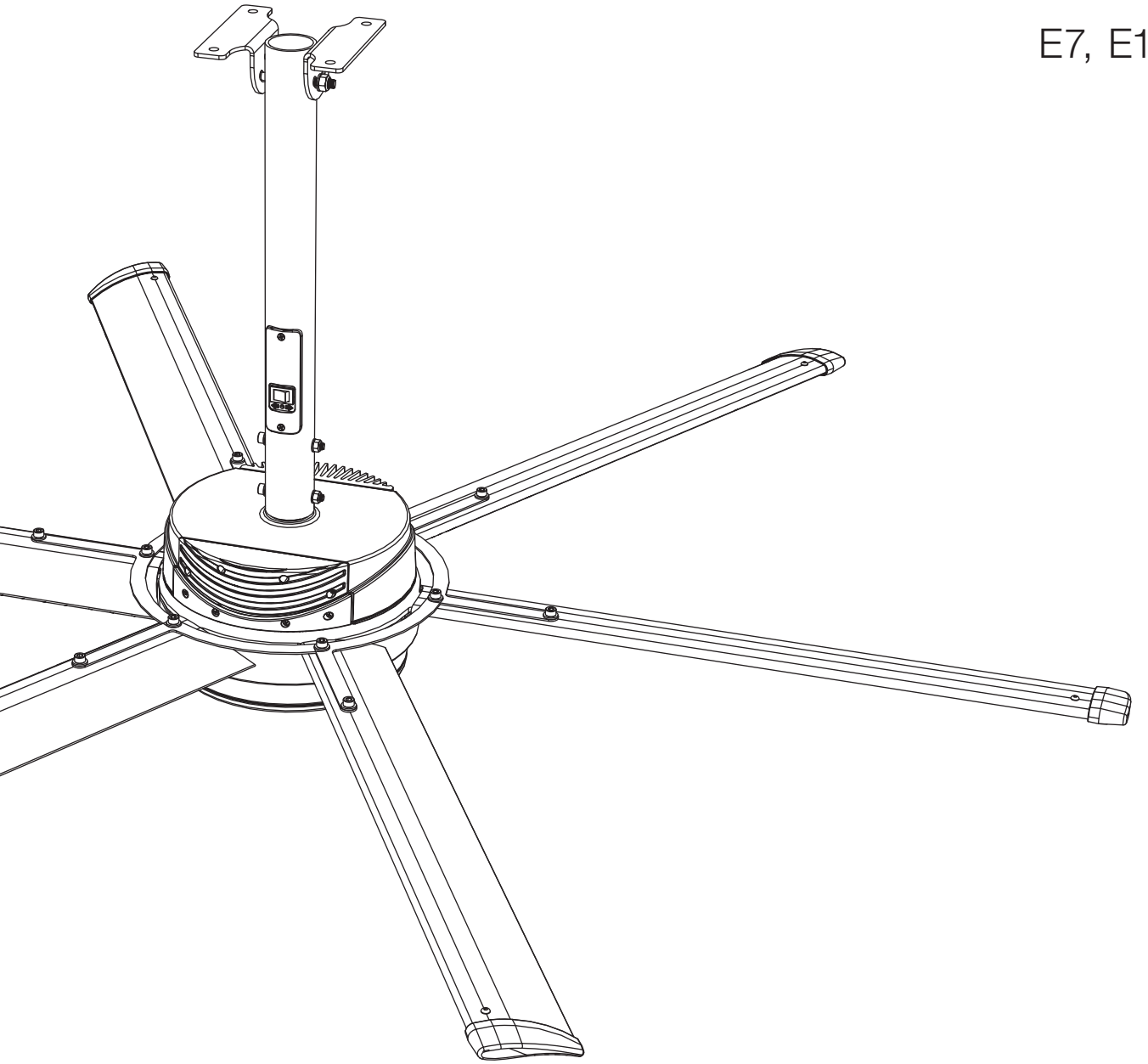
BIG ASS FANS®

INSTALLATION GUIDE

E7, E10, E12

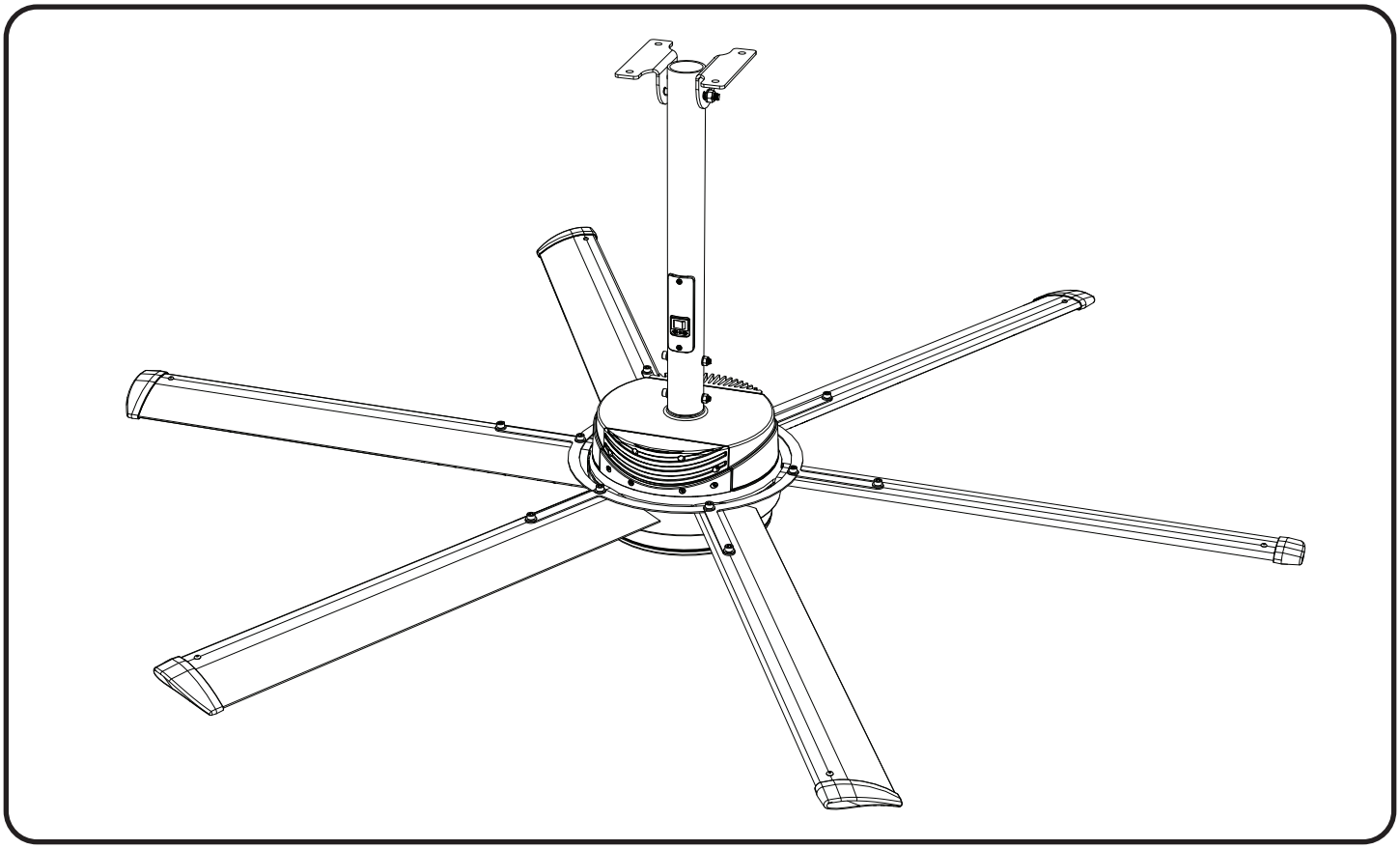


For help, call 1-877-BIG-FANS
or visit www.bigassfans.com

Installation Checklist

- ☐ **Did a structural engineer approve the mounting structure?** See page 5 for Big Ass Fans-approved mounting structures.
- ☐ **Are you familiar with the function and use of the safety cable?** See page 12 for information on properly securing the safety cable.
- ☐ **Will the fan be installed so that the airfoils are at least 10 ft (3.05 m) above the floor?**
- ☐ **Will the fan be installed so that the airfoils have at least 2 ft (0.61 m) of clearance from obstructions?**
- ☐ **Will the fan be installed so that it is not subjected to high winds such as from a Heating, Ventilating, and Air Conditioning (HVAC) system or near a large garage door?** See page 5.
- ☐ **Will the distance between multiple fans be at least 2.5x the fans' diameter when measured from the centers of the fans?**
- ☐ **If you ordered multiple fans, did you keep the parts of each fan together?**

Installation Guide
E7, E10, E12



Installation Guide:
Rev. L
11/29/2022

Conforms to UL 507: Electric Fans
Certified to CSA C22.2 No. 113: Fans & Ventilators

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IMPORTANT SAFETY INSTRUCTIONS
READ AND SAVE THESE INSTRUCTIONS

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

CAUTION: Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards.

CAUTION: When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

CAUTION: Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

WARNING: Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

CAUTION: The installation of a Big Ass Fan must be in accordance with the requirements specified in this installation manual and with any additional requirements set forth by the National Electric Code (NEC), ANSI/NFPA 70-2011, and all local codes. Code compliance is ultimately YOUR responsibility! Failure to comply with these codes could result in personal injury or property damage.

CAUTION: Exercise caution and common sense when powering the fan. Do not connect the fan to a damaged or hazardous power source. Do not attempt to resolve electrical malfunctions or failures on your own. Contact Big Ass Fans if you have any questions regarding the electrical installation of this fan.

WARNING: To reduce the risk of fire, electric shock, and injury to persons, Big Ass Fans must be installed with Big Ass Fan supplied controllers that are marked (on their cartons) to indicate the suitability with this model. Other parts cannot be substituted.

CAUTION: When service or replacement of a component in the fan requires the removal or disconnection of a safety device, the safety device is to be reinstalled or remounted as previously installed.

WARNING: Risk of fire, electric shock, or injury to persons during cleaning and user-maintenance! Disconnect the fan from the power supply before servicing.

CAUTION: Do not bend the airfoils when installing, adjusting, or cleaning the fan. Do not insert foreign objects in between rotating airfoils.

WARNING: Stay alert, watch what you are doing, and use common sense when installing fans. Do not install fans if tired or under the influence of drugs, alcohol, or medication. A moment of inattention while installing fans may result in serious personal injury.

CAUTION: The installation of this fan requires the use of some power tools. Follow the safety procedures found in the owner's manual for each of these tools and do not use them for purposes other than those intended by the manufacturer.

CAUTION: The Big Ass Fans product warranty will not cover equipment damage or failure caused by improper installation.

WARNING: This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a responsible person. Children should be supervised to ensure that they do not play with the appliance.

Leave this installation guide with the owner of the fan after installation is complete.

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About this fan

Technical specifications

Model	Diameter	Input power	Minimum circuit size	Rated current
E7	7 ft (2.13 m)	110–125 VAC, 50/60 Hz, 1Φ	10 A	5.5 A
		200–240 VAC, 50/60 Hz, 1Φ	10 A	3.4 A
E10	10 ft (3.05 m)	110–125 VAC, 50/60 Hz, 1Φ	10 A	6.0 A
		200–240 VAC, 50/60 Hz, 1Φ	10 A	4.0 A
E12	12 ft (3.66 m)	110–125 VAC, 50/60 Hz, 1Φ	10 A	4.1 A
		200–240 VAC, 50/60 Hz, 1Φ	10 A	3.0 A

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2 Pre-Installation

Parts included

⚠ **CAUTION: Do not remove the main fan unit from its protective packaging or place it on a flat surface prior to hanging it!**

⚠ **CAUTION: If you ordered multiple fans, be sure to keep the components of each fan together.**

If you are missing any piece required for installation, contact Big Ass Fans Customer Service. *Note: Drawings below are not to scale. All boxes are labeled to identify the contents.*

Hardware[1]

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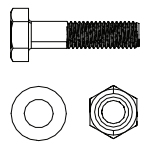
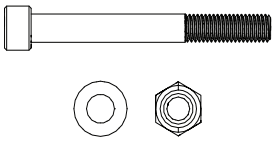
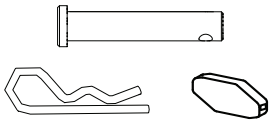
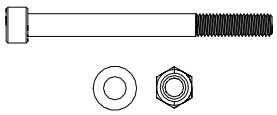
<td>  </td>
<td>  </td>
<td>  </td>
<td>  </td>
</tr>
<tr>
<td>Mounting Hardware
(5) M10 x 40 mm Hex Head Cap Screw
(9) M10 Flat Washer
(5) M10 Nylock Nut</td>
<td>Extension Tube Hardware
(3) M10 x 90 mm Socket Head Cap Screw
(5) M10 Flat Washer
(3) M10 Nylock Nut</td>
<td>Safety Cable Hardware
5/16” Clevis Pin
Cotter Pin
Gripple®</td>
<td>Main Fan Unit Hardware
(3) M8 x 75 mm Socket Head Cap Screw
(5) M8 Flat Washer
(3) M8 Nylock Nut</td>
</tr>
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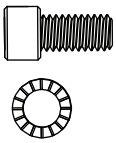
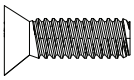
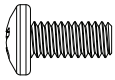
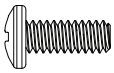
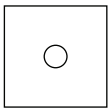
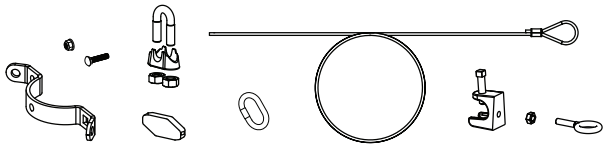
<td>  </td>
<td>  </td>
<td>  </td>
</tr>
<tr>
<td>Airfoil Tip Hardware
(7) M5 x 12 mm Button Head Screw</td>
<td>Airfoil Hardware
(13) M8 x 18 mm Socket Head Cap Screw
(13) 8 mm Belleville Washer</td>
<td>Cover Plate Assembly Hardware
(3) 8-32 x 1/2” Flat Head Screw</td>
<td>Lower Cover Mounting Bracket Hardware
(4) 8-32 x 3/8” Pan Head Screw</td>
</tr>
<tr>
<td>  </td>
<td>  </td>
<td colspan="2">  </td>
</tr>
<tr>
<td>Lower Cover Hardware
(9) 6-32 x 3/8” Pan Head Screw</td>
<td>Angle Iron Hardware
(8) 3” Square Washer</td>
<td colspan="2">Guy Wire Hardware[2]
(2) Guy Wire Clamp
(2) 1/4-20 X 1” Carriage Bolt
(2) 1/4-20 Nylock Flange Nut
(8) Locking Carabiner
(4) 1/4” Beam Clamp
(4) 1/4-20 x 1” Eyebolt
(4) 1/4-20 Hex Nut
(4) Guy Wire
(4) Gripple
(16) Wire Rope Clip</td>
</tr>
</table>

1. One extra of each piece of hardware is included except for the Safety Cable Hardware, Angle Iron Hardware, and Guy Wire Hardware.
2. Guy wires are designed to constrain the fan’s lateral movement. Big Ass Fans recommends using guy wires if the fan is exposed to high winds or similar conditions or if the fan is close to any building fixtures. Guy wires are packaged in the main box. The Guy Wire Hardware is packaged in the box with the extension tube.

Mounting

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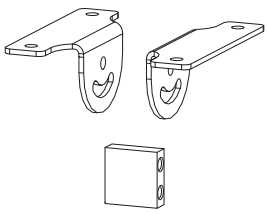
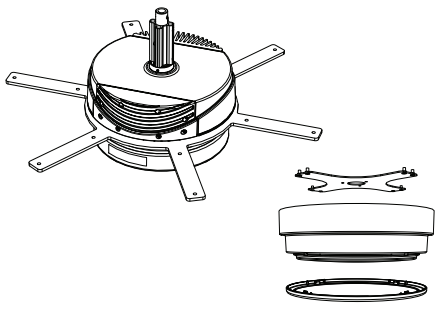
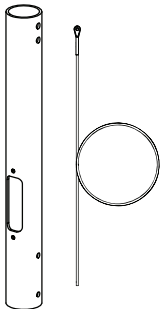
<td>  </td>
<td>  </td>
<td>  </td>
</tr>
<tr>
<td>Upper Mount & Upper Mounting Brace[1]</td>
<td>Main Fan Unit, Lower Cover, Lower Cover Mounting Bracket, & Trim Ring</td>
<td>Extension Tube & Safety Cable[2]</td>
</tr>
</table>

1. The upper mounting brace strengthens the upper mounting system and must be installed inside the top of the extension tube.
2. Two (2) safety clips and two (2) carabiners are provided for safety cable installation in locations where the top of the mounting structure is inaccessible. Contact Customer Service if you need assistance installing the safety cable.

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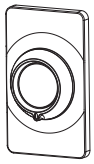
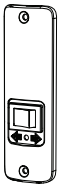
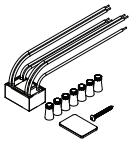
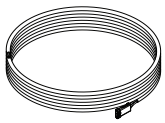
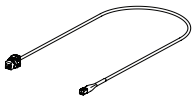
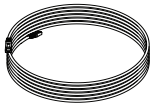
Parts included (cont.)

Note: Drawings below are not to scale.

Electrical

		
Wall Controller	**Cover Plate Assembly[1]**	**Fire Relay[2]**
		
20-ft Power Supply Cable	**20-ft Controller Input Cable**	**100-ft CAT5 Cable[3]**

Airfoils

(6) Airfoil	
(6) Airfoil Tip	**(6) Airfoil Retainer**

1. The cover plate assembly includes a fan status LED and a switch used to change the direction of fan rotation. The LED will flash an error code if there is a problem with the fan. See page 28 for information on the fan status LED. See page 24 for information on changing the fan direction.
2. The fire relay is provided for fans that will be installed in buildings that have a fire sprinkler system. See page 23 for fire relay wiring details.
3. The CAT5 cable connects the wall controller to the fan. One end plugs into the wall controller, and the other end plugs into the controller input cable. See pages 22–23 for wiring details. A longer CAT5 cable can be used if needed (customer-supplied).

Tools needed

Big Ass Fans recommends gathering the following tools prior to beginning installation.

Mechanical installation
Standard and metric wrench sets
Standard and metric socket and ratchet sets
Torque wrench capable of 29 ft·lb (39.3 N·m)
Phillips and flat head screwdrivers
Metric Allen wrench set
Metric Allen head sockets
Drill
Hacksaw
Level
Tape measure

Electrical installation
Phillips and flat head screwdrivers
#10 to #14 AWG strippers
Medium size channel locks
Multimeter

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Fan diagram

Refer to the diagram below to identify the fan components. *Note: The safety cable is not pictured below; however, it is an important part of the installation.*

A. Upper mount. Secures the fan to the mounting structure.

B. Extension tube. Extends the fan from the ceiling and provides a path for wiring.

C. Upper mounting brace. Strengthens the upper mounting system.

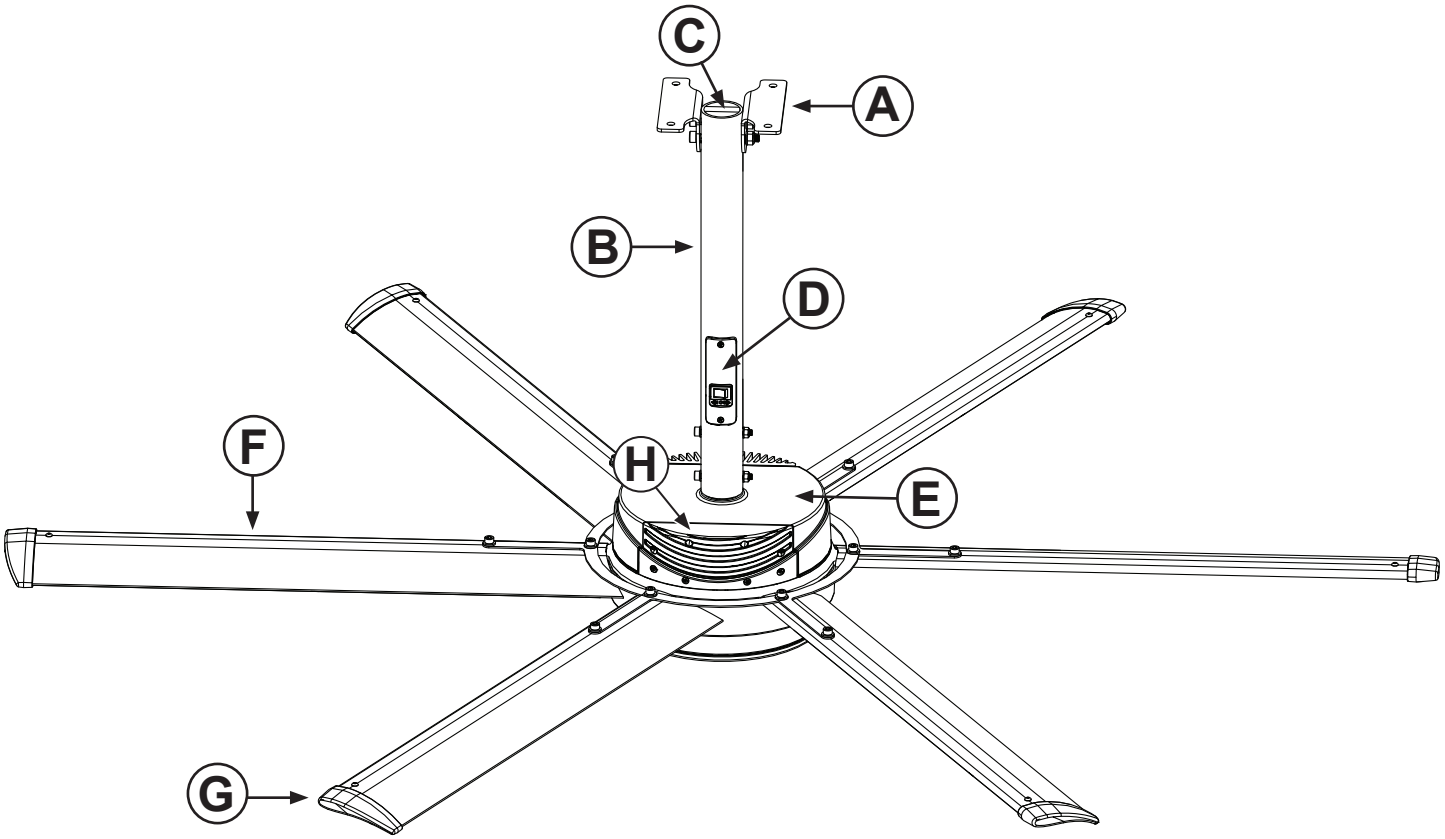
D. Cover plate assembly. Provides access to wiring and includes a fan status LED and a switch used to change the direction of fan rotation. The LED will flash an error code if there is a problem with the fan. See page 28 for LED error codes. See page 24 for information on changing the fan direction.

E. Main fan unit. Includes the motor, hub, and power wiring.

F. Airfoil. Provides air movement. The unique, patented design provides efficient and effective air movement.

G. Airfoil tip. Ensures quiet fan operation.

H. Electronics cover. Provides access to the fan electronics and fuses. See page 29 for information on replacing fuses.



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Preparing the work site

The fan should only be installed according to the instructions described in this manual. Consult a structural engineer for installation methods not covered in this manual.

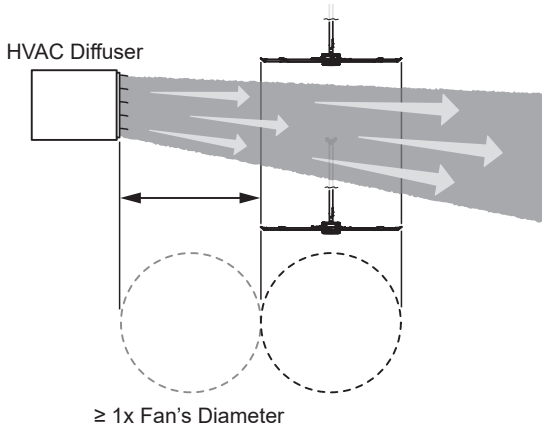
When surveying the work site, keep the following mechanical and electrical guidelines in mind.

Mechanical

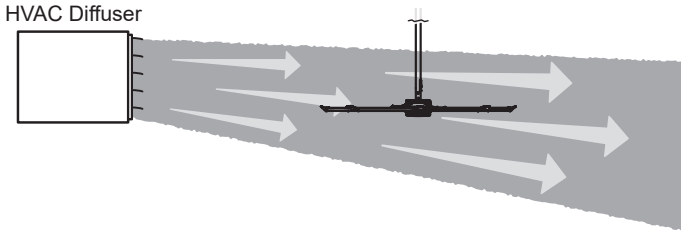
- The main fan unit is heavy. A suitable means for lifting the weight of the fan, such as a scissor lift, and at least two installation personnel will be required.
- If hanging the fan from angle irons, the minimum dimensions of the angle iron must be 2-1/2'' × 2-1/2'' × 1/4'' (6.4 cm × 6.4 cm × 0.6 cm) and it cannot be longer than 12 ft (3.7 m). It must be secured to the structure. Do not mount the fan to a single purlin, truss, or bar joist. Consult a structural engineer for installation methods not covered in this manual.
- To reduce the risk of injury to persons, install the fan so that the airfoils are at least 10 ft (3.05 m) above the floor.
- If mounting the fan in the vicinity of an infrared/radiant heater, it is recommended that the fan be mounted outside of the clearances recommended by the manufacturer of the heater and at a height equal to or above the shielding on the heating element with the controller on the opposite side of the heater. If mounting the fan below the heater shielding, all fan elements must be outside of the clearances recommended by the heater manufacturer. The installation manual for the specific model of heater will typically provide the minimum clearance to combustibles (MCC).
- Adhere to the safety requirements in the table below when selecting where to mount the fan.

Safety requirement	Minimum distances
Clearance	≥ 2 ft from all fan parts and ≥ 3 ft below sprinklers. The fan installation area must also be free of obstructions such as lights, cables, or other building structure.
Blade height	≥ 10 ft above the floor
HVAC equipment	Above or below diffuser: ≥ 1x fan's diameter. Same level as diffuser: Contact Customer Service for assistance. Refer to the illustration below.
Fan spacing	2.5x fan diameter, center-to-center
Radiant/IR heaters	See the manufacturer's requirements for the minimum clearance to combustibles.

Above or Below HVAC Diffuser



Same Level as HVAC Diffuser



Contact Customer Service for assistance.

Electrical

- Ensure power wiring is routed to a junction box at the fan location prior to installation.
- To reduce the risk of electric shock, wiring should be performed by a qualified electrician! Incorrect assembly can cause electric shock or damage the motor and the controller!
- Installation of a Big Ass Fan must be in accordance with the National Electrical Code (NEC), ANSI/NFPA 70-2011, and local codes.

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6 Installing the Fan

⚠ **WARNING: The fan should not be installed unless the structure on which the fan is to be mounted is of sound construction, undamaged, and capable of supporting the loads of the fan and its method of attachment. A structural engineer should verify that the mounting structure is adequate prior to fan installation. Verifying the stability of the mounting structure is the sole responsibility of the customer and/or end user, and Big Ass Fans hereby expressly disclaims any liability arising therefrom, or arising from the use of any materials or hardware other than those supplied by Big Ass Fans or otherwise specified in these installation instructions.**

⚠ **CAUTION: Do not install the fan from a single purlin or truss or junction box.**

⚠ **CAUTION: Unsupported angle iron spans should not exceed 12 ft (3.7 m).**

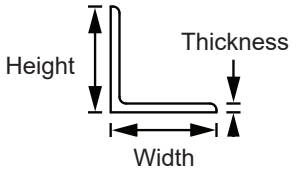
1. Select proper angle irons

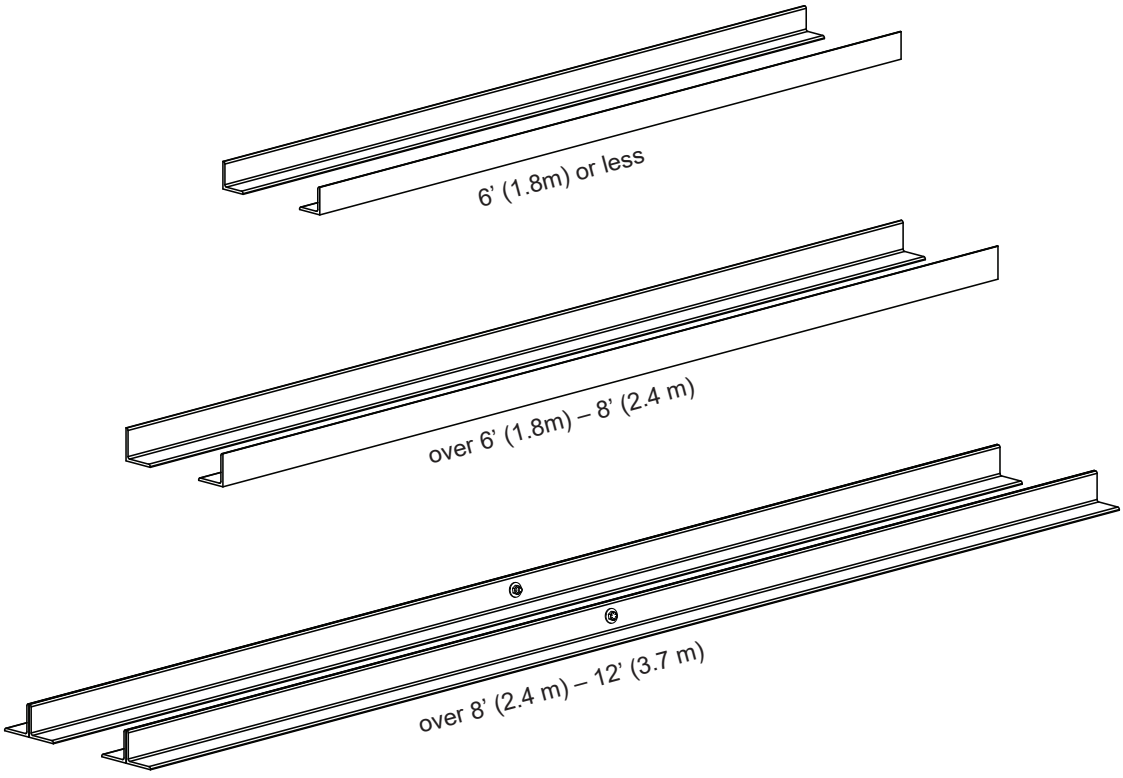
Follow the table below when selecting angle irons for fan installation. *Note: Angle irons and angle iron hardware are not included with the fan.*

Angle iron span (between mounting points)	**Minimum angle iron dimensions** (W x H x T)	**Number of angle irons needed**
6 ft (1.8 m) or less	2.5” (6.4 cm) x 2.5” (6.4 cm) x 0.25” (0.6 cm)	2
over 6 ft (1.8 m) to 8 ft (2.4 m)	3” (7.6 cm) x 3” (7.6 cm) x 0.25” (0.6 cm)	2
over 8 ft (2.4 m) to 12 ft (3.7 m)	3” (7.6 cm) x 3” (7.6 cm) x 0.25” (0.6 cm)	4*

*Two pairs of angle irons. Pairs should be placed back to back and fastened in center (see step 3).

Angle Iron Side View
(see table for dimensions)





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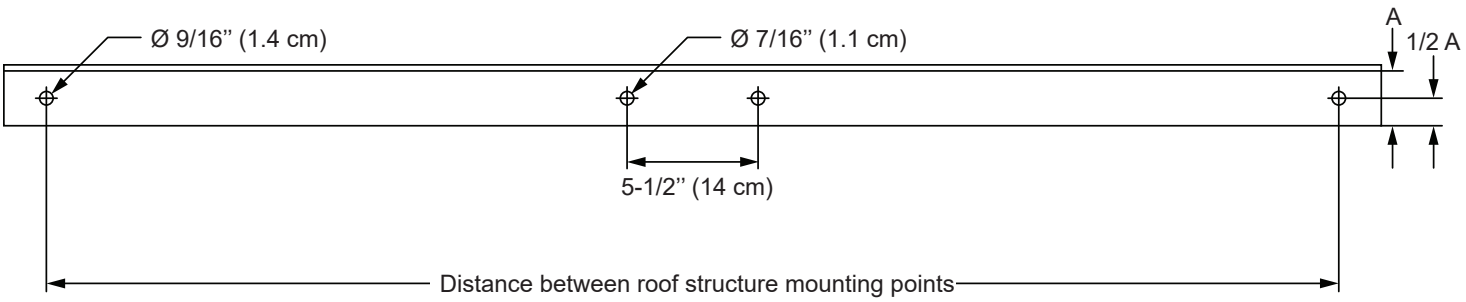
2. Pre-drill angle irons

Drill two Ø 7/16” (1.1 cm) holes exactly 5-1/2” (14 cm) apart in the centers of two angle irons.

Measure the distance between the mounting points of the roof structure that the angle irons will span. Measure the same distance on the angle irons, and drill Ø 9/16” (1.4 cm) holes through each end of the angle irons. Drill holes in two angle irons if span is 8 ft (2.4 m) or less. Drill holes in four angle irons if span is greater than 8 ft (2.4 m).



3. Secure angle irons (if span is longer than 8 ft)

If the angle iron span is 8 ft (2.4 m) or less, proceed to step 4a on the following page.

If the angle iron span is longer than 8 ft (2.4 m), it is necessary to use double angle irons.

Locate the center of the angle iron length. Drill Ø 9/16” (1.4 cm) hole through the center of the vertical wall of the angle iron. Drill a total of four angle irons.

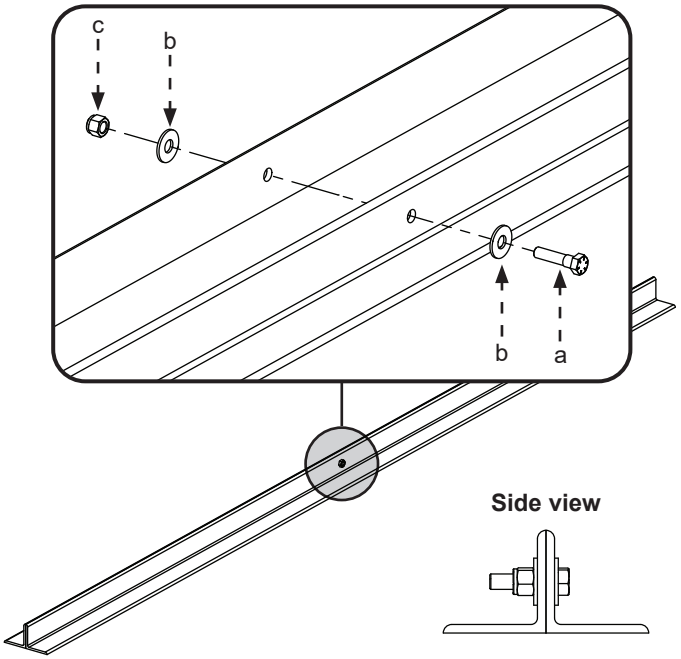
Place two drilled angle irons back to back. Fasten the angle irons together with customer-supplied Grade 8 hardware.

Align the angle irons to each other and tighten the bolts to **25 ft·lb (33.9 N·m)** using a torque wrench with a 3/4” or 19 mm socket.

Repeat step for remaining two angle irons.

Proceed to step 4b.

Angle Iron Hardware (Customer-Supplied):
a. (2) 1/2-13 or M12 Bolt
b. (4) 1/2” or M12 Washer
c. (2) 1/2” or M12 Nut



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4a. Fasten single angle irons to roof structure mounting points

If installation requires double angle irons, i.e., span is greater than 8 ft (2.4 m), proceed to step 4b.

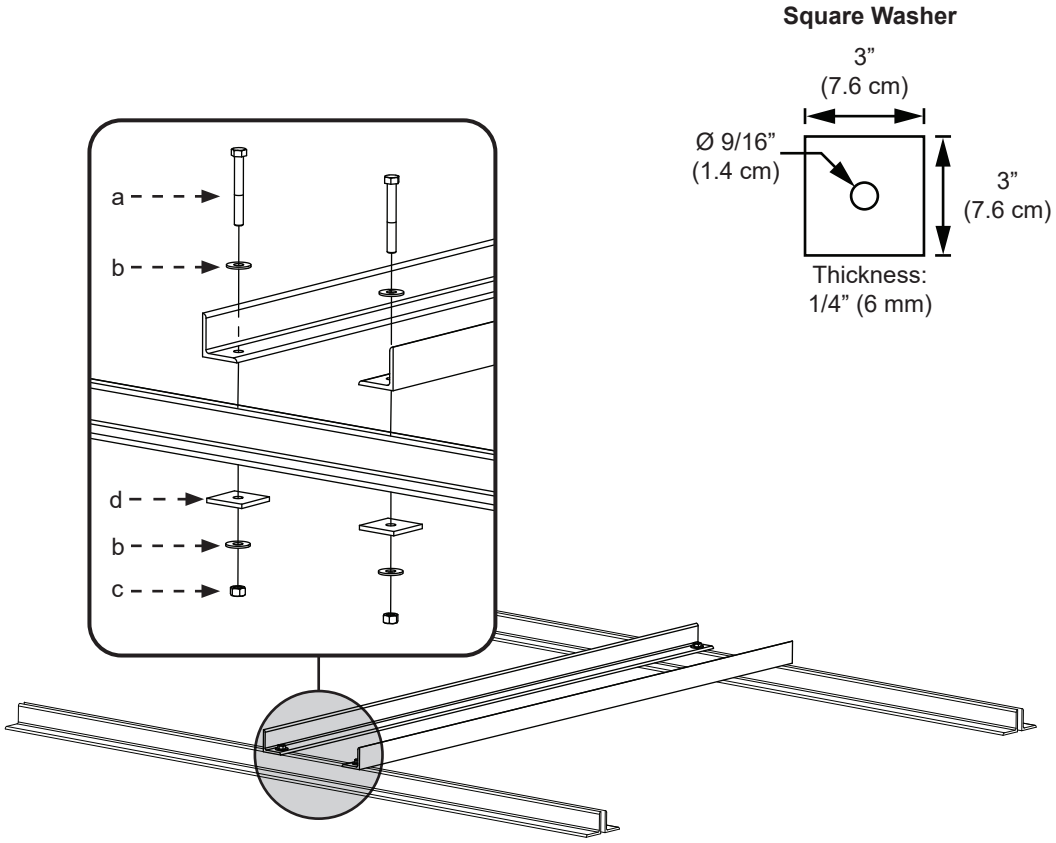
⚠ **CAUTION: The angle irons must be fastened to the roof structure at each end.**

Fasten the angle irons to the roof structure mounting points at each end with customer-supplied Grade 8 hardware as shown. **Tighten the hardware so that it is snug, but do not torque until the fan has been mounted to the angle irons.** *Note: Big Ass Fans recommends orienting the angle irons so that the horizontal legs are facing each other. Refer to the illustration below.*

Proceed to step 5.

Angle Iron Hardware (Customer-Supplied):
a. (4) 1/2-13 or M12 Bolt
b. (8) 1/2" or M12 Washer
c. (4) 1/2" or M12 Nut

Angle Iron Hardware:
d. (8) 3" Square Washer (see diagram)



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4b. Fasten double angle irons to roof structure mounting points

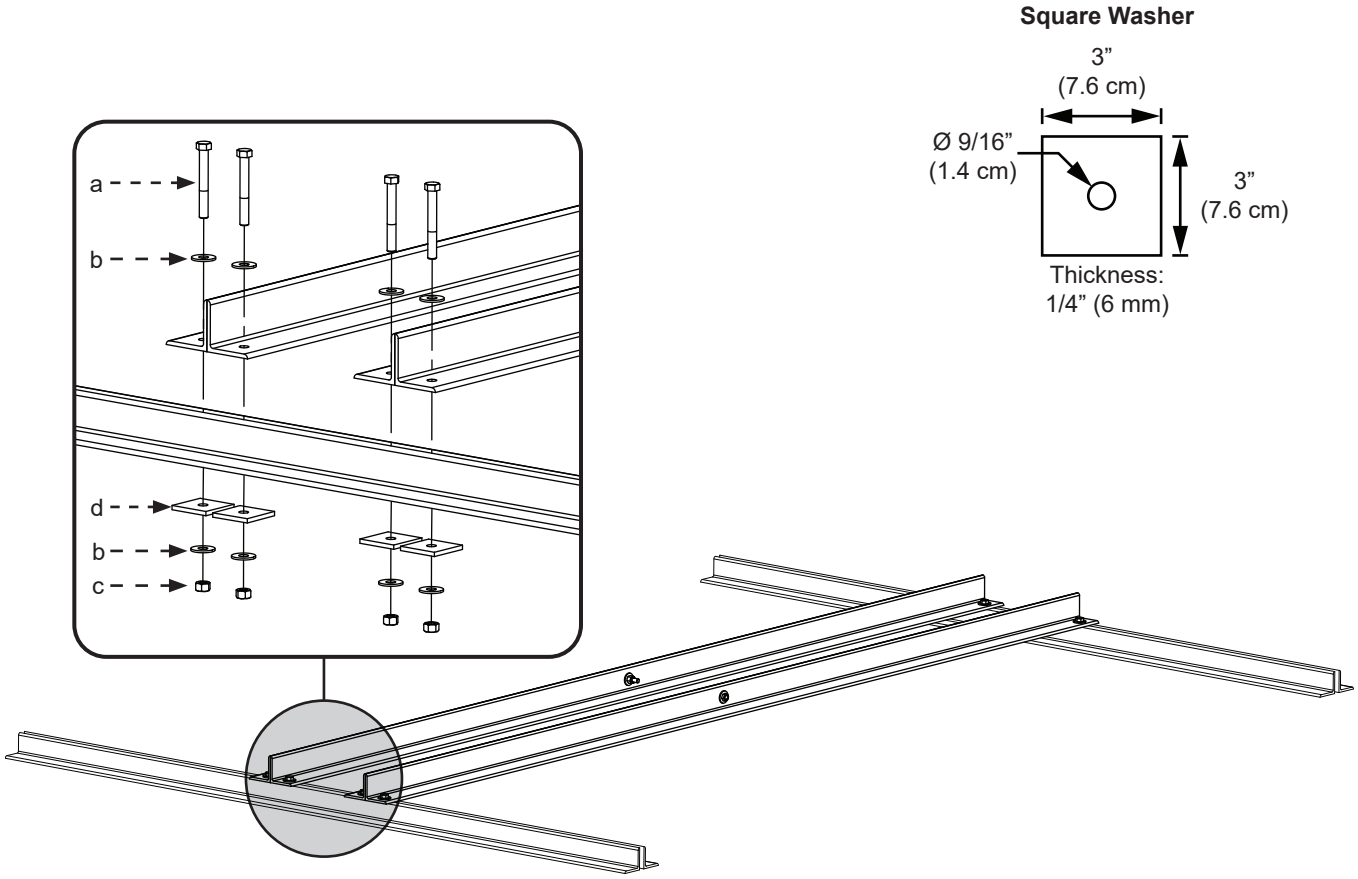
⚠ **CAUTION: The angle irons must be fastened to the roof structure at each end.**

Fasten the angle irons to the roof structure mounting points at each end with customer-supplied Grade 8 hardware as shown. **Tighten the hardware so that it is snug, but do not torque until the fan has been mounted to the angle irons.**

Proceed to step 5.

Angle Iron Hardware (Customer-Supplied):
a. (8) 1/2-13 or M12 Bolt
b. (16) 1/2” or M12 Washer
c. (8) 1/2” or M12 Nut

Angle Iron Hardware:
d. (8) 3” Square Washer (see diagram)



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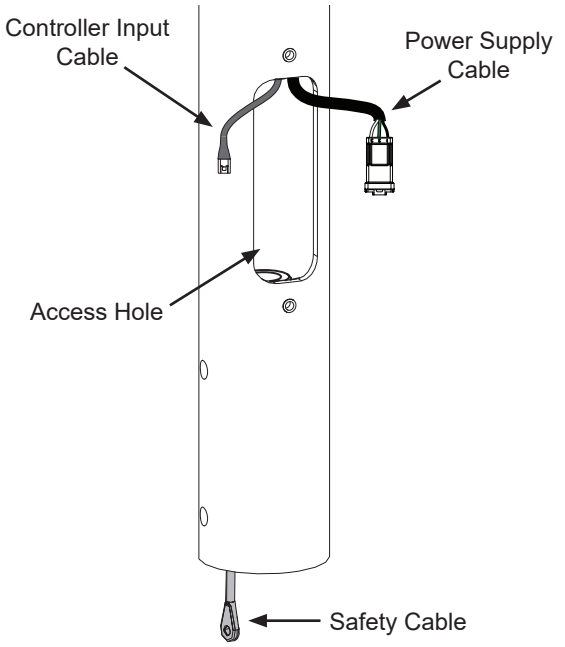
5. Route wiring and safety cable into extension tube

Note: To facilitate installation, Big Ass Fans recommends that the extension tube is horizontal with the rectangular access hole facing up during this step.

To route the wiring and safety cable into the extension tube:

1. Route the end of the controller input cable with the wiring harness on it (the end *without* the three loose wires) down into the top of the extension tube and out the rectangular access hole as shown.
2. Route the end of the power supply cable with the wiring harness on it down into the top of the extension tube and out the rectangular access hole as shown.
3. Route the end of the safety cable with the lug on it down into the top of the extension tube and out the bottom of the tube as shown.



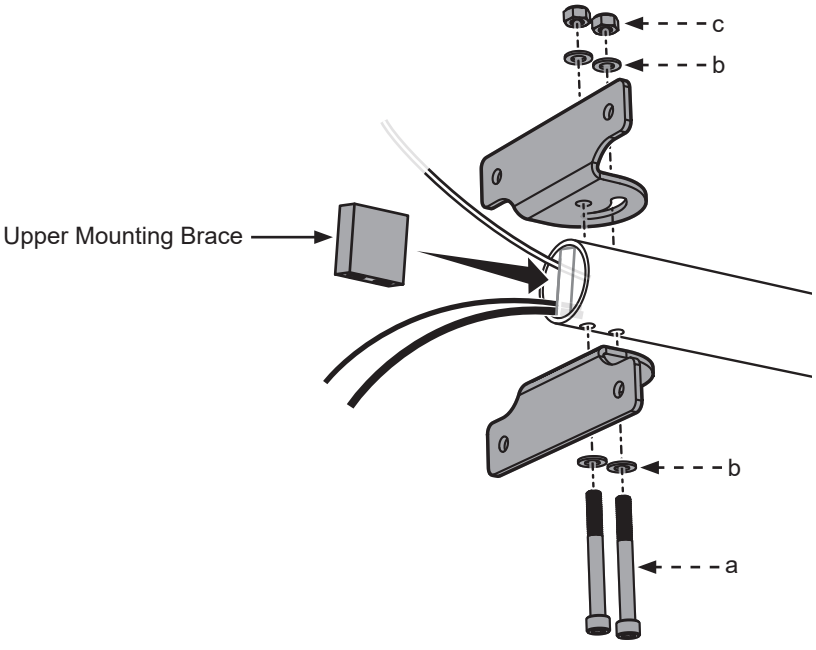
6. Attach upper mount and upper mounting brace (to extension tube)

Note: To facilitate installation, Big Ass Fans recommends that the extension tube is horizontal with the rectangular access hole facing up during this step.

Insert the upper mounting brace into the top of the extension tube and align the four (4) mounting holes in the brace with the four (4) mounting holes at the top of the tube as shown below.

Attach the upper mounting brace (inside the extension tube) and the upper mount to the extension tube using the Extension Tube Hardware as shown below. **Tighten the hardware so that it is snug, but do not torque.**

Extension Tube Hardware:
a. (2) M10 x 90 mm Socket Head Cap Screw
b. (4) M10 Flat Washer
c. (2) M10 Nylock Nut



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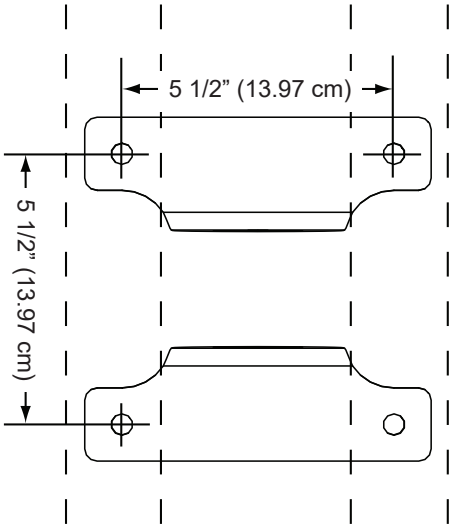
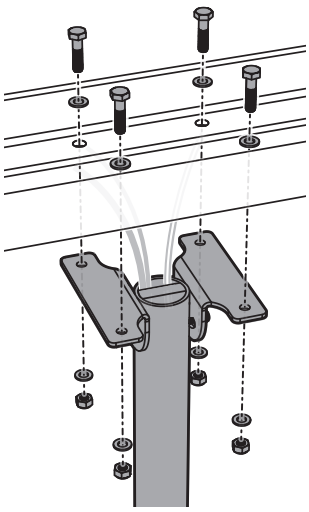
7. Attach upper mount (to angle irons)

Secure the upper mount (with extension tube and upper mounting brace already attached) directly to the angle irons using the Mounting Hardware as shown. Consult the diagrams below for distances between the angle irons. **Tighten the hardware so that it is snug, but do not torque.**

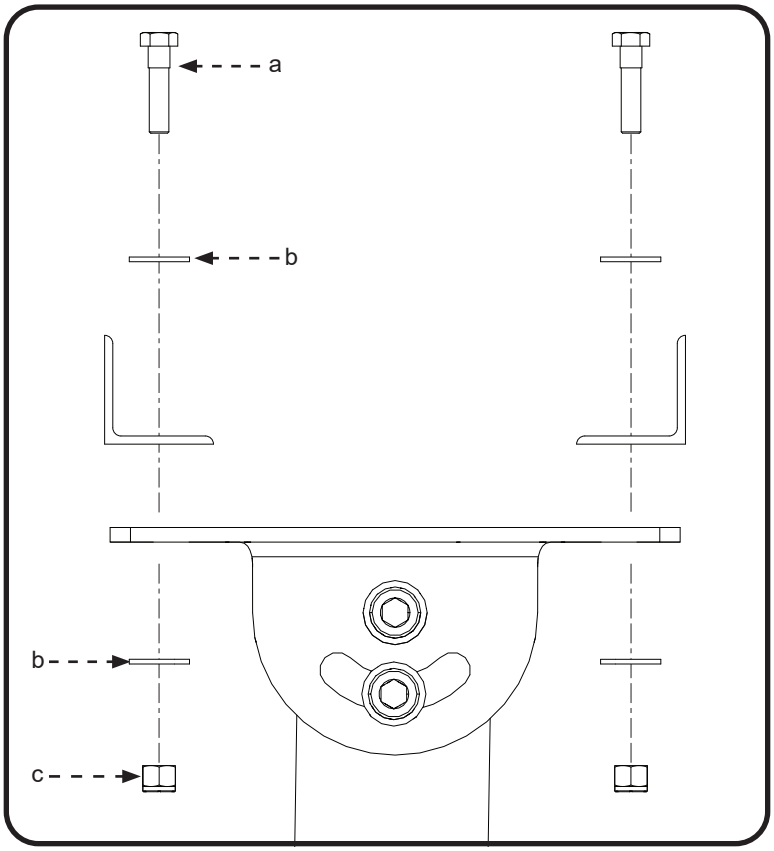
Mounting Hardware:
a. (4) M10 x 40 mm Hex Head Cap Screw
b. (8) M10 Flat Washer
c. (4) M10 Nylock Nut



Note: Dashed lines represent angle irons.



Side View



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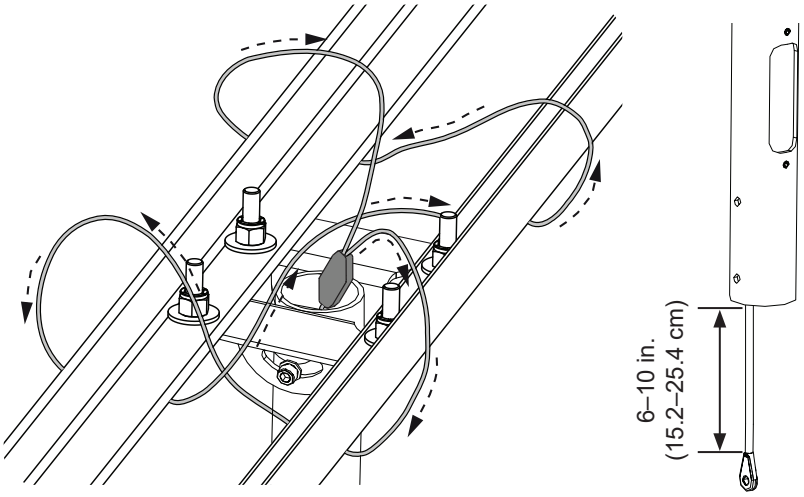
8. Secure safety cable (to angle irons)

⚠ **WARNING: The safety cable is a crucial part of the fan and must be installed correctly. If you have any questions, call Customer Service.**

To secure the safety cable to the angle irons:

1. Route the free end of the safety cable into one of the two (2) holes in the Gripple®, and then pull the cable through the Gripple until the Gripple rests at the top of the extension tube.
2. Wrap the safety cable around the angle irons, leaving 6–10 in. (15.2–25.4 cm) of slack.
3. Route the loose end of the safety cable through the remaining hole in the Gripple and pull to tighten.



9. Secure safety cable (to main fan unit)

⚠ **CAUTION: Do not remove the main fan unit from its protective packaging or place it on a flat surface prior to hanging it!**

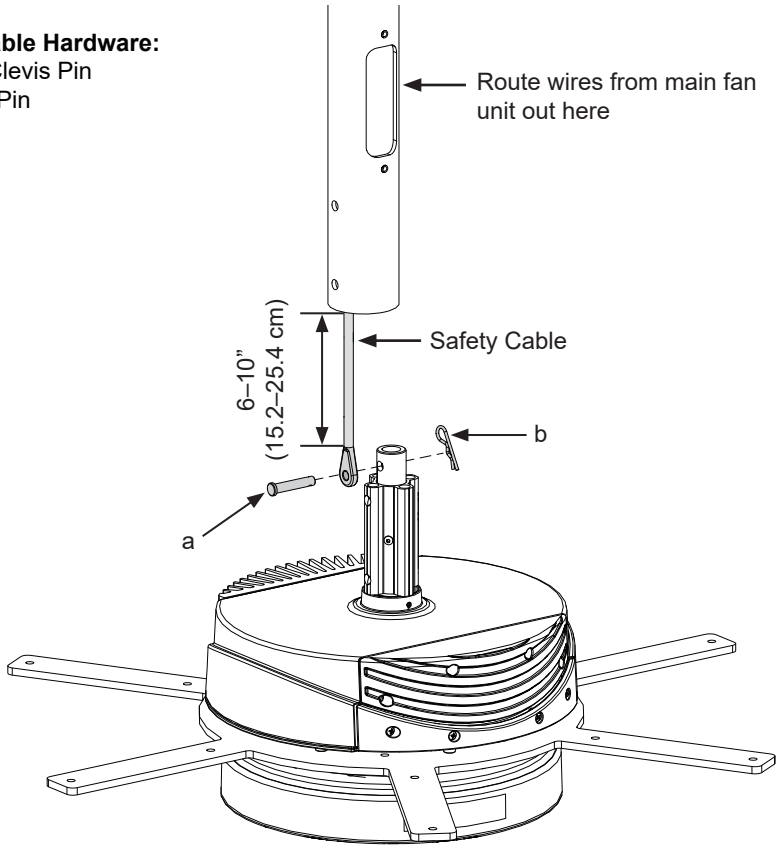
⚠ **CAUTION: To prevent damage, avoid contact with the stator wires located on the bottom of the main fan unit!**

⚠ **CAUTION: The main fan unit is heavy. Use caution when raising it.**

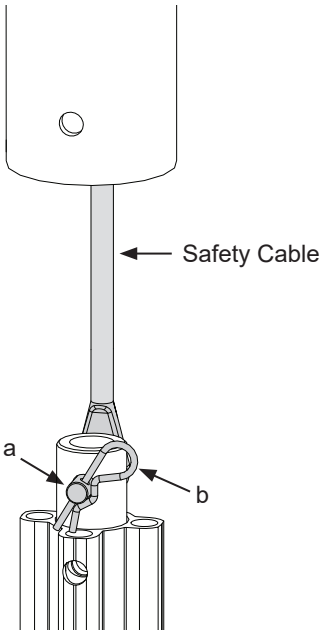
Raise the main fan unit directly from its packaging to the extension tube. Route the three (3) sets of wires from the main fan unit up into the bottom of the extension tube and out the rectangular access hole near the bottom of the tube. Ensure the wires are positioned inside the grooves on the motor shaft. *Note: Wiring not shown in the illustrations below.*

While supporting the main fan unit, secure the safety cable to the motor shaft using the Safety Cable Hardware as shown. Insert the clevis pin through the safety cable lug and motor shaft, and then insert the straight leg of the cotter pin into the small hole on the clevis pin.

Safety Cable Hardware:
a. 5/16” Clevis Pin
b. Cotter Pin



Cotter Pin Inserted into Clevis Pin



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10. Attach main fan unit (to extension tube)

⚠ **CAUTION: The main fan unit is heavy. Use caution when raising it.**

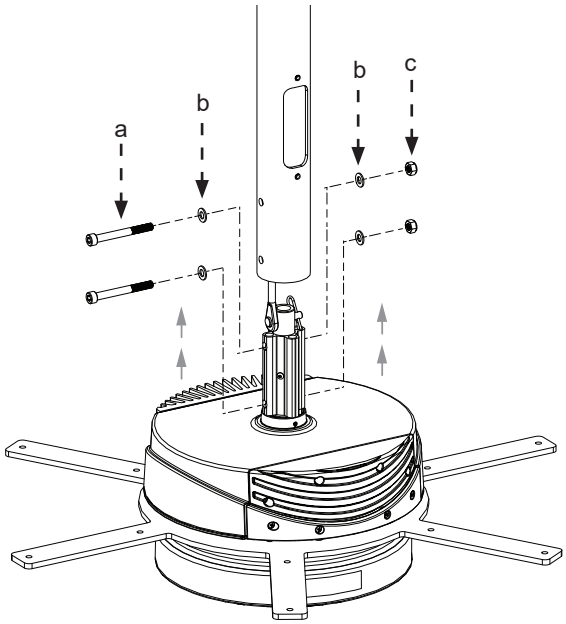
⚠ **CAUTION: Be careful not to pinch the fan wiring between the extension tube and main fan unit during installation.**

⚠ **CAUTION: Do not discard the main fan unit packaging and foam. It should be used if the fan is ever moved or relocated.**

Attach the main fan unit to the extension tube using the Main Fan Unit Hardware as shown. *Note: Wiring not shown in the illustration on the right.*

Tighten the hardware to **25 ft·lb (33.9 N·m)** using a 6 mm Allen wrench and a torque wrench with a 13 mm socket.

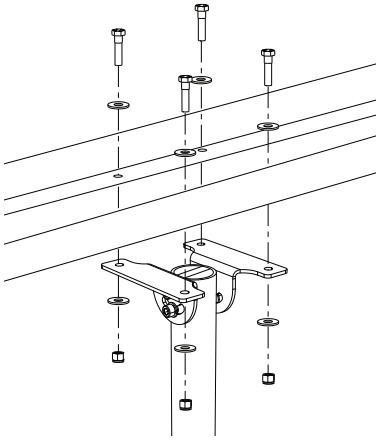
Main Fan Unit Hardware:
a. (2) M8 x 75 mm Socket Head Cap Screw
b. (4) M8 Flat Washer
c. (2) M8 Nylock Nut



11. Tighten hardware

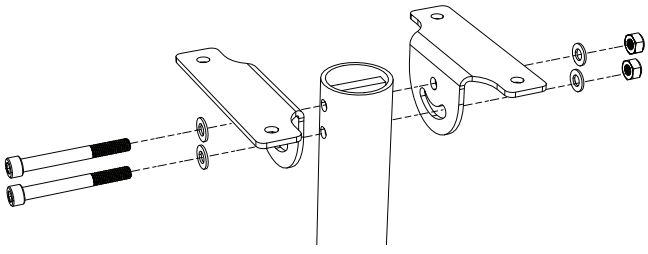
After attaching the main fan unit to the extension tube, tighten the following hardware to the specified torque.

Tighten the Mounting Hardware to **25 ft·lb (33.9 N·m)** using a 17 mm wrench and a torque wrench with a 17 mm socket.



Mounting Hardware

Allow the extension tube to hang freely and balance itself, and then tighten the Extension Tube Hardware to **25 ft·lb (33.9 N·m)** using an 8 mm Allen wrench and a torque wrench with a 17 mm socket.



Extension Tube Hardware

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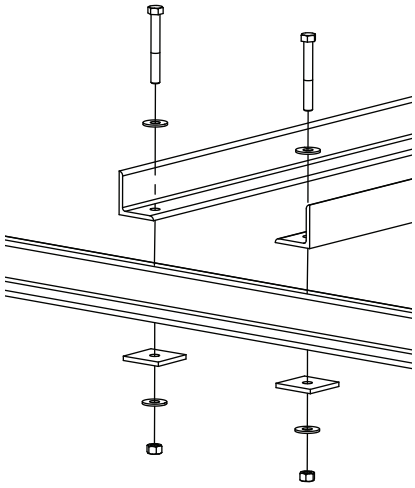
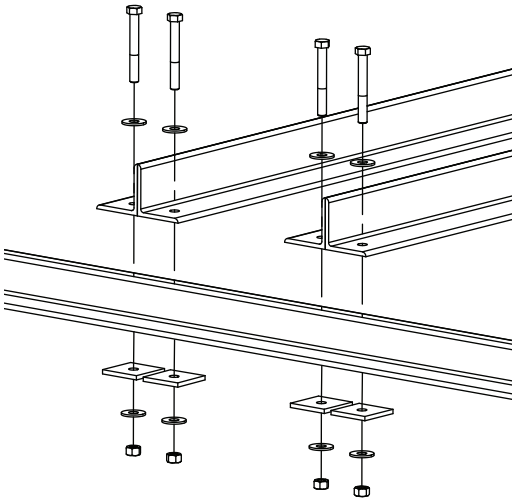
Tighten all hardware securing the angle irons to the roof structure (Angle Iron Hardware) to **40 ft·lb (54.2 N·m)** using a 3/4” or 19 mm wrench and a torque wrench with a 3/4” or 19 mm socket.



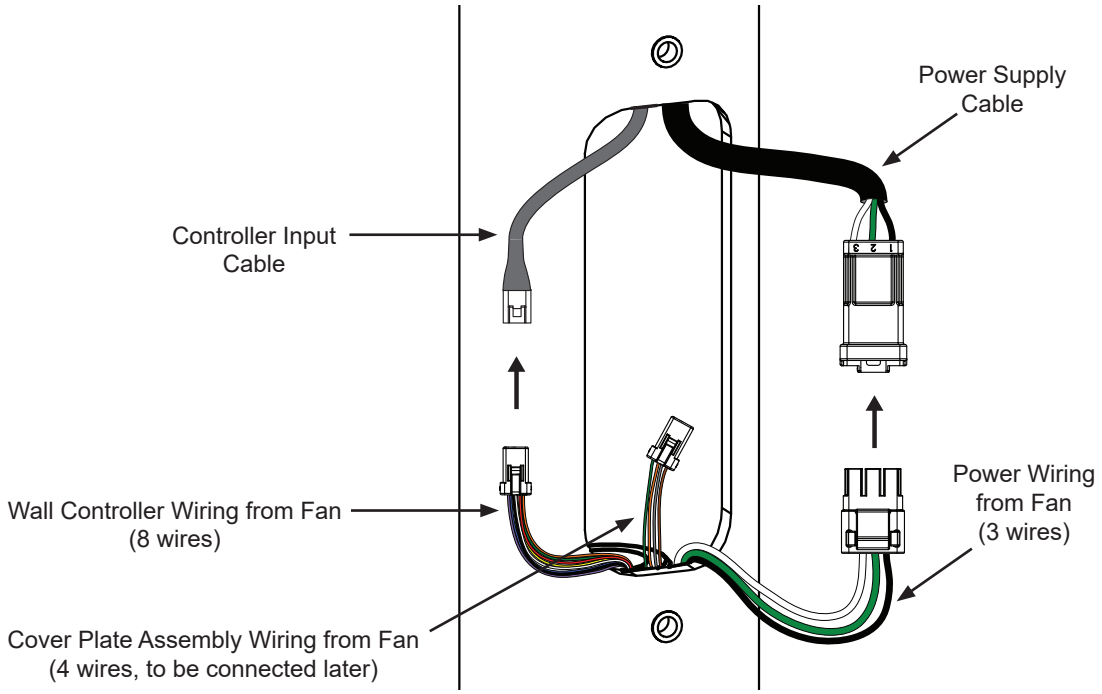
Angle Iron Hardware (single angle irons)



Angle Iron Hardware (double angle irons)

12. Connect power and wall controller wiring

Plug the male wiring harnesses on the fan wiring into the female wiring harnesses on the power supply cable and the controller input cable as shown. Carefully tuck the wiring into the extension tube.



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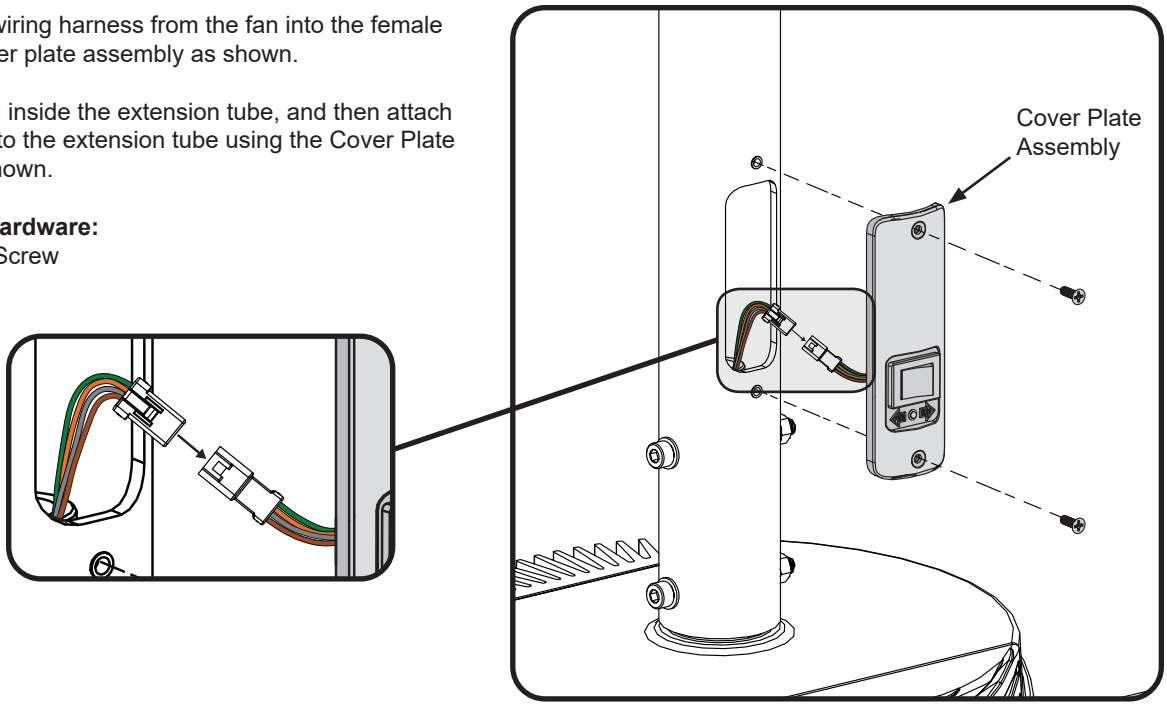
13. Install cover plate assembly

Plug the remaining male wiring harness from the fan into the female wiring harness on the cover plate assembly as shown.

Ensure all wiring is tucked inside the extension tube, and then attach the cover plate assembly to the extension tube using the Cover Plate Assembly Hardware as shown.

Cover Plate Assembly Hardware:
(2) 8-32 x 1/2" Flat Head Screw



14. Install lower cover mounting bracket

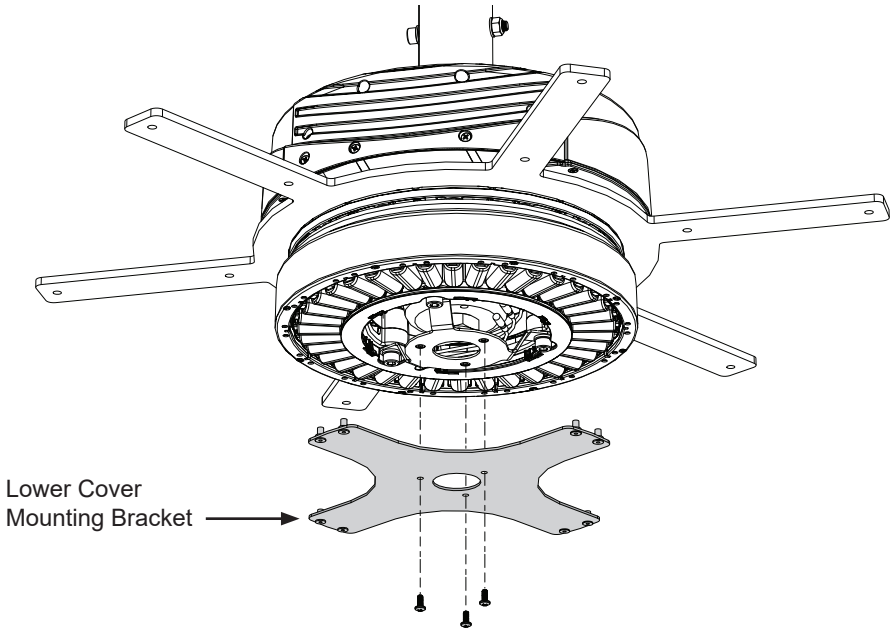
Remove the protective plastic cover from the bottom of the main fan unit before installing the mounting bracket.

Ensure that the three (3) stator wires on the bottom of the main fan unit are tucked in securely before installing the mounting bracket. Be careful not to damage the stator wires while installing the mounting bracket and lower cover.

⚠ **WARNING: Disconnect power to the fan before installing the lower cover mounting bracket and lower cover.**

Attach the lower cover mounting bracket to the bracket on the bottom of the main fan unit using the Lower Cover Mounting Bracket Hardware as shown. Loosely attach all three (3) screws, and then tighten them.

Lower Cover Mounting Bracket Hardware:
(3) 8-32 x 3/8" Pan Head Screw



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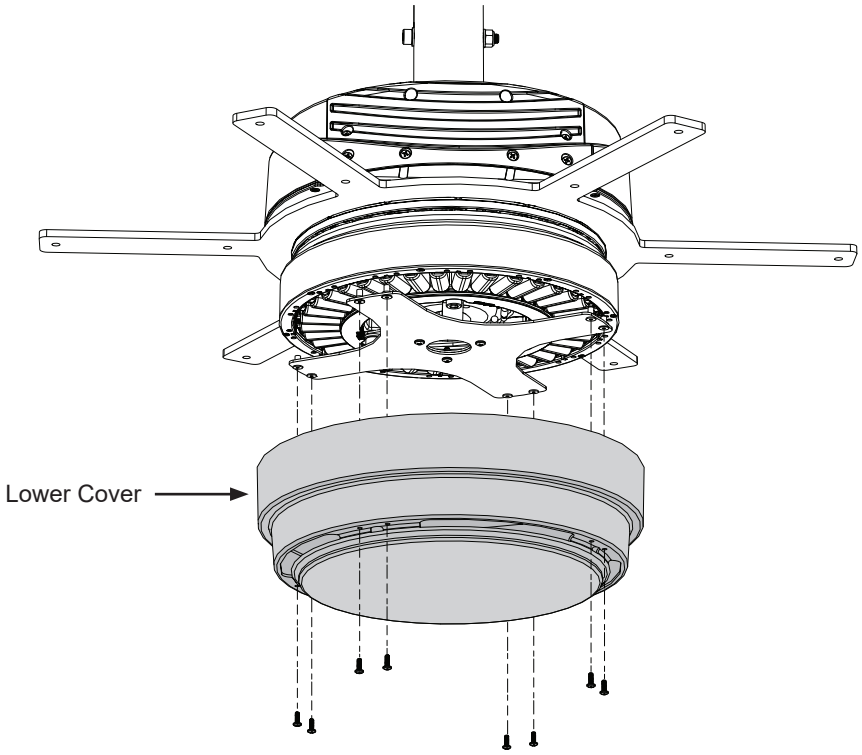
15. Install lower cover

⚠ **WARNING: Disconnect power to the fan before installing the lower cover mounting bracket and lower cover.**

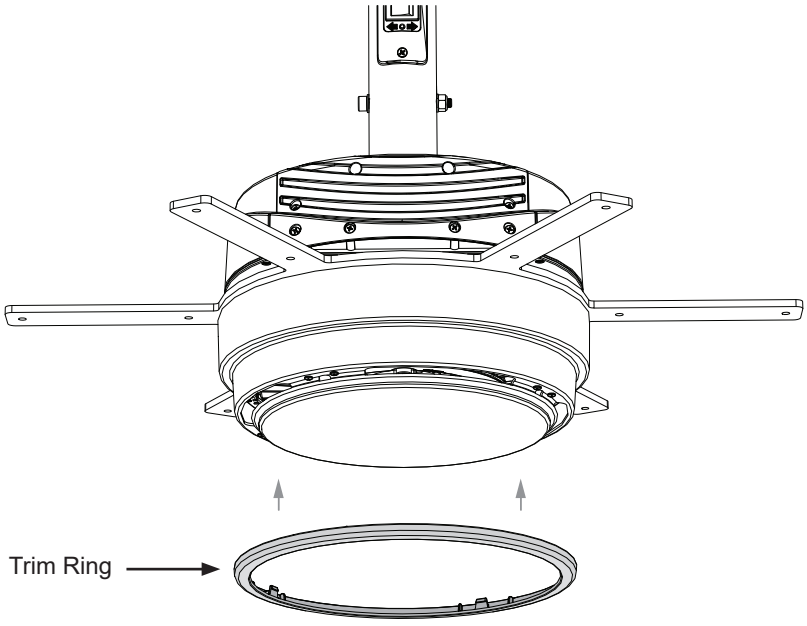
Attach the lower cover to the lower cover mounting bracket using the Lower Cover Hardware as shown. Loosely attach all eight (8) screws, and then tighten them.

Lower Cover Hardware:
(8) 6-32 x 3/8" Pan Head Screw



16. Install trim ring

Snap the trim ring onto the lower cover as shown.



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Installing Guy Wires

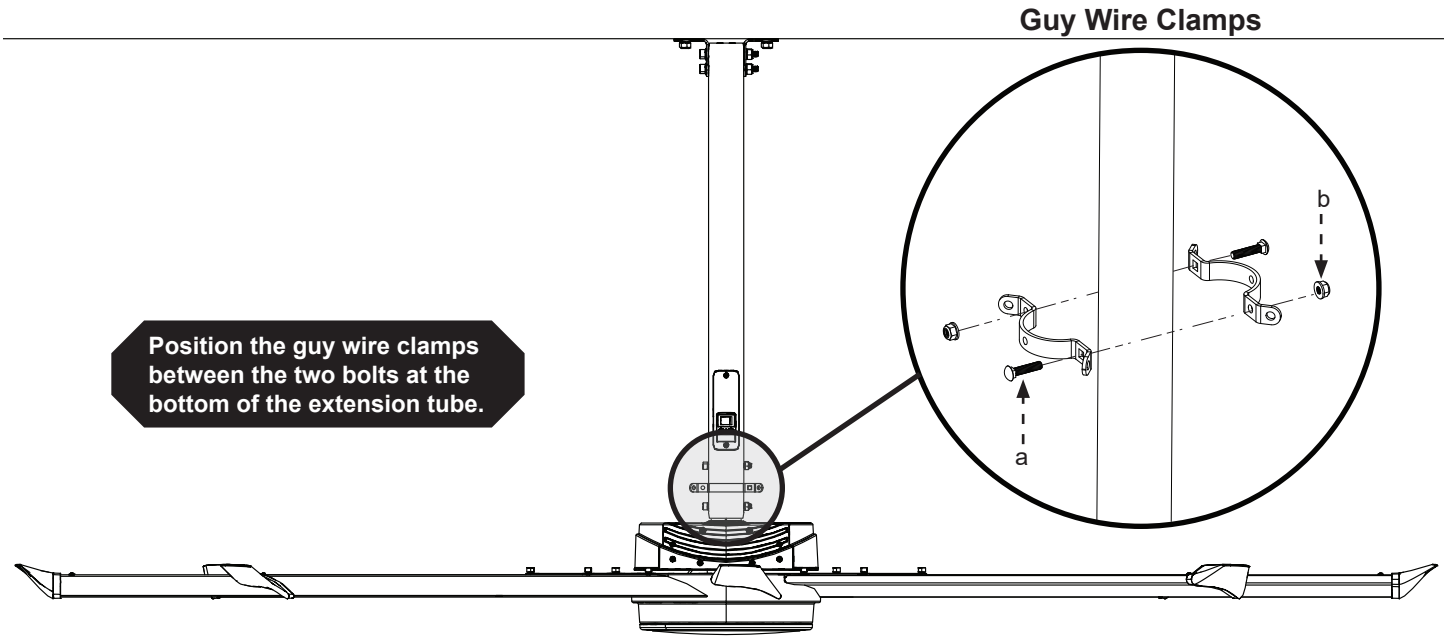
Guy wires are designed to constrain the fan's lateral movement. Big Ass Fans recommends using guy wires if you are installing the 4-ft (1.2 m) extension tube, if the fan is exposed to high winds or similar conditions, or if the fan is close to any building fixtures.

⚠ **WARNING: Disconnect power to the fan before installing the guy wires.**

1. Attach guy wire clamps

Position the guy wire clamps between the two bolts at the bottom of the extension tube. Refer to the diagram below. Secure the clamps to the extension tube using the Guy Wire Hardware.

Guy Wire Hardware:
a. (2) 1/4-20 x 1" Carriage Bolt
b. (2) 1/4-20 Nylock Flange Nut



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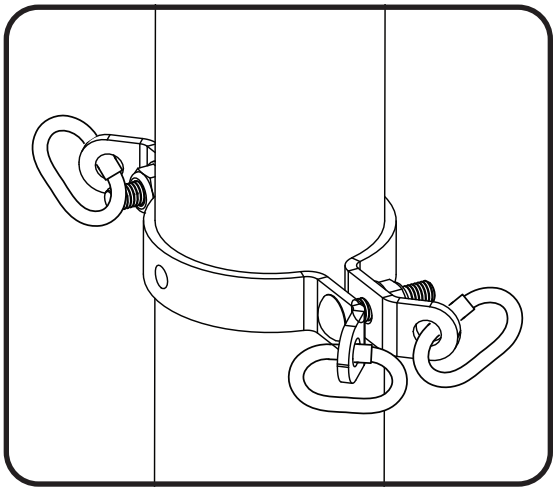
2. Attach locking carabiners to guy wire clamps

Secure the four (4) locking carabiners to the guy wire clamps as shown.

Securely tighten the carabiners.



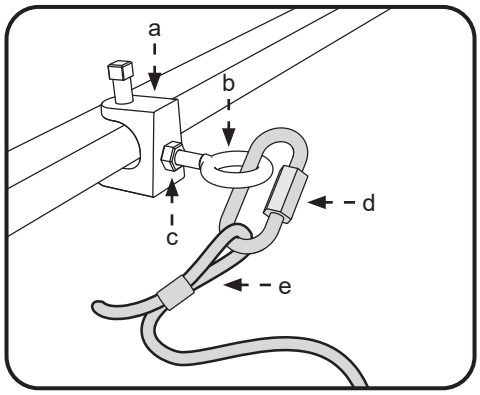
3. Attach beam clamp

The guy wire should be at a 45° angle from the extension tube (see the illustrations on the following page). Attach the beam clamp to the mounting structure accordingly.

For best results, the guy wires should be installed at 45° in the X-Y, Y-Z, and X-Z planes as shown on the following page. If the angle deviates by more than 15°, contact Customer Service for assistance.

Fasten the small eyebolt and nut onto the beam clamp (the nut will be on the outside of the beam clamp).

Loop the crimped end of the guy wire into the locking carabiner and secure to the eyebolt as shown. Securely tighten the carabiner.



Guy Wire Hardware:
a. 1/4” Beam Clamp
b. 1/4-20 x 1” Eyebolt
c. 1/4-20 Hex Nut
d. Locking Carabiner
e. Guy Wire

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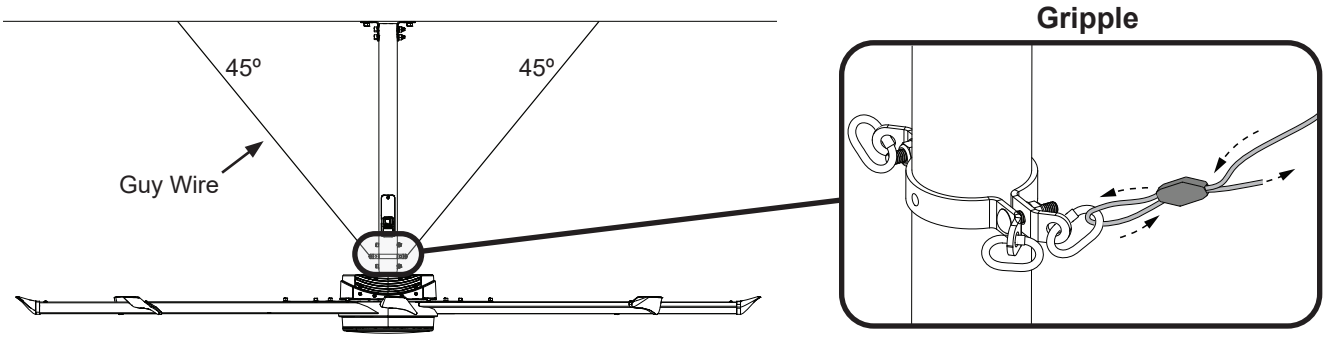
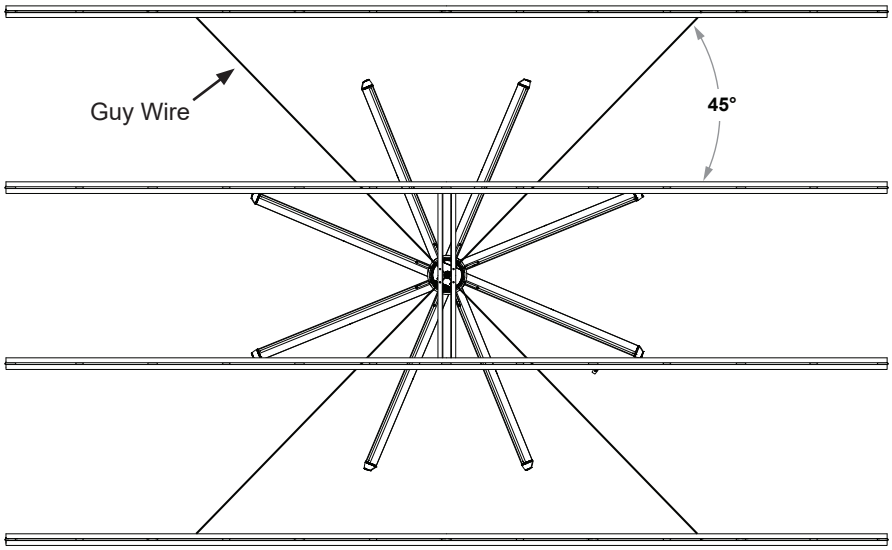
4. Route guy wire through Gripple®

Route the guy wire through the Gripple® and the carabiner on the guy wire clamp, and then back through the Gripple as shown below. **Do not tighten the Gripple until the remaining guy wires have been installed.**

Note: To back the guy wire out of the Gripple, insert the small tool included with the Gripple set or a 0.050" Allen wrench into the small hole on the Gripple.

Note: Angle irons mounted to bar joists are shown in the illustration below. Your mounting structure may differ.





5. Install three remaining guy wires

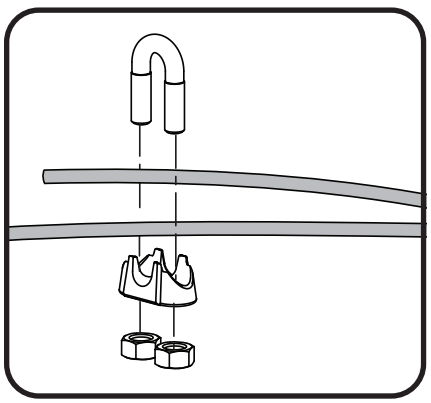
⚠ **CAUTION: Over-tightening the guy wires could throw the fan off balance.**

Repeat steps 3–4 to install the three remaining guy wires.

Evenly cinch all four guy wires into place using the Gripples. The guy wires should be taut, evenly spaced around the fan, and away from the path of the airfoils. Maintain a distance of 6”–8” between the Gripple and the carabiner.

Once all of the guy wires are taut, secure their loose ends with the wire rope clips and torque to **4.5 ft·lb (6.1 N·m)**. *Ensure all electrical cords/cables are unobstructed by the guy wire system.*

Wire Rope Clip



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Installing Airfoils

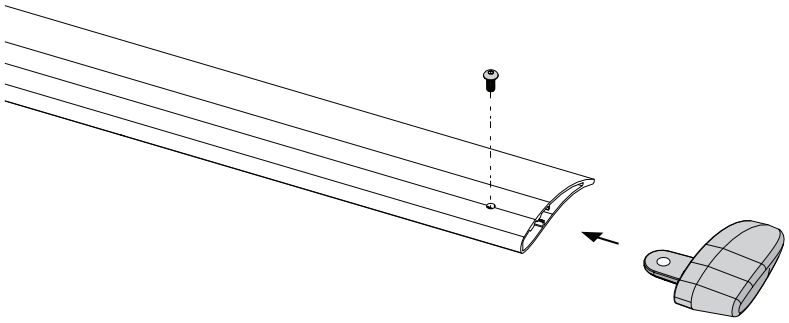
Big Ass Fans recommends wiring the fan (page 22) before installing the airfoils.

⚠ **WARNING: Disconnect power to the fan before installing the airfoils.**

1. Attach airfoil tips (to airfoils)

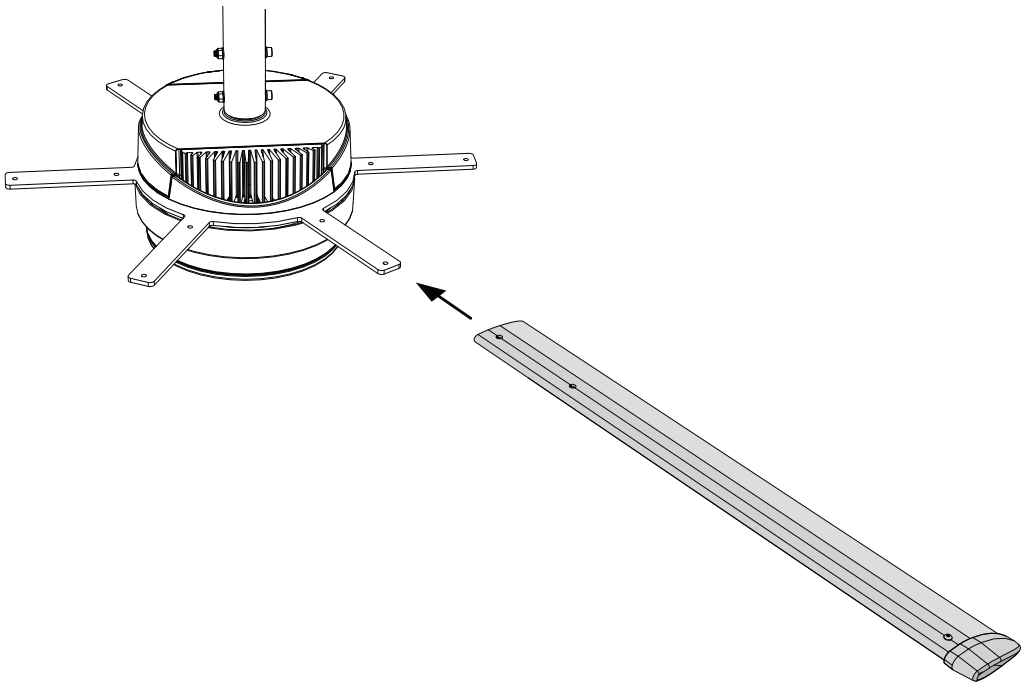
Attach the airfoil tips to the airfoils using the Airfoil Tip Hardware as shown. Securely tighten the screws using a 3 mm Allen wrench. Attach airfoil tips to all six (6) airfoils before attaching the airfoils to the fan.

Airfoil Tip Hardware:
(6) M5 x 12 mm Button Head Screw



2. Position airfoils

Slide the airfoils onto the tabs as shown.



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3. Attach airfoils (to main fan unit)

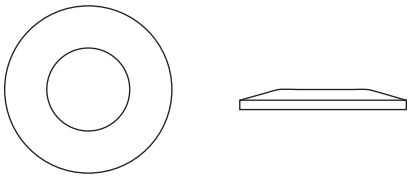
⚠ **WARNING: Disconnect power to the fan before installing airfoils.**

Attach the six (6) airfoil retainers using the Airfoil Hardware. Moving clockwise around the fan hub, position the airfoil retainers as shown. Hole A of the retainer should be positioned over top of Hole B. **Do not tighten the bolts until all airfoil retainers have been attached!**

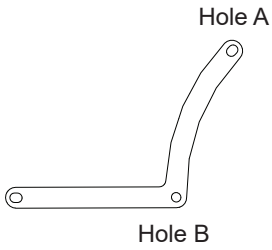
Tighten the bolts along the outside perimeter to **29 ft·lb (39.3 N·m)** using a torque wrench with a 6 mm Allen head socket. After the outer perimeter bolts are torqued, tighten the bolts along the inner perimeter to **29 ft·lb (39.3 N·m)**.

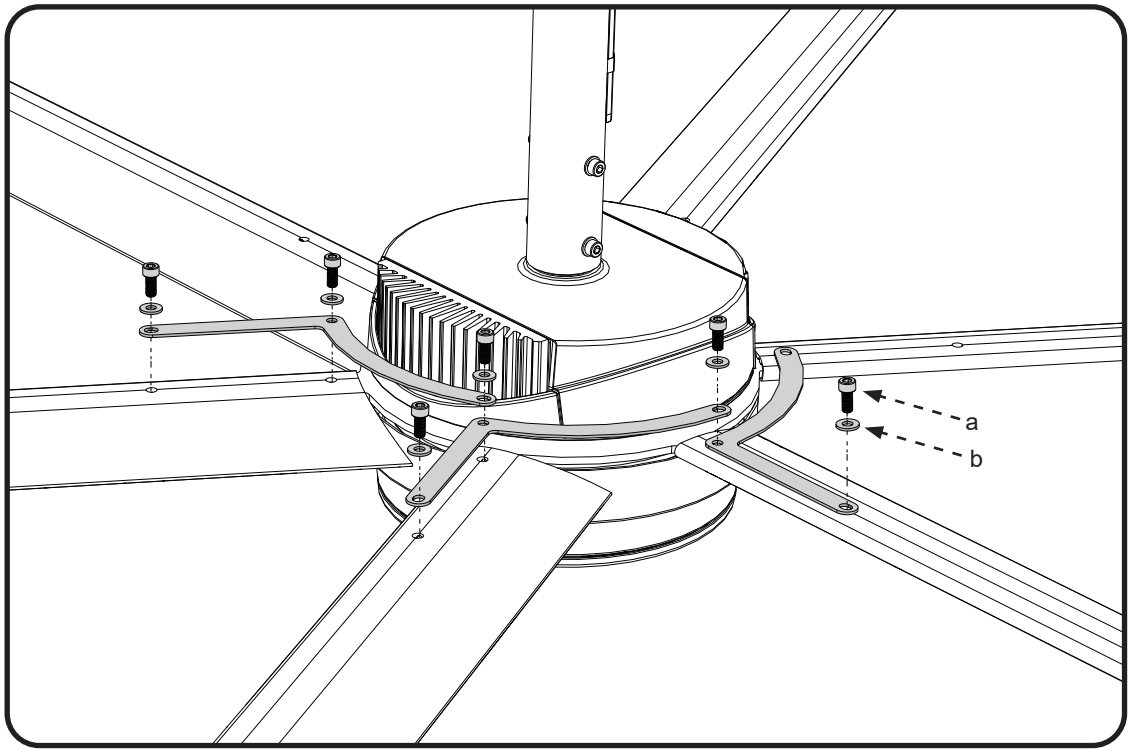
Airfoil Hardware:
a. (12) M8 x 18 mm Socket Head Cap Screw
b. (12) 8 mm Belleville Washer

Belleville Washer



Airfoil Retainer





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Wiring the Fan

⚠ **WARNING: To reduce the risk of electric shock, wiring should be performed by a qualified electrician! Incorrect assembly can cause electric shock or damage the motor and the controller! Hazard of electrical shock!**

⚠ **WARNING: The installation of a Big Ass Fan must be in accordance with the requirements specified in this installation manual and with any additional requirements set forth by the National Electric Code (NEC), ANSI/NFPA 70-2011, and all local codes. Code compliance is ultimately YOUR responsibility!**

⚠ **WARNING: Exercise caution and common sense when powering the fan. Do not connect the fan to a damaged or hazardous power source. Do not attempt to resolve electrical malfunctions or failures on your own. Contact Big Ass Fans if you have any questions regarding the electrical installation of this fan.**

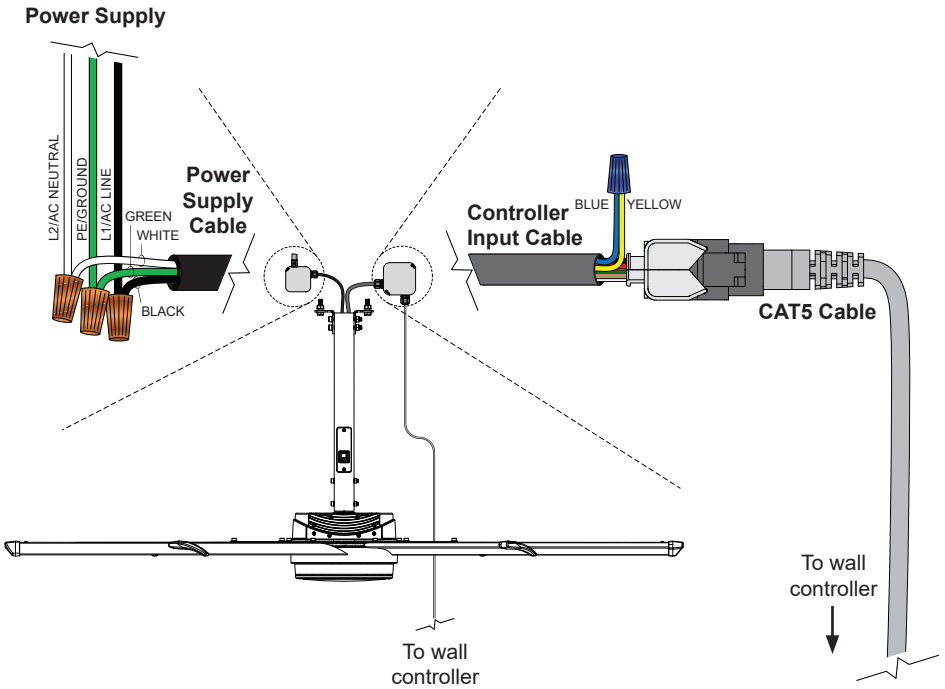
Power requirements

The fan is shipped with either a 110–125 VAC motor or a 200–240 VAC motor. The fan's voltage is marked on the fan packaging and on the label on top of the main fan unit. **The voltage cannot be changed during installation**. Ensure your fan is the correct voltage prior to beginning installation.

Model	Diameter	Input power	Minimum circuit size	Rated current
E7	7 ft (2.13 m)	110–125 VAC, 50/60 Hz, 1Φ	10 A	5.5 A
		200–240 VAC, 50/60 Hz, 1Φ	10 A	3.4 A
E10	10 ft (3.05 m)	110–125 VAC, 50/60 Hz, 1Φ	10 A	6.0 A
		200–240 VAC, 50/60 Hz, 1Φ	10 A	4.0 A
E12	12 ft (3.66 m)	110–125 VAC, 50/60 Hz, 1Φ	10 A	4.1 A
		200–240 VAC, 50/60 Hz, 1Φ	10 A	3.0 A

Wire color chart and wiring diagram

	AC Line (L1)	AC Line/Neutral (L2/N)	Earth/PE
North America 100–120 V system	Black	White	Green or Bare Copper
North America 208–240 V system	Black, Red, or Blue	Red, Blue, or Black	
Australia	Brown or Red	Black or Light Blue	Green with Yellow Tracer
All other regions	Brown	Blue	



Controller Input Cable

White	+0-10 VDC Speed Ref.
Brown	Not Used
Orange	Status LED (+)
Yellow	Run Enable Closed: Enable, Open: Disable
Blue	
Green	Status LED (-)
Red	+10 VDC Supply
Black	DC Common

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Wiring: Fire signal relay

⚠ **WARNING: To reduce the risk of electric shock, wiring should be performed by a qualified electrician! Incorrect assembly can cause electric shock or damage the motor and the controller! Hazard of electrical shock!**

⚠ **CAUTION: Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards.**

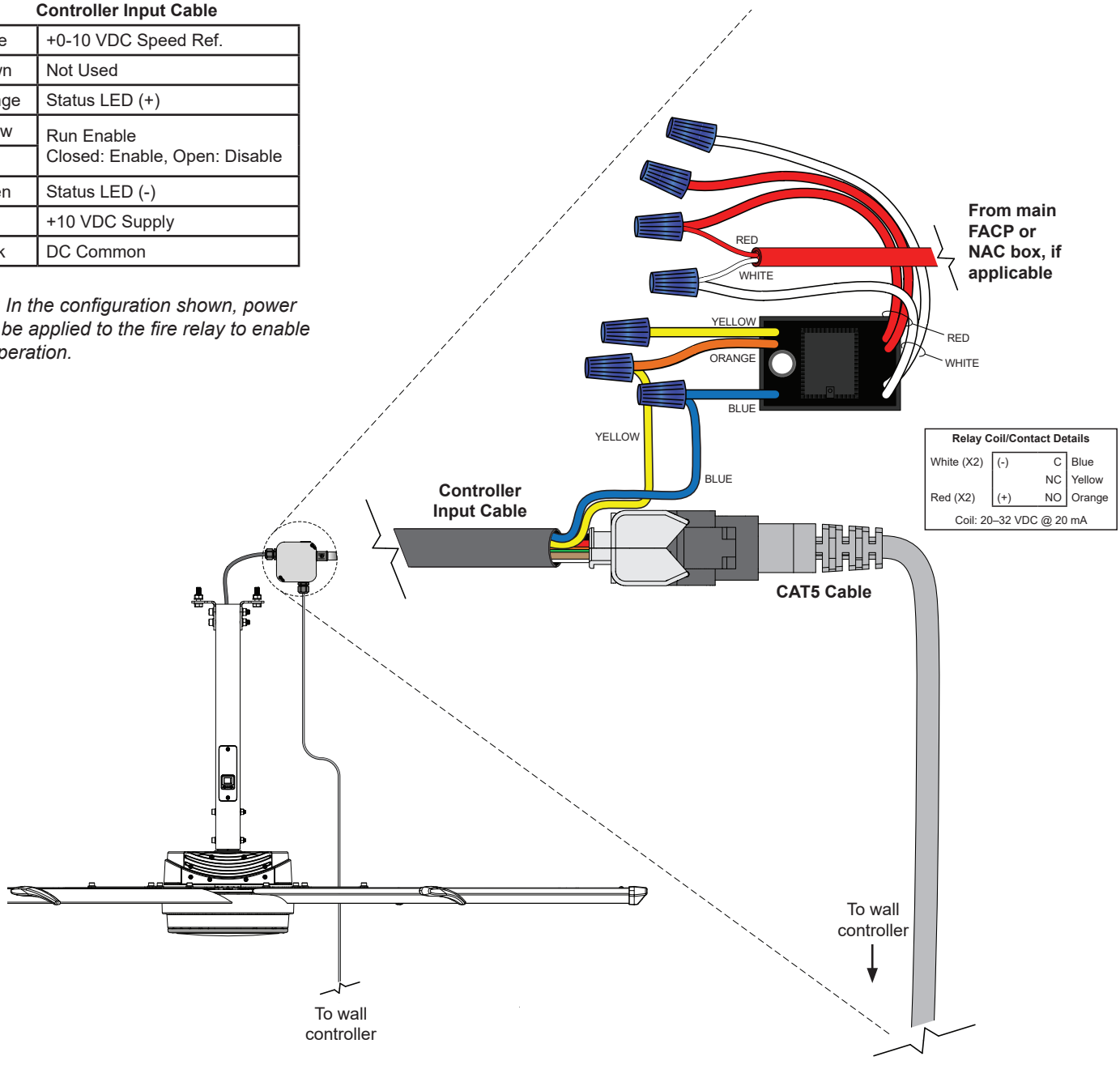
ATTENTION: If installing the fire relay, the fan must be installed per the following National Fire Protection Association (NFPA) guidelines:
- **The fan must be centered approximately between four adjacent sprinklers.**
- **The vertical distance from the fan to the sprinkler deflector must be at least 3 ft (91.4 cm).**
- **The fan must be interlocked to shut down immediately upon receiving a waterflow signal from the alarm system.**

The fire relay is provided for fans that will be installed in buildings that have a fire sprinkler system. The fire relay integrates the fan with the sprinkler system and shuts down the fan upon receiving an alarm signal from the system.

Controller Input Cable

White	+0-10 VDC Speed Ref.
Brown	Not Used
Orange	Status LED (+)
Yellow	Run Enable Closed: Enable, Open: Disable
Blue	
Green	Status LED (-)
Red	+10 VDC Supply
Black	DC Common

Note: In the configuration shown, power must be applied to the fire relay to enable fan operation.



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24 Mounting the Wall Controller

Make sure the CAT5 controller cable is routed from the junction box to the controller installation location. Refer to the instructions that came in the controller box for controller installation details.

Operating the Fan

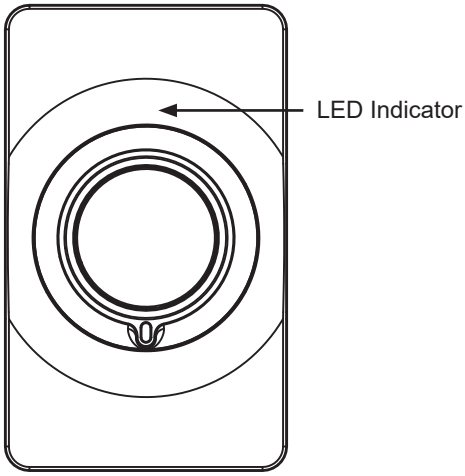
Operating the wall controller

To start the fan, turn the control knob on the wall controller clockwise. *Note: The LED indicator at the top of the controller is lit when the fan is turned on. The LED indicator will flash an error code if there is a problem with the fan. See page 28 for LED error codes.*

To stop the fan, turn the control knob counterclockwise.

To increase fan speed, turn the control knob clockwise.

To decrease fan speed, turn the control knob counterclockwise.

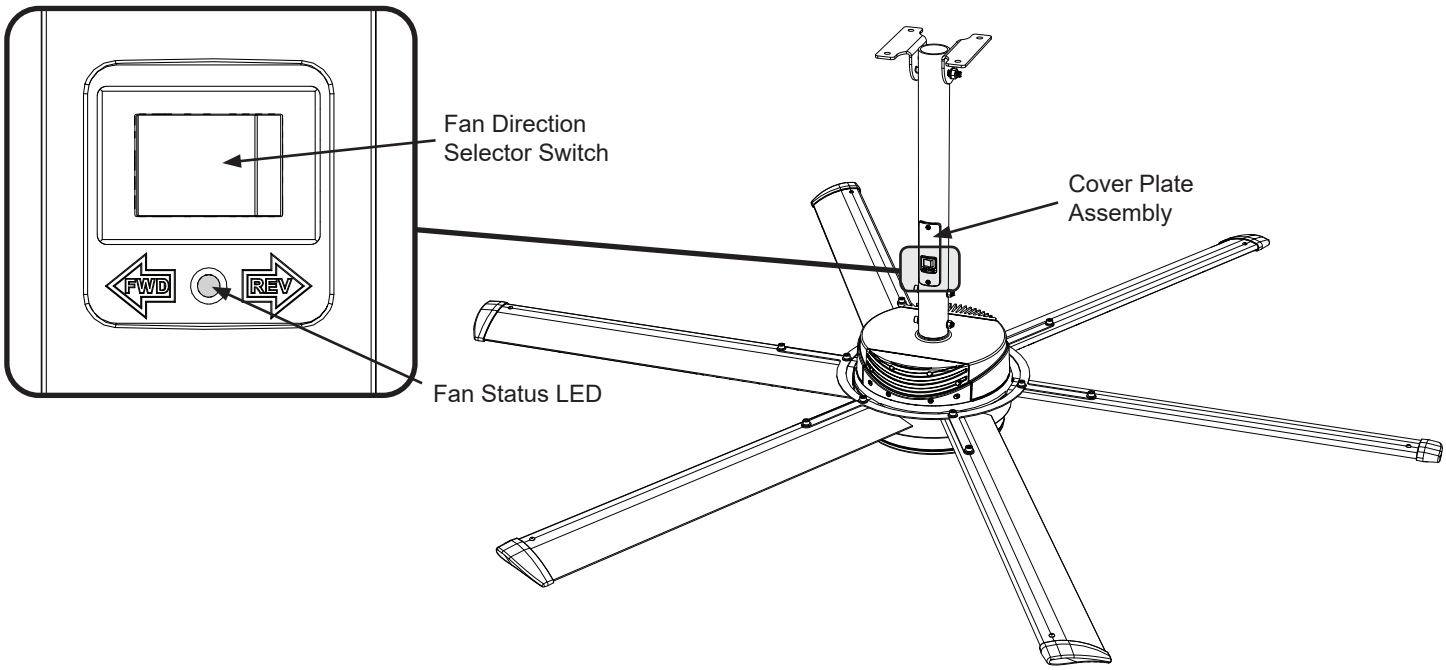


Note: The fan may take 30–60 seconds to start rotating after it is turned on. It is normal to see an initial slight jerking forward and backward upon startup as the fan positions itself relative to the motor stator.

Changing the fan direction

Big Ass Fans recommends operating the fan in the forward (FWD) direction. The fan should be rotating counterclockwise when viewed from below.

To reverse the direction of the fan, remove power from the fan. Select the direction of the fan using the fan direction selector switch located on the fan's cover plate assembly. Reapply power to the fan. For fan status LED definitions, see page 28.



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Preventive Maintenance 25

⚠ **WARNING: Before servicing or cleaning unit, switch power off at the service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device (such as a tag) to the service panel.**

⚠ **WARNING: When service or replacement of a component in the fan requires the removal or disconnection of a safety device, the safety device is to be reinstalled or remounted as previously installed.**

Please take a few moments each year to perform the following preventive maintenance inspection on your fan to ensure its safe and efficient operation. Before contacting Customer Service, try resolving the issue using the troubleshooting procedures on page 27. If you have any questions, contact Customer Service.

Annual preventive maintenance

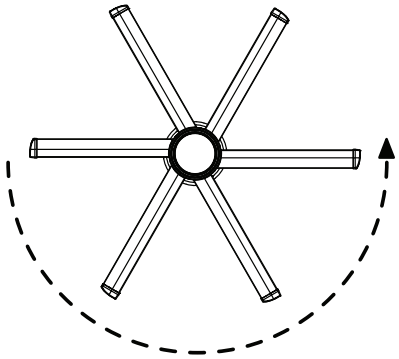
Perform the following maintenance procedures each year using the Annual Maintenance Checklist on page 26.

1. Ensure all upper mounting bolts are present and torqued to 25 ft·lb (33.9 N·m).
2. Ensure airfoils are secured to one another by airfoil retainers.
3. Ensure all 12 bolts securing the airfoils to the fan are present and torqued to 29 ft·lb (39.3 N·m).
4. Ensure the two (2) bolts securing the extension tube to the main fan unit are present and torqued to 25 ft·lb (33.9 N·m).
5. Ensure all airfoil tip hardware is secure.
6. Check guy wires (if installed) for fraying or damage (not shown in the illustration below).

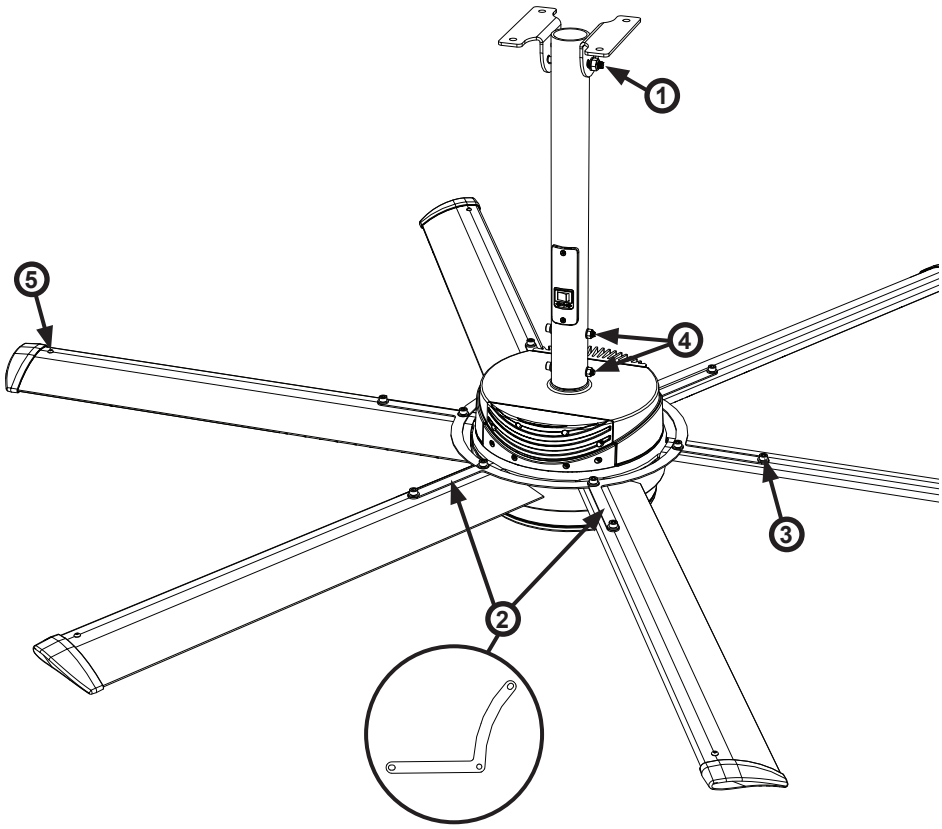
General preventive maintenance

- Verify proper fan rotation. To be effective, the fan must be turning counterclockwise when viewed from the floor.
- Dust airfoils and motor. If desired, use a gentle cleaner or degreasing agent to polish the airfoils. Do not use Clorox® or other chlorine based cleaners! This could result in the release of toxic/fatal fumes. Do not use cleansers on the electronics enclosure.
- Check that the safety cable and upper mounting system are secure.
- Observe the motion of the fan during operation. The fan should not wobble or precess. If any wobble is noticed, ensure the mounting structure is rigid enough to support the fan and that the guy wires, if used, are sufficiently taut. If guy wires were not used, Big Ass Fans suggests installing them. Contact Customer Service.

⚠ **WARNING: Do not operate a fan with missing or damaged components. Please contact Customer Service.**



View from Below



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Annual Maintenance Checklist

Fan Model:

Serial #:

Location:

Date	Initials

Fan Model:

Serial #:

Location:

Date	Initials

Fan Model:

Serial #:

Location:

Date	Initials

⚠ **WARNING: When servicing or replacement of a component in the fan requires the removal or disconnection of a safety device, the safety device is to be reinstalled or remounted as previously installed.**

⚠ **CAUTION: Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.**

⚠ **WARNING: Before servicing or cleaning unit, switch power off at the service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.**

General troubleshooting

Some issues can be resolved before requesting service. Review the below troubleshooting tips before contacting Customer Service for support.

Symptom	Possible solution(s)
A popping noise is coming from the fan. Airfoil noise is a result of airfoils that are not tightened to the specified torque.	Switch off power at the service panel and lock the service disconnecting means. (If it cannot be locked, fasten a prominent warning device.) Tighten the airfoil hardware to 29 ft·lb (39.3 N·m). If popping still occurs, verify that the airfoils are not contacting each other. If the airfoils are contacting each other, please contact Customer Service.
The fan will not start.	Verify the following: • All wires are securely connected. • The blue wire and the yellow wire on the controller input cable are wired together. See pages 22–23 for wiring details. • The wall controller has power. • Supply power is adequate and functional. • All fuses are functional. If a fuse is blown, see page 29 for instructions on replacing fuses. If the fan still does not start, contact Customer Service.
The LED on the wall controller is flashing. The LED on the wall controller will flash an error code if there is a problem with the fan.	See the following page for fan error code descriptions and possible solutions.
The fan jerks upon startup.	This is normal and may happen occasionally upon startup as the fan positions itself relative to the motor stator. An initial slight jerking forward and backward does not affect fan operation.

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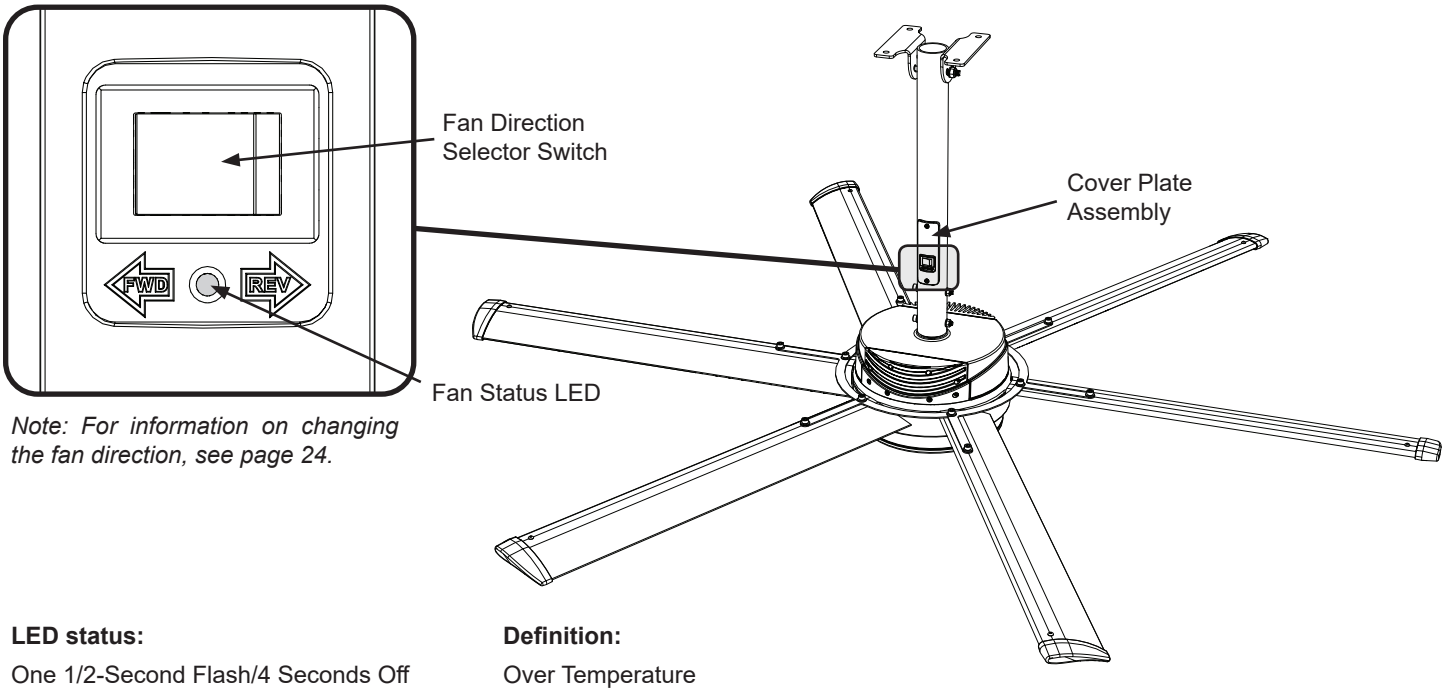
Electrical troubleshooting

Fan status LED definitions

The fan direction selector switch and fan status LED are located on the cover plate assembly at the bottom of the fan's extension tube.



Note: For information on changing the fan direction, see page 24.

LED status:	Definition:
One 1/2-Second Flash/4 Seconds Off	Over Temperature
Two 1/2-Second Flashes/4 Seconds Off	Motor Stall
Three 1/2-Second Flashes/4 Seconds Off	Output Device Failure
Four 1/2-Second Flashes/4 Seconds Off	Internal Communication Error
Five 1/2-Second Flashes/4 Seconds Off	DC Buss Undervoltage
Six 1/2-Second Flashes/4 Seconds Off	DC Buss Over Voltage
Seven 1/2-Second Flashes/4 Seconds Off	Run Enable Jumper Open
Eight 1/2-Second Flashes/4 Seconds Off	Motor Overload/Thermal Trip
Nine 1/2-Second Flashes/4 Seconds Off	Current Limit/Short Circuit

Fan status LED troubleshooting

LED code	Description/Possible cause(s)	Possible solution(s)
Over Temperature	The fan drive electronics have exceeded safe operating temperature limits.	The fan will shut down for five (5) minutes and then attempt to restart two (2) times. If the fan does not restart after two attempts, reset power to the fan. If the fan still does not restart, contact Customer Service.
Output Device Failure	The fan drive electronics have failed or output phase loss has occurred.	
Internal Communication Error	The main fan drive has failed to respond to the command source (daughterboard, etc.).	
DC Buss Undervoltage	Buss voltage has fallen below 255 VDC.	
DC Buss Over Voltage	Buss voltage has exceeded 373 VDC.	
Motor Overload/Thermal Trip	Thermal motor overload protection has been activated.	
Current Limit/Short Circuit	The hardware current limit has been reached. A severe overload or short circuit condition exists on the fan drive output.	
Motor Stall	The fan failed to accelerate to the target RPM within one (1) minute of startup.	The fan will shut down and will not attempt to restart. Contact Customer Service.
Run Enable Jumper Open	The run enable circuit is open and motor operation is disabled.	Make sure the blue wire and the yellow wire on the controller input cable are wired together. See pages 22–23 for wiring details.

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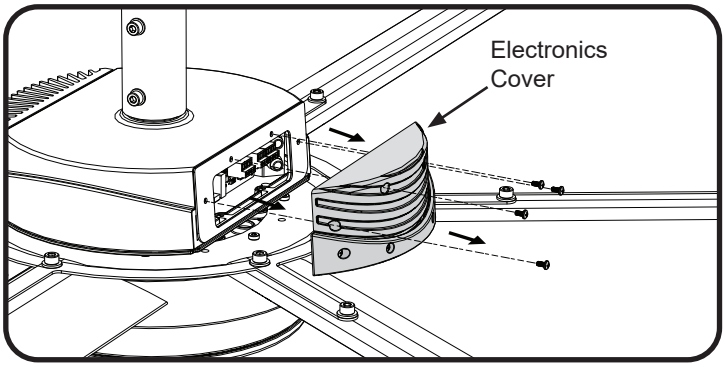
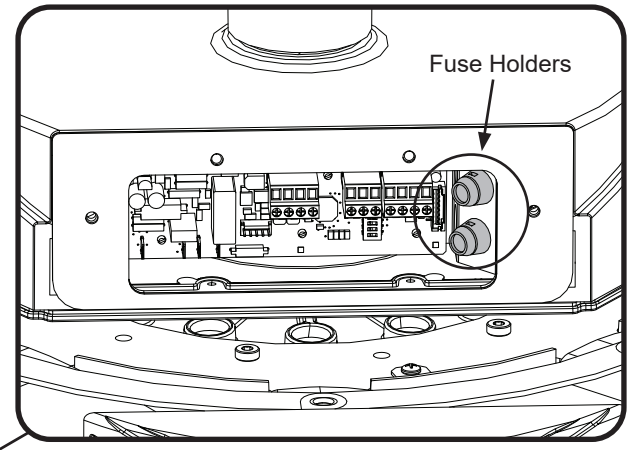
Replacing fuses

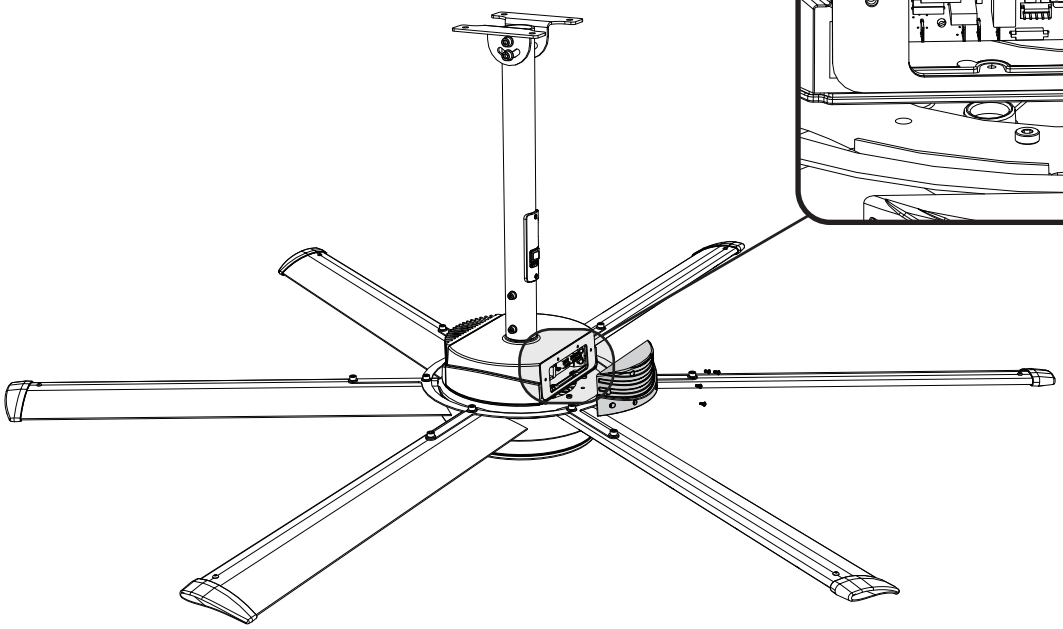
⚠ **WARNING: Ensure power is disconnected before replacing fuses.**

⚠ **CAUTION: Do not touch the fan's electronics unless necessary!**

To replace the fuses on the main fan unit, remove the electronics cover from the fan as shown. The electronics cover is attached to the fan with four (4) screws. Gently twist and pull out the appropriate fuse holder, and replace the fuse. Reinstall the fuse holder, and then reattach the fan's electronics cover. See below for fuse recommendations.

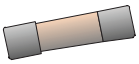






Suitable Fuse Replacements
250 VAC 10 A (AC Mains Supply)

- Bussman S505 Series
- Littelfuse 215 Series
- Mersen Fuse GSF
- Bel Fuse 5HT



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CONTACT US

Talk to a Big Ass Fan Expert. Call us at one of the numbers below or visit www.bigassfans.com

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Manufacturing and Warranty

You are responsible for providing and paying for shipping when returning a product to Big Ass Fans for the purpose of recycling under the WEEE directive.

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Warranty and WEEE Returns
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Lexington, KY 40511
USA

Manufacturing Site
2251 Innovation Drive
Lexington, KY 40511
USA

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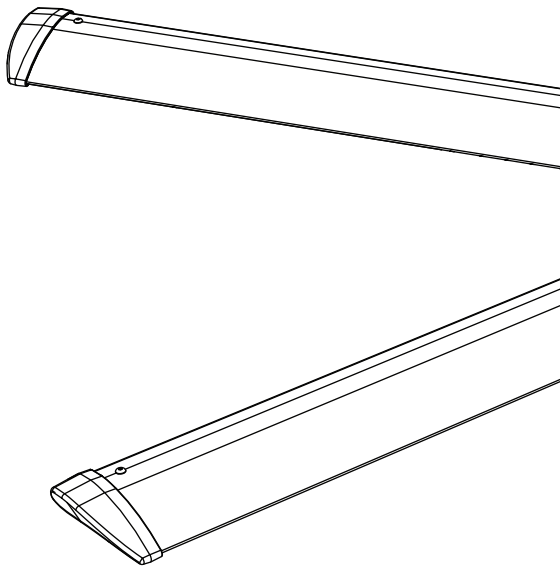

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