

Installation, Operation & Maintenance Instructions for Coolair Propeller Fans

Dimensions of Wall or Other Openings for Mounting Fan. The Coolair fan is designed for all-angle usage and may be mounted in any position. When face mounted to a wall, the wall opening should be approximately 3" less than O.D. of the fan frame. If fan frame is to be recessed into the wall, opening should be 1/4" larger than O.D. of the fan frame. Shutter installation must be a minimum of 4" from fan blade exhaust. Shutter must have a net opening equal to or larger than the diameter of the fan being used. For installation in a wall housing, refer to the wall housing instructions for recommended wall opening size.

Air Exhaust or Air Supply Usage. The Coolair fan is designed primarily for use as a wall exhaust fan. If supply fan usage is required, it is recommended that the entire fan unit be mounted in a sheet metal or plywood sleeve and attached to the wall location with fan position reversed 180° from the normal wall exhaust position. Coolair fans may be electrically reversed for temporary or emergency use. Fan will not perform efficiently when electrically reversed.

Pre-Installation Check of Fan. Before installation of fan, check carefully for shipping damage which may result in blade misalignment, deformed parts or other damage. After motor has been mounted, check pulley alignment and belt tension. Before connecting the power source, check motor nameplate to be sure of correct phase and voltage, and motor voltage connection when motor is dual voltage. Single phase motors are shipped from factory wired for 230 volt. For low voltage operation see motor manufacturer's instructions on nameplate. Make sure propeller turns freely without striking fan frame or any foreign object which may interfere with its operation. Note direction arrow on orifice to make sure propeller is rotating in the correct direction when power is applied.

Motor Mounting and Belt Alignment. Coolair fans are shipped in two packages. The fan assembly, motor bracket and belt comprise one package; the motor and pulley comprise a second package.

(A) Motor Mounting.

- 1) Remove motor bracket from its shipping position on fan frame. Attach motor bracket to motor (see Figure 1 below, or Figure 4 on reverse if using a slope wall housing, for correct positioning of bracket to motor).
- 2) Place fan in upright position with bracket mounting holes in uprights below center of fan.
- 3) The motor pulley should be placed on the motor shaft with the set screw that will secure pulley to motor shaft toward the motor.
- 4) Hang motor and bracket from belt by placing motor pulley on belt and temporarily supporting back of motor as necessary.
- 5) Select correct bracket holes so that slots in motor bracket will allow adjustment up and down.
- 6) Fasten motor bracket to uprights with four bolts provided. Make sure motor base remains level. Do not tighten bolts until belt tension is adjusted.
- 7) Adjust belt tension (see paragraph (C) right) by loosening bolts slightly and tapping motor bracket up or down as necessary. Check motor pulley alignment with fan pulley and adjust pulley position on motor shaft as necessary.
- 8) Retighten pulley set screw and motor bracket bolts. **IMPORTANT:** Motor bracket bolts must be secured to maintain proper belt adjustment.

(B) Motor Pulley Alignment and Motor Pulley Fastening.

- 1) On fans supplied with an adjustable pitch motor pulley, the pitch setting made at the factory operates the fan at the proper motor load, and the set screw(s) holding the adjustable flange has been factory sealed with threadlocking compound.

NOTE: On some adjustable pitch motor pulleys, it will be necessary to open the adjustable flange to tighten the set screw onto the shaft key. It is important that the factory set position of the adjustable flange be maintained for proper fan/motor operation. When opening the adjustable flange, note the factory set position and return the adjustable flange to this same position after the set screw has been tightened.

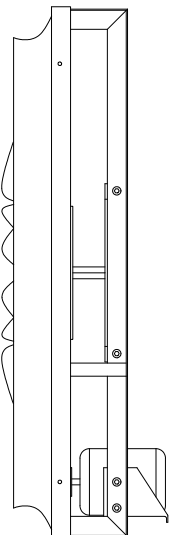


FIGURE 1

- 2) After the fan and motor pulleys are in alignment, tighten motor pulley set screw(s).

For fans using motor with 1/2" diameter shaft (48 frame), make sure set screw is centered on the flat section of the motor shaft.

For fans using motors larger than 48 frame, the set screw will be set on the motor shaft key.

(C) Belt Tension Adjustment

After 8-10 hours of fan operation following installation, belt tension should be rechecked and adjusted if necessary. To check proper belt tension, place a finger midway between fan pulley and motor pulley and push belt(s) inward about 1/2" (at approximately 5 lb. force) for proper tension. Adjustment beyond the slots in the motor bracket may be necessary. If so, remove motor bracket bolts and place in next hole location in fan uprights. This will allow additional belt adjustments as necessary. **CAUTION:** Do not overtension the belt. This will cause premature bearing failure.

NOTE: All local, state and federal codes should be checked to make sure all wiring, guarding and intended usage of the fan unit(s) comply with all applicable codes. The proper type and class of fan and motor should be used for handling air of a hazardous nature such as explosive or corrosive air mixtures.

Fan Cleaning and Adjustments. Fan should be cleaned as necessary to remove accumulated dust, dirt and other foreign matter which may collect on the blades or other fan parts. Belt(s) should be inspected and tension adjusted (see below). Be sure to check for belt misalignment which can result in excessive wear and premature failure. If rust or corrosion is found, the affected area should be thoroughly cleaned and refinished.

WARNING:

DO NOT PRESSURE WASH THE FAN MOTOR, SHAFT OR BEARINGS. DOING SO MAY VOID THE WARRANTY.

Fan Speed Adjustment. On belt drive models equipped with adjustable pitch motor pulley, the pitch setting made at the factory operates the fan at the maximum safe load for the motor. Do not close pulley to increase fan speed as this will overload motor and cause damage to motor or trip-out. Pulley may be opened to reduce fan speed and thus decrease CFM. If further information is required contact your nearest American Coolair Representative.

Belt Replacement and Tensioning. Belts should be inspected and tension adjusted at regular intervals. Remove old belt and replace new one by slipping over blade tips - one at a time. Note: for CBHX models, it may be necessary to remove the blade assembly to replace the belt.

Repair Parts.

- a) Belts** — Belts are standard V-belts used on industrial machines and replacement may be obtained through local industrial supply houses. If more than one belt is used on the fan, be sure to replace with match sets. To install belts, see instruction above for belt replacement.
- b) Blades** — If one or more blades on propeller are damaged, it is recommended that the entire blade assembly be removed and returned to the factory for necessary repair and rebalancing. Detach shaft from X-brace on fan frame and return the complete propeller, bearing assembly and shaft. For convenience in shipment, individual blades may be removed from the fan disc.
- c) Bearings** — Field replacement of bearings is not recommended. Return entire blade assembly to factory or authorized distributor for repairs.
- d) Motors** — Motor repairs should be performed only by an authorized motor repair station. Contact the motor manufacturer or American Coolair for location of repair station.

CAUTION: Do not return damaged or defective parts to American Coolair without prior authorization. If repairs under warranty are claimed, see warranty terms in American Coolair catalog or contact the factory at Jacksonville, Florida. Claims for warranty repairs to electric motor should be made direct to the motor manufacturer's authorized repairs centers.

WARNING: IF THESE VENTILATION PRODUCTS ARE USED IN AGRICULTURAL STRUCTURES TO SUPPORT LIFE WHERE FAILURE OF THE VENTILATION COULD RESULT IN LOSS OR INJURY, THE USER SHOULD PROVIDE AN ADEQUATE BACK-UP VENTILATION SYSTEM AND A FAILURE ALARM SYSTEM. THE USER MUST ACCEPT THE RISK OF SUCH LOSS OR INJURY FROM FAILURE OF THE VENTILATION SYSTEM.

WARNING



DO NOT INSTALL FAN WITH MOVING PARTS WITHIN 8 FEET OF FLOOR OR GRADE LEVEL WITHOUT A GUARD THAT COMPLIES WITH OSHA REGULATIONS. **DO NOT** USE UNLESS ELECTRICAL WIRING COMPLIES WITH ALL APPLICABLE CODES. **DO NOT** WIRE WITHOUT PROVIDING FOR A POWER SOURCE DISCONNECT AT THE FAN ITSELF. **DO NOT** SERVICE EXCEPT BY A QUALIFIED MAINTENANCE TECHNICIAN AND ONLY AFTER DISCONNECTING THE POWER SOURCE. FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

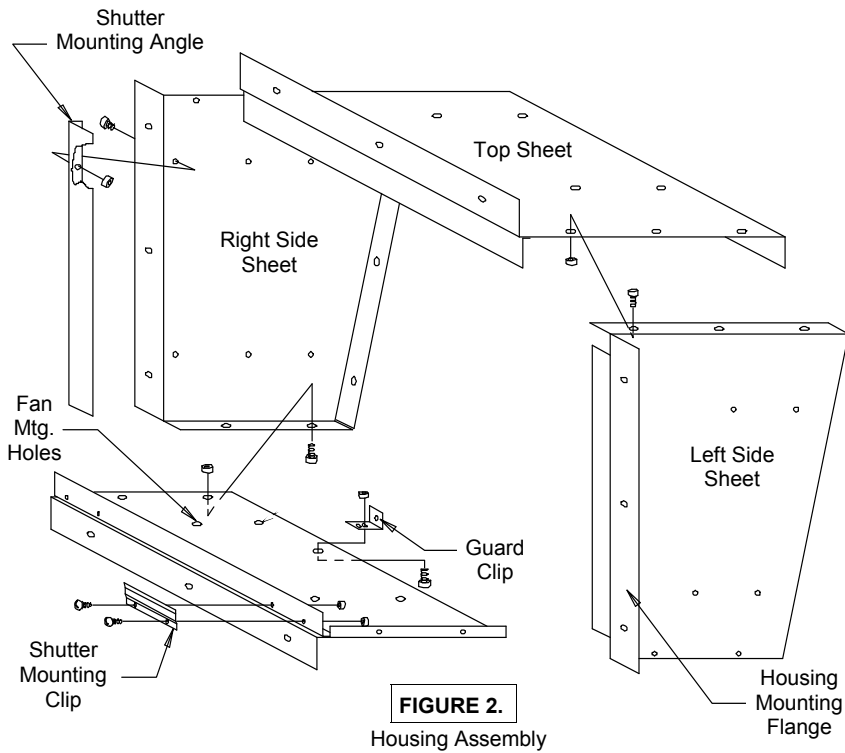
CAUTION



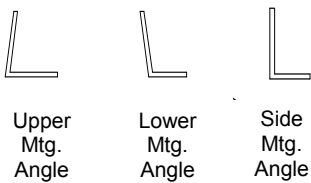
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ASSEMBLY INSTRUCTIONS

Slope Wall Housing for Agricultural Buildings

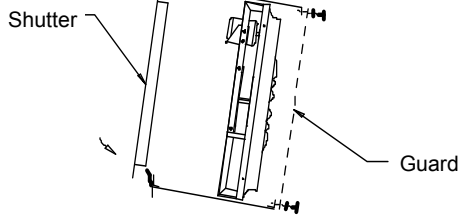


See Note 3 For Mounting Instructions



**** NOTE ****

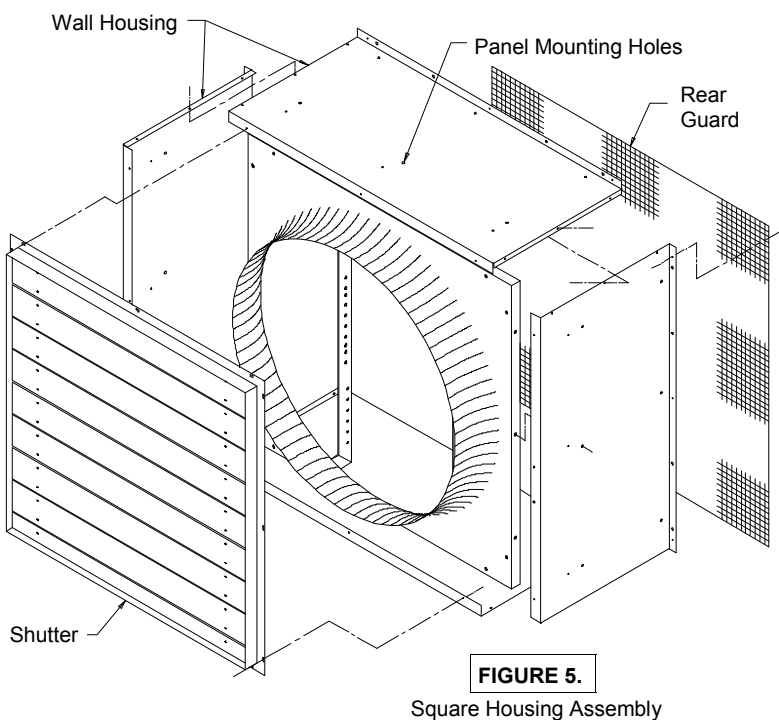
Motor Must Be Mounted at Top of Wall Housing as Shown



- 1) Before beginning assembly, verify that all components are present. Each slope wall housing fan package should consist of a fan and motor, 4 wall housing sheets, 4 shutter mounting angles, 2 or 3 shutter mounting clips, a shutter and a bag of hardware. The front guard consists of a wire mesh guard and another bag of hardware. All holes for assembly of the unit are pre-punched and all necessary hardware supplied.
- 2) For the proper mounting of the motor bracket to the fan frame, disregard Figure 1. Install the motor bracket as shown in Figure 4 of these instructions. Make sure the motor is mounted on top of the motor bracket.
- 3) The shutter mounting angles must be attached to the wall housing sheets. There are 4 mounting angles of which two are the same. Identify the mounting angles per Figure 3. There are 4 wall housing sheets—the two that are the same size are the side sheets. The smaller rectangular sheet is the bottom. The larger rectangular sheet is the top. Using 1/4" nuts and bolts, fasten the shutter mounting angles to their respective housing sheets so that the turned in flange of the angle is flush with the housing mounting flange. See Figure 2.
- 4) Assemble the bottom and one side sheet together using 1/4" nuts and bolts as shown in Figure 2. Then place the fan on the bottom housing sheet aligning the holes in the fan flanges with the fan mounting holes in the wall housing sheets. **Caution:** For proper shutter clearance, the fan **MUST** be mounted in the housing with the motor at the top of the housing as shown in Figure 4. **NOTE:** There are six types of fans that can be used in the wall housing. They are the type NBF (with either old style welded orifice or newer spun orifice), NBC, NCF, NEF or FD Fans. For the old style type NBF fan with the welded orifice ring, mount the fan in the holes closest to the front of the housing. For the newer type NBF (with the spun orifice), NCF, NBC, NEF or FD FANS, mount the fan in the holes closest to the rear of the housing. See Figure 2. Now, assemble the remaining housing sheets around the fan using 1/4" nuts and bolts for the housing assembly and for mounting the fan panel to the housing. When assembling the wall housing, do not tighten any hardware until all bolts are in place or it may be difficult to align some holes.
- 5) Attach the shutter mounting clips to the bottom shutter mounting angle using #10 nuts and round head bolts. See Figure 2. When mounting the shutter to the wall housing, slide the top shutter flange under the top shutter mounting angle and then slide the shutter down until the bottom shutter flange rests between the shutter mounting clip and the bottom shutter mounting angle. See Figure 4.
- 6) It will be necessary to bolt the guard clips to the bottom wall housing sheet. Attach the clips using 1/4" nut and bolt as shown in Figure 2. The guard can then be mounted to the front of the wall housing using 1/4" self-tapping screws and large flat washers. Self-tap through the guard into the clips on the bottom sheet, and into the pre-punched holes on the flanges on the top and side sheets. See Figure 4.

ASSEMBLY INSTRUCTIONS

Square Wall Housing for Agricultural Buildings



The wall housing consists of four (4) identical panels, which form the four sides.

- 1) Lay one wall housing panel down and place fan on it, aligning the fan panel flange mounting holes with the wall housing panel mounting holes. If mounting an old style NBF fan (the panel has a welded orifice ring, not a spun orifice), remove the 3/8" knock outs 3" in front of the standard wall housing mounting holes and use them for fan mounting.
- 2) Using the hardware supplied, assemble all four wall housing panels around the fan with the wall housing flanges positioned on the outside of the joint. **Note:** When assembling the wall housing, do not tighten any bolts until all the bolts are in place. Otherwise, there may be difficulty in aligning some bolt holes. Assemble the fan to the wall housing with the hardware supplied, using the pre-punched holes in both the fan panel flanges and the wall housing panels.
- 3) Next, attach the shutter flanges to the rear of the shutter as shown in the instructions included with the shutter. Reference Form 610-40. **(S/SR shutters only).**
- 4) Mount the shutter to the front flanges of the wall housing as shown using 1/4" self-tapping screws supplied.
- 5) The rear guard should now be installed. It may be mounted to either the wall housing or the wall. It is mounted to the wall housing by fastening through the guard into the rear wall housing flanges as shown using the small pre-punched holes in the wall housing flanges. The guard can also be mounted directly to the building, on either side of the wall. The mounting hardware (1/4" self-tapping screws and large flat washers) for either installation is supplied with the guard.
- 6) For a water tight housing, caulk all of the top joints.