

## 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 DDF directional destratification fans provide improved comfort and reduced energy costs by efficiently mixing air from floor to ceiling to improve temperature uniformity. Fans are ideal for a variety of commercial, industrial and institutional applications, especially in buildings with high ceilings. Features include an aerodynamically optimized housing, high efficiency corrosion resistant propeller with aluminum blades, electronically commutated (EC) Vari-Green® motor, and 10 foot wiring pigtail with plug. Universal mounting bracket includes steel hanging cable and secondary steel safety cable with Grippler® installation hardware.



## Important Safety Instructions

### Read and save these instructions.

1. Only mount fan to building structure.
2. Read and follow all instructions, cautionary markings and make sure power source conforms to the requirement of the equipment.
3. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) in the United States, including fire rated construction. Ground motor in accordance with NEC Article 250 (grounding).
4. Do not use an extension cord with this fan.
5. Do not kink power cord or allow it to contact oil, grease, hot surfaces, sharp objects or chemicals. Replace worn or damaged cord immediately.

### WARNING

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

Do not insert foreign objects in between rotating fan blades.

To reduce the risk of electric shock, do not expose to water or rain.

Do not use general purpose fans in flammable, explosive, chemical-laden, or wet or rainy atmospheres. Do not attach fan to ductwork.

### WARNING

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

- a. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- b. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting the 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.
- c. Do not use this fan with any solid-state speed control device.
- d. Do not use replacement parts that have not been recommended by the manufacturer.
- e. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- f. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

## AVERTISSEMENT

Pour écarter tout risque d'incendie, d'électrocution ou de blessures graves, veiller à toujours débrancher, verrouiller et étiqueter la source d'alimentation avant toute intervention. Veiller à toujours débrancher le cordon d'alimentation.

Ne pas insérer de corps étranger entre les pales en rotation du ventilateur.

Pour réduire le risque de choc électrique, ne pas exposer à l'eau ou à la pluie.

Ne pas utiliser de ventilateurs d'usage général dans des milieux inflammables, explosifs, chargés de substances chimiques, ou bien humides ou pluvieux. Ne pas fixer le ventilateur au système de gaines.

## AVERTISSEMENT

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

- a. Utiliser cet appareil exclusivement comme prévu par le fabricant. En cas de questions, communiquer avec le fabricant.
- b. Avant tout entretien ou nettoyage de l'appareil, couper l'alimentation sur le tableau électrique 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 panonceau, au tableau électrique.
- c. Ne pas utiliser ce ventilateur avec un quelconque dispositif de régulation de vitesse à semi-conducteurs.
- d. Ne pas utiliser de pièces de rechange qui n'ont pas été recommandées par le fabricant.
- e. 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.
- f. Lors de la découpe ou du perçage de murs ou plafonds, ne pas endommager les câbles électriques et autres conduites masquées.

## 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 make a notation of 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, immediately contact your local representative. 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. If any items are missing, report shortages to your local representative to arrange for obtaining missing parts. Due to availability of transportation and truck space all items for the unit may not be shipped together. 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.

## Storage Environment

The ideal environment for the storage of fans and accessories is indoors, above grade, in a low humidity atmosphere which 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.

The unit should be stored at least 3-1/2 inches 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. At each inspection, rotate the propeller by hand ten to fifteen revolutions to distribute lubricant in motor.

## 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.

Prior to fully assembling and installing the fan inspect the fan assembly to make sure it is in working order.

1. Check all fasteners and set screws on the fan, motor base, and accessories for tightness.
2. Rotate the propeller by hand to ensure no parts are rubbing.

# Typical Installation

## WARNING

Installation and troubleshooting to be performed only by qualified person(s).

## WARNING

Use only GFCI receptacles.  
Not for outdoor applications.

## AVERTISSEMENT

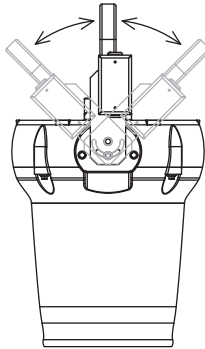
La pose et le dépannage ne doivent être effectués que par des personnes qualifiées.

## AVERTISSEMENT

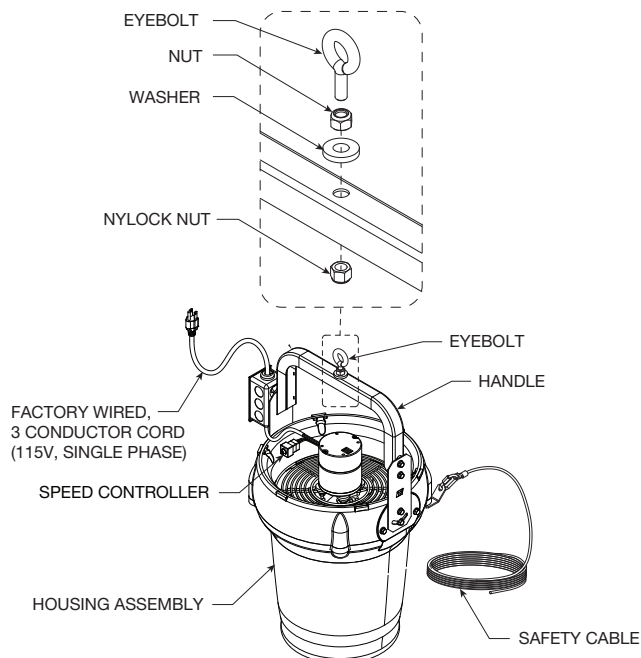
Utiliser uniquement des prises comportant un disjoncteur différentiel (GFCI).  
Ne pas utiliser à l'extérieur.

**IMPORTANT:** Only mount fan to building structure.

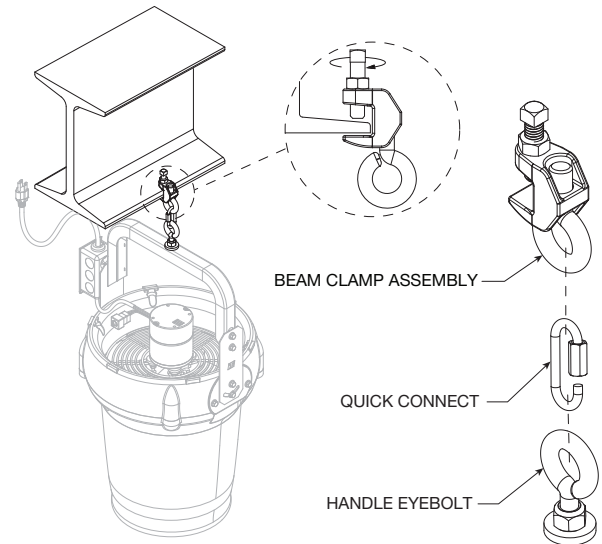
1. Remove the fan from its packaging.
2. Using a 3/8 inch socket, loosen the lower bolts on both sides of the fan's handle so that the handle is able to pivot from side to side. Position the handle at the desired mounting angle, then re-tighten the bolts.



3. Using a 9/16 inch deep well socket, attach the eyebolt to the top of the fan handle.



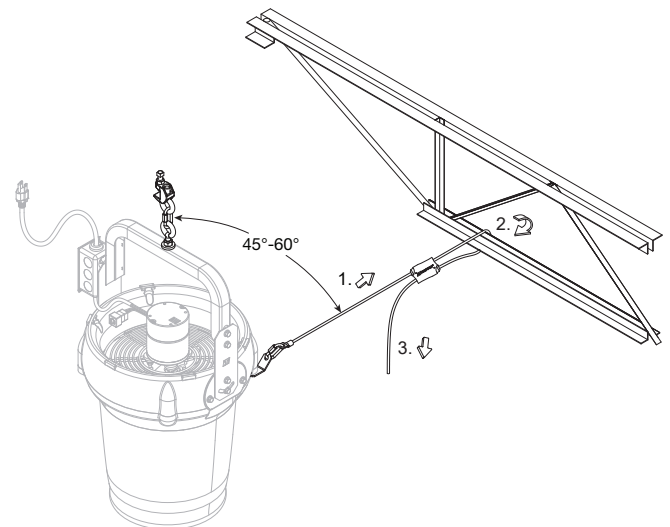
4. Attach the beam clamp assembly to the ceiling structure. Use the quick connect link to mount the handle eyebolt on the fan to the beam clamp assembly.



7. Wrap the loose end of the factory-installed safety restraint cable around the mounting structure so that the cable is installed 45° to 60° from vertical. Do not allow the cable to come in contact with any sharp edges.

**IMPORTANT:** Safety restraint cable must be installed for proper function of the fan. Failure to install the safety retention cable will result in voiding of the fan warranty.

8. Secure the safety restraint cable to the mounting structure using the provided No. 2 Gripple connector. Pull the loose end of the cable through the Gripple connector to tighten the cable. The cable should be pulled taut, leaving only a small amount of slack to ensure proper functioning.



**NOTE:** Safety restraint cable will only feed through the Gripple connector in one direction (marked on the Gripple connector with an arrow). If necessary, the safety cable can be loosened by pressing the release

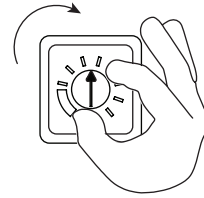
button on the Gripple connector and pulling the cable in the opposite direction of the arrow marked on the Gripple connector.

9. Cut or secure excess safety cable to ensure it does not interfere with fan operation.
10. Plug the factory-installed power cord into a 115V, 1 phase outlet. Secure any excess power cord to the fan's handle and/or mounting structure.

## Operation and Wiring

### Balance Dial

The speed control dial (P/N 385806) is factory-installed in the 9-pin connector on the motor. To increase speed, rotate the dial clockwise. To decrease speed, rotate the dial counterclockwise. The motor will be off from 0-1.9V and will operate in the 2-10V range.



## Maintenance

### WARNING

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

### AVERTISSEMENT

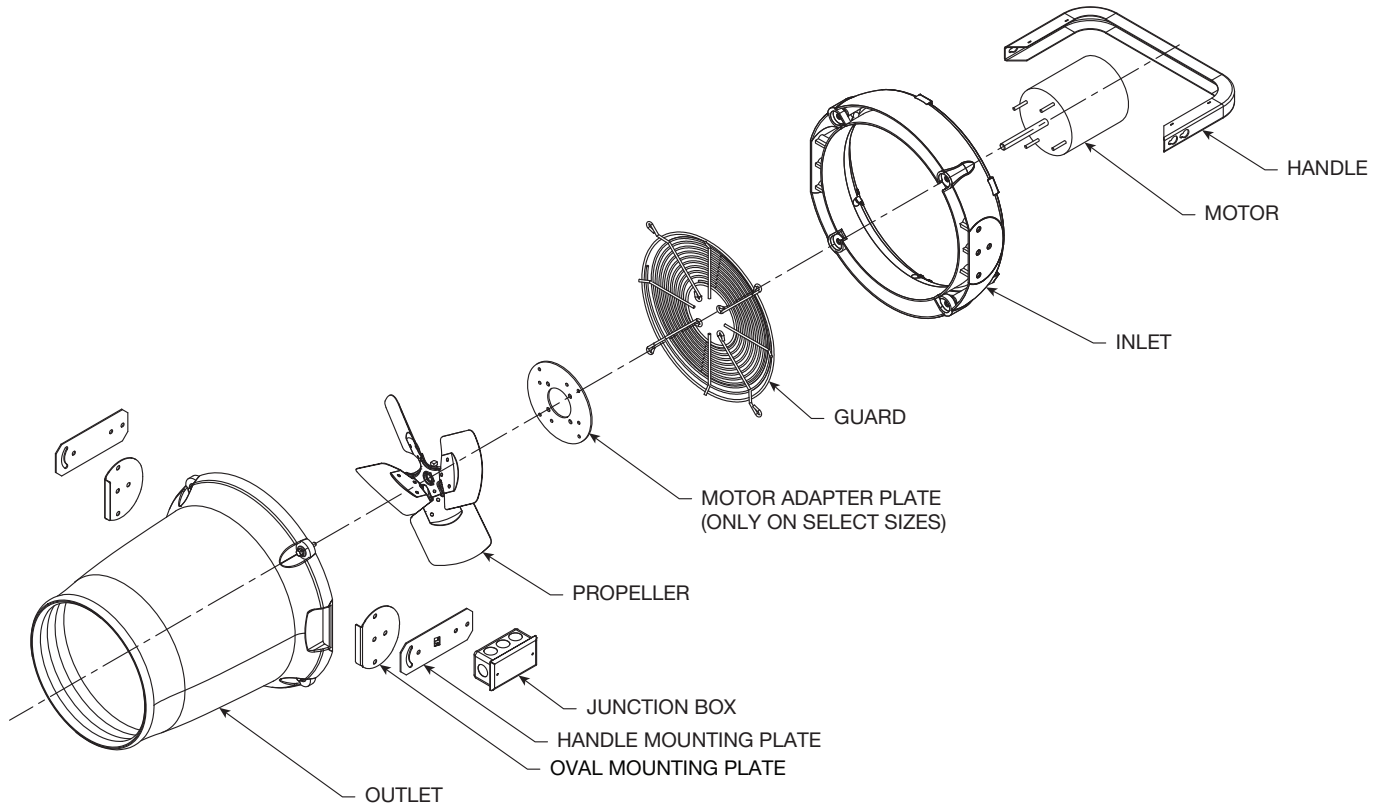
Pour écarter tout risque d'incendie, d'électrocution ou de blessures graves, veiller à toujours débrancher, verrouiller et étiqueter la source d'alimentation avant toute intervention.  
Veiller à toujours débrancher le cordon d'alimentation.

**IMPORTANT:** When making repairs, use only authorized repair parts from the manufacturer.

1. With a dry rag, periodically clean propeller, guard, and motor when excessive dirt and particles accumulate. Allow motor sufficient time to cool as it may be hot enough to cause injury.
2. Check for unusual noises when fan is running.
3. Periodically inspect and tighten all bolts.

## Parts List

Each fan bears a manufacturer's nameplate with the model number and serial number. This information will assist the local representative and the factory in providing service and replacement parts. Before taking any corrective action, make certain unit is not capable of operation during repairs.



## Troubleshooting

### WARNING

Before taking any corrective action, make certain unit is not hot to the touch and capable of operation during repairs.

### AVERTISSEMENT

Avant d'entreprendre toute action corrective, s'assurer que l'appareil n'est pas chaud au toucher et qu'il ne pourra pas fonctionner durant les réparations.

PROBLEM	CAUSE	CORRECTIVE ACTION
Fan Inoperative	Blown fuse or open circuit breaker	Replace or repair
	Defective motor or switch	Replace or repair
	Balance dial is loose or not installed	Ensure balance dial is fully plugged into 9-pin connector on motor
Fan Cycles On and Off	Thermal protector	Check for obstructions to airflow, low or high voltage, excessive intake air temperatures above 140°F
	Faulty wiring or balance dial	Replace or repair
Excessive Noise While Operating	Loose or damaged propeller	Tighten or replace
	Motor not secure	Tighten motor nuts
Insufficient Air Flow	Guard excessively dirty	Clean guard
	Balance dial set too low	Rotate balance dial clockwise to increase fan speed
Propeller Rubbing	Improper location	Loosen (4) bolts connecting motor to guard and recenter the propeller. 1/8 inch clearance from propeller to housing is desired.

# 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).

Greenheck's ARC submittal provides additional information describing the equipment, fan performance, available accessories, and specification data.

