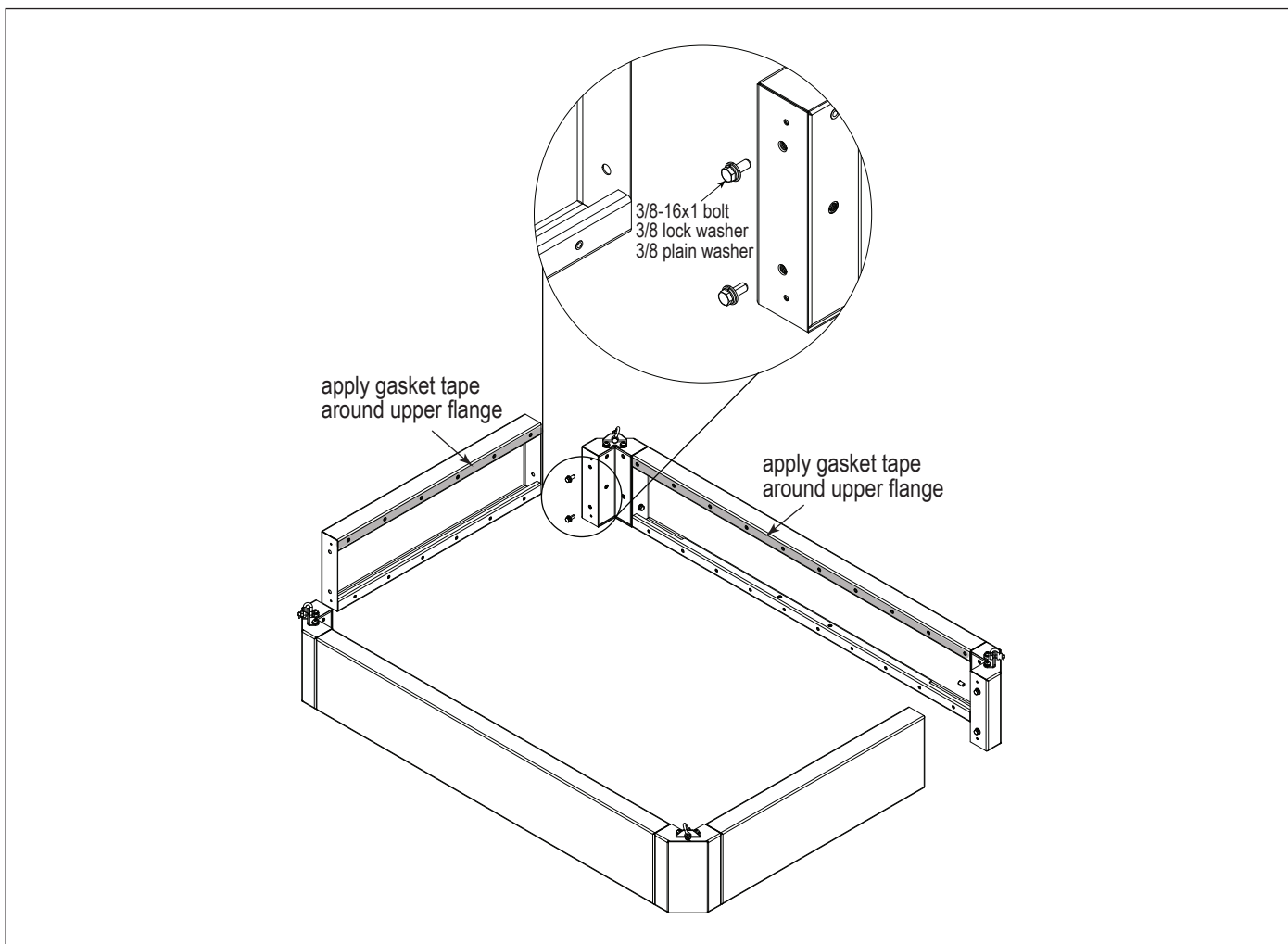
## Corner and Side Assembly

Apply gasket tape to the bolt flanges of the corner assembly to attach to the side assembly.



## Frame Assembly

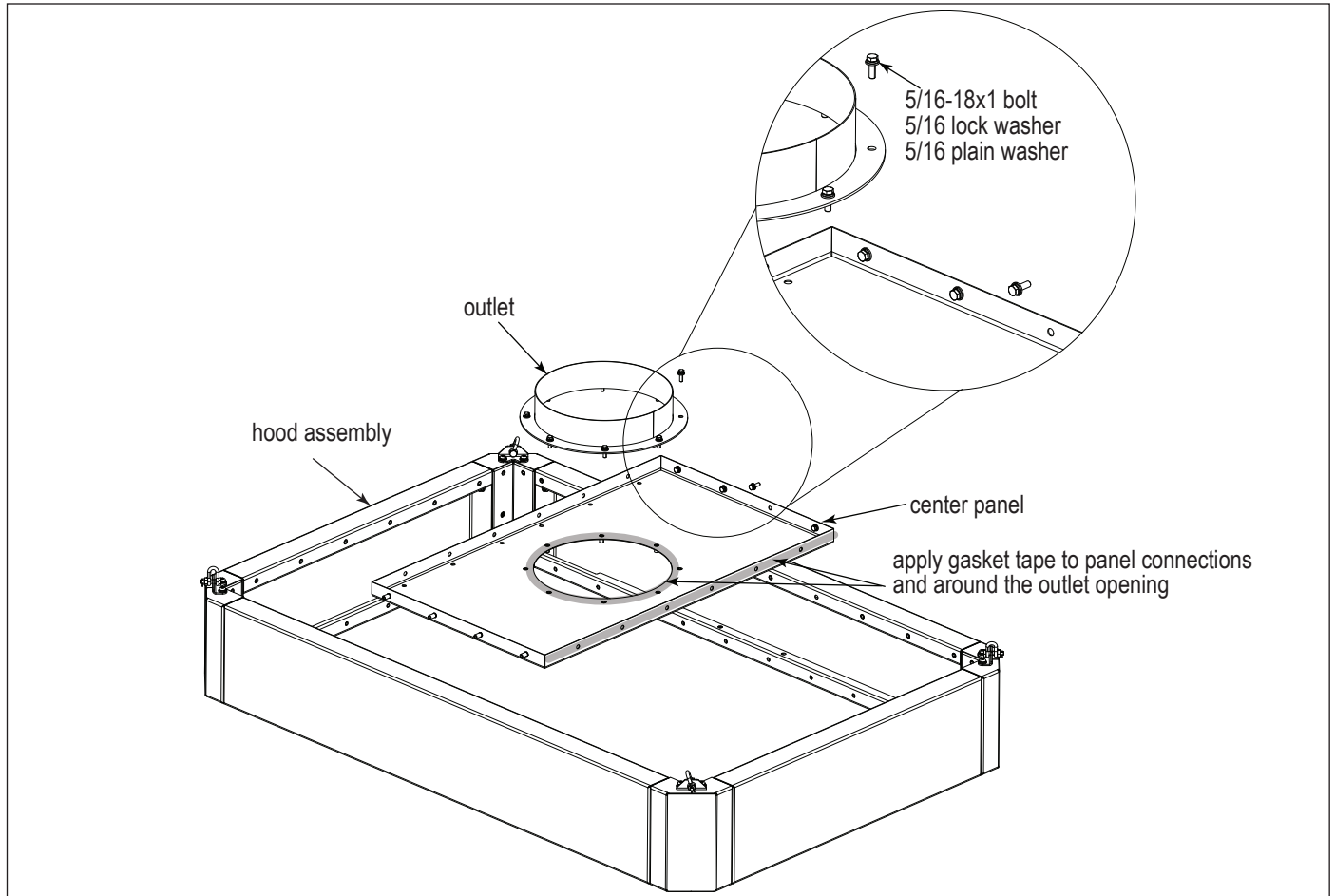
Apply gasket tape to the perimeter of the upper flange where the roof panels will mount. If optional central distribution channel was purchased for the hood, reference Optional Central Distribution Channel Assembly for installation instructions.





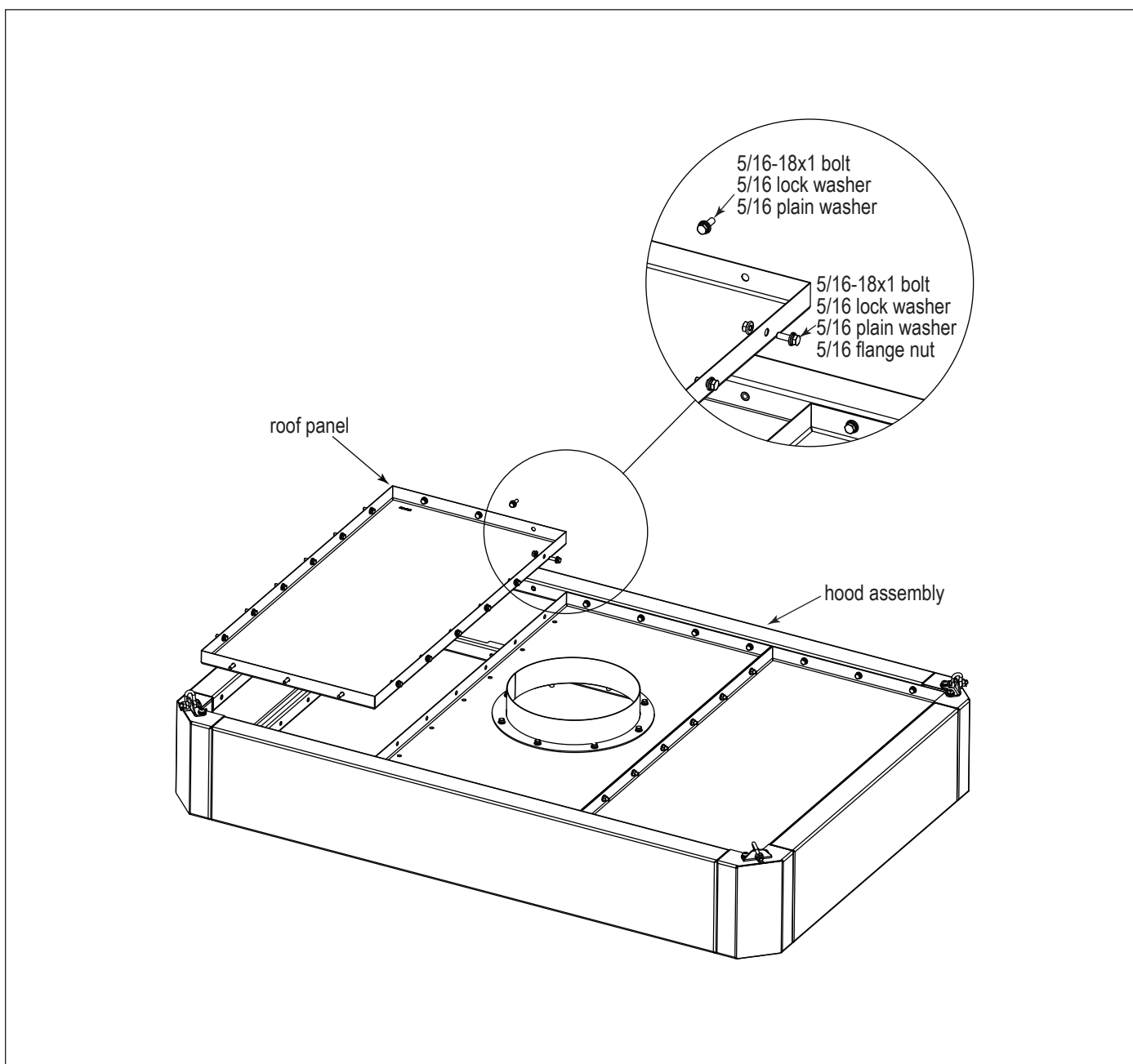
## Center Panel and Outlet Assembly

Apply gasket tape to joints where the center panel will join the side panels and where the outlet bolts to the center panel.

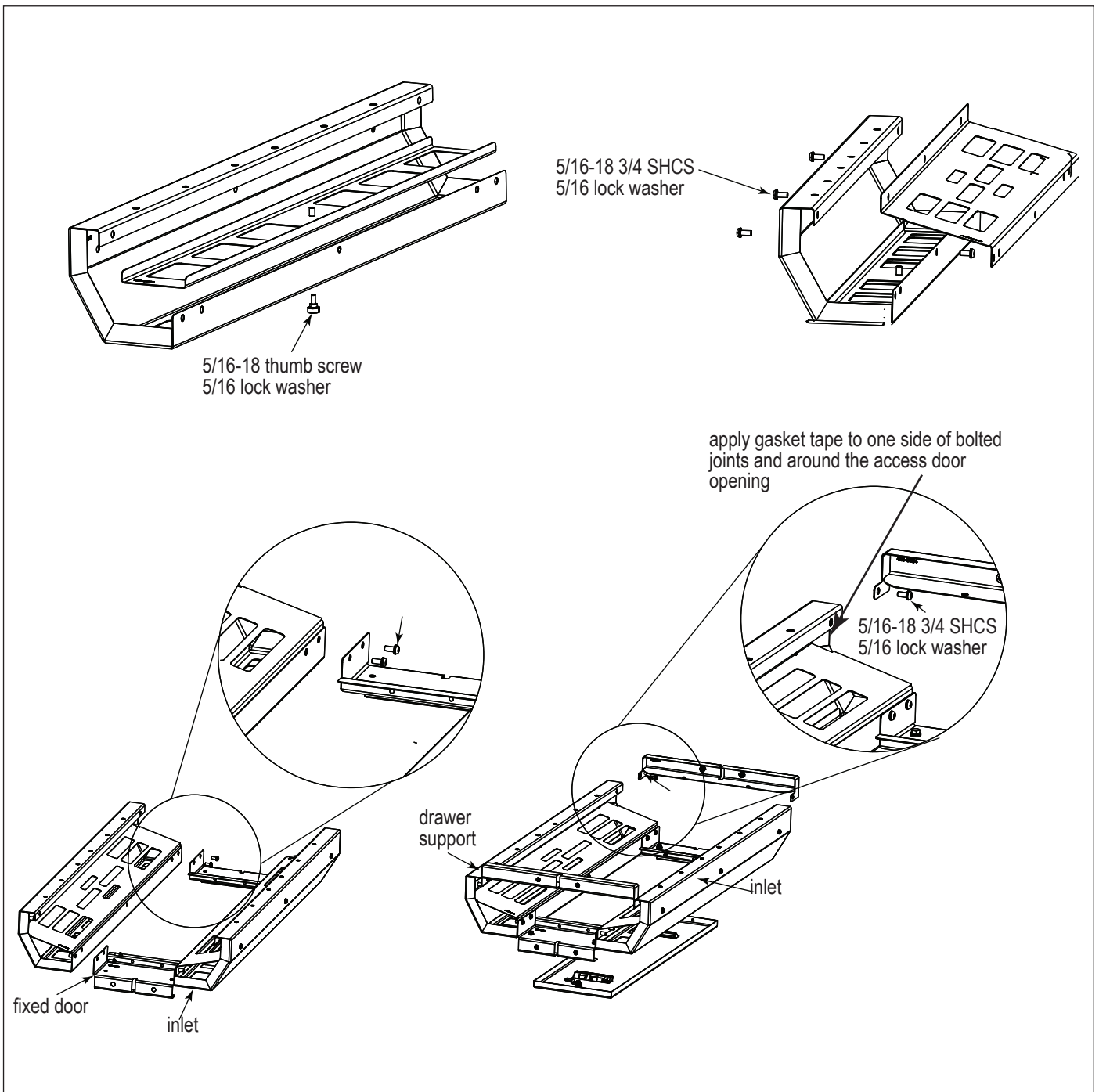


## Roof Assembly

Attach roof panel to hood assembly using the supplied hardware.

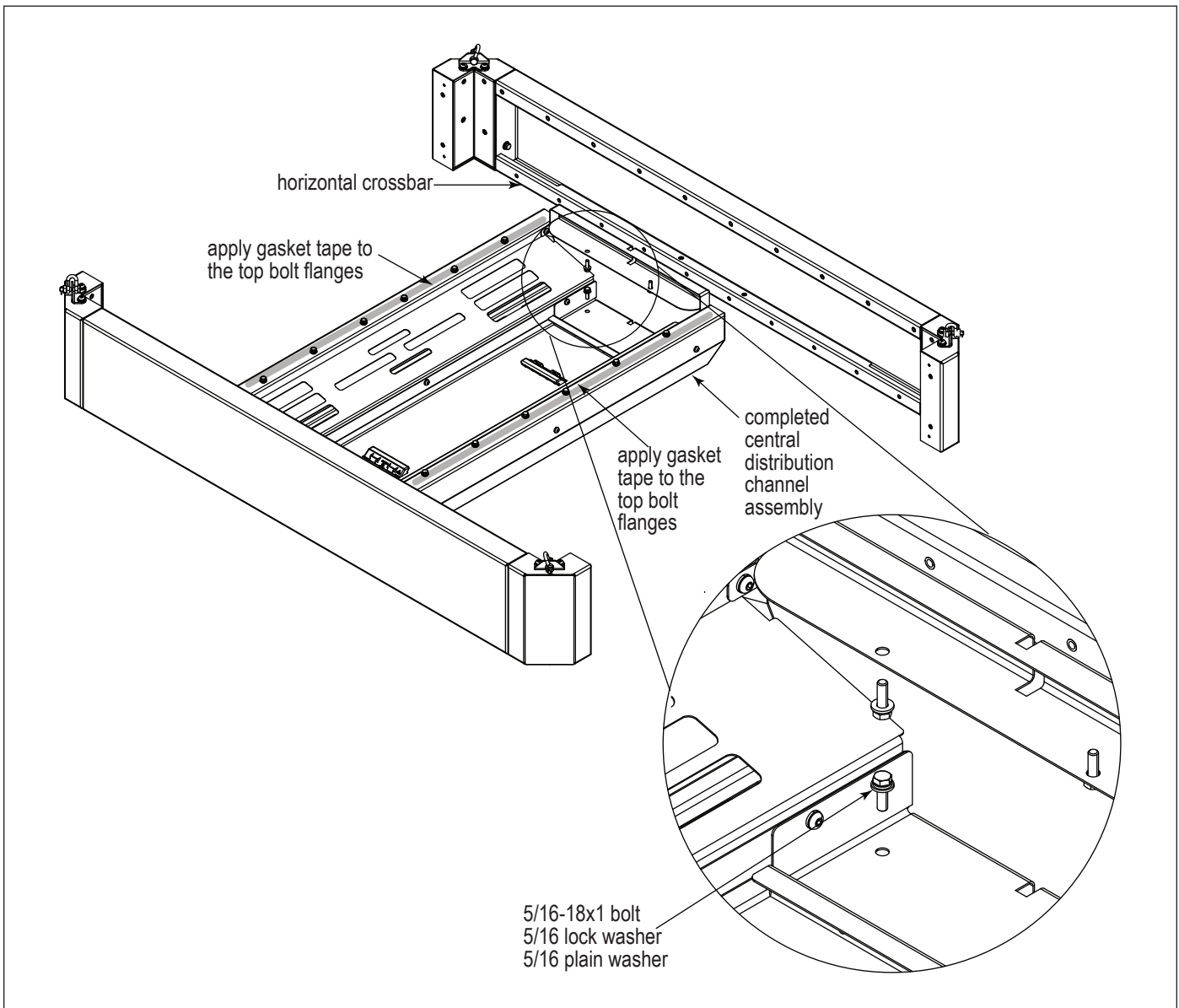


## Optional Central Distribution Channel Assembly



## Completed Optional Central Distribution Channel

Apply gasket tape to the top bolt flanges that will attach to the roof panel



## Optional Light Assembly

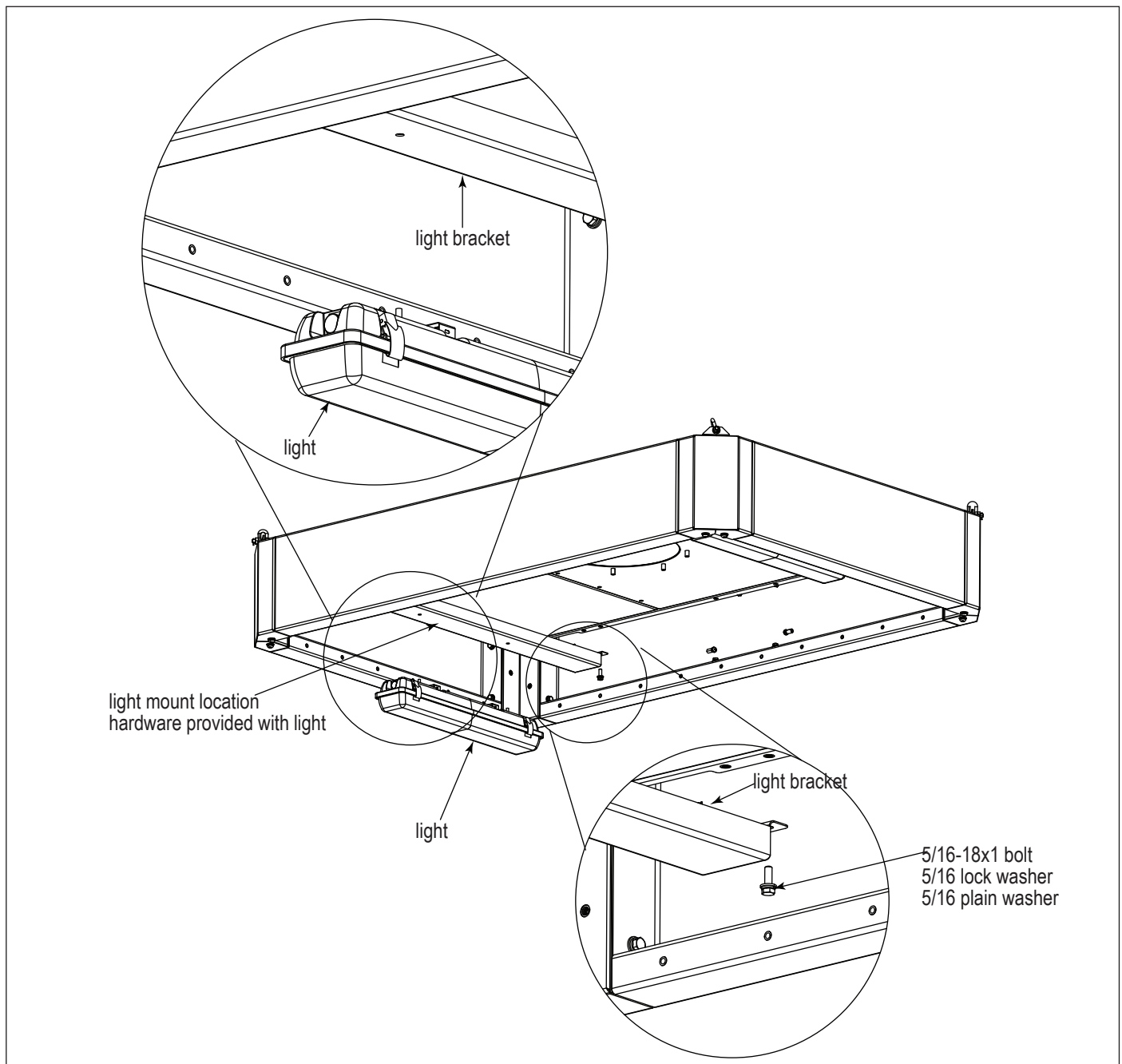


Electrical installation, service, or maintenance work must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn all power off and lock out all power before performing service or maintenance work. It is not unusual for the equipment to be operated from a remote location so equipment may start or stop unexpectedly.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

1. Attach light to the light bracket using supplied hardware.
2. Repeat this process for all lights included in the kit.
3. All wiring and controls provided by the customer.

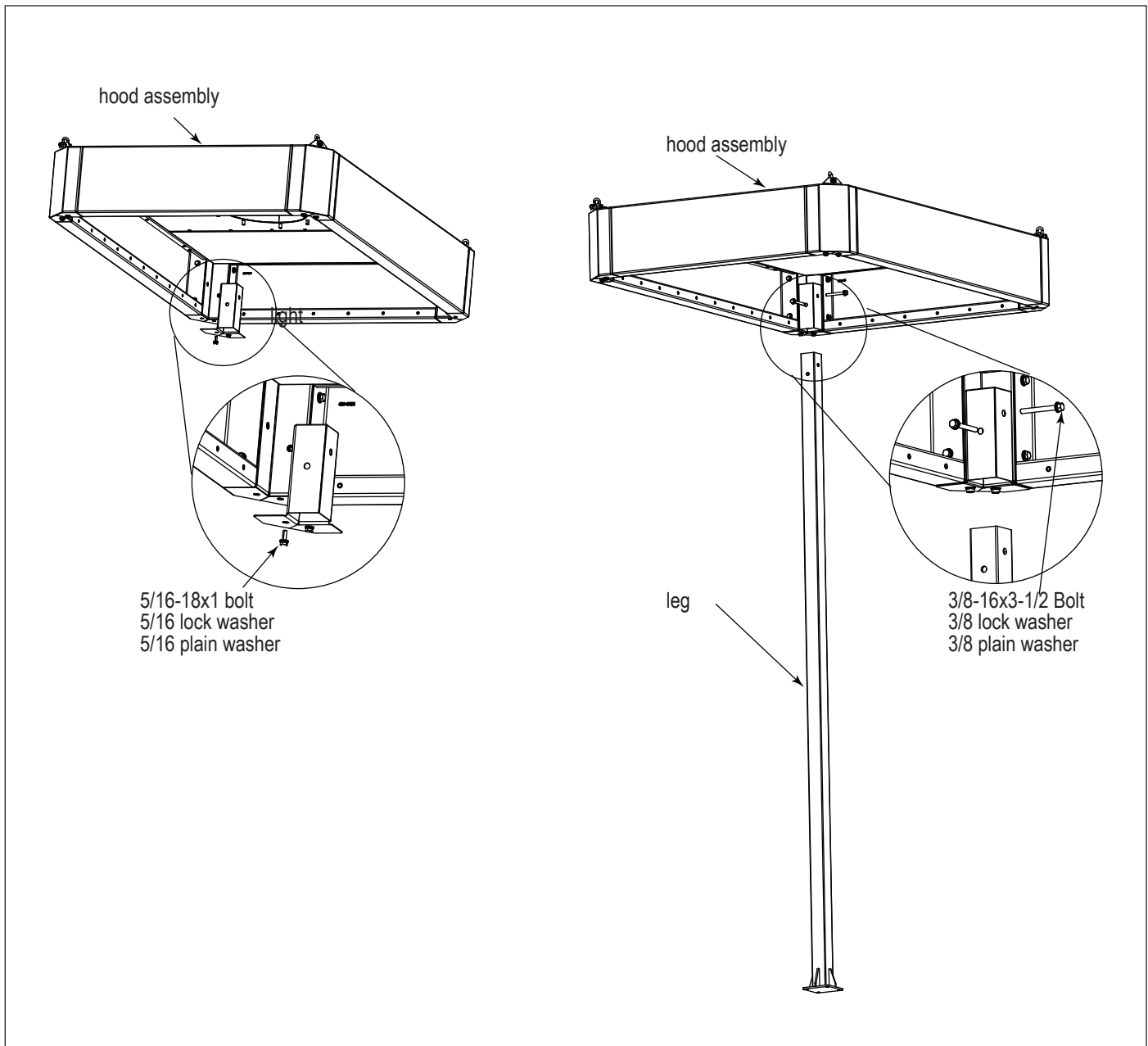


## Optional Leg Pack Assembly

**NOTICE**

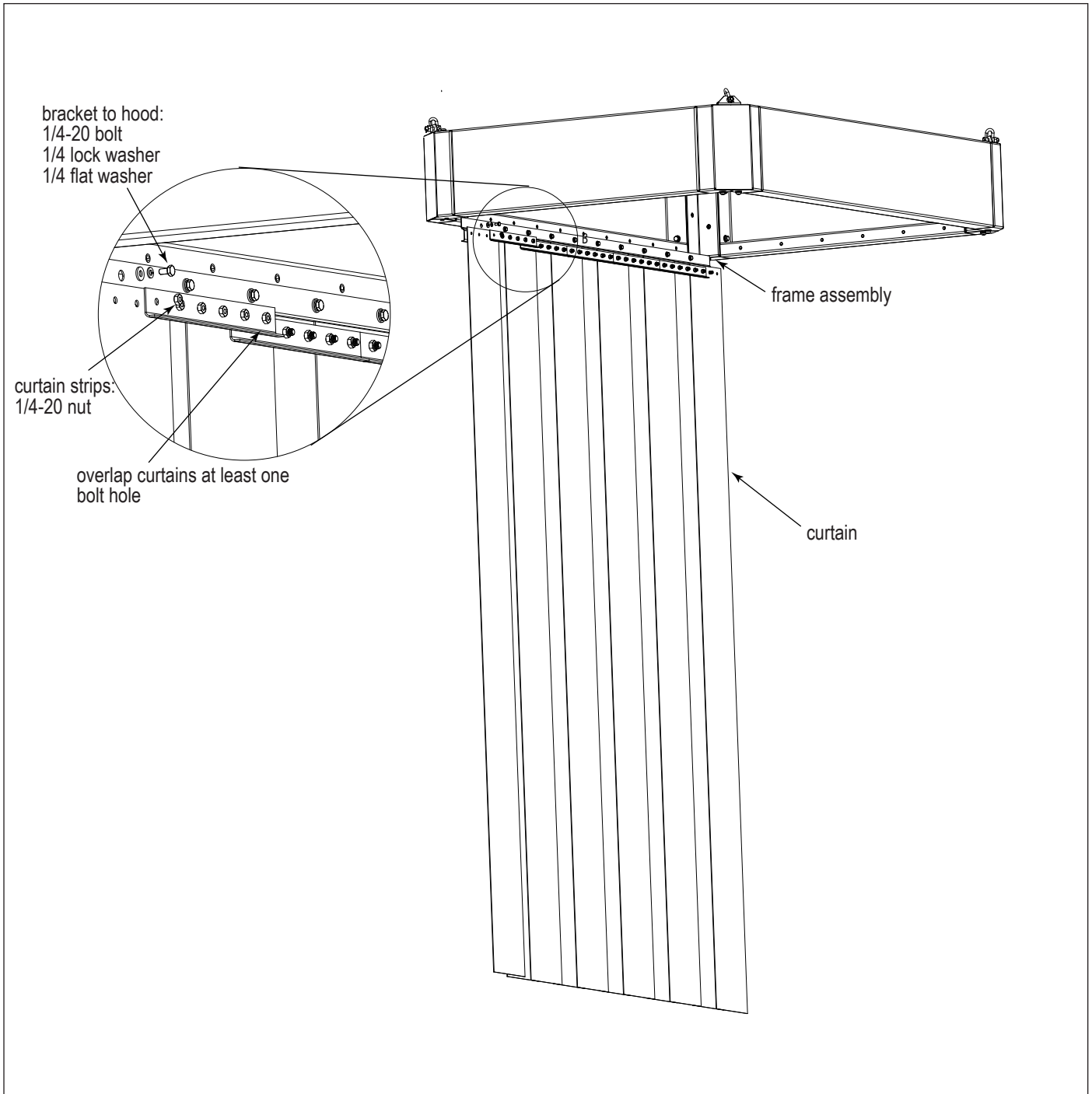
During leg installation, continue to support the hood from above (hanging) or below until all legs are attached. Once hood and legs are in position, use column guards to prevent accidental contact with the legs by equipment or personnel.

1. Use supplied hardware to attach legs to hood assembly.
2. Repeat this process 4 times.



## Optional Curtain

1. Optional curtains are available in blue and in 8, 10 and 12-ft lengths.
2. Curtains should overlap each other by at least one bolt hole.



## Start-up / Commissioning

Instruct all personnel on safe use and maintenance procedures.



Electrical installation, service, or maintenance work must be performed by a qualified electrician and comply with all applicable national and local codes. This equipment may start or stop unexpectedly from a remote location.

Turn all power off and lock out all power before performing service or maintenance work.

Check that the collector is clear and free of all debris before starting.

Do not operate in classified hazardous atmospheres without an enclosure rated for the application.

1. Check duct connection from hood to dust collection system.
2. Check electrical connections to optional lighting kit.
3. Ensure support structures are properly connected and anchored from either the top or bottom.
4. Ensure the access panel on the optional distribution channel is securely attached.
5. Perform start-up checks on the associated dust collection system.
6. Turn dust collection systems power ON.
7. Verify airflow and adjust as needed.

**NOTICE**

Excess airflow can shorten filter life, cause electrical system failure and fan motor failure.



## Decommissioning

Once the equipment has reached the end of operational life it will need to be decommissioned.



During decommissioning, there is potential for exposure to the dust in the equipment. Most dusts present safety and health hazards that require precautions. Wear eye, respiratory, head, and other protection equipment suitable for the type of dust when performing any decommissioning activities.

LOCK-OUT all energy sources prior to performing any decommissioning activities on the equipment.

Electrical service must be performed by a qualified electrician.

Disconnection of ducts must be performed by a qualified contractor.

1. Lock-Out all energy sources and associated equipment.
2. Prior to disassembling, clear residual dust accumulations from surfaces inside and outside the hood in a fashion suitable for the dust.
3. Disconnect the ducting.
4. Support the hood with alternate means and disconnect the support system.
5. With the hood at ground level, proceed to disassemble the components in reverse order of the installations instructions.
6. Secure all equipment components to a suitable transport carrier and transport to a disposal site suitable for the dust on or in the equipment.



## Donaldson Industrial Air Filtration Warranty

Donaldson warrants to the original purchaser only that the Goods will be free from defects in material and manufacture for the applicable time periods stated below: (1) Major structural components for a period of ten (10) years from the date of shipment; (2) Non-Structural, Donaldson-built components and accessories including Donaldson Airlocks, TBI Fans, TRB Fans, Fume Collector products, Donaldson built electrical control components, and Donaldson-built Afterfilter housings for a period of twelve (12) months from date of shipment; and (3) Donaldson-built filter elements for a period of eighteen (18) months from date of shipment.

Buyer is solely responsible for determining if goods fit Buyer's particular purpose and are suitable for Buyer's process and application. Seller's statements, engineering and technical information, and recommendations are provided for the Buyer's convenience and the accuracy or completeness thereof is not warranted. If, after Seller receives written notice, within the warranty period, that any goods allegedly do not meet Seller's warranty, and Seller, in its sole discretion, determines that such claim is valid, Seller's sole obligation and Buyer's exclusive remedy for breach of the foregoing warranty or any Seller published warranty, will be, at Seller's option, either: (i) repair or replacement of such goods or (ii) credit or refund to Buyer for the purchase price from Seller. In the case of repair or replacement, Seller will be responsible for the cost of shipping the parts but not for labor to remove, repair, replace or reinstall the allegedly defective goods. Refurbished goods may be used to repair or replace the goods and the warranty on such repaired or replaced goods shall be the balance of the warranty remaining on the goods which were repaired or replaced. Any repair or rework made by anyone other than Seller is not permitted without prior written authorization by Seller, and voids the warranty set forth herein. Seller warrants to Buyer that it will perform services in accordance with the Sales Documents using personnel of required skill, experience and qualifications and in a professional and workmanlike manner in accordance with generally recognized industry standards for similar services. With respect to any services subject to a claim under the warranty set forth above, Seller shall, in its sole discretion, (i) repair or re-perform the applicable services or (ii) credit or refund the price of such services at the pro rata contract rate and such shall be Seller's sole obligation and the exclusive remedy for breach of the foregoing warranty on services. Products manufactured by a third party ("Third Party Product") may constitute, contain, be contained in, incorporated into, attached to or packaged together with, the goods. Buyer agrees that: (a) Third Party Products are excluded from Seller's warranty in this Section 7 and carry only the warranty extended by the original manufacturer, and (b) Seller's liability in all cases is limited to goods of Seller's design and manufacture only. EXCEPT FOR SELLER'S WARRANTY OF TITLE TO THE GOODS, SELLER EXPRESSLY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES WHATSOEVER, WHETHER, EXPRESSED OR IMPLIED, ORAL, STATUTORY, OR OTHERWISE, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY AND ANY WARRANTIES ARISING FROM TECHNICAL ADVICE OR RECOMMENDATIONS, COURSE OF DEALING OR OF PERFORMANCE, CUSTOM OR USAGE OF TRADE. Seller's obligations do not cover normal wear and tear or deterioration, defects in or damage to any goods resulting from improper installation, accident or any utilization, maintenance, repair or modification of the goods, or any use that is inconsistent with Seller's instructions as to the storage, installation, commissioning or use of the goods or the designed capabilities of the goods or that, in its sole judgment, the performance or reliability thereof is adversely affected thereby, or which is subjected to abuse, mishandling, misuse or neglect or any damage caused by connections, interfacing or use in unforeseen or unintended environments or any other cause not the sole fault of Seller, and shall be at Buyer's expense. Seller's warranty is contingent upon the accuracy of all information provided by Buyer. Any changes to or inaccuracies in any information or data provided by Buyer voids this warranty. Seller does not warrant that the operation of the goods will be uninterrupted or error-free, that the functions of the goods will meet Buyer's or its customer's requirements unless specifically agreed to, or that the goods will operate in combination with other products selected by Buyer or Buyer's customer for its use.

The terms of this warranty may only be modified by a special warranty document signed by a Director, General Manager or Vice President of Donaldson. To ensure proper operational performance of your equipment, use only genuine Donaldson replacement parts.

**This Product is provided subject to and conditioned upon Donaldson's Terms of Sale ("Terms"), a current copy of which is located at [termsofsale.donaldson.com](https://termsofsale.donaldson.com). These Terms are incorporated herein by reference. By purchasing or using this Product, the user accepts these Terms. The Terms are available on our website or by calling our customer service line at 1-800-365-1331.**

**Important Notice:** Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, availability and data are subject to change without notice, and may vary by region or country.



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