



Description

Our ceiling fans are designed for both summer and winter operation. Four complete lines of high quality industrial and commercial ceiling fans can efficiently achieve the air patterns necessary for any application to have energy savings up to 30%. In winter by minimizing heat stratification they can reduce heating costs. In summer by providing a general air recirculation and cooling they can reduce cooling costs. Industrial and Commercial fans are not warranted for severe service or agricultural applications.

RAMM ceiling fans have passed the UL sprayproof and humidity tests and are designed for agricultural or severe service areas that may have high moisture, dust or humidity.

Agricultural and Severe Service Fans

LINE	MODEL	DOWNBLOWING MODEL #	REVERSING MODEL #	VOLTS	AMPS	WEIGHT
PLATINUM LINE	190	190A	190C	110V	0.71	24 LBS

Heavy Duty Industrial and Commercial Fans

LINE	MODEL	DOWNBLOWING MODEL #	REVERSING MODEL #	VOLTS	AMPS	WEIGHT
GOLD LINE	160	160F	160C	110V	0.64	24 LBS
GOLD LINE	160	160F 277V	NA	277V	0.44	24 LBS
GOLD LINE	136	136F	NA	110V	0.70	17 LBS
GOLD LINE	136	136F 277V	NA	277V	0.30	17 LBS
SILVER LINE	60	60F	60C	110V	0.61	18 LBS
SILVER LINE	60	60F 277V	NA	277V	0.44	18 LBS
SILVER LINE	48	48F	48C	110V	0.61	16 LBS
BRONZE LINE	FP	FP56	NA	110V	0.70	18 LBS

Specifications

Parts List

- 1 - Pre-assembled fan without blades.
- 3 - Blades with brackets attached.
- 6 - Bolts attached to motor housing.
- 1 - J-Hook mounting bolt (or lag screw for 190A).
- 2 each - lock washers, flat washers, nuts.
- 1 - J-Hook secondary support bolt (except 190A).
- 1 - EZ Mount bracket (except 190A).

Unpacking

- Carefully remove fan and parts from carton and check for shipping damage.
- Check parts list against carton contents.
- Read instructions carefully and completely before installation.
- Do not install blades before mounting fan.**
- Connect fan motor to temporary power source to check electrical operation before installation to be sure wiring was not jostled during shipment.

Before Installation:

- Disconnect power at main service panel.** Lock in open position and tag it to prevent unexpected power application.
- Check that power source conforms to electrical requirements of

Questions? For troubleshooting tips or additional installation information, please visit our website at www.rammfence.com
(800) 434-8456

All RAMM fans are UL Listed and Approved

RAMM CEILING FANS

ASSEMBLY AND INSTALLATION INSTRUCTIONS

READ AND SAVE THESE INSTRUCTIONS

READ BOTH SIDES OF THESE INSTRUCTIONS COMPLETELY AND CAREFULLY BEFORE ASSEMBLING OR INSTALLING YOUR ENVIROFAN.

IT IS IMPORTANT THAT YOU OBSERVE ALL SAFETY INFORMATION TO HELP PREVENT PERSONAL INJURY AND/OR PROPERTY DAMAGE.

FOLLOWING THESE INSTRUCTIONS WILL ALSO HELP MAXIMIZE PRODUCT SUCCESS AND HELP PREVENT POSSIBLE INVALIDATION OF YOUR WARRANTY.

INDUSTRIAL AND COMMERCIAL FANS ARE NOT WARRANTED FOR SEVERE SERVICE OR AGRICULTURAL APPLICATIONS.

ALL ENVIROFANS ARE UL LISTED AND APPROVED



Safety Precautions

- This fan should be installed by a qualified electrician in accordance with all applicable National Electrical Codes, ANSI/NFPA 70 and local electrical codes and standards.
- Use this fan only in the manner intended by the manufacturer. This fan is intended for permanent installation and to be used for air circulation only.
- The secondary support cable included with the fan must be properly connected.
- The fan shall be supported 1) directly from the building structure or 2) directly from UL approved fan electrical box using EZ Mount hardware. **Caution: To reduce risk of injury, use only the enclosed hardware as the primary means of support.**
- Ceiling fans without guards are to be installed at least ten feet above floor with adequate clearance between blades and adjacent walls, furnishings, etc.
- When mounted in a cathedral ceiling, blade tips should be at least 12 inches from the angled roof line or air turbulence may cause fan to sway.
- The supporting beam must be capable of holding at least 80 pounds (or the weight of the fan plus any accessories that might be added).
- When using a single J-hook mounting be sure to tighten all nuts and lockwashers properly and provide a means to prevent rotation after assembly if it is employed with a reversible fan or a fan that operates in a manner that may tend to loosen screws or a J-hook.
- Ceiling fans installed with ceiling fan guards must be installed with J bolt hardware provided, and must be attached directly to the building structure. J bolt provided will support weight of fan and fan guard. Do not use EZ mount bracket or any other alternate hardware.**
- All Envirofans are suitable for use with solid-state speed controls.
- WARNING:** To reduce the risk of personal injury, do not bend the blade brackets when installing the blades or cleaning the fan. Do not insert fingers or foreign objects into rotating fan, or block or tamper with fan in any manner while it is operating.

Accessories Available

Protecto-Guard Ceiling Fan Guard - For any fan that requires protection or a safety guard. Patented design fits most 36" to 60" fans.



Downrod Extension Kit - 30" downrod extension kit. Includes safety cable extension.



Fan Controls - A complete line of solid state, infinite speed, UL recognized fan controls.



Electrical Hook-Up

Model F & FP Fans - Curved Blades - Downblowing Only:

Black to Black
White to White
Green (Ground)
Red (capped off)

Model C Fans - Straight Blades - Reversing:

Black to Black (down blowing)
Red to Black (up blowing)
White to White
Green (Ground)

Cord and Plug Installation - Models 60F-7, 160F-7, 190A-7:

These models are manufactured with a cord and molded 3 prong plug which can be installed directly into a 3-way electrical box.

Note: The Models 60C, 48C, 160C and 190C can be wired as a combination fan (both up and down blowing) by installing a reversing pole switch in the line between the fan and the control. (Model 108C control available from Northwest Envirofan - see instructions below)

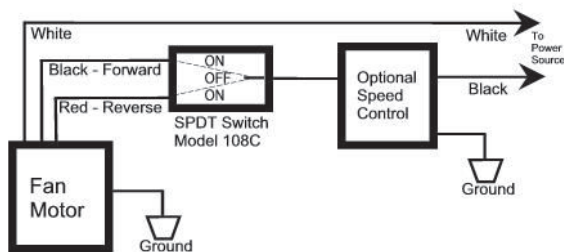
Reversible fans operate most effectively with straight blades which come standard on all C Models. **Caution:** Do not flip switch to change fan direction without waiting for motor to stop. Damage to motor could occur.

All fans may be wired to an optional speed control. It is recommended to use an Envirofan Solid State Infinite Speed Control as they are calibrated with Envirofan Ceiling Fans to ensure optimum performance. For Envirofan controls or an alternate control, refer to the installation instructions included with that individual control for proper instructions.

Note: When any solid state motor speed control is used, a humming noise may be present in the fan on low speed. This hum in no way affects the operation or performance of the fan and is acceptable in most industrial applications. If you have a low noise application (i.e. churches, theatres, etc.) and are experiencing a hertz hum issue, a transformer/dehummer control is recommended.

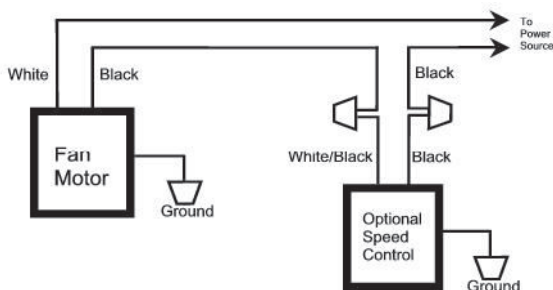
Reversing—Model C Fans

Using Envirofan Model 108C SPDT Reversing Switch



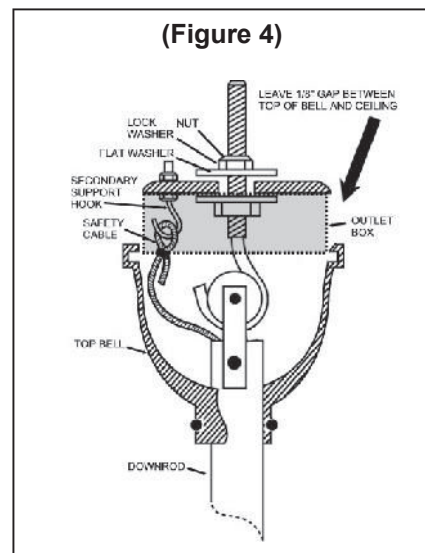
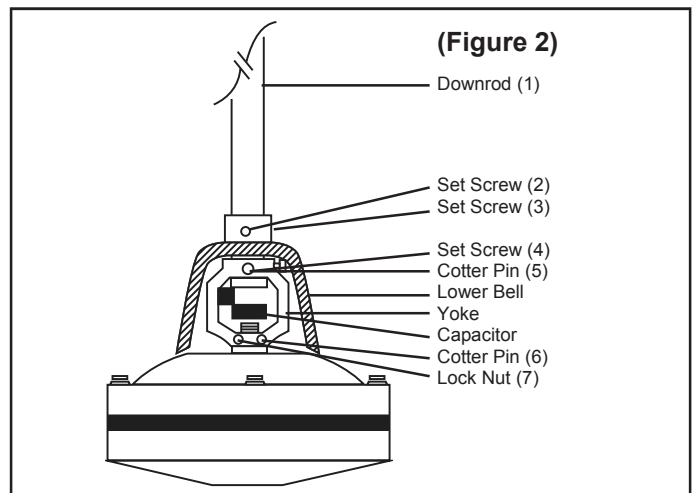
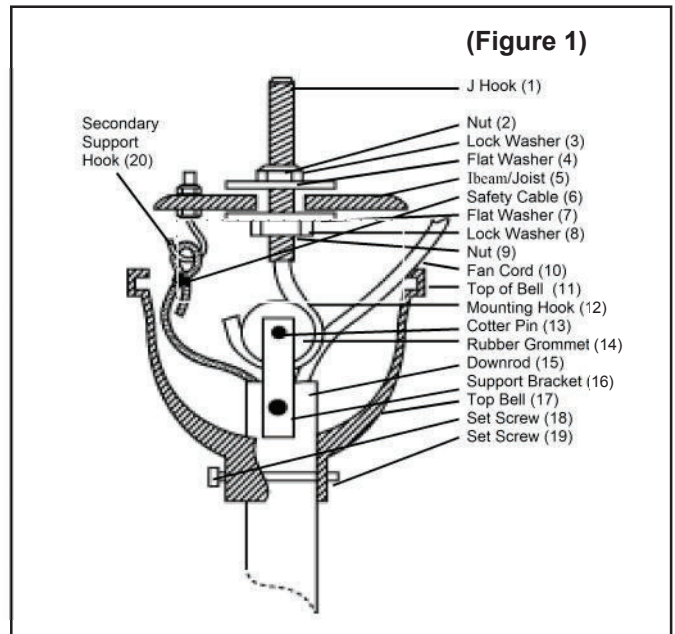
Downblowing—Model F and A fans

Using Envirofan Model 100F Solid State Infinite Speed Control



Diagrams

For Use with Instructions on Page 3



Tools and Supplies Needed

1. Screwdriver - Slot and Phillips.
2. Wrench - Adjustable or 1/2", 9/16", and 10 mm.
3. Electrical Wire Connectors - 2 or 3.
4. Metal Outlet Box - Grounded, single receptacle.
5. Solid State Speed Control (optional).

Step #1 Hanging the Fan

J-Hook Mount (Figure 1)

Lag Screw J-Hook (Model 190A)

1. If the threaded J-hook is used for a wood joist mount, a pilot hole should be drilled no larger than the minor diameter of the screw threads on the hook.
2. Do not put lubricant on the "J" hook.
3. At least 1 1/2" of the lag screw threads should be inserted into the structural wood joist.

Threaded Bolt J-Hook

1. If the threaded J-bolt is used, be careful to secure tightly with supplied lockwashers and nuts.
2. Wind one nut (9) down to bottom of J-bolt (1) towards the curve. Add a lock washer (8), then a flat washer (7) on top of nut.
3. Put hook through opening in Ibeam/Joist. Add flat washer (4), then lock washer (3), and nut (2). **Do not tighten nut completely until fan is put in place on J-Hook** (See #5 below).
4. Loosen set screws (18) and (19) of top bell (17) on fan downrod (15) and lower the bell to make room to place rubber grommet (14) onto Mounting Hook (12).
5. Tighten top nut (2) on J-Hook to raise fan into the proper installation position.
6. Install secondary support hook (20) next to mounting hook so both will fit within area of top bell (Note: Model 190A-7 does not offer secondary support hook).
7. Double loop (figure-eight) the safety cable loop (6) over the secondary support hook (20), leaving some slack (Note: Model 190A-7 does not offer safety cable).
8. Safety cable loop can be clamped for more security.
9. Wire fan according to directions on Page 2. Ensure power to outlet box is off before wiring.
10. Move top bell back up the downrod to cover both mounting and support hooks. Leave 1/8" gap between top of bell (11) and hanging surface (so downrod does not move off center which could make fan wobble or vibrate). Tighten set screws (18) and (19).

EZ Mount - Alternate Mounting Bracket for Envirofan Ceiling Fans .

Included with all models except Model 190A.

WARNING -To reduce the risk of Fire, Electric Shock, or Personal Injury:

Mount to an outlet box marked Acceptable for Fan Support and use only the mounting screws provided with the outlet box.



DZ-1
EZ Mount Bracket

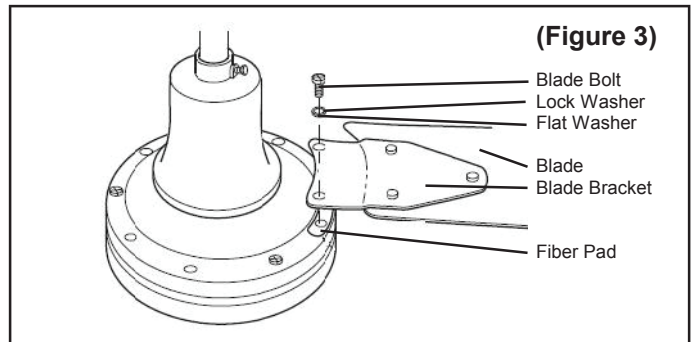


UL Approved
Metal Fan Box
with DZ-1 EZ
Mount Bracket
Installed

1. When using the EZ Mount Bracket, the bracket must be mounted to a UL approved metal fan box marked "acceptable for fan support"
2. The original mounting screws provided with the UL approved metal fan box must be used.
3. The weight of the fan together with intended combination of accessories installed cannot exceed 35 lbs.
4. After metal fan box is installed, using screws provided, attach DZ-1 bracket to metal fan box as shown in illustration.
5. Make sure all screws are securely fastened before hanging fan.
6. Install safety cable to extra J-hook provided for added protection.
7. **Warning: Ceiling fan with fan guard cannot be installed to a fan box using the EZ mount bracket as the weight will exceed 35 lbs.**

Step #2 Attaching Blades (Figure 3)

1. Bolts, flat washers, lock washers and fiber pads for attaching blades are located on the motor housing.
2. Brackets come already installed on blades.
3. For each blade remove 2 bolts. Replace in blade bracket with lock washer and flat washer between bolt and bracket (lock washer against bolt).
4. Leaving fiber pad in place on motor housing, set bracket over holes and reinstall the bolts in their original holes. Tighten into motor housing. Do not over tighten.
5. When all three blades are attached turn power back on and test fan function.



(Figure 3)

Step #3 Product Safety Inspection (After Installation)

Check the following as a product safety inspection before completing your installation.

Figure 1 (see Page 2)

1. Make sure cotter pin (13) is in place and secure.
2. Make sure safety cable (6) is in correct position.
3. Make sure both nuts (2) and (9) are secure on J-Hook.
4. Make sure upper bell set screws (18) and (19) are tight on downrod. Leave 1/8" between bell and hanging surface. (Figure 4 -see Page 2).

Figure 2 (see Page 2)

1. **Important**—make sure set screw (4) is tight to assure wobble-free operation.
2. Make sure cotter pin (5) is in place and secure.
3. Make sure lock-nut (7) is tight and cotter pin (6) is in place and secure.
4. Make sure lower bell set screws (2) and (3) are tight on downrod (1). Leave 1/8" of space between bell and fan. (Figure 2 - see Page 2).

IMPORTANT:

Wire Connections: After making all wire connections, wires should be spread apart with the grounded conductor and the equipment grounding conductor on one side of the outlet box—and the ungrounded conductor on the other side of the outlet box.

Splices and Outlet Box: All splices should be turned upward and pushed carefully up into outlet box.

Supply Connections: Conductor of fan identified as grounded conductor to be connected to a grounded conductor of power supply. Conductor of fan identified as ungrounded conductor to be connected to an ungrounded conductor of power supply. Conductor of fan identified for equipment grounding to be connected to an equipment-grounding conductor.

Troubleshooting

Every Envirofan is tested before it leaves the factory, and again before it leaves our warehouse, resulting in an extremely low rate of returns. However, due to shipping and installation procedures, occasionally a fan will need a minor adjustment to run satisfactorily. If this should happen, we recommend that you identify the problem and try the simple suggestions listed below, before attempting return procedures.

One of the following suggestions will usually solve any of these problems that sometimes occur. If you continue to have trouble after trying these solutions, please contact your distributor, visit our website at www.envirofan.com, or contact one of our technicians at 1-800-236-7080.

1. Fan will not start - **Caution: Turn off power at main circuit breaker before checking!**

- Check fuses and circuit breakers.
- Check wire connections to fan.
- Check wiring connections in lower canopy. (See Page 4 - Motor Wiring Diagrams)
- Check voltage at fan connection.

2. Fan too fast/slow

- Adjust the trim set screw in fan control. (See control instructions)
- Check wire connections to fan.
- Check wiring connections in lower canopy. (See Page 4 - Motor Wiring Diagrams)
- Check voltage at fan connection.

3. Fan makes noise

- Check motor case to make sure all visible screws are snug.
- Check to make sure that all blade bracket screws are tight.
- Check for labels or wire nuts that could be rubbing.
- Tinging sound - make sure top or bottom bell is not pulled tight, and touching inside bracket on top or bottom of downrod.
- All motors can have a slight noise known as the "Hertz Hum" when used with solid state, infinite speed controls, especially on lower speeds. This hum will not affect the fan performance. To eliminate this motor hum use a transformer/dehummer control - available at most hardware or lighting stores.
- Allow a 24 hour break-in period which normally eliminates any residual noise other than listed above.

4. Fan wobbles

- Check that all blade brackets are screwed firmly to motor case.
- Check distance from tip of blades to ceiling. If blades get bent during installation, you must balance them. Gently bend up or down until all distances are the same. Do not bend brackets.
- Make sure upper canopy is 1/8" from ceiling.
- Check that blade tips are at least 12 inches from the angled roof line or air turbulence may cause fan to sway.
- Make sure that hanging hooks are secured tightly to ceiling.
- Run fan without blades. If fan does not wobble without blades, the motor is not defective, but the blades may be bent.

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Maintenance

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

When properly maintained, your Envirofan can be expected to give years of trouble free operation.

Lubrication

All bearings are permanently lubricated and do not need further lubrication.

Cleaning

If dust or dirt accumulates on the fan, a damp cloth may be used to clean the fan. Do not use solvents or harsh detergents. Do not allow the motor to get wet.

Inspection

Properly maintained fans must be inspected every four months (3000 hours) for vibration and wear on the support mechanism, assuring all screws, nuts, and bolts are tight.

1. **Visible Vibration** - Fan should be operating smoothly, not vibrating, or wobbling.
2. **Support Mechanism** - J-hook and hanging bracket should be visibly checked for wear. Be sure all screws, nuts, and bolts are tight.
3. **Blades** - Blades should be checked that all screws are tight.

Note: If vibration and/or wear is noticed at anytime, the fan should be serviced by a qualified person and repaired or replaced immediately.

Motor Wiring Diagrams

Downblowing - Model F or A Fans - Downblowing/Forward Direction

- Black from fan to White from cord
- Red from fan to Black from cord and Black from capacitor
- White from fan to Red from capacitor

Reversing - Model C Fans - Combination Up and Downblowing

- Black from fan to White from wire leads
- Red from fan to Red from wire leads Black from capacitor
- White from fan to Black from wire leads Red from capacitor

Example - 190A Downblowing/Forward

