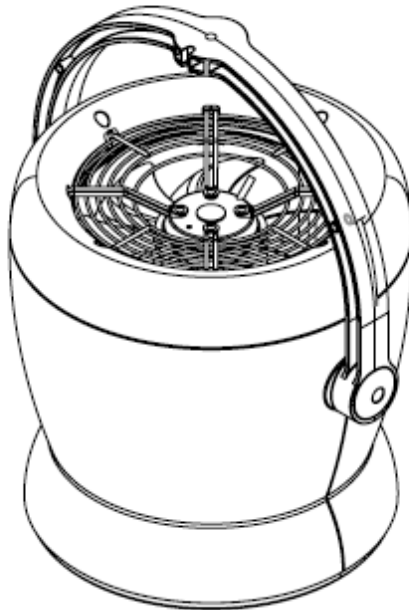




# Installation Guide

Model: H60-EC



**Covered by the following United States and International Patents:**

D631148S, 138172, 001790452-001, 338608 and other patents pending



## IMPORTANT SAFETY INFORMATION READ AND SAVE THESE INSTRUCTIONS

**WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS:** Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards.

**CAUTION:** The installation of a ZOO 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 70-1999, and all local codes. If you are unfamiliar with wiring, use a qualified electrician.

**WARNING:** To reduce the risk of fire, electric shock, or personal injury, mount directly to a structural framing member.

**WARNING:** To prevent electrical shock and/or injury disconnect fan from power source before you move or service the fan.

Not Suitable for use with solid-state speed controls.

**WARNING:** To reduce the risk of fire, electric shock, and injury to persons, ZOO Fans must be installed only with controllers supplied by ZOO Fans. 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.

**WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC 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 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:** Do not install in a cooking area.

**WARNING:** Fatal electric shock from metal cable glands in the plastic terminal box is possible if incorrectly connected – do not use metal cable glands in plastic terminal boxes.

**WARNING:** Do not operate the fan in spaces with hazardous or Explosive Material and Vapors.

**DANGER: Rotating equipment.** Death, severe injury and property damage may result. ZOO Fans are intended to be hung out-of-reach of people. The bottom of the fan must be no less than 3.05m (10') from any area capable of receiving pedestrian traffic.

**WARNING:** Stay alert and use common sense when installing fans. Do not install fans if tired or under the influence of drugs, alcohol, or medication.

**CAUTION:** Only operate the fan within the ranges specified on the motor's type plate.

**WARNING:** Do not bend the blade brackets when installing, adjusting, or cleaning the fan. Do not insert foreign objects in between rotating fan blades.

**CAUTION:** The ZOO Fans product warranty will not cover equipment damage or failure that is caused by improper installation.



## INFORMATIONS DE SÉCURITÉ IMPORTANTES LISEZ ET SAUVEGARDEZ CES INSTRUCTIONS

**AVERTISSEMENT – POUR RÉDUIRE LE RISQUE DE DÉPART D’INCENDIE, DE COMMOTION ÉLECTRIQUE OU DE BLESSURE POUR LES PERSONNES :** Le travail d’installation et le câblage électrique doivent être réalisés par du personnel qualifié, en conformité avec la norme électrique américaine, ANSI/NFPA 70-1999, et toutes les normes locales.

**AVERTISSEMENT:** Risque de départ d’incendie, de commotion électrique ou de blessure pour les personnes durant le nettoyage ou la maintenance par l’usager! Débranchez l’appareil de la source d’alimentation avant toute intervention.

QUI NE POUVANT être utilisé avec des contrôles de vitesse à semi-conducteurs.

**AVERTISSEMENT:** Pour réduire le risque de départ d’incendie, de commotion électrique et de blessure aux personnes, les ventilateurs ZOO Fans doivent être installés avec des commandes de ventilateur fournis par ZOO Fans. D’autres pièces ne peuvent pas être substituées.

**AVERTISSEMENT:** Ne pas installer près d’un appareil de cuisson.

**ATTENTION :** Quand le service ou le remplacement d’un composant dans le ventilateur exige le déplacement ou le débranchage d’un dispositif de sécurité, le dispositif de sécurité doit être réinstallée ou remounted comme précédemment installé.

**AVERTISSEMENT:** Risque de départ d’incendie, de commotion électrique ou de blessure pour les personnes durant le nettoyage ou la maintenance par l’usager! Débranchez l’appareil de la source d’alimentation avant toute intervention.

**AVERTISSEMENT – POUR RÉDUIRE LE RISQUE DE DÉPART D’INCENDIE, DE COMMOTION ÉLECTRIQUE OU DE BLESSURE POUR LES PERSONNES, APPLIQUEZ CECI:**

- a. N’utilisez cette unité que de la manière voulue par le constructeur. Si vous avez des questions, contactez le constructeur.
- b. Avant d’installer, de réparer ou de nettoyer l’unité, arrêtez son alimentation au panneau de distribution électrique et verrouillez le dispositif de coupure pour éviter une remise sous tension accidentelle. Si ce dispositif de coupure ne peut pas se verrouiller, fixez bien une signalisation très visibles, comme un étiquetage, au niveau du panneau de distribution.

**AVERTISSEMENT :** Une commotion électrique fatale à partir de raccords de câbles métalliques dans le boîtier de raccordement en plastique est possible en cas de connexion incorrecte – n’utilisez pas de raccords de câbles métalliques dans des boîtiers de raccordement en plastique.

**ATTENTION :** À ne pas utiliser dans des espaces avec des matières ou vapeurs dangereuses ou explosives.

**DANGER : Équipement rotatif.** La mort, une blessure grave ou des dégâts matériels peuvent en résulter. Les ventilateurs ZOO Fans sont conçus pour être suspendus hors de portée des gens. Le bas du ventilateur ne doit pas être à moins de 3,05 m (10 pieds) par rapport à toute zone pouvant recevoir du trafic piétonnier.

**AVERTISSEMENT :** Restez vigilant, faites attention à ce que vous faites, et faites preuve de bon sens lors de l’installation de ventilateurs ZOO Fans. N’installez pas de ventilateurs si vous êtes fatigué ou sous l’influence de drogues, d’alcool ou de médicaments.

**ATTENTION :** Ne faites fonctionner le ventilateur que dans les plages spécifiées sur la plaque signalétique du moteur.

**AVERTISSEMENT :** Pour réduire le risque de blessure personnelle, ne pas tordre les supports de pales lors de leur installation, ou à l’équilibrage des pales, ou au nettoyage du ventilateur. N’insérez pas d’objets étrangers entre les pales de ventilateur en rotation.

# Contents

PRE-INSTALLATION .....	1
PARTS ENCLOSED.....	1
ZOO FANS SPECIFICATIONS .....	2
LAYOUT.....	2
INSTALLATION.....	3
HANGING THE FAN .....	3
STEP 1: Fasten Main Hanging Cable.....	3
STEP 2: Fasten Stabilization Tether.....	4
STEP 3: Secure the Gripples .....	5
WIRING THE LINE VOLTAGE .....	9
WIRING THE CONTROL SIGNAL .....	10
OPTION 1 – Wiring AVS-EC-Auto .....	10
OPTION 2 - Wiring 10k Ohm Potentiometer.....	10
OPTION 3 - Wiring 0 – 10VDC Analog Signal.....	10

## PRE-INSTALLATION

The safe installation and operation of equipment supplied by ZOO Fans is the responsibility of the system designer, installer, maintainer, and operator (collectively, the “User”). The need for protective safety accessories to meet company standards, applicable codes, and the requirements of the Occupational Safety and Health Act (“OSHA”) must be determined by the User since safety requirements may vary depending on the location and application of the equipment.

The elements of a successful installation consist of:

1. Good layout of fans, wiring, and controls
2. Hanging the fans where they’ll be most effective and convenient to control
3. Completing the electrical hook-up
4. Start-up and commissioning
5. Conducting all work in a safe manner consistent with all relevant codes and regulations

## PARTS ENCLOSED

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

- H60-EC ZOO Fan
- “Bag 1 of 2” Main Hanging Gripple®
  - (2) 3/8” Flat Washers
  - (1) 3/8” Lock Washer
  - (1) 3/8” Nut
  - (1) 3/8” Nylock Nut
  - 8’ Cable with 3/8” Stud End Fixing (200 lb Safe Working Load)
  - Gripple No. 3 Fastener
  - Release/Setting Key
- “Bag 2 of 2” Stabilization Tether
  - 12’ Cable with 1/4” Eyelet End Fixing (100 lb Safe Working Load)
  - Gripple No. 2 Fastener
  - (1) 1/4” x 2 1/4” Hex Head Bolt
  - (1) 1/4” Nylock Nut
- Installation Guide (this manual)
- Operating Manual
- Variable speed controller (optional, as ordered)

# ZOO FANS SPECIFICATIONS

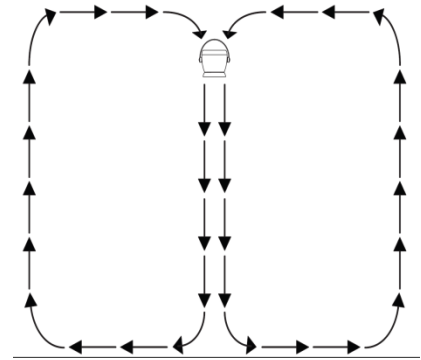
Model	Width	Weight	Full Load Current	Max RPM	Max CFM
H60-EC	1.75 ft (0.53 m)	23 lbs (10.4 kg)	2.0A @ 115V	2100	1600

## LAYOUT

This phase should have been completed prior to placing your order. If you don't have a plan or would like to consider modifications, please consult with your professional engineer, designer and/or installer. You may also contact your ZOO Fans' representative or ZOO Fans directly if you require assistance.

Remember, the number of ZOO Fans required for the job, as well as where they are hung, will depend on a number of variables, some of which are:

- Ceiling height, as well as the overall **volume** of air the fans need to move in order to achieve the targeted level for turnover of air in the facility every hour (a good design target for destratification is 100% turnover every hour)
- The availability of a sturdy and secure anchor point for attaching the fan
- Obstructions, such as merchandise/inventory racks, lighting, overhead equipment, and other mechanical systems
- The location of existing HVAC diffusers and returns
- A desire to create air movement at a specific work station, machine or other locale to dissipate heat, provide spot cooling, dry floors, or reduce/eliminate condensation



Ask the electrician who will do the wiring for the fan(s) to review the following section to be sure your layout is a good one for your objectives and that it is sensible given electrical requirements and any existing wiring. Ask the contractor who will be hanging your fans to review your layout for ease and safety of installation, as well as compatibility with existing mechanical systems and all applicable codes. If the installer(s) have any questions about where to locate your fan(s) or how to install them, please contact either your ZOO Fans' representative or ZOO Fans. A copy of this installation guide can also be found at [www.zoofans.com](http://www.zoofans.com).

# INSTALLATION

## ***HANGING THE FAN***

The fan intake must be 12" from any obstruction.

ZOO Fans are designed to be hung vertically or at an angle. For vertical installations, proceed to STEP 1 below. To install the ZOO Fan at an angle, additional hardware is required. Please contact ZOO Fans or your ZOO Fans' representative.

### **STEP 1: Fasten Main Hanging Cable**

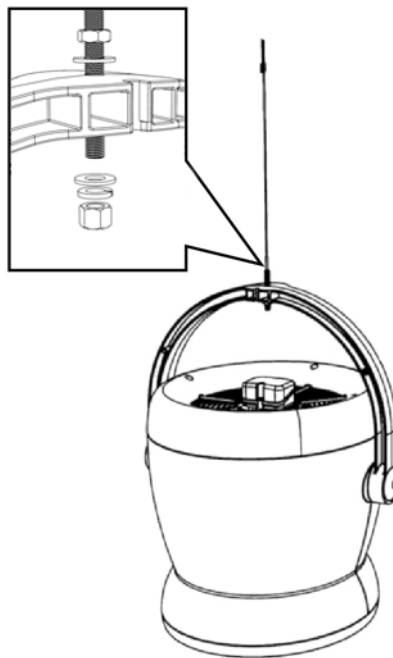
Use the hardware from the white bag labeled "Bag 1 of 2" containing the 8' Cable with 3/8" Stud End Fixing, and attach that cable to the hole at the top of the fan's handle as shown in **Illustration 1**, below.

NOTE: Gripple Installation Guidelines are included with your Gripple hardware and should be consulted for information about installing, adjusting and caring for your Gripple attachment hardware.

**TIP:** When attaching these cables, leave the cables wound, as shipped, until you are ready to hang the fan.

1. Place 3/8" Nut on Stud Fixing
2. Place 3/8" Flat Washer on Stud Fixing
3. Insert 3/8" Stud Fixing through the center hole in the handle
4. Place 3/8" Flat Washer, 3/8" Lock Washer, and 3/8" Nylock Nut on thread sticking through the handle
5. Securely tighten 3/8" Nylock Nut

***Illustration 1***



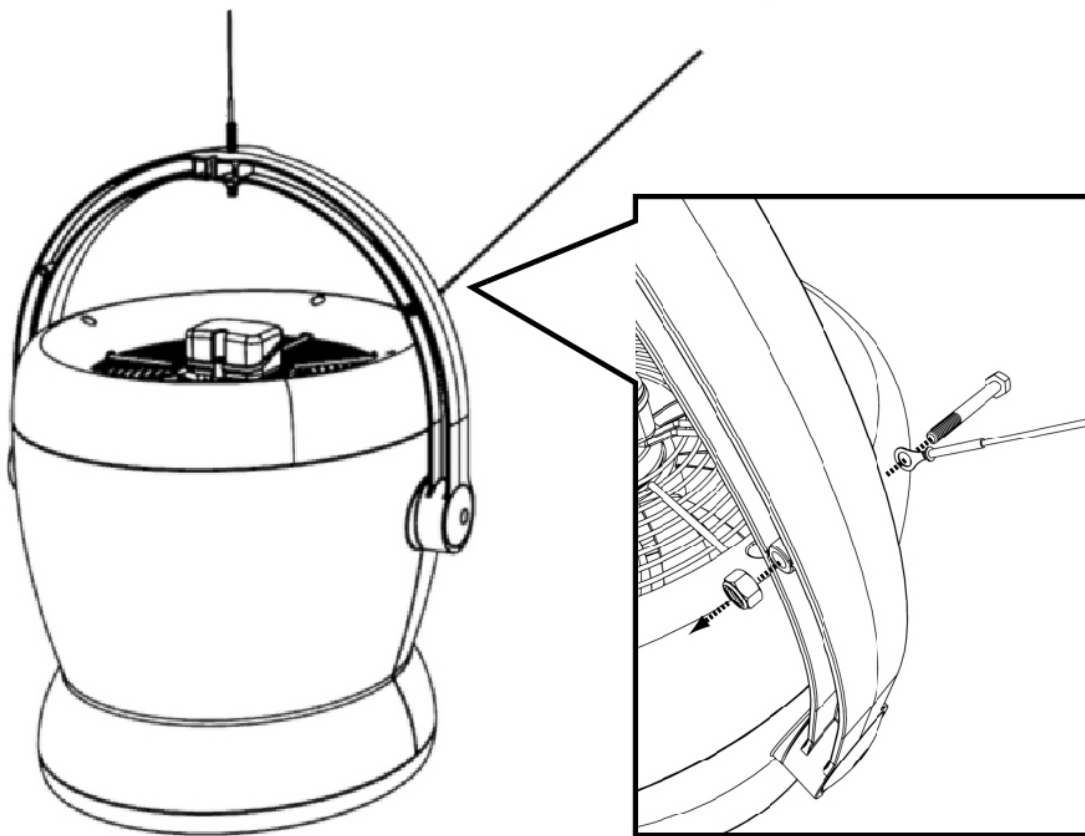
## STEP 2: Fasten Stabilization Tether

Use the hardware from the white bag labeled “Bag 2 of 2” containing the 12’ cable with eyelet, and attach the stabilization tether to either attachment point located at 45° on each side of the fan’s handle as shown in **Illustration 2**, below.

**TIP:** When attaching these cables, leave the cables wound, as shipped, until you are ready to hang the fan.

1. Insert 1/4” Hex Head bolt through the Eyelet of Gripple
2. Insert 1/4” Hex Head bolt through the hole located at 45° on either side of the handle
3. Securely tighten 1/4” Nylock Nut

**Illustration 2**





### STEP 3: Secure the Gripples

**Illustration 3** shows how to secure the Main Hanging Cable to the Truss, I-Beam, unistrut or other appropriate attachment point that can easily support the load of the fan.

1. Insert cable through Gripple
2. Loop cable over Truss, I-Beam, or support beam
3. Insert end of cable into Gripple
4. Adjust to desired height

**Illustration 3**

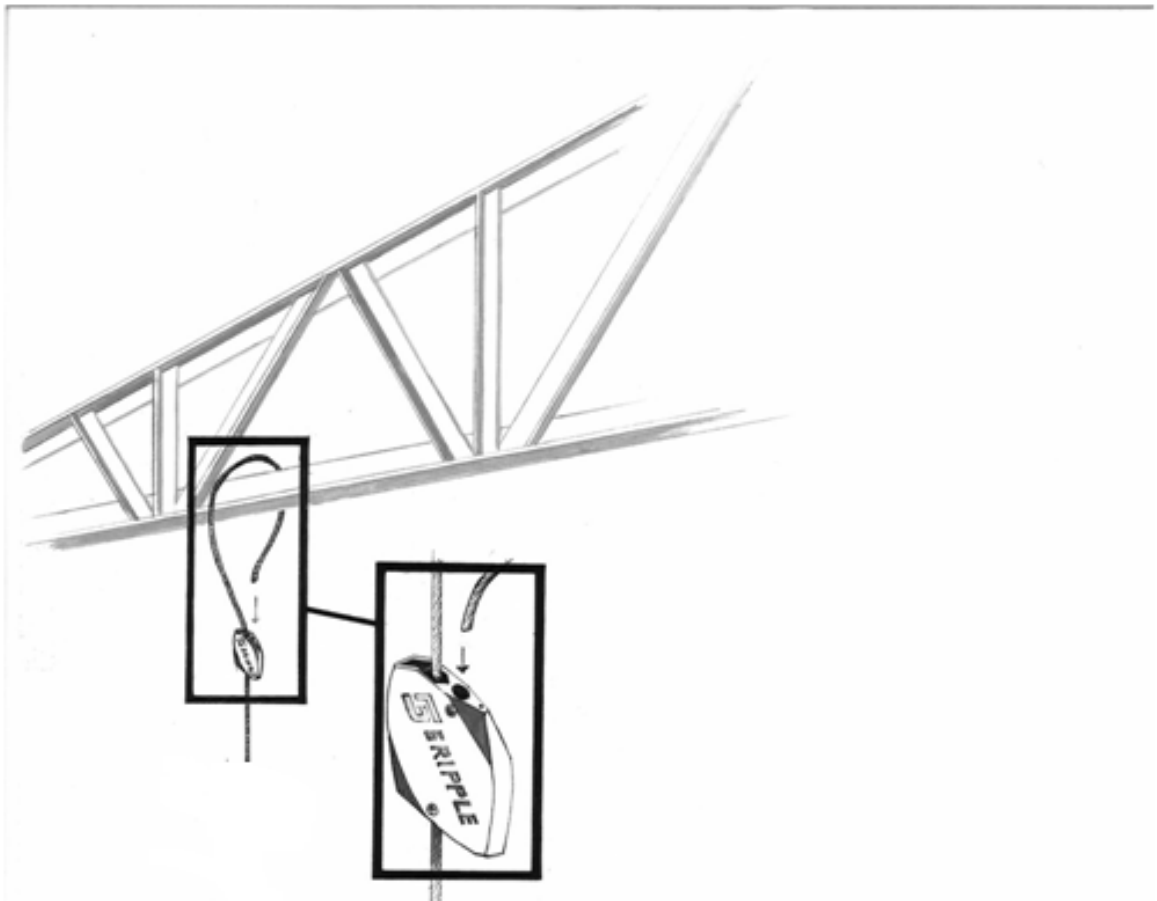
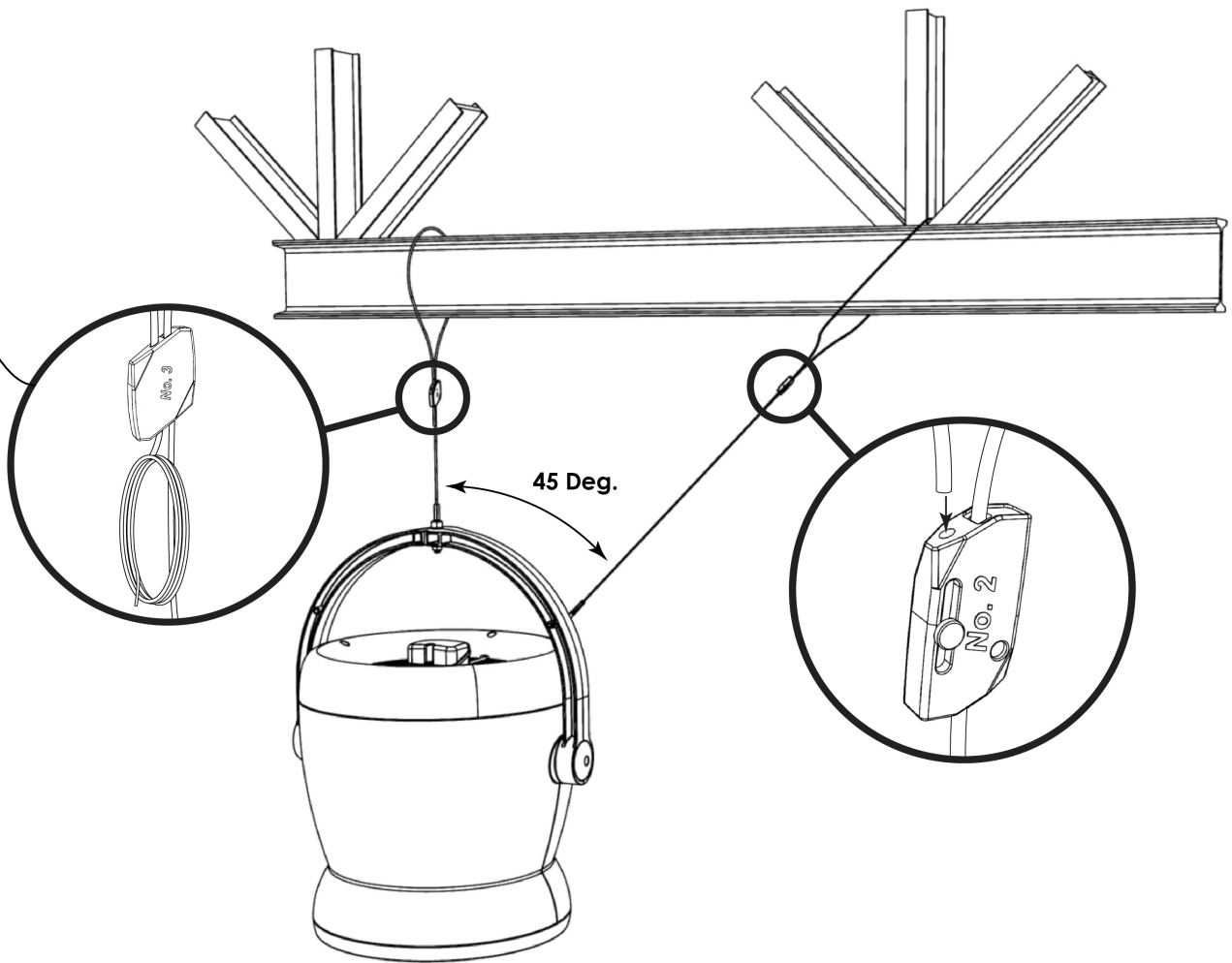


Illustration 4, 5, and 6 show how to secure the Stabilization Tether to the Truss, I-Beam, or support beam.

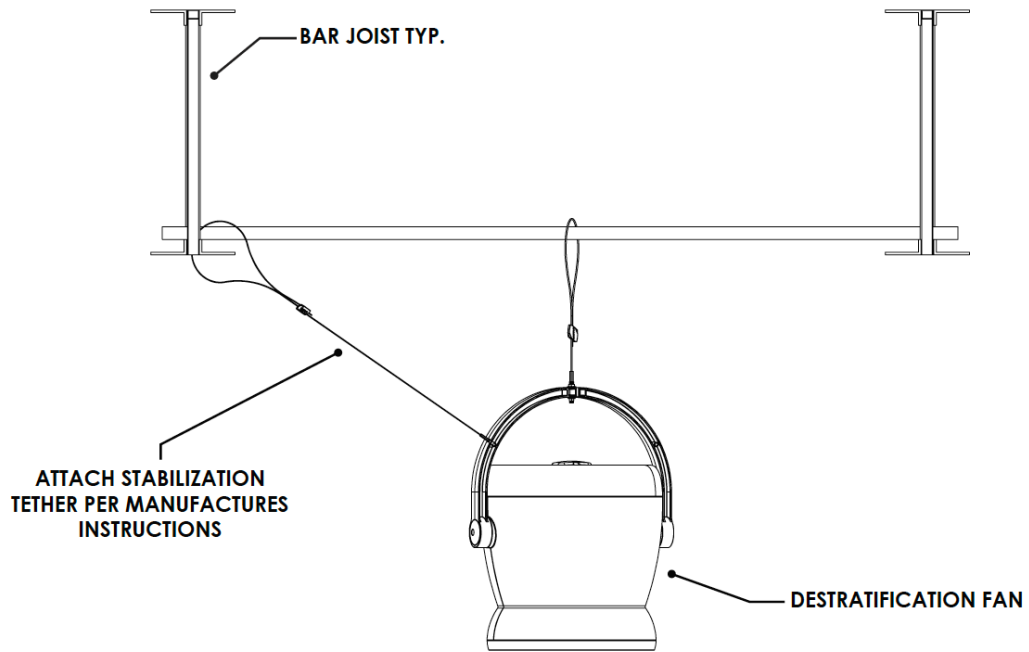
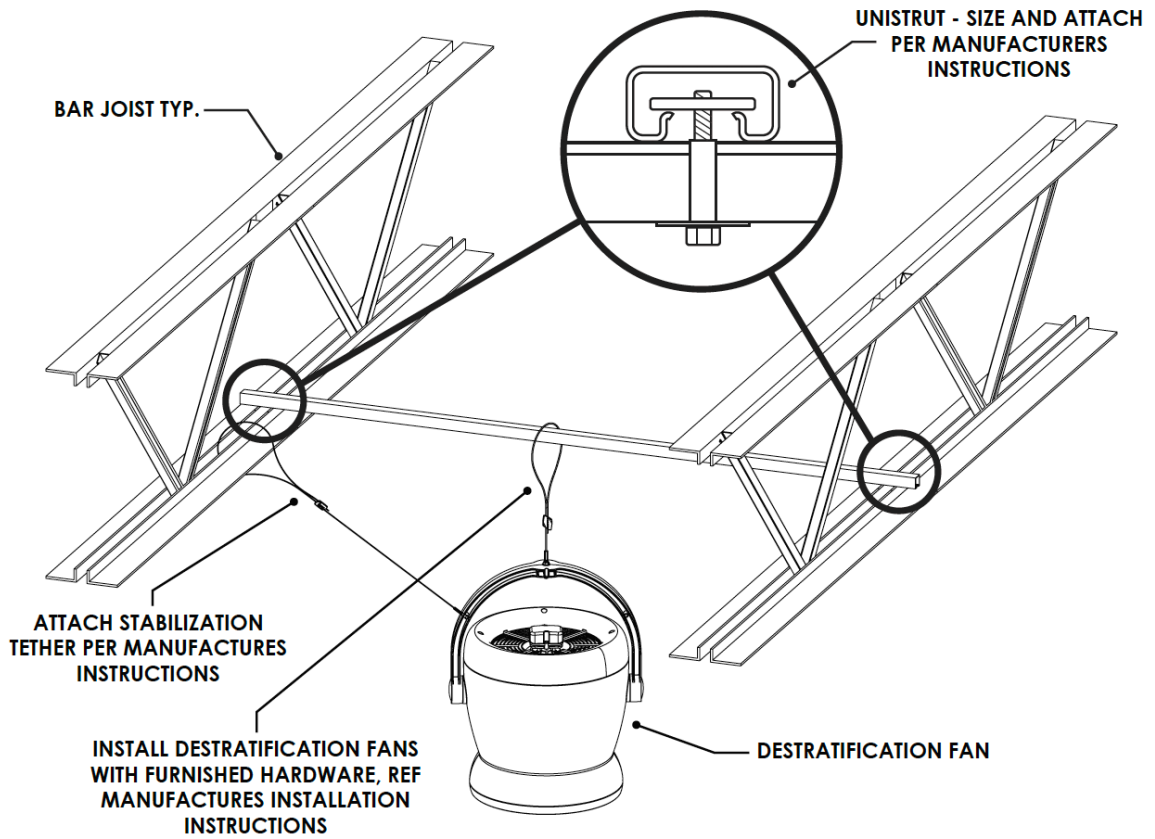
**WARNING:** The Stabilization Tether MUST be installed properly to ensure safe operation of your ZOO Fan.

1. Insert cable through Gripper
2. At a 45 ° angle, loop cable over Truss, I-beam, or support beam
3. Push end of cable into Gripper
4. Adjust cable so there is no slack
5. Excess cable should be neatly rolled up and taped or cut for a clean installation

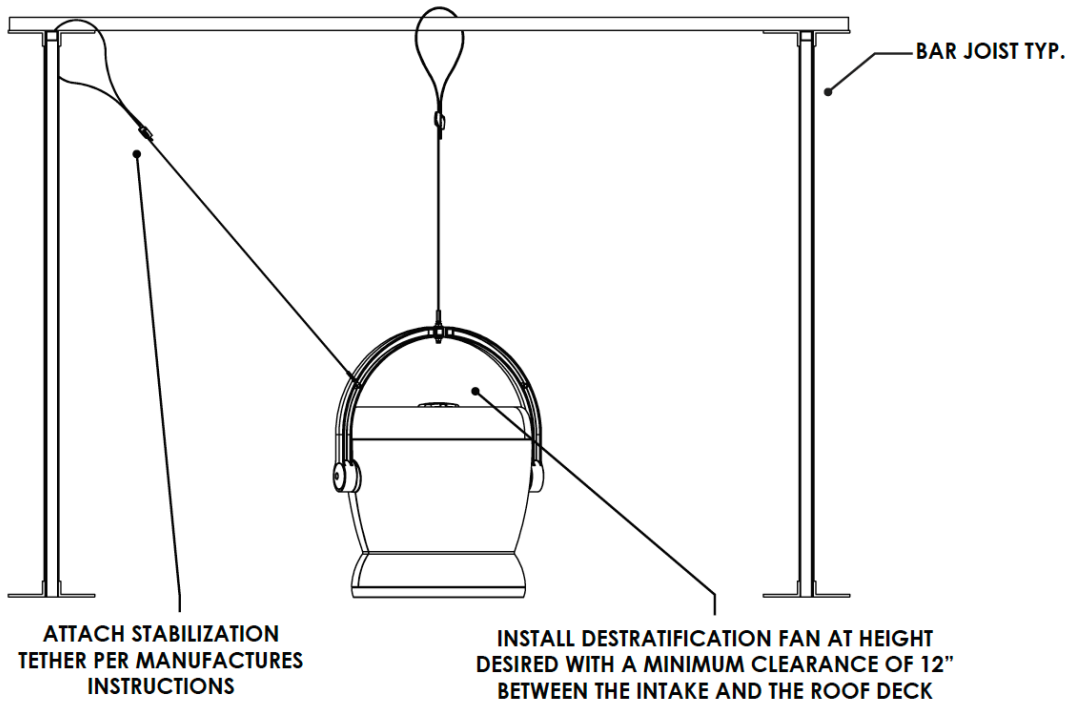
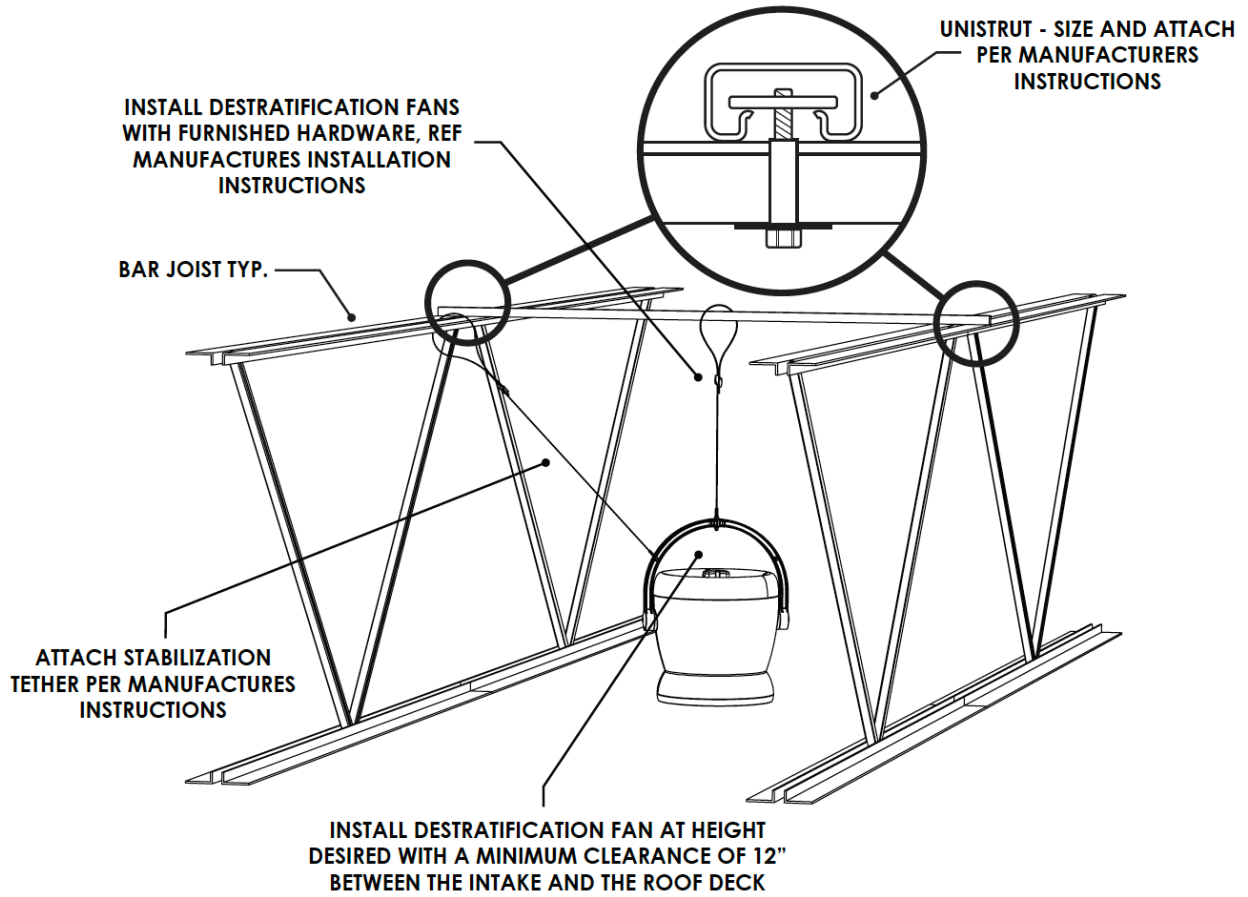
**Illustration 4**



*Illustration 5*



**Illustration 6**



## **WIRING THE LINE VOLTAGE**

The H60-EC is equipped with an EC motor.

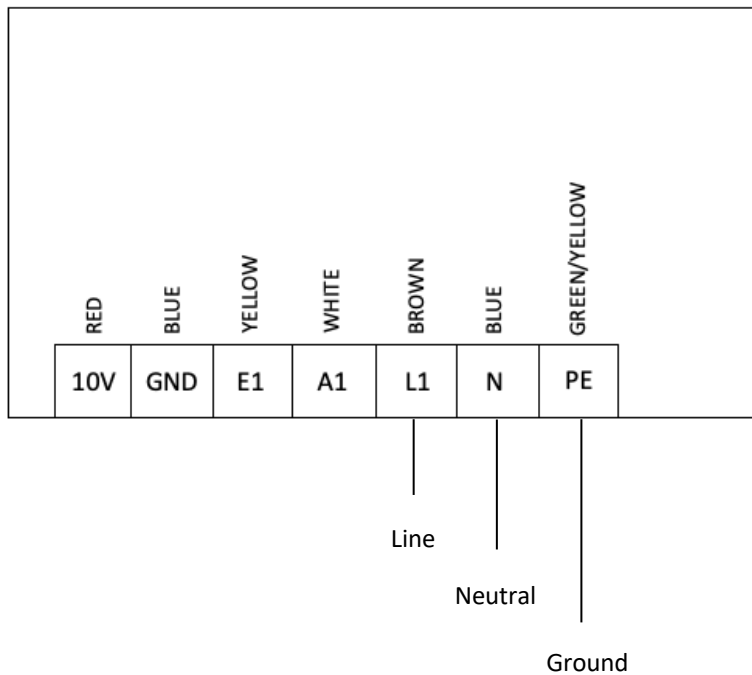
Single Phase installation ONLY  
115V  
50Hz or 60Hz

**WARNING:** DO NOT USE LINE VOLTAGE TO TURN FAN ON OR OFF. The motor requires constant power.

To control on/off and speed of the fan, use the low-voltage control. Refer to **WIRING THE CONTROL SIGNAL**.

The H60-EC fan is available with a pre-wired 6' cord and 3-pronged plug option. If your fan will be hard wired and does not have a cord and plug, the electrical connection should be made according to **Illustration 8**, the wiring diagram below:

**Illustration 8, Wiring Diagram**



## **WIRING THE CONTROL SIGNAL**

The H60-EC has multiple control options available including:

- ZOO Fans AVS-EC-Auto
- ZOO Fans VS-10KPOT
- 0 – 10 Volt DC analog signal
- PWM signal (contact Zoo Fans for wiring instructions)

**WARNING:** Never apply line voltage to the control signals

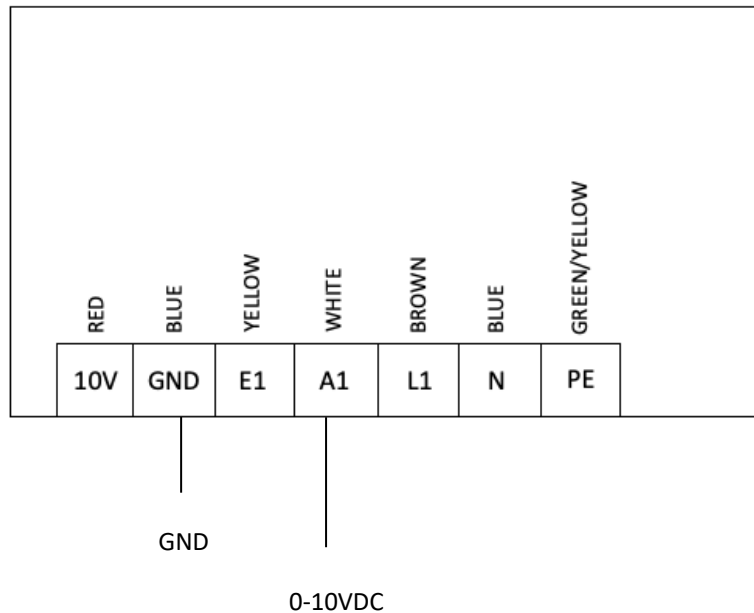
### **OPTION 1 – Wiring AVS-EC-Auto**

Please refer to ZOO Fans AVS-EC-Auto installation guide for wiring

### **OPTION 2 - Wiring 10k Ohm Potentiometer**

Please refer to ZOO Fans VSPOT-10K Installation Guide

### **OPTION 3 - Wiring 0 – 10VDC Analog Signal**



Contact Zoo Fans for other control options.





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