

## Installation, Operation and Maintenance Manual

Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.



Model DM overhead ceiling fans are ideal for providing year-round comfort in air circulation and destratification applications. Designed for commercial spaces with low to medium height ceilings, model DM provides quiet, comfortable air movement that maximizes building efficiency by reducing load on the HVAC system. The DM's light-weight direct drive motor and compact design also result in effortless installation, making the DM a smart choice for any space.

### Required Tools

The following tools will be required to complete the installation of every DM fan. Additional tools may be required depending on the application and installation location of the fan.

- Hex Key Set with 2.5 mm, 3 mm, and 4 mm Hex Keys (Included)
- Socket Wrench with 10 mm Deep Well Socket
- 10 mm Wrench (Optional)
- Torque Wrench (Up to 100 in·lbf)
- Magnetic Level
- Wire Strippers

**NOTE:** Model DM fan components can weigh 20 lbs. or greater depending upon the fan size and accessories that are provided. A suitable means for lifting the weight of the fan to the mounting point, such as a ladder or scissor lift, should be used for all DM fan installations.

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General Information

General Safety Information

**IMPORTANT:** To reduce the risk of fire, electric shock, or injury to persons, Model DM fans must be installed with a mount assembly, motor assembly and airfoils that are marked (on their cartons) to indicate suitability with this model. Other mounts, motors, and airfoils cannot be substituted.

Only qualified personnel should install this fan. Personnel should have a clear understanding of these instructions and should be aware of general safety precautions. Improper installation can result in electric shock, possible injury due to coming in contact with moving parts, as well as other potential hazards. Other considerations may be required if high winds or seismic activity are present. If more information is needed, contact a licensed professional engineer before moving forward.

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the National Fire Protection Agency (NFPA), where applicable. Follow the Canadian Electric Code (CEC) in Canada.
2. The rotation of the impeller is critical. It must be free to rotate without striking or rubbing any stationary objects.
3. Motor must be securely and adequately grounded.
4. Do not allow the power cable to kink or come in contact with oil, grease, hot surfaces or chemicals. Replace wiring immediately if damaged.
5. Verify that the power source is compatible with the equipment.

### WARNING

To reduce the risk of fire, electric shock, or injury to persons, observe the following:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
2. 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.

### WARNING

To reduce the risk of fire, electric shock, or injury to persons, observe the following:

1. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire rated construction.
2. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

### WARNING

To reduce the risk of fire or electric shock, do not use this fan with any sold-state speed control devices.

### WARNING

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

### DANGER

Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury.

### CAUTION

When servicing the fan, motor may be hot enough to cause pain or injury. Allow motor to cool before servicing.

### CAUTION

Precaution should be taken in explosive atmospheres.

### WARNING

To reduce the risk of personal injury, do not bend the blade brackets when installing the brackets, balancing the blades, or cleaning the fan. Do not insert foreign objects in between rotating fan blades.

### WARNING

To reduce the risk of fire, electric shock, or personal injury, mount directly to a structural framing member or to an outlet box marked "Acceptable for fan support of 15.9 kg (35 lbs.) or less." For outlet box mounting, use mounting screws provided with the outlet box.

### AVERTISSEMENT

Pour réduire le risque d'incendie, de choc électrique ou de blessure corporelle, respecter ce qui suit :

1. Utiliser cet appareil exclusivement comme prévu par le fabricant. En cas de questions, communiquer avec le fabricant.
2. Avant tout entretien ou nettoyage de l'appareil, couper l'alimentation sur le tableau de commande et verrouiller le dispositif de sectionnement pour empêcher toute mise sous tension accidentelle. Si le dispositif de sectionnement ne peut pas être verrouillé, attacher un moyen de mise en garde bien visible, tel qu'un panneau, au tableau de commande.

### AVERTISSEMENT

Pour réduire le risque d'incendie, de choc électrique ou de blessure corporelle, respecter ce qui suit :

1. La pose et le câblage électrique doivent être effectués par des personnes qualifiées en conformité avec les codes et normes en vigueur, y compris pour la résistance au feu du bâtiment.
2. Lors de la découpe ou du perçage de murs ou plafonds, ne pas endommager les câbles électriques et autres conduites masquées.

### AVERTISSEMENT

Pour réduire le risque d'incendie ou de choc électrique, ne pas utiliser ce ventilateur avec un quelconque dispositif de régulation de vitesse à semi-conducteurs.

### AVERTISSEMENT

Cet appareil peut être utilisé par des enfants âgés de 8 ans et plus et par des personnes aux capacités physiques, sensorielles ou mentales réduites ou qui manquent d'expérience et de connaissances s'ils sont surveillés ou ont reçu des instructions concernant l'utilisation sécuritaire de l'appareil et comprennent les risques encourus. Les enfants ne doivent pas jouer avec l'appareil. Le nettoyage et l'entretien par l'utilisateur ne doivent pas être effectués par des enfants sans surveillance.

### DANGER

Pour écarter les risques d'incendie, de choc électrique ou de blessure grave, veiller à toujours débrancher, verrouiller et étiqueter la source de courant avant l'installation ou l'entretien.

**ATTENTION**

Lors de toute intervention sur la soufflante, le moteur peut être suffisamment chaud pour provoquer une douleur voire une blessure. Laisser le moteur refroidir avant toute maintenance.

**ATTENTION**

Faire preuve de précaution dans les atmosphères explosives.

**AVERTISSEMENT**

Afin de réduire les risques de blessure, ne pas plier les supports de pale lors de l'installation des supports, de l'équilibrage des pales ou du nettoyage du ventilateur. Ne pas insérer de corps étranger entre les pales en rotation du ventilateur.

**AVERTISSEMENT**

Afin de réduire les risques d'incendie, de décharge électrique ou de blessure, monter directement sur un élément structural ou sur une boîte de sortie indiquant la mention : « Acceptable pour un support de ventilateur de 15,9 kg (35 lb) ou moins ». En ce qui concerne le montage de la boîte de sortie, utiliser les vis de montage fournies avec la boîte de sortie.

**Receiving**

Upon receiving the product, check to ensure all items are accounted for by referencing the delivery receipt or packing list. Inspect each crate or carton for shipping damage before accepting delivery. Alert the carrier of any damage detected. The customer will note damage (or shortage of items) on the delivery receipt and all copies of the bill of lading which is countersigned by the delivering carrier. If damaged, contact your local representative immediately. Any physical damage to the unit after acceptance is not the responsibility of the manufacturer.

**Unpacking**

Verify that all required parts and the correct quantity of each item have been received using the component list on page 5. If any items are missing, report shortages to your local representative to arrange for obtaining missing parts. Sometimes it is not possible that all items for the unit be shipped together due to availability of transportation and truck space. Confirmation of shipment(s) must be limited to only items on the bill of lading.

**Storage**

Fans are protected against damage during shipment. If the unit cannot be installed and operated immediately, precautions need to be taken to prevent deterioration of the unit during storage. The user assumes responsibility of the fan and accessories while in storage. The manufacturer will not be responsible for damage during storage. These suggestions are provided solely as a convenience to the user.

**Indoor** - The ideal environment for the storage of fans and accessories is indoors, above grade, in a low humidity atmosphere that is sealed to prevent the entry of blowing dust, rain or snow. Temperatures should be evenly maintained between 30° to 110°F (-1° to 43°C). Wide temperature swings may cause condensation and “sweating” of metal parts. All accessories must be stored indoors in a clean, dry atmosphere.

Remove any accumulations of dirt, water, ice or snow and wipe dry before moving to indoor storage. To avoid “sweating” of metal parts, allow cold parts to reach room temperature. To dry parts and packages, use a portable electric heater to get rid of any moisture build up. Leave coverings loose to permit air circulation and to allow for periodic inspection.

The unit should be stored at least 3-1/2 in. (89 mm) off the floor on wooden blocks covered with moisture proof paper or polyethylene sheathing. Aisles between parts and along all walls should be provided to permit air circulation and space for inspection

**Inspection and Maintenance During Storage**

While in storage, inspect fans once per month. Keep a record of inspection and maintenance performed.

If moisture or dirt accumulations are found on parts, the source should be located and eliminated. If paint deterioration begins, consideration should be given to touch-up or repainting. Fans with special coatings may require special techniques for touch-up or repair.

Machined parts coated with rust preventive should be restored to good condition promptly if signs of rust occur. Immediately remove the original rust preventive coating with petroleum solvent and clean with lint free cloths. Polish any remaining rust from surface with crocus cloth or fine emery paper and oil. Do not destroy the continuity of the surfaces. Thoroughly wipe clean with Tectyl® 506 (Ashland Inc.) or the equivalent. For hard to reach internal surfaces or for occasional use, consider using Tectyl® 511M Rust Preventive, WD-40® or the equivalent.

**Removing from Storage**

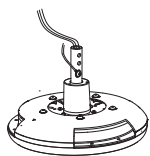
As fans are removed from storage to be installed in their final location, they should be protected and maintained in a similar fashion until the fan equipment goes into operation.

## Fan Components

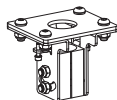
Verify that all of the following parts and hardware have been received prior to beginning installation. Contact your local representative or the manufacturer if replacement parts are required.

**NOTE:** Additional parts (provided by others) may be required to complete the fan installation, including additional wiring and hardware for connecting the fan mount to the building structure.

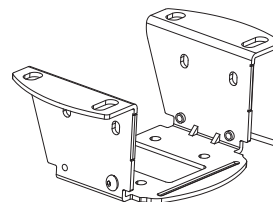
**NOTE:** Hardware quantities listed below indicate what is required to complete installation. Hardware kits may include extra fasteners as a convenience.



**Motor/Hub Assembly (1)**



**Universal Mounting Bracket (1)**



**Universal Mounting Yoke (1)**



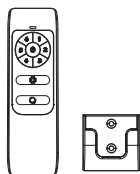
**Downtube Assembly (1)**



**Mount Cover (1)**



**Motor Driver Assembly (1)**



**RF Remote Control (1)**



**M6 x 20 mm Airfoil Screws (6)**



**Wire Nuts (6)**



**Hex Key Set (1)**



**Airfoil Blade (3)**

## Pre-Installation

### Pre-Installation Checks

**IMPORTANT:** Consult all applicable national, state and local codes to ensure that all necessary code requirements are met. It is the sole responsibility of the installer to ensure compliance with applicable codes.

Prior to installing the fan, perform each of the following checks:

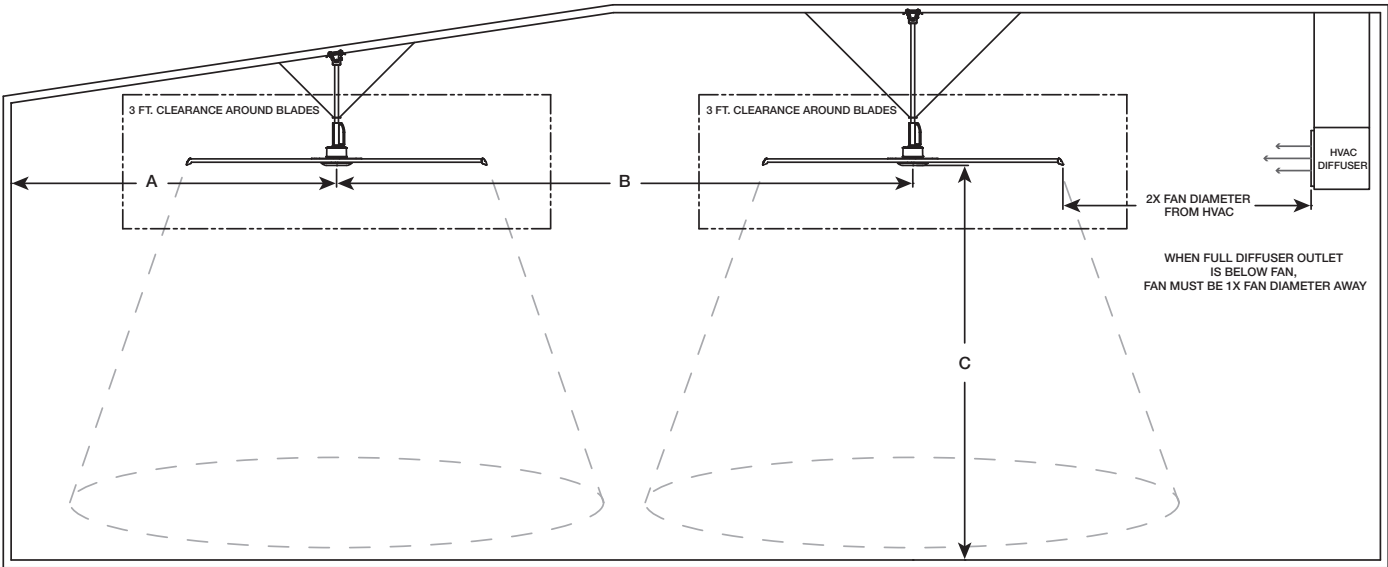
1. Verify that fan components are undamaged. Do not install or operate any damaged fan components, fans, or fan accessories. Failure to comply with this instruction may result in property damage, personal injury and/or death.
2. Verify that the fan is to be installed in a location where the airfoils will be a minimum of 7 feet above the finished floor with a minimum of 3 feet of horizontal and vertical clearance to any obstructions.
3. Verify that the fan is to be installed in a location where the center of the fan is a minimum of 1.5 fan diameters away from building walls and corners.
4. For best performance, the fan must be installed with a two fan diameter minimum clearance to radiant heaters and HVAC system discharges or intakes.
5. Check that the fan will not be mounted in a location near overhead doors or other building openings where gusts of wind may occur. Fan should not be installed or operated in locations where wind is present.
6. Check to see if the intended placement of the fan is directly below any building lights or skylights. If possible, avoid installing fan directly below a light source to prevent a strobing effect that can be caused by fan rotation.
7. If the building has a mezzanine or other elevated spaces that may be occupied by people, verify that no component of the fan can be reached from the highest level or deck. The fan must be positioned so that the tips of the airfoils are a minimum of 3 ft. away from the furthest point that a person could reach or otherwise come in contact, to prevent injury.
8. If the fan is to be mounted in an area where materials or equipment may be elevated into its path, ensure that the floor is marked or painted to alert personnel of the overhead location of the fan(s).
9. Before installation, it is important to verify that the mounting surface will bear the operating weight and maximum torque (twisting force) of the unit. The Structural Engineer of Record (SEOR) must perform a thorough evaluation of the mounting structure and determine all final mounting requirements before the fan is installed. It is the sole responsibility of the installer to ensure that the mounting structure and fan installation method are adequate for safe operation of the fan.

Fan Size	Fan Diameter (in.)	*Max. Fan Weight (lbs)	Max. Torque (ft·lbf)
5	60	26	1.1

\*Maximum weight is shown in pounds and includes all available options, actual fan weight may be less.



# Minimum Spacing Requirements



Fan Size (ft.)	Fan Diameter (in.)	Minimum Spacing From Center of Fan (ft.)		
		A	B	C
5	60	7.5	15	10

## Mechanical Installation

### Mounting Installation

DANGER
Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury.
DANGER
Pour écarter les risques d'incendie, de choc électrique ou de blessure grave, veiller à toujours débrancher, verrouiller et étiqueter la source de courant avant l'installation ou l'entretien.

#### Universal Mounting Kit

**IMPORTANT:** Structural Engineer of Record (SEOR) must perform thorough evaluation of mounting structure and determine final mounting requirements before fan is installed. Manufacturer is not liable for any problems that arise as the result of insufficient structure, including (but not limited to) vibration, noise, or safety hazards. Product warranty will be voided at manufacturer's discretion if structure is deemed insufficient.

Installations must comply with the following requirements at a minimum, but SEOR may require more stringent specifications at their discretion:

- ❑ Fans must be directly secured to structural member(s) that are an existing part of the building such as joists/trusses or beams. Do not install fan so that it is only supported by ceiling sheathing.

Required Loose Components (Included):

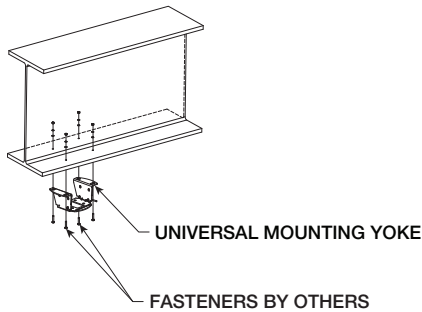
- Universal Mounting Yoke (1)

Hardware/Tools Needed (Not Included):

- Mounting Hardware, Specified By Others

1. Identify desired mounting location for fan on structural member(s) that are an existing part of the building. The Structural Engineer of Record (SEOR) must perform a thorough evaluation of the mounting structure and determine all final mounting requirements before the fan is installed. It is the sole responsibility of the installer to ensure that the mounting structure and fan installation method are adequate for safe operation of the fan.

2. Route supply power wiring (by others) to the fan's mounting location. Secure wiring to the building structure, making sure to follow all local and national electrical codes.
3. Install the universal mounting yoke on the bottom surface of the structural member(s) using appropriate fasteners (by others to accommodate varying material properties). Appropriate fasteners to be specified by structural engineer. Make sure that fasteners are adequately tightened.



## Motor/Hub to Downtube Installation

Required Loose Components (Included):

- Downtube Assembly (1)
- Motor/Hub Assembly (1)
- Mount Cover (1)
- Universal Mounting Bracket (1)
- Motor Driver Assembly (1)

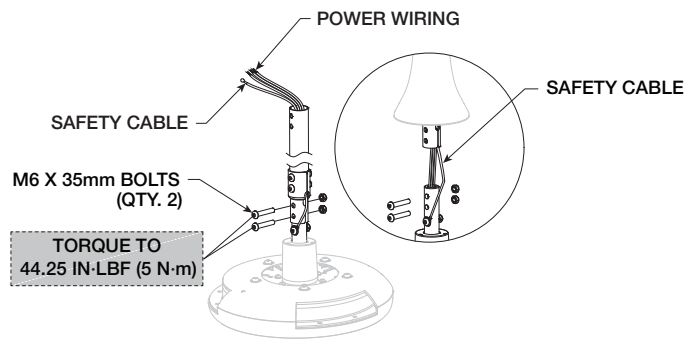
Hardware/Tools Needed:

- 3 mm and 4 mm Hex Keys (Included)
- Socket Wrench with 10 mm Deep Well Socket (Not Included)
- Torque Wrench (Up to 100 in-lbf, Not Included)
- Magnetic Level (Not Included)

1. Remove the pre-installed M6 x 35 mm bolts from the downtube assembly and set aside.
2. Feed the safety retention cable and power wiring pigtails that are attached to the motor/hub assembly up through the bottom of the downtube until the loose ends are accessible at the top of the downtube. Pull the loose ends of the safety retention cable and wiring pigtails from the top of the downtube until all of the slack is pulled through.
3. Carefully align the motor axle with the downtube opening, then slowly insert the motor axle until the axle is nested inside the downtube. Take care to align the motor axle holes with the downtube holes.

**IMPORTANT:** Do not allow safety cable or wiring to be crushed while nesting the motor axle inside the downtube. Safety cable must be kept taut inside the downtube in order to prevent damage. If either the safety cable or the wiring are damaged during installation, contact your local rep or the manufacturer.

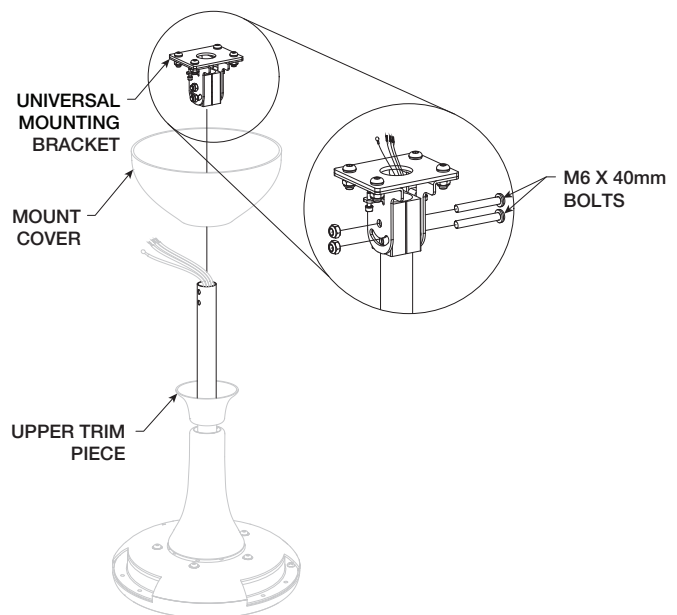
4. Reinstall the M6 x 35 mm bolts that were previously set aside to secure the motor/hub assembly to the downtube. Torque the bolts to 44.25 in-lbf (5 N·m).



5. Slide the mount cover over the downtube until it rests on top of the downtube's upper trim piece. Make sure that the mount cover is positioned so that the cavity is facing up.
6. Remove the pre-installed M6 x 40 mm bolts from the universal mounting bracket and set aside. Slide the universal mounting bracket over the downtube and align the holes in the bracket with the holes in the downtube.

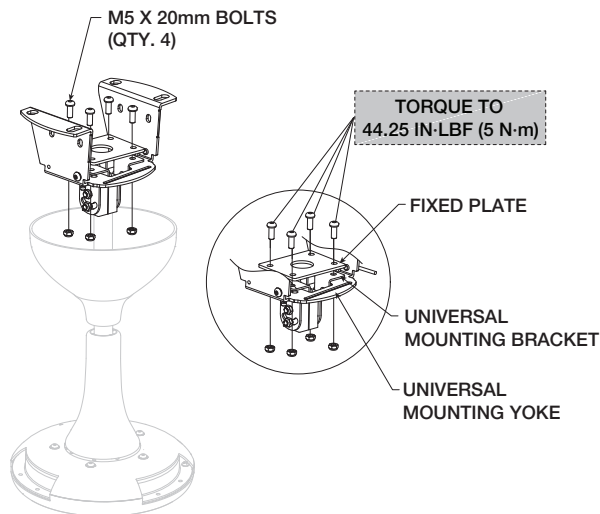
**NOTE:** The universal mounting bracket is designed to pinch the downtube for a secure connection. If needed, a rubber mallet may be used to gently tap the universal mounting bracket into place on the downtube.

7. Re-install the M6 x 40 mm bolts that were previously set aside to secure the universal mounting bracket to the downtube. Hand tighten hardware until the universal mounting bracket is securely attached to the downtube but can still be pivoted from side to side.

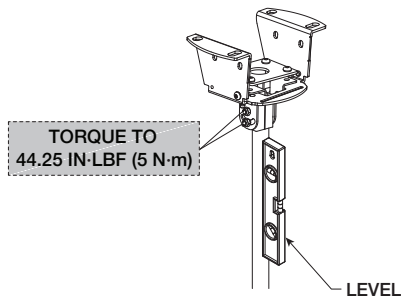




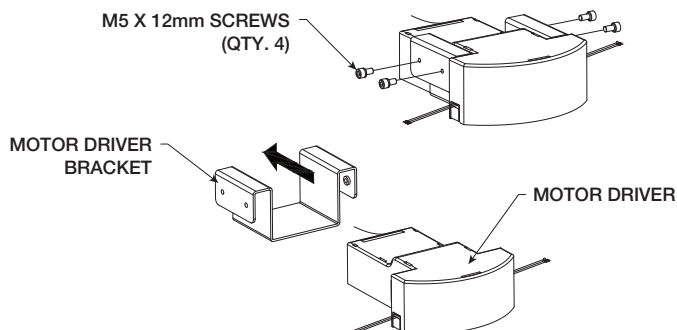
8. Remove the pre-installed M5 x 20 mm bolts and fixed plate from the universal mounting bracket and set aside.
9. Hang the motor/hub and downtube assembly from the universal mounting yoke by inserting the universal mounting bracket through the opening in the side of the yoke.
10. Re-install the M5 x 20 mm bolts and fixed plate that were previously set aside to secure the universal mounting bracket to the universal mounting yoke. Torque the bolts to 44.25 in-lbs (5 N·m).



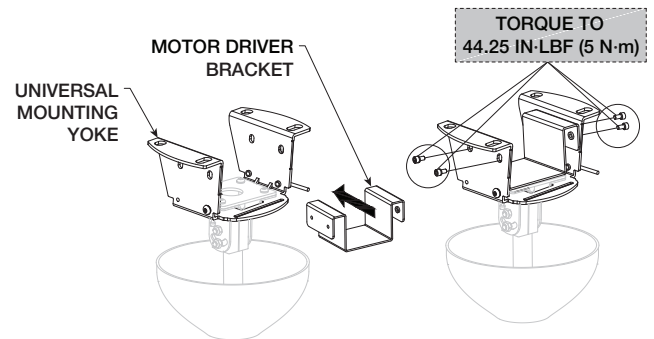
11. Place a level against the downtube and adjust the angle of the downtube until the fan is plumb in all directions. Tighten the M6 x 40 mm bolts connecting the universal mounting bracket to the downtube and torque to 44.25 in-lbs (5 N·m).



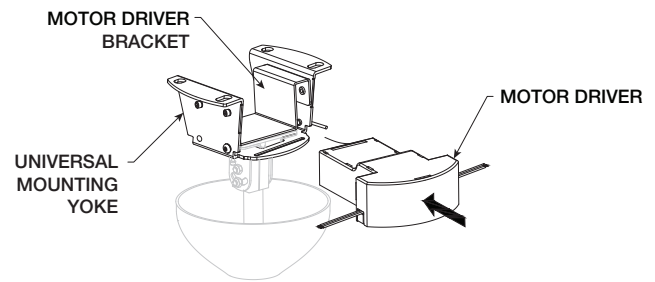
12. Remove the pre-installed M5 x 12 mm screws from the motor driver assembly and set aside. Separate the motor driver from the motor driver bracket.



13. Slide the motor driver bracket into the universal mounting yoke. Re-install the M5 x 12 mm screws that were previously set aside to secure the motor driver bracket to the universal mounting yoke. Torque the screws to 44.25 in-lbs (5 N·m).



14. Slide the motor driver into the motor driver bracket as shown in the drawing below. Please note that the motor driver must be oriented as shown in the drawing for the mount cover to fit.



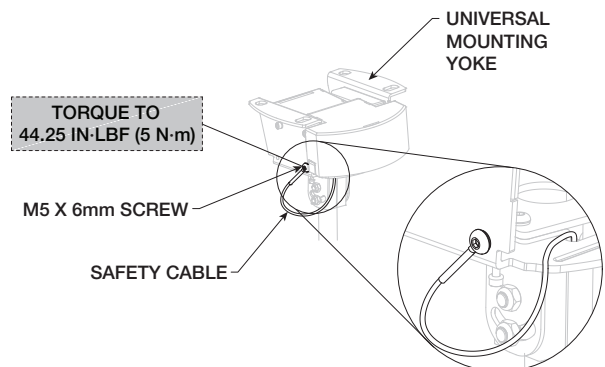
## Safety Retention Cable Installation

**IMPORTANT:** Failure to install the safety retention cable will result in voiding of the fan warranty

Hardware/Tools Needed:

- 3 mm Hex Key (Included)
- Torque Wrench (Up to 100 in-lbf, Not Included)

1. Remove the pre-installed M5 x 6 mm screw from the lower corner of the universal mounting yoke and set aside.
2. Attach the eyelet of the safety retention cable to the universal mounting yoke using the M5 x 6 mm screw that was previously set aside. Torque the screw to 44.25 in-lbs (5 N·m).



Airfoil Blade Installation

**IMPORTANT:** Do not operate fans without the airfoil blades. Failure to comply with this warning will result in voiding of the product warranty and may result in permanent damage to the motor.

**WARNING**

To reduce the risk of personal injury, do not bend motor struts, airfoil blades, or airfoil retaining links when installing the airfoil blades, balancing the blades, or cleaning the fan. Damage to these components may result in unsafe operation of the fan, which can lead to property damage, personal injury or death. Contact your local representative or the factory if replacement parts are needed.

**WARNING**

To reduce the risk of personal injury, do not insert foreign objects in between rotating fan blades.

**AVERTISSEMENT**

Pour réduire le risque de blessure, ne pliez pas les entretoises moteurs, ailerons ou aile en conservant des liens lors de l’installation des aubes, équilibrez, ou nettoyer le ventilateur. Ces composants peuvent endommager en utilisation dangereuse du ventilateur, qui peut conduire à des dommages matériels, des blessures ou la mort. Ces composants peuvent endommager en utilisation dangereuse du ventilateur, qui peut conduire à des dommages matériels, des blessures ou la mort.

**AVERTISSEMENT**

Ces composants peuvent endommager en utilisation dangereuse du ventilateur, qui peut conduire à des dommages matériels, des blessures ou la mort.

Mechanical Installation

Required Loose Components (Included):

- Airfoil Blade (3)
- M6 x 20 mm Airfoil Screws (6)

Hardware/Tools Needed:

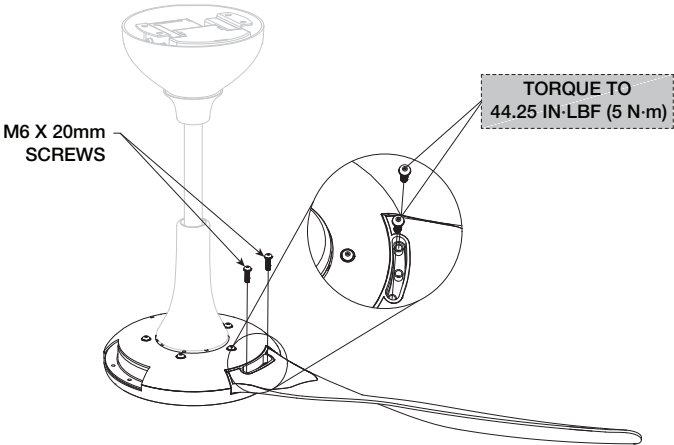
- 4 mm Hex Key (Included)
- Torque Wrench (Up to 100 in·lbf, Not Included)

1. Lift the first blade into place and slide it inside the opening on the motor/hub assembly until the mounting holes in the blade align with the threaded holes in the hub. It might be necessary to use two people for this step.
2. With the blade in position, install (2) M6 x 20 mm screws into the threaded holes to secure the blade to the motor/hub assembly. Hand tighten hardware, but be careful not to overtighten.

**NOTE:** The center hole in each airfoil blade is not used.

3. Repeat steps 1 through 2 on remaining airfoil blades. Torque the (6) installed screws to 44.25 in·lbs (5 N·m), making sure to alternate fasteners until proper torque is achieved.

**IMPORTANT:** Do not use an impact driver to tighten screws that secure airfoil blades to the hub. Overtightening may damage the blades and hub, or strip the threaded holes.



# Electrical Installation

## Power Wiring

### DANGER

Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury.

### DANGER

Pour écarter les risques d'incendie, de choc électrique ou de blessure grave, veiller à toujours débrancher, verrouiller et étiqueter la source de courant avant l'installation ou l'entretien.

**IMPORTANT:** Do not apply power until mechanical installation, communication wiring and fan control installation are complete.

**IMPORTANT:** Do not apply power to the fan above the rated voltage of the motor driver. Failure to comply with this warning will result in voiding of the product warranty and may result in permanent damage to the motor driver and motor.

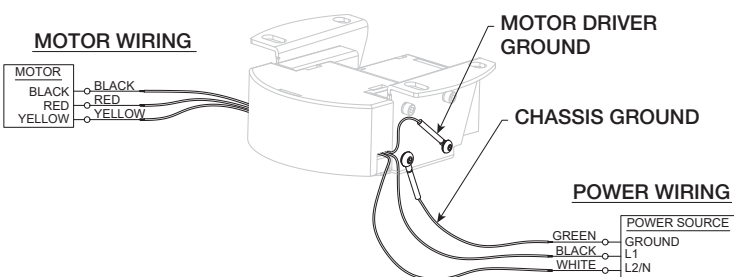
**IMPORTANT:** To prevent electrical failures, source power must comply with the following power quality requirements. If source power falls outside of these specified tolerances, an external power line filter will be required (by others). If other power quality issues are present, contact the factory for support.

Allowable Voltage Fluctuation	+/- 10% of nominal
Allowable Frequency Fluctuation	+/- 5% of nominal (47-63 Hz)
Area of Use	Do not install fans in electrical environments with Pollution higher than Degree 2 in accordance with UL 61800-5-1
Surge Immunity	Do not install fans in electrical environments above Installation Class 3 in accordance with IEC 61000-4-5

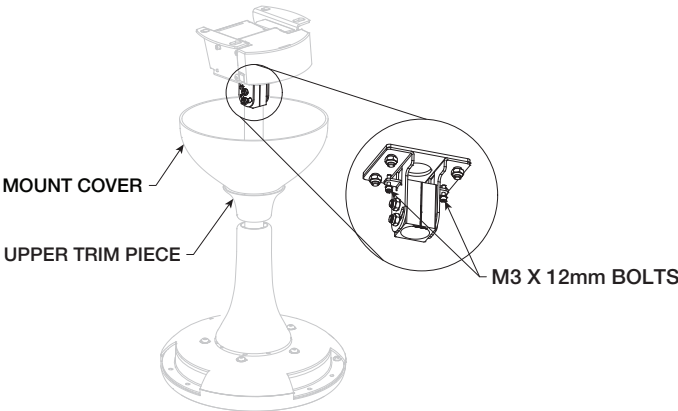
### Hardware/Tools Needed:

- 2.5 mm and 3 mm Hex Keys (Included)
- Wire Strippers (Not Included)

1. Refer to the wiring diagram below to complete power wiring between the motor, motor driver, and building supply power.



2. Secure any loose power cable to the building structure to ensure it does not interfere with fan performance.
3. Remove the pre-installed M3 x 12 mm bolts from the underside of the universal mounting bracket and set aside.



4. Lift the mount cover into place and re-install all the M3 x 12 mm bolts that were previously set aside.
5. Slide the upper trim piece up to cover the M3 x 12 mm bolts on the underside of the mount cover.

## Disconnect and Fuse Installation

1. If provided, mount and wire the optional safety disconnect switch outside of the sweep of the fan's airfoil blades. Installation should be completed per the disconnect manufacturer's recommendation. Be sure to follow all national and local codes for electrical installation.
2. Fusing is required by code unless otherwise specified by local authority having jurisdiction (AHJ). Refer to the fuse sizing chart below and install fuses per the manufacturer's recommendation. If the fan was supplied with the optional fused disconnect, the fuses received will match the models shown. Be sure to follow all national and local codes for electrical installation.

**IMPORTANT:** Warranty may be voided at manufacturer's discretion if correct fuses are not installed.

Fuse Sizing Chart	
DM-3 (5 ft.), 50W Motor	
Motor Voltage	115V/1 PH/60 HZ
Motor Full Load Amps (FLA)*	1.5
Fuse Required**	FRS-R-5
*FLA is based on worst case system conditions assuming lowest nominal voltage and phase.	
** Fuses shown are available as an optional accessory. Fuses provided by others must meet requirements of all national and local codes.	

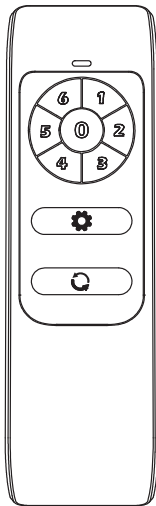
# Operation And Maintenance

## Pre-Start-Up Checks

- 1. Disconnect and lock-out all power switches to fan.
- 2. Check all fasteners on the ceiling mount, mounting kit, blades, motor driver, motor and accessories for tightness.
- 3. Rotate the fan impeller by hand to ensure that it rotates freely and does not come into contact with any obstructions.
- 4. Check all electrical connections for proper attachment.
- 5. Verify that the fan is hanging so that the airfoils and downtube are level and the fan is plumb to the floor. Adjust guy wire tension as necessary (if applicable).

## RF Remote Control Operation

**NOTE:** The RF remote control has a maximum range of roughly 20-25 feet.



Button	Function
0	Press the 0 button to turn off the fan. The fan will produce a short beep to confirm that an off signal has been received.
1-6	Press the 1-6 buttons to turn on the fan and set fan speed with speed increasing in numerical order (1 = lowest speed, 6 = highest speed). The fan will produce a short beep to confirm that a run command signal has been received.
	Press the rotation button to change the fan's direction of rotation. In the forward direction, the fan will move air downwards (counterclockwise rotation when viewed from below). In the reverse direction, the fan will move air upwards (clockwise rotation when viewed from below). The fan will produce a short beep to confirm that a rotation command signal has been received.
0 +	Press the 0 and the settings buttons at the same time to enter pairing mode. Refer to the instructions below to pair the RF remote control with a fan.

## RF Remote Control Pairing (Single Fan)

**NOTE:** Each fan includes an RF remote control that is paired with its motor driver at the factory prior to shipment. The following instructions should only be followed if the RF remote control is not communicating with the fan.

- 1. Confirm that power wiring has been installed according to the instructions on page 11.
- 2. Apply power to the fan. The pairing process must be completed within 1 minute of power being applied.
- 3. Press and hold the 0 and for at least two seconds while pointing the RF remote control at the fan that needs to be paired. Please note that the RF remote control has a maximum range of 20-25 feet.
- 4. The fan will produce two short beeps to confirm that it has been paired with the RF remote control.
- 5. If no sound is heard, then pairing has failed. Turn off power to the fan and wait 1 minute before repeating steps 2 through 4 to reattempt pairing with the fan.

## RF Remote Control Pairing (Multiple Fans)

**NOTE:** Each fan includes an RF remote control that is paired with its motor driver at the factory prior to shipment. The following instructions should only be followed if multiple fans will be operated using one RF remote control.

**IMPORTANT:** If multiple fans are operated using one RF remote control, all fans will operate with the same speed setting and direction of rotation.

- 1. Confirm that power wiring has been installed according to the instructions on page 11.
- 2. Apply power to the first fan that should be paired with the RF remote control. The pairing process must be completed within 1 minute of power being applied.
- 3. Press and hold the 0 and for at least two seconds while pointing the RF remote control at the fan that need to be paired. Please note that the RF remote control has a maximum range of 20-25 feet.
- 4. The fan will produce two short beeps to confirm that it has been paired with the RF remote control.
- 5. If no sound is heard, then pairing has failed. Turn off power to the fan and wait 1 minute before repeating steps 2 through 4 to reattempt pairing with the fan.
- 6. After successfully pairing the RF remote control, turn off power to the fan.
- 7. Repeat steps 2-6 for all remaining fans.



## Fan Operation

**IMPORTANT:** If unusual vibration or oscillating movement is observed during fan operation, immediately discontinue use of the fan and contact the manufacturer or a suitably qualified maintenance/repair technician.

1. When the fan is started, observe the operation and check for any unusual noise, vibration or overheating. Refer to the Troubleshooting section of this manual if a problem develops.
2. With the system in full operation, measure current input to the motor driver and compare with the FLA ratings in the table on page 11 to determine if the motor/motor driver system is operating under safe load conditions.
3. Keep approaches to fan clean and free from obstruction.

## Fan Inspection

<b>DANGER</b>
Disconnect and secure to the 'OFF' position all electrical power to the fan prior to inspection or servicing. Failure to comply with this safety precaution could result in serious injury or death.
<b>DANGER</b>
Pour écarter les risques de blessure grave ou de mort, débrancher et verrouiller l'alimentation électrique en position « Arrêt » avant tout contrôle ou entretien.

Inspection of the fan should be conducted at the first 30 minute and 24 hour intervals of satisfactory operation.

- 30 Minute Interval - Check all fasteners for tightness. Adjust and tighten as necessary.
- 24 Hour Interval - Inspect all fan components. Check all fasteners and the safety cable. Adjust and tighten as necessary.

## Fan Maintenance

**NOTE:** Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations and have experience with this type of equipment.

Once the fan has been put into operation, a periodic maintenance program should be set up to ensure reliable fan performance. A proper maintenance program will help deliver years of dependable service. Items to be included in this program are as follows:

1. Verify that all fasteners are tight and properly torqued.
  2. Verify that the fan's safety retention cable is properly installed. Inspect for signs of damage or failure.
  3. Inspect the fan for signs of fatigue, corrosion, or wear.
  4. Impellers require little attention when moving clean air. Occasionally, oil and dust may accumulate causing imbalance. When this occurs, clean the impeller and other fan components to ensure smooth and safe operation. Remove any accumulated dust and dirt using hot water or mild cleaning solutions. Harsh chemicals should not be used to clean the fan as they may damage the fan's finish or motor.
- IMPORTANT:** Do not allow water or solvents to enter the motor or motor driver. Under no circumstances should motors or motor drivers be sprayed with steam, water or solvents.
5. Motor maintenance is generally limited to cleaning. Limit cleaning to exterior surfaces only. Removing dust buildup on motor housing ensures proper motor cooling.
  6. Prior to restarting unit, check all fasteners for tightness each time maintenance checks are performed.



## Troubleshooting

### DANGER

Disconnect and secure to the 'OFF' position all electrical power to the fan prior to inspection or servicing. Failure to comply with this safety precaution could result in serious injury or death.

### DANGER

Pour écarter les risques de blessure grave ou de mort, débrancher et verrouiller l'alimentation électrique en position « Arrêt » avant tout contrôle ou entretien.

Each fan bears a manufacturer's nameplate with the fan's model number and a unique serial number for identification. This information will assist the local representative and the manufacturer in providing service and replacement parts.

**IMPORTANT:** Do not remove motor driver circuit board from plastic enclosure under any circumstances. Removal of circuit board will result in voiding of the fan warranty.

## General Troubleshooting

### Problem: Unknown, Initial Troubleshooting Steps.

1	Is supply power turned on at all circuit breakers and fan disconnects?	Yes ⬆	No ⬆	<b>No supply power to fans.</b> Turn circuit breakers and disconnects to "on" position.
2	Is there line voltage across L1 and L2/N on supply power wiring?	Yes ⬆	No ⬆	<b>Supply power wiring not connected or fuses damaged/missing.</b> Connect proper power supply to fan and confirm that fuses are installed/functional. Test and replace fuses if necessary. Refer to wiring diagram and fuse sizing table on page 11.
3	Are line voltage measurements within +/- 10% of nominal voltage across L1 and L2/N on supply power wiring?	Yes ⬆	No ⬆	<b>Phase imbalance or incorrect supply power applied to fan.</b> Correct supply power wiring to fan.
4	Is power wiring connected between motor driver and motor?	Yes ⬆	No ⬆	<b>No power connection between motor driver and motor.</b> Connect power wiring as shown on page 11.
5	Does the fan produce 2 short beep sounds immediately after power is applied?	Yes ⬆	No ⬆	<b>Damaged or defective motor driver and/or motor. Contact factory.</b>
6	Does the RF remote control light up after pushing a button?	Yes ⬆	No ⬆	<b>Batteries not installed or need replacing.</b> Open the battery compartment on the RF remote control and install two new AAA batteries. If RF remote control does not light up after new batteries are installed, contact factory.
7	Does fan produce an audible beep sound after pushing a button on the RF remote control?	Yes ⬆	No ⬆	<b>RF remote control not paired with fan.</b> Follow the RF remote control pairing instructions on page 12.
8	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Check detailed troubleshooting steps on the following pages or contact the factory.</b>
Everything is working properly.				



## Controls Troubleshooting

Problem: One or more fans not pairing with RF remote control.				
1	Is supply power turned on at all circuit breakers and fan disconnects?	Yes ⬆	No ⬆	<b>No supply power to fans.</b> Turn circuit breakers and disconnects to “on” position.
2	Is there line voltage across L1 and L2/N on supply power wiring?	Yes ⬆	No ⬆	<b>Supply power wiring not connected or fuses damaged/missing.</b> Connect proper power supply to fan and confirm that fuses are installed/functional. Test and replace fuses if necessary. Refer to wiring diagram and fuse sizing table on page 11.
3	Are line voltage measurements within +/- 10% of nominal voltage across L1 and L2/N on supply power wiring?	Yes ⬆	No ⬆	<b>Phase imbalance or incorrect supply power applied to fan.</b> Correct supply power wiring to fan.
4	Is power wiring connected between motor driver and motor?	Yes ⬆	No ⬆	<b>No power connection between motor driver and motor.</b> Connect power wiring as shown on page 11.
5	Does the fan produce 2 short beep sounds immediately after power is applied?	Yes ⬆	No ⬆	<b>Repeat pairing process. If problem persists, contact factory.</b>
6	Does the RF remote control light up after pushing a button?	Yes ⬆	No ⬆	<b>Batteries not installed or need replacing.</b> Open the battery compartment on the RF remote control and install two new AAA batteries. If RF remote control does not light up after new batteries are installed, contact factory.
7	Does fan produce 2 short beep sounds after completing the pairing process on page 12?	Yes ⬆	No ⬆	<b>Repeat pairing process. If problem persists, contact factory.</b>
8	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Contact factory.</b>
Everything is working properly.				


## Fan Troubleshooting

Problem: One or more fans paired with RF remote control but will not run.				
1	Do all connected fans produce a short beep sound when speed is changed on the RF remote control?	Yes ⬆	No ⬆	<b>Fan(s) are not paired with RF remote control.</b> Follow pairing instructions on page 12.
2	Is the RF remote control set to a speed greater than 0?	Yes ⬆	No ⬆	<b>Control is not sending a run command to fans.</b> Set speed to a value between 1-6 by pressing the corresponding button on the RF remote control. Fan will indicate that a run command has been received by producing a short beep sound.
3	Is power wiring connected between motor driver and motor?	Yes ⬆	No ⬆	<b>No power connection between motor driver and motor.</b> Connect power wiring as shown on page 11.
4	Does the fan produce 2 short beep sounds immediately after power is applied?	Yes ⬆	No ⬆	<b>Damaged or defective motor driver and/or motor. Contact factory.</b>
5	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Contact factory.</b>
Everything is working properly.				

Problem: One or more fans attempt to run, but do not rotate completely.				
1	Turn off power and rotate all fans by hand. Can fans rotate freely without any audible rubbing, scraping, or grinding noise?	Yes ⬆	No ⬆	<b>Rubbing components on the fan hub and/or airfoils.</b> Correct any issues that are found.
2	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Contact factory.</b>
Everything is working properly.				

Problem: One or more fans run intermittently, but will not run consistently.				
1	Are line voltage measurements within +/- 10% of nominal voltage across L1 and L2/N on supply power wiring?	Yes ⬆	No ⬆	<b>Phase imbalance or incorrect supply power applied to fan.</b> Correct supply power wiring to fan.
2	Is power wiring between motor driver and motor securely connected and undamaged?	Yes ⬆	No ⬆	<b>Loose or damaged power wiring between motor driver and motor.</b> Correct any issues that are found.
3	Are multiple fans being controlled by one RF remote control?	Yes ⬆	No ⬆	<b>Fan(s) may be out of RF remote control range or experiencing signal interference.</b> Contact factory to order additional/replacement remote control.
4	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Contact factory.</b>
Everything is working properly.				

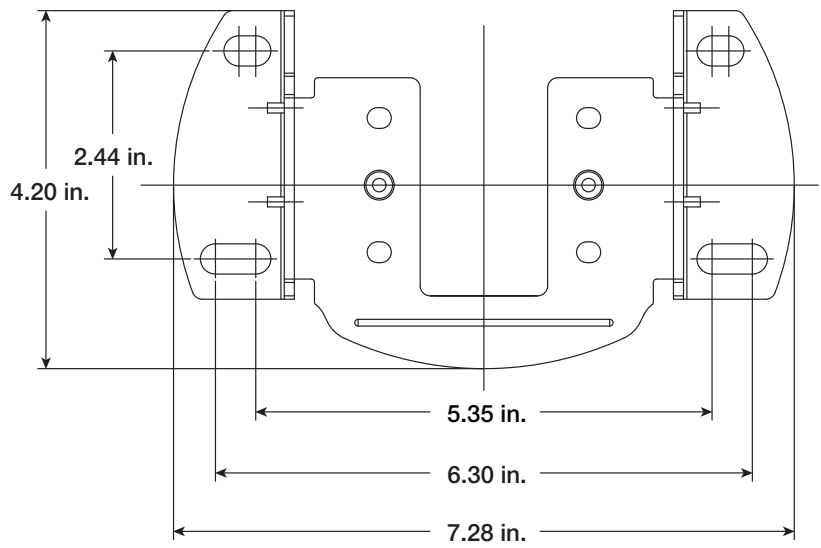
Problem: One or more fans run, but are making excessive noise/vibrating.				
1	Have all fasteners been torqued to the appropriate values listed in the IOM?	Yes ⬆	No ⬆	<b>Loose fasteners.</b> Torque all fasteners to the appropriate values. Refer to pages 7-10 for torque specifications of each fastener.
2	Is the downtube level on all sides for all installed fans?	Yes ⬆	No ⬆	<b>Fans not installed level.</b> Refer to page 9 for fan levelling instructions.
3	Turn off power and rotate all fans by hand. Can fans rotate freely without any audible rubbing, scraping, or grinding noise?	Yes ⬆	No ⬆	<b>Rubbing components on the fan hub and/or airfoils.</b> Correct any issues that are found.
4	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Contact factory.</b>
Everything is working properly.				

Problem: One or more fans run, but I don't feel much airflow.				
1	Are fans installed with a minimum of 1.5 feet of clearance to ceiling structure?	Yes ⬆	No ⬆	<b>Fan is starved for air.</b> Correct installation to maintain minimum clearance requirements.
2	Is the control set to the maximum fan speed (speed setting of 6)?	Yes ⬆	No ⬆	<b>Fan speed too low.</b> Increase fan speed by pressing buttons 1-6 on the RF remote control until desired airflow is achieved.
3	Is the control set to forward operation (downward airflow; counterclockwise rotation when viewed from below)?	Yes ⬆	No ⬆	<b>Fan operating in reverse (upward airflow).</b> Press the  button on the RF remote control to change rotation direction.
4	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Contact factory.</b>
Everything is working properly.				

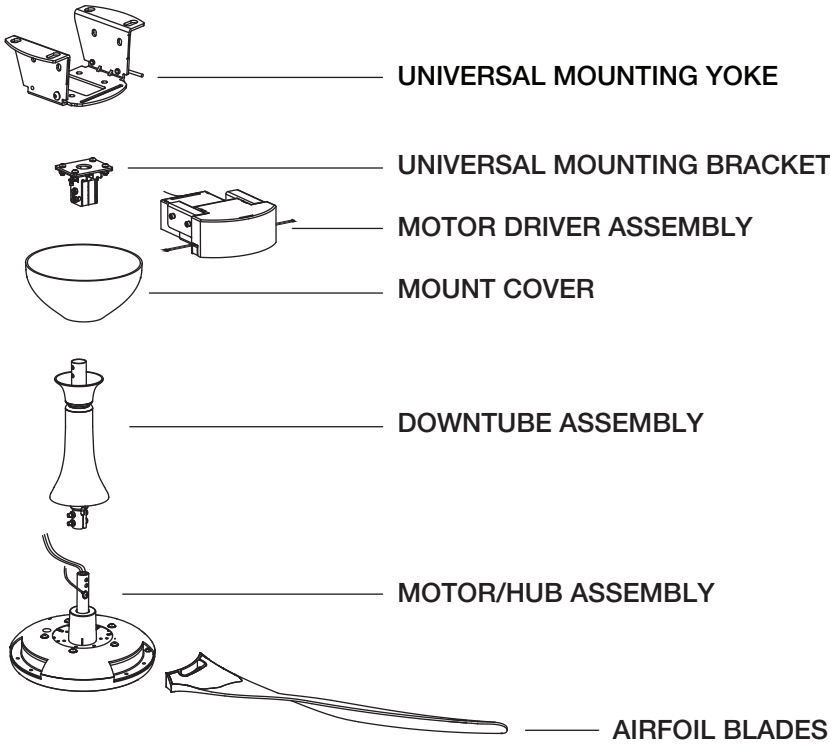
Problem: One or more fans operated normally for a period of time, but have stopped running.				
1	Is supply power turned on at all circuit breakers and fan disconnects? Are fuses installed and functional?	Yes ⬆	No ⬆	<b>No supply power to fans.</b> Turn circuit breakers and disconnects to "on" position. Test and replace fuses if necessary.
2	Does the RF remote control light up after pushing a button?	Yes ⬆	No ⬆	<b>Batteries not installed or need replacing.</b> Open the battery compartment on the RF remote control and install two new AAA batteries. If RF remote control does not light up after new batteries are installed, contact factory.
3	Do all connected fans produce a short beep sound when speed is changed on the RF remote control?	Yes ⬆	No ⬆	<b>Fan(s) are not paired with RF remote control.</b> Follow pairing instructions on page 12.
4	Are there visible signs of damage on motor driver (black marks, damaged wiring, etc.)?	Yes ⬆	No ⬆	<b>Damaged or defective motor driver. Contact factory.</b>
5	Do fans operate as expected?	Yes ⬆	No ⬆	<b>Contact factory.</b>
Everything is working properly.				

Reference

Universal Mounting Yoke Dimensions



Exploded View Diagram



Maintenance Log

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## Our Commitment

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*As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.*

Product warranties can be found online at [Greenheck.com](http://Greenheck.com), either on the specific product page or in the literature section of the website at [Greenheck.com/Resources/Library/Literature](http://Greenheck.com/Resources/Library/Literature).

AMCA Publication 410-96, Safety Practices for Users and Installers of Industrial and Commercial Fans, provides additional safety information. This publication can be obtained from AMCA International, Inc. at [www.amca.org](http://www.amca.org).

