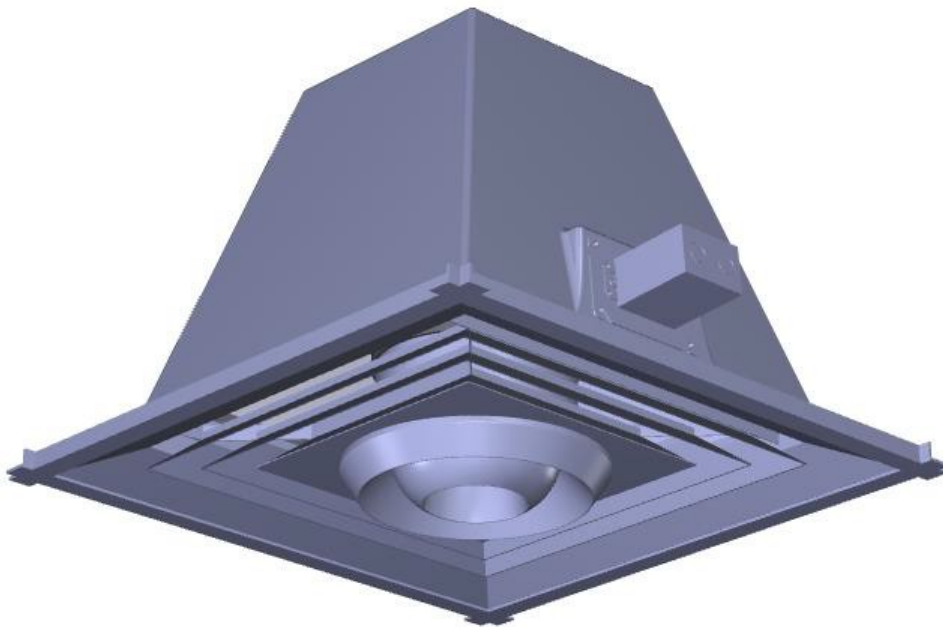




Installation Guide

Model: IC20 EC Drop-In



May be covered by the following United States and International Patents:

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

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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'utilisateur! Débranchez l'appareil de la source d'alimentation avant toute intervention.

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 réinstallé ou remounté 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'utilisateur! 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:

- N'utilisez cette unité que de la manière voulue par le constructeur. Si vous avez des questions, contactez le constructeur.
- 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 visible, 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.

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.



IMPORTANT SAFETY INFORMATION READ AND SAVE THESE INSTRUCTIONS

WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, AND/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.

CAUTION: To reduce the risk of electric shock, do not use with any solid-state speed control device.

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.

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.

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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.

- Combination Intake/Exhaust Diffuser
- Electrically commutated inline motor with adapter ring
- Drop Ceiling Plenum
- "Bag 1 of 2" Support Gripples
 - (4) 15' Cable with ¼" Eyelet End Fixing (25 lbs. Safe Working Load, each)
 - (4) Gripper No. 1 External Release Fastener
- "Bag 2 of 2" Attachment Hardware
 - (8) Wing nuts
 - (2) ½" 8-32 Machine screws
- 4"X4" Electrical job box with mounting plate
- Installation Guide (this manual)
- Variable speed controller (optional, ordered separately)

ZOO FANS SPECIFICATIONS

Model	Dimensions	Weight	Full Load Current	Max RPM	Max CFM
IC20 Drop-In	23.75W x 23.75L x 16.375H	15 lbs. (6.8 kg)	1.2A @ 120V	3800	710

LAYOUT

This phase should have been completed prior to placing your order. If you don't have a plan or wish to review it again, 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 installed, will depend on a number of variables, some of which are:

- Ceiling height, as well as the overall **volume** of air the fan(s) 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 of the volume of air every hour.
- The availability of sturdy and secure anchor points for attaching the fan
- Obstructions, such as merchandise/inventory racks, lighting, and other mechanical systems
- The location of existing HVAC diffusers and returns
- A desire to create OR avoid air movement at a specific work station, machine or other locale

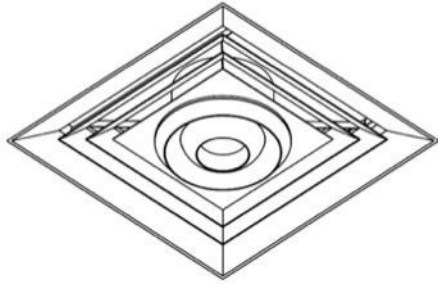
Ask the electrician who will be installing the wiring for the fans to review the following section to be sure your layout is a good one when evaluated against existing wiring and electrical equipment.

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.

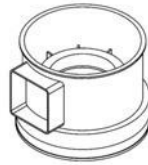
If the installer(s) have any questions about where to locate your fan(s) or how to install them, please contact either your ZOO Fans' representative or ZOO Fans directly. A copy of this installation guide can also be found at www.zoofans.com.

INSTALLATION

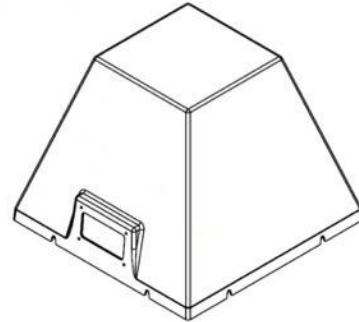
**BEFORE INSTALLING THE FAN IN THE CEILING,
FOLLOW THESE ASSEMBLY INSTRUCTIONS**



Combination Diffuser



Motor



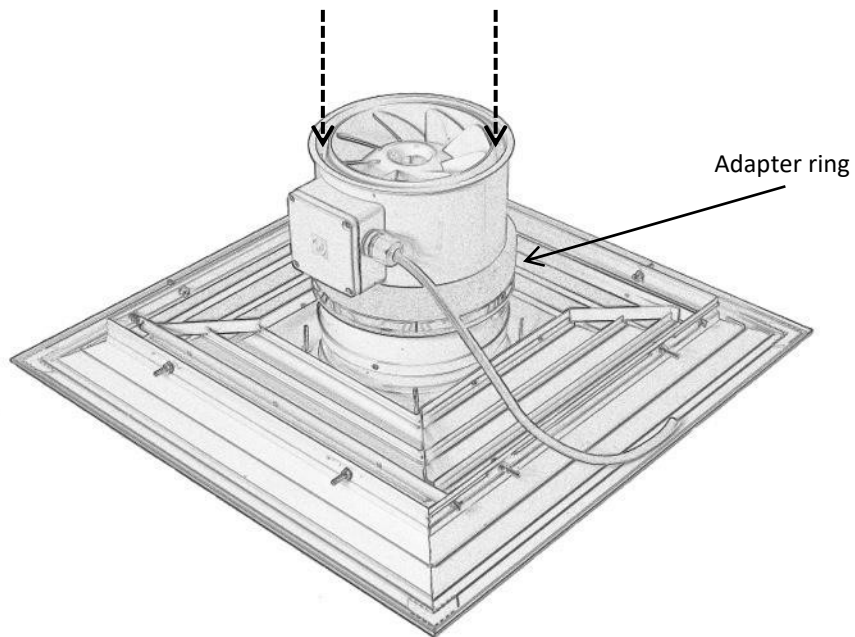
Plenum

ASSEMBLY

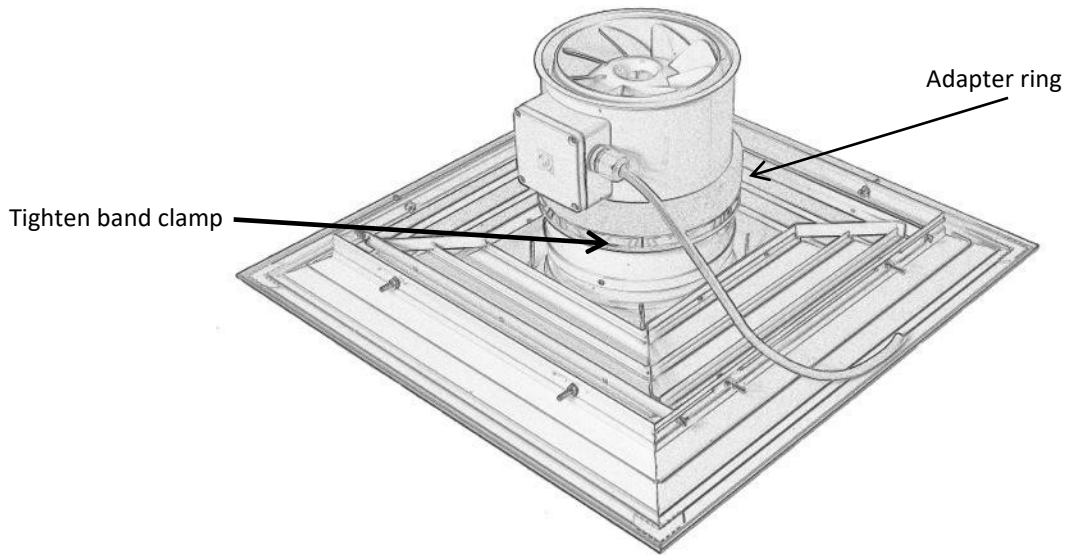
STEP 1: Attach Motor to Diffuser

1. Place the diffuser on a soft surface or support it by the outer edges all the way around (such as placing it over the opening of a box), so the jet ball is not damaged during this operation
2. The motor will come pre-assembled with the adapter ring attached. Place the motor down over the diffuser as shown below and install the adapter ring onto the intake side of the jet ball diffuser.
3. Align the motor so the pre-installed wire comes straight out, toward the side where the power supply wire from the circuit will be supplied

Place the motor over the back of the diffuser so the adapter ring attaches to the intake side of the jet ball diffuser

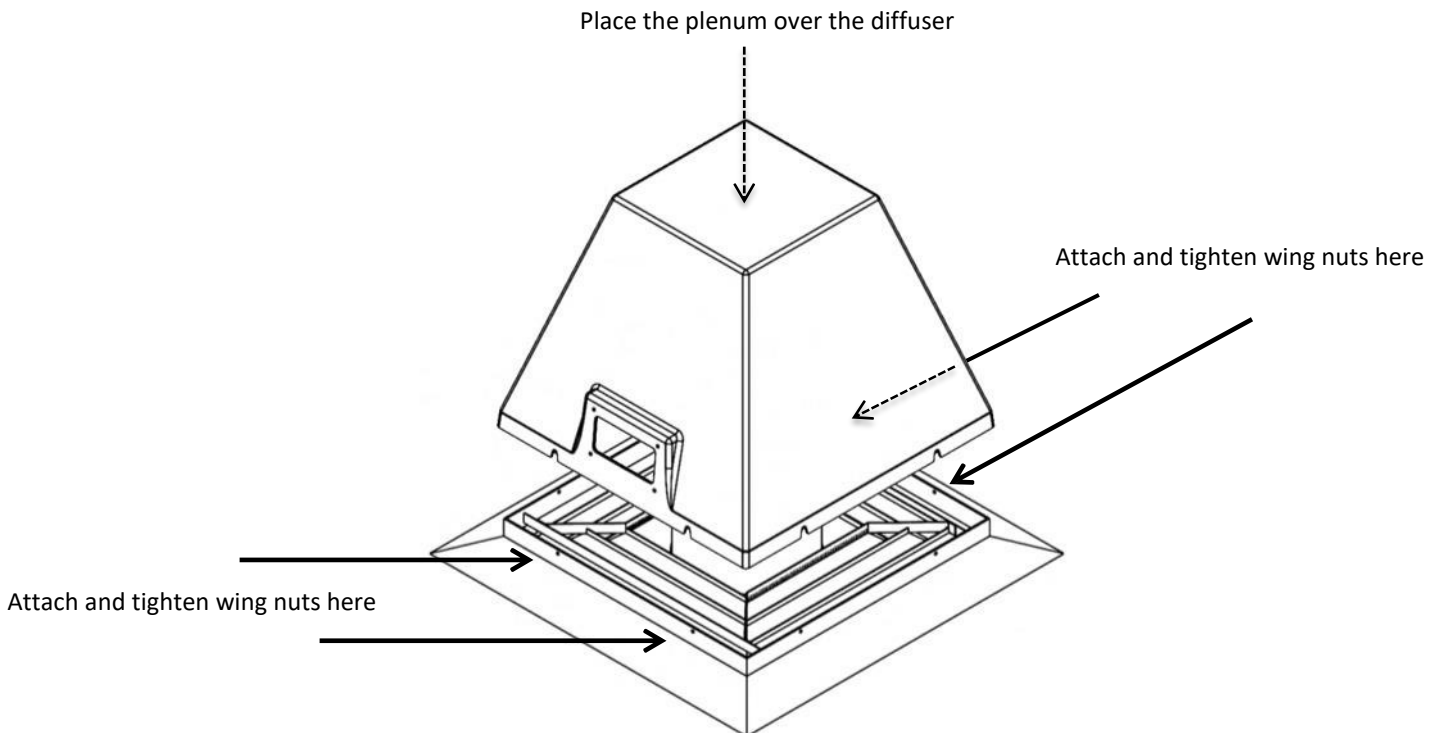


4. Tighten the band clamp on the adapter ring



STEP 2: Install the Plenum

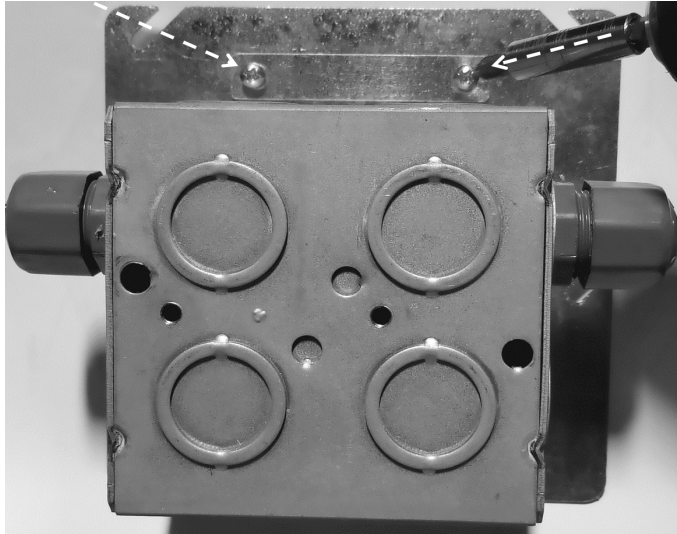
1. Place the plenum over the diffuser, aligning the notches in the plenum with the mounting studs on the diffuser
2. Install and tighten two wing nuts on the studs at the bottom of the plenum on the side with the electrical opening
3. Install and tighten the two wing nuts on the opposite side (see arrows, below)
➔ **Leave the remaining wing nuts off – they will be installed at a later step.**



ELECTRICAL WIRING

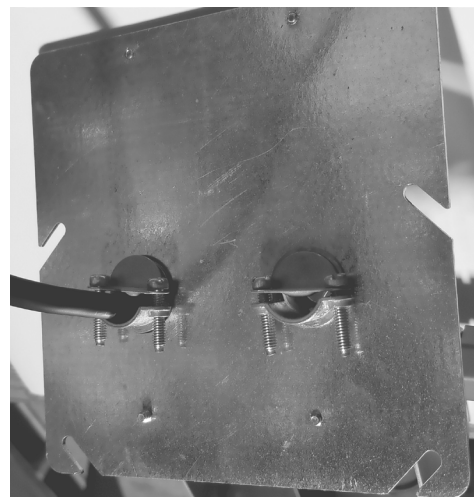
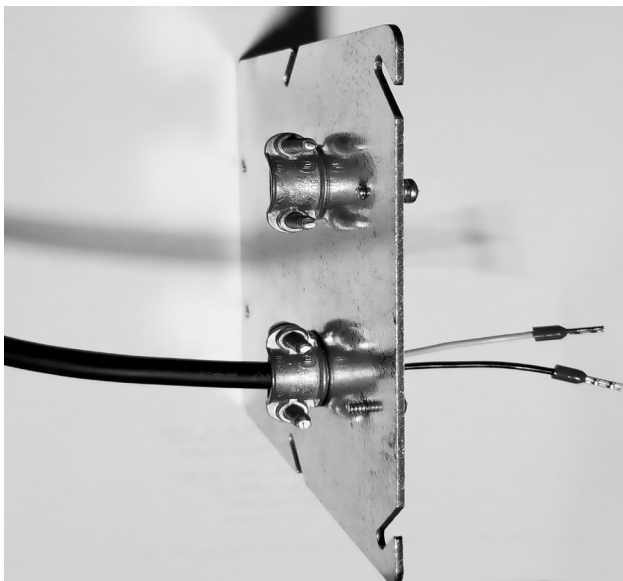
STEP 1. Remove the cover plate from the Junction Box

1. Remove the two screws—one at each side on the **top**—that hold the cover plate and remove it. TIP: LEAVE the bottom screws attached. The terminal box will slide back into this slot.



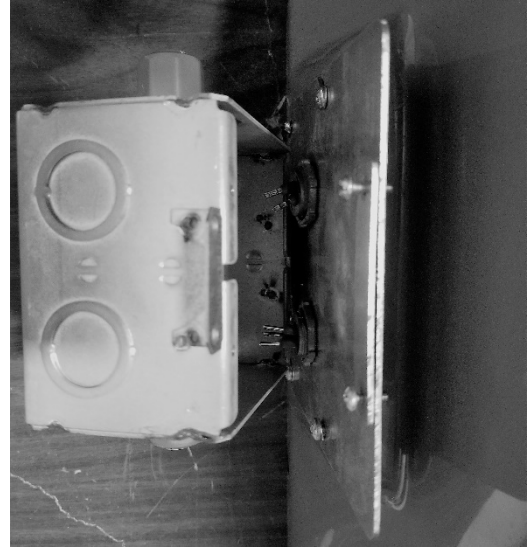
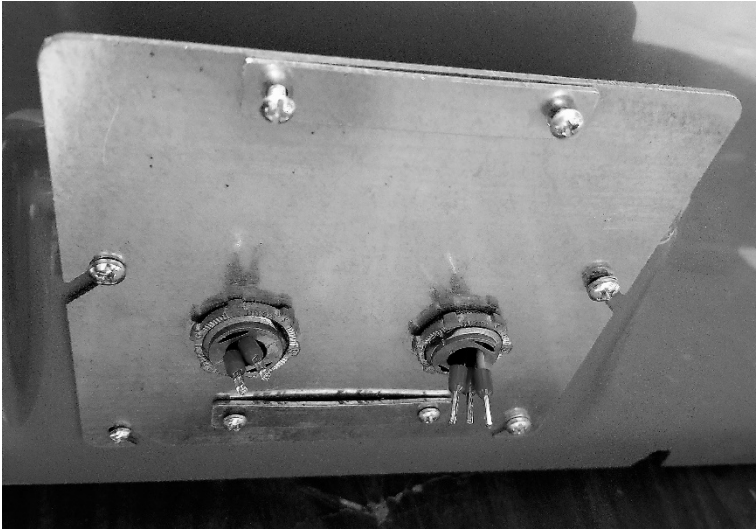
STEP 2. Secure the Fan Wires and Attach the Junction Box to the Mounting Plate

1. Place the high-voltage wire on the motor through the hole in the side of the plenum
2. Put the wire through the strain relief that is already attached to the mounting plate, with the screws facing in toward the fan and secure the strain relief by tightening the two screws
3. Place the low-voltage wire from motor into the other strain-relief and secure by tightening the two screws



STEP 3. Attach the junction box mounting plate to the plenum

1. Slide the junction box mounting plate onto the two screws already in place, and tighten
2. Install two additional (8-32) 1/2" machine screws (provided) and tighten to secure to plenum



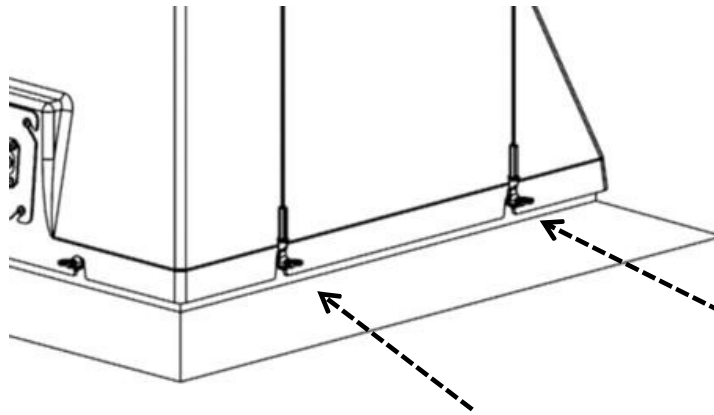
SECURING THE FAN

STEP 1: Prepare Hanging System before Installing Fan in Ceiling

The IC20 Drop-In includes a four (4) wire Gripple® hanging system to support the unit on the drop ceiling grid. This system relieves additional weight load on the existing ceiling frame to avoid sag or unlevel portions of the ceiling, and also provides a safety system to secure the fan independently of the ceiling.

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

1. Place the eyelet end fixings at the end of each Gripple wire over the mounting studs on BOTH SIDES of the plenum (two per side), and secure with remaining wing nuts as shown below:



INSTALLATION TIPS:

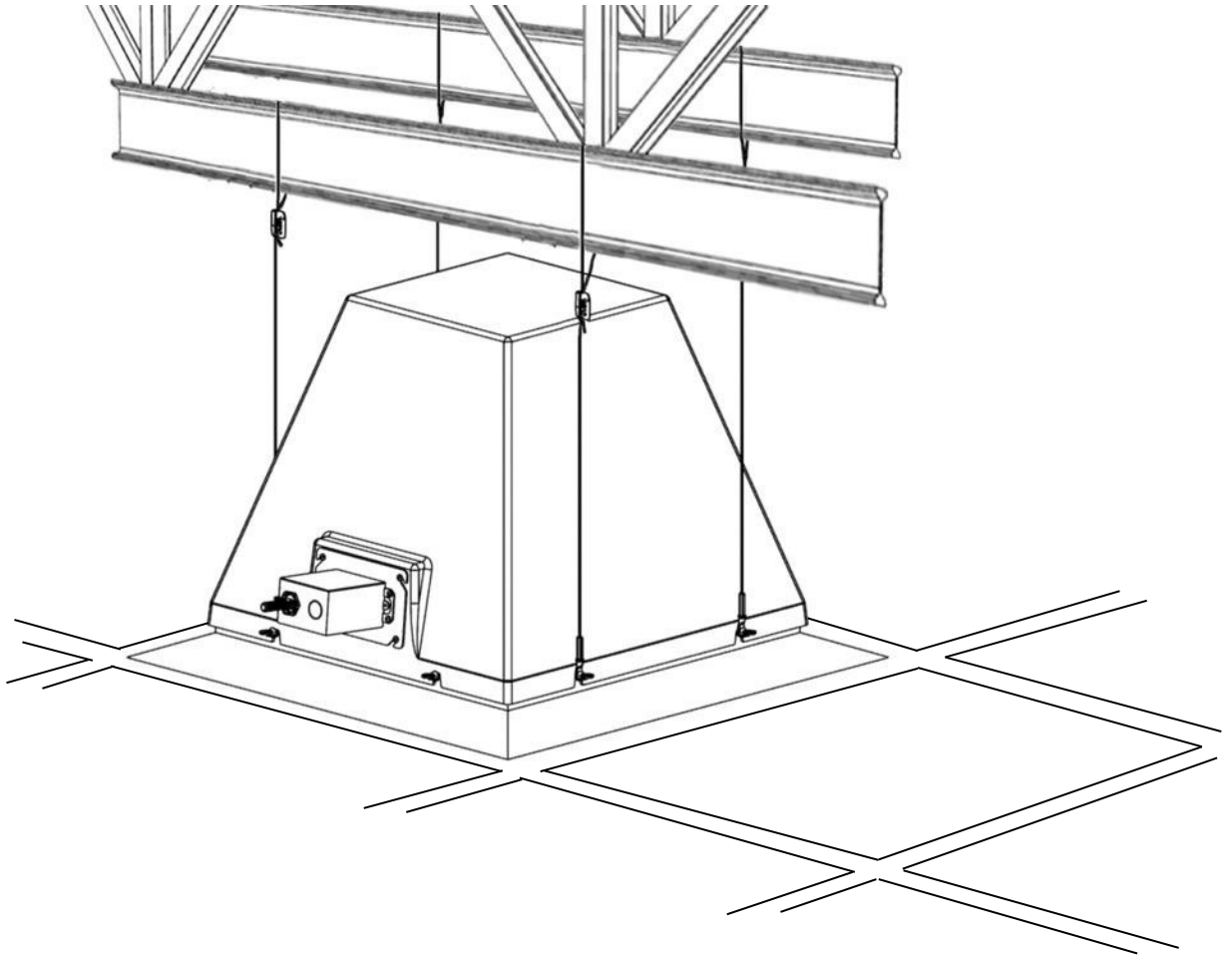
- Only uncoil enough of the Grippler wire to attach the end fitting to the stud
- Tape the remainder in a coil on the top of the plenum so it's out of the way while lifting the fan into the ceiling

FOR BEST RESULTS:

- Place duct tape along the outside, bottom edge of the plenum to seal between the plenum and the diffuser in order to maintain optimum air circulation

STEP 2: The Fan Unit is Ready to be Placed in the Ceiling Frame

1. Be sure to place the fan so the side with the electrical mounting plate is facing toward the power supply. Lifting the fan unit by the diffuser, carefully place it in the designated 2' x 2' ceiling grid by angling it through the opening and setting into place. When angled, the assembled unit it can be lifted through a 2' x 2' opening.



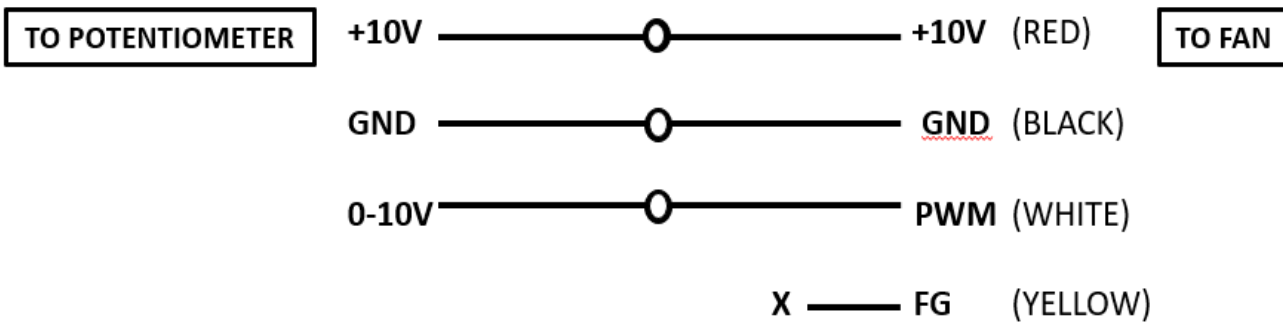
2. Uncoil each Gripple wire that is attached to the fan
3. Place a Gripple fitting on each wire
4. Loop each wire over a Truss, I-beam, support beam or other suitable anchor point
5. Push end of wire back into Gripple fitting, repeat for all wires
6. Adjust wires so there is no slack

WIRING THE FAN

STEP 1: Prepare Power Supply Wire in Ceiling

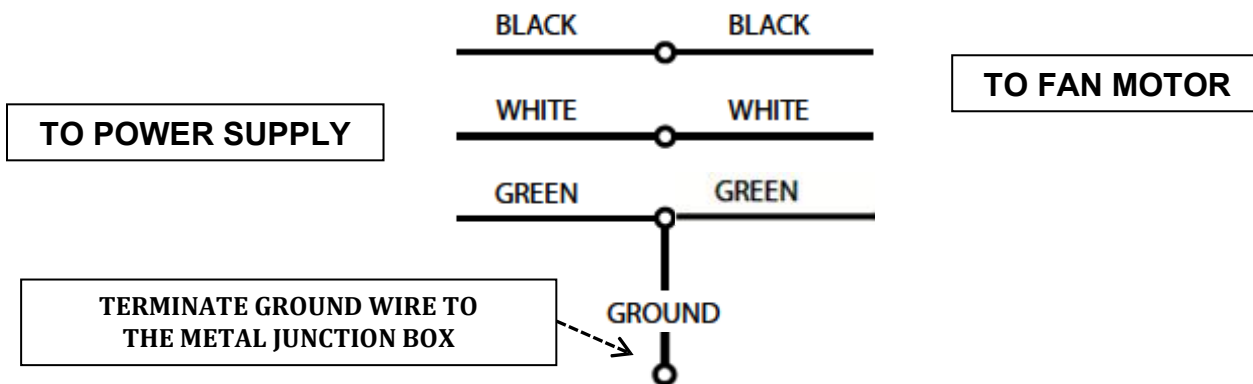
1. Prepare the wire from the power supply and secure it to the J-Box using the strain relief
2. Terminate the grounding wire from the power supply to the metal junction box.

STEP 2: Wire the Controller



STEP 3: Wire the Fan Mains

Using the black and white wires from the fan that are secured by the mounting plate, wire the fan to the power supply as follows:



- Electrical connection should be made according to the wiring diagram (see wiring diagram on following page)
- Proper grounding of the controller is required for safety and proper operation
- Multiple fans may be wired in parallel to one controller; please contact ZOO Fans for detailed instructions
- Ground wire must be bonded at each location where metal boxes are used

CAUTION: An incorrectly installed controller can result in component damage or reduction of the fan's life. Wiring or application errors such as under-sizing the controller, incorrect or inadequate AC supply, or excessive ambient temperatures may result in a malfunction of the fan system. Verify correct voltage and phase before beginning installation!

CAUTION: Fans should only be used with manufacturer supplied controller. Do not use fan with other speed control device!

STEP 4: Replace the Cover on the Junction Box

Install and tighten (2) screws, one on each side at the top

FAN SHOULD NOW BE INSTALLED PROPERLY AND READY FOR OPERATION



Efficiency and Performance

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