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**MNBCC54 and MNEFC54
 GALVANIZED WALL FANS**
 Installation, Operation, and Maintenance Instructions

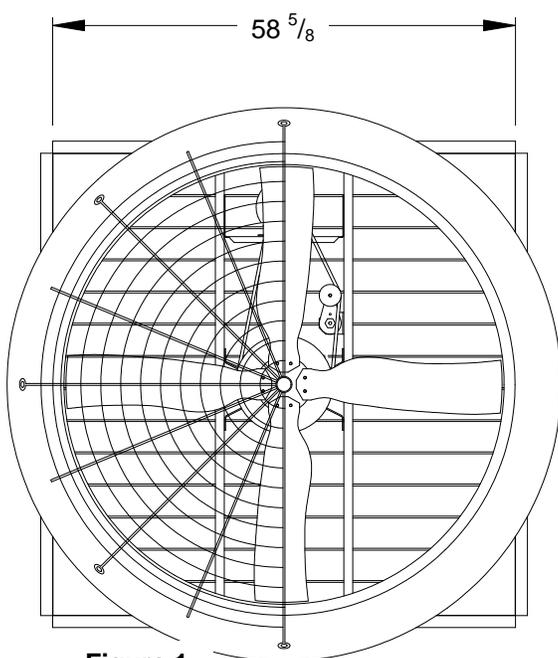
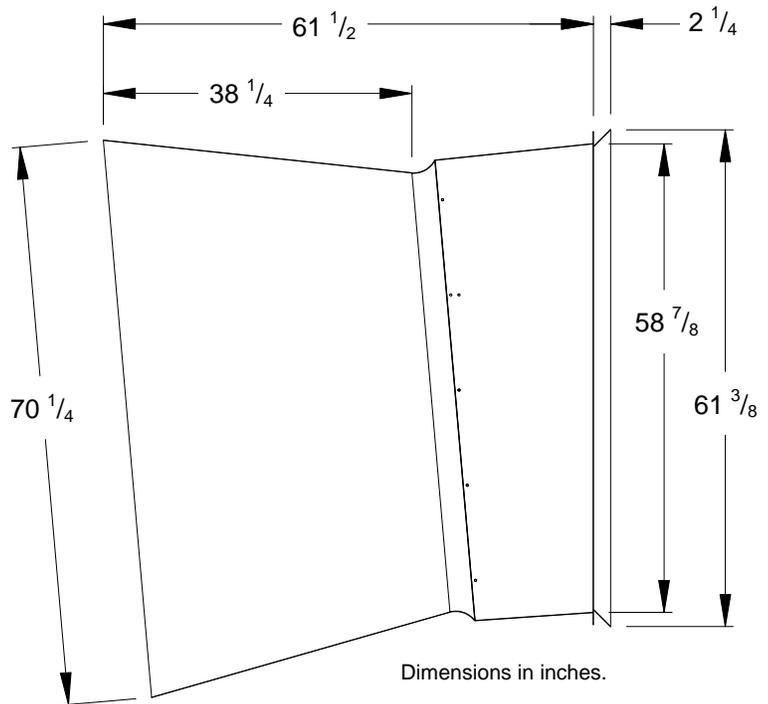


Figure 1



Dimensions in inches.

**MNBCC54L * MNBCCCE54L * MNBCC54M
 MNBCCCE54M * MNEFC54L * MNEFCCE54L
 MNEFC54M * MNEFCCE54M**

UNPACKING
 Inspect the fan for signs of shipping damage. It is the responsibility of the customer to report any shipping damage to the freight carrier.

WHAT SHOULD YOU FIND?
 Fan, Fan Housing (4 Housing Sheets, 4 Corner Deflectors, and 4 Shutter Latches), Cone (4 Cone Panels and 4 Cone Gussets), Cone Guard, Shutter with 4 Inlet Angles, and Hardware.

FRAME CONSTRUCTION

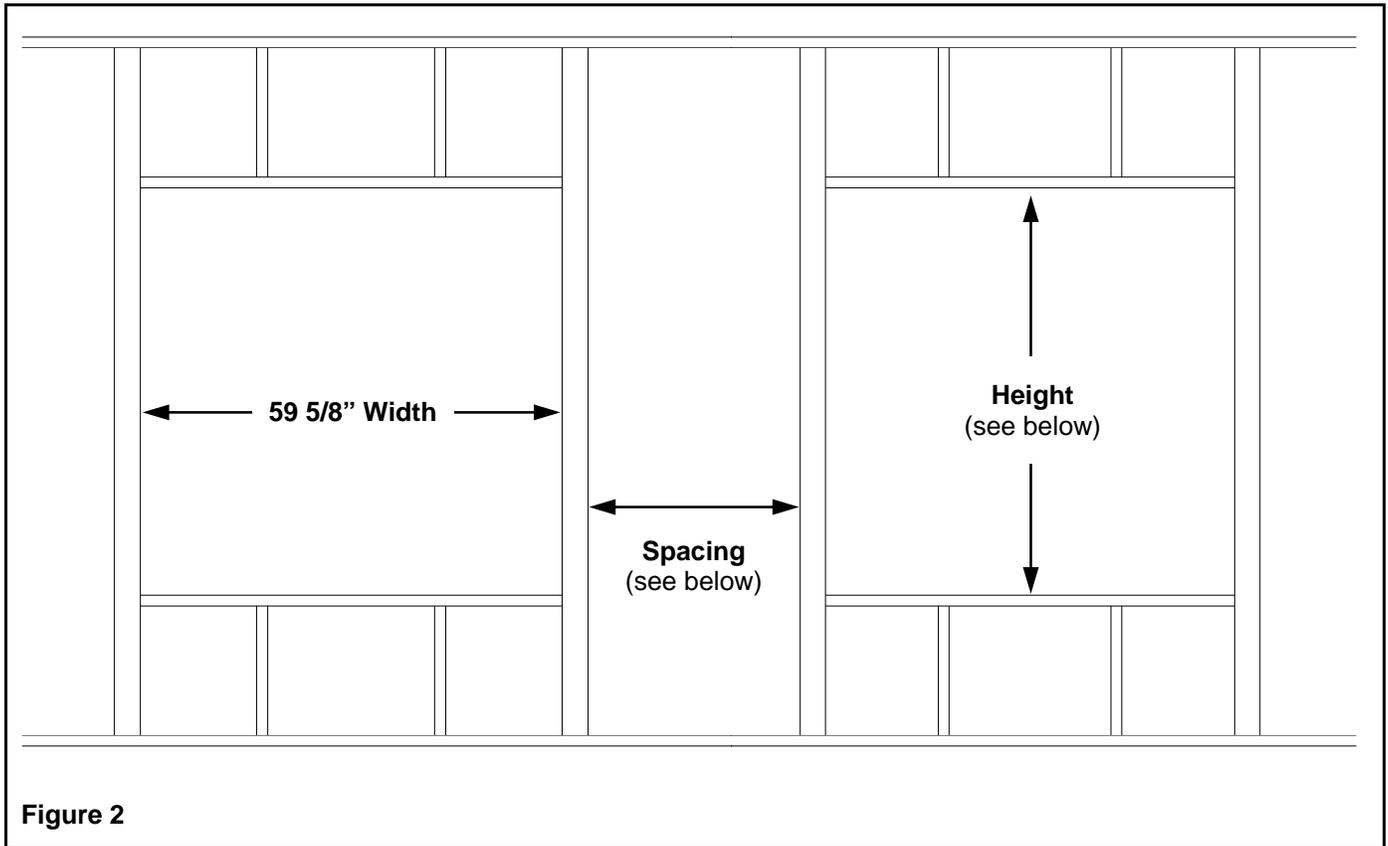


Figure 2

The required framed-in opening **width** for both the MNBCC54 and MNEFC54 is $59 \frac{5}{8}$ ". The required framed-in opening **height** depends on wall thickness:

For 2" thick walls, the height is $59 \frac{7}{8}$ ".

For 4" thick walls, the height is 60".

For 6" thick walls, the height is $60 \frac{1}{4}$ ".

The minimum **spacing** between fans is 15". However, to insure optimum fan performance, Coolair recommends a spacing between fans of at least 30".

CAUTION: To insure proper fan and shutter operation, the frame opening **MUST BE SQUARE**. To verify this, measure from the upper right corner of the frame diagonally to the lower left corner. Next, measure from the upper left corner of the frame diagonally to the lower right corner. These two **DIAGONAL MEASUREMENTS MUST BE EQUAL** prior to installing the fan.

FAN & HOUSING ASSEMBLY

For assembly and maintenance instructions for the fan and motor, see Form 220-40 included with the fan.

If the fan and housing are factory assembled, skip to Page 4 — Fan Mounting & Installation. For the proper mounting of the motor bracket to the fan frame, disregard Figure 1 on Form 220-40 and install the motor bracket towards the top of the fan — see Figure 4. Make sure the motor is mounted on top of the motor bracket.

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. Assemble the bottom and one side sheet together using 1/4" hardware as shown in Figure 3. 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. 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.

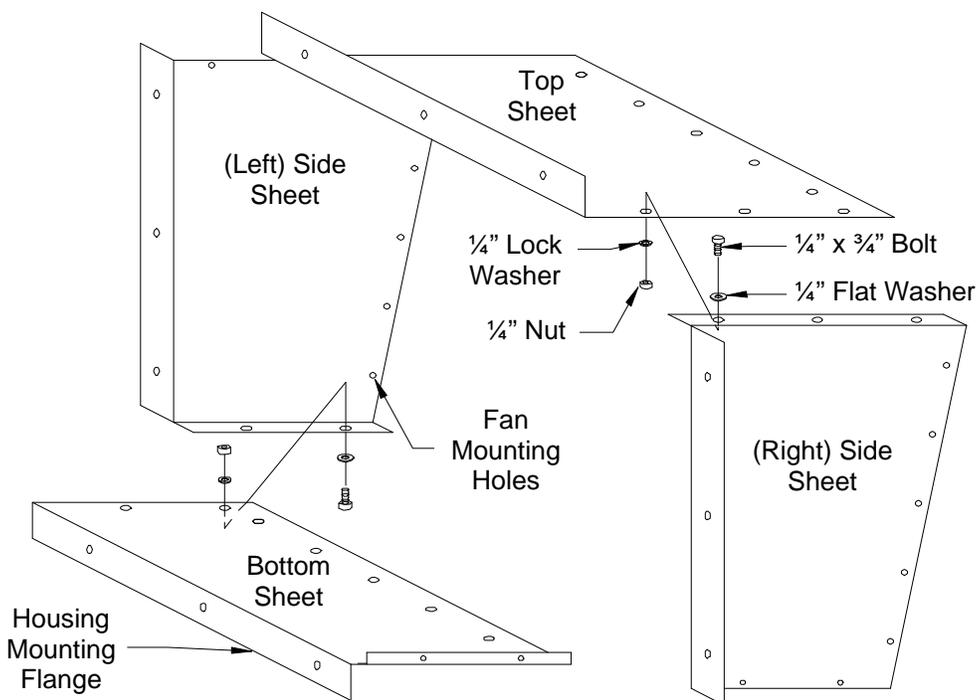


Figure 3 — Housing Assembly

CORNER DEFLECTOR INSTALLATION: For proper fan operation, the corner deflectors must be fastened to the fan. There are two sizes of these triangular deflectors — the longer deflectors will be installed in the top two corners where the fan panel meets the housing, and the shorter deflectors will be installed in the bottom two corners.

First, place the deflector inside the housing such that the two shorter sides (with the flanges and mounting holes) are against the housing, and the longer side is against the fan panel. The holes in the deflectors should align with the holes in the housing. If the holes are not aligned, check that you are using the correct length deflector in the proper corner. Fasten each deflector using four of the 1/4" x 3/4" self-tapping screws provided. The screws must be fastened from the outside of the housing through the housing and then through the deflector. See Figure 5.

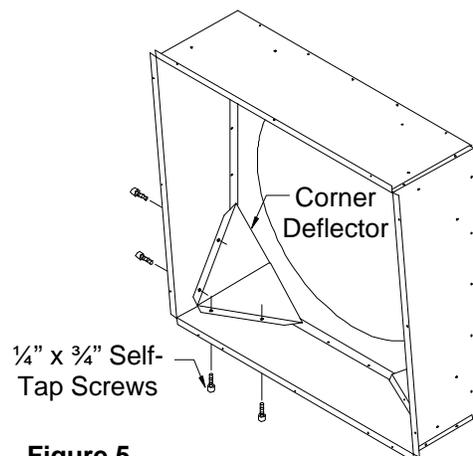


Figure 5

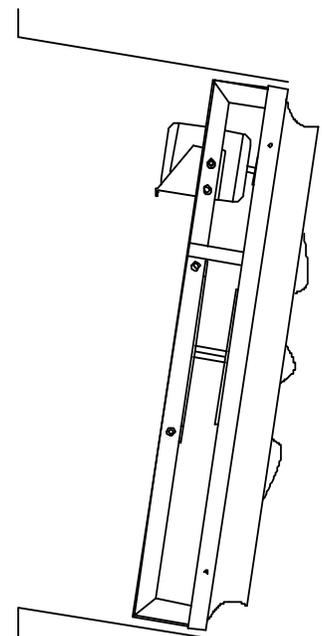


Figure 4 — Side view of the fan assembled in the housing

FAN MOUNTING & INSTALLATION

For motor mounting instructions, please refer to the accompanying Form #220-43.

From the inside of the building, insert the fan/housing through the opening. Before fastening the fan to the building, the fan housing **MUST BE SQUARE IN THE FRAME** to insure proper fan and shutter operation. To verify this, measure from the upper right corner of the fan housing diagonally to the lower left corner. Next, measure from the upper left corner of the fan housing diagonally to the lower right corner. These two **DIAGONAL MEASUREMENTS MUST BE EQUAL** prior to installing the fan. If the two diagonal measurements are not equal, the fan must be shimmed to bring it into square.

Once that the housing has been squared, secure the fan to the building frame (hardware not provided). Next, using the 1/4" Lag Screws and Rubber Washers, install the Shutter Latches to the building frame 5/8" away from the fan housing flange as shown in Figure 6. The Shutter Latches should be located approximately 9 inches from the top and 20" from the bottom of the housing, with a third latch centered between the two (See Figure 7).

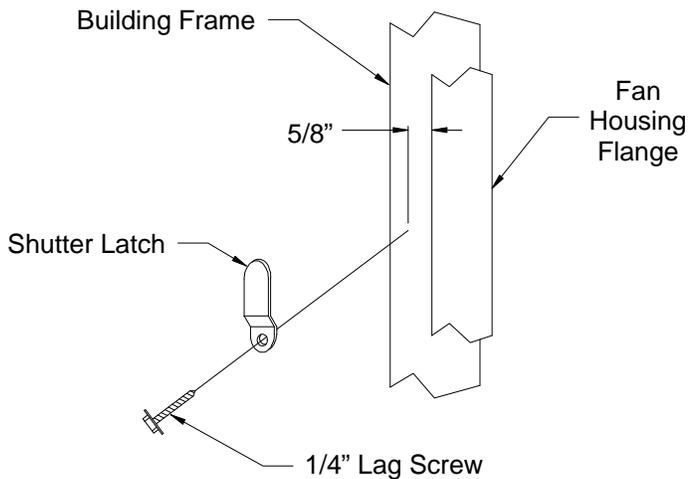


Figure 6

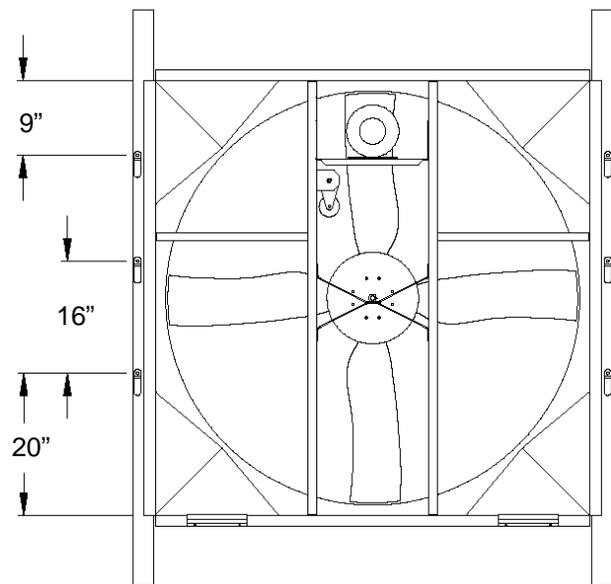


Figure 7

For cone assembly and mounting instructions, refer to the accompanying Form #912-22.

BLADE AND BELT ALIGNMENT INSTRUCTIONS

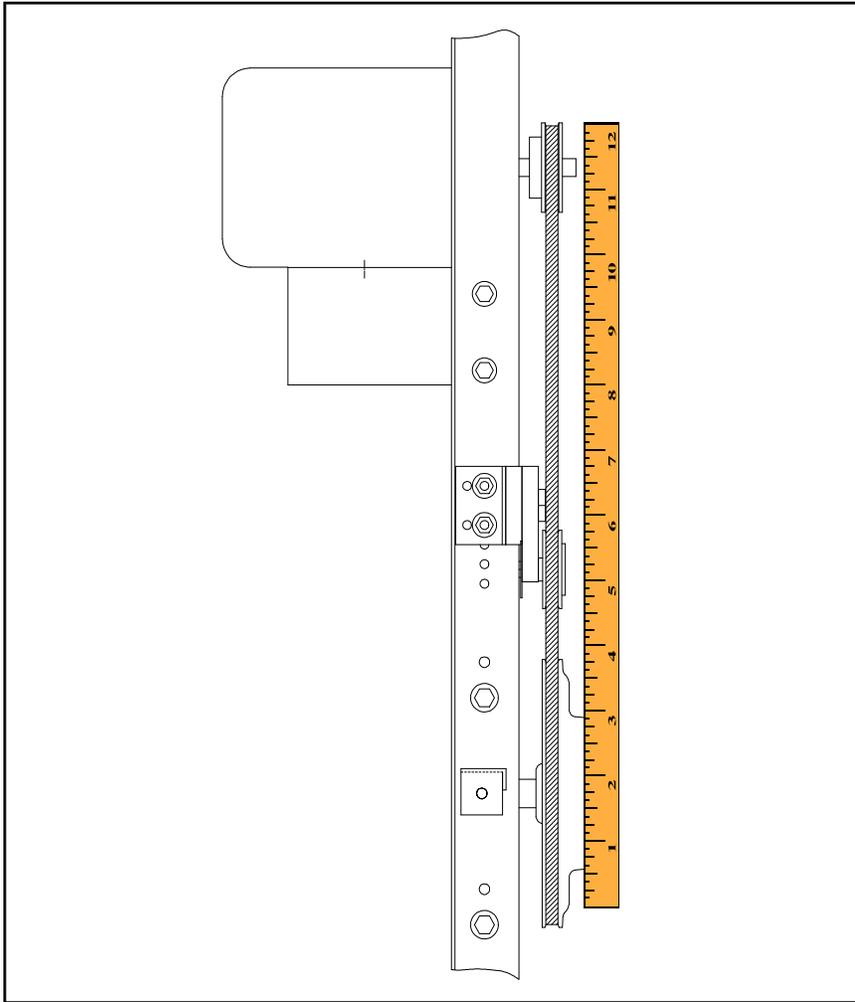


Figure 8 — Detailed View of Properly Aligned Fan Sheaves

Spin the blade assembly by hand. Make sure that the blade assembly rotates freely and did not shift during shipment. If the blades rub in either side of the fan orifice, it will be necessary to loosen the two (2) 3/8" bolts that secure the blade assembly's hexagonal shaft to the fan x-braces, center the blade assembly, and tighten the bolts to 25-30 ft-lbs torque. If the blades rub in the fan orifice at the top or bottom, it will be necessary to loosen the four (4) 3/8" bolts that secure the fan x-braces to the fan uprights, center the blade assembly, and tighten the bolts to 25-30 ft-lbs torque. Next, the fan drive assembly should be checked for alignment. The fan drive assembly must be aligned for proper fan performance and to minimize pulley and belt wear. Before wiring and operating the fan, check that the drive pulley, driven disc and auto belt tensioner are aligned by using a straight edge such as a scale or yard stick. If an adjustment is necessary, loosen the set screw on the motor pulley and adjust to proper alignment. Make sure to retighten the motor pulley set screw before the fan is operated. See Figure 8.

ELECTRICAL WIRING

All wiring must comply with national, state and local electrical codes. If fans are to be used for livestock ventilation to support life where failure could result in loss or injury, and continuous ventilation is essential, it is recommended that the fans be wired to individual electrical circuits, or at least two circuits per room. Any minimum ventilation fans should be on individual circuits.

WARNING

If the fans are going to be used for livestock building ventilation to support life where failure could result in loss or injury, the user must provide an adequate backup ventilation system and a failure alarm system. The user must accept the risk of such loss or injury from failure of the ventilation system.

AUTO BELT TENSIONER BELT TENSION INSTRUCTIONS

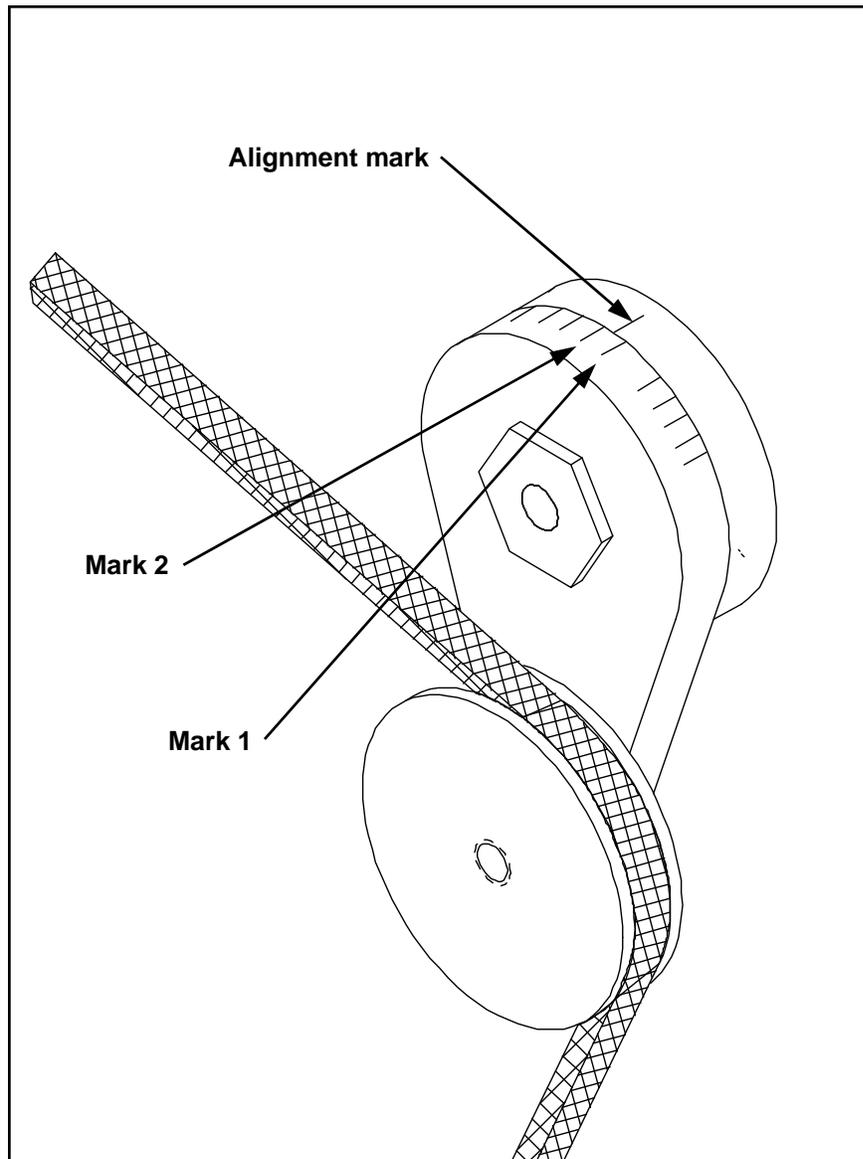
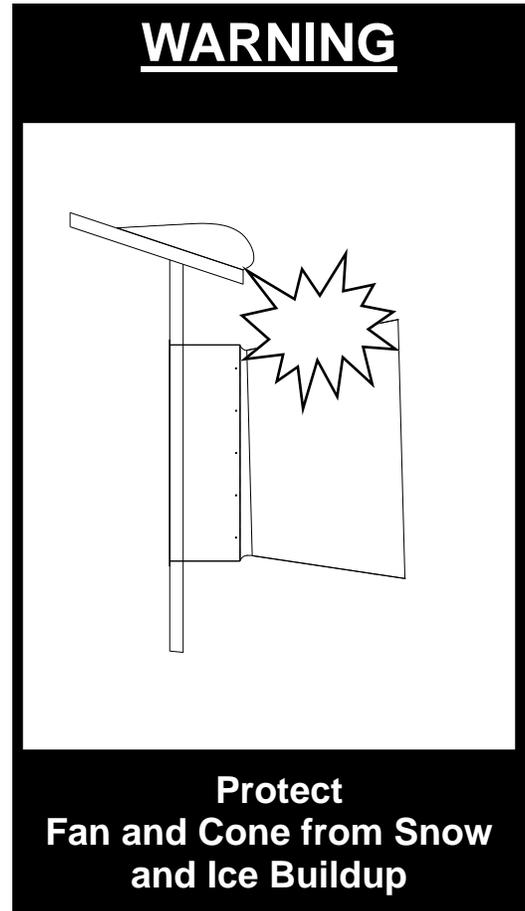
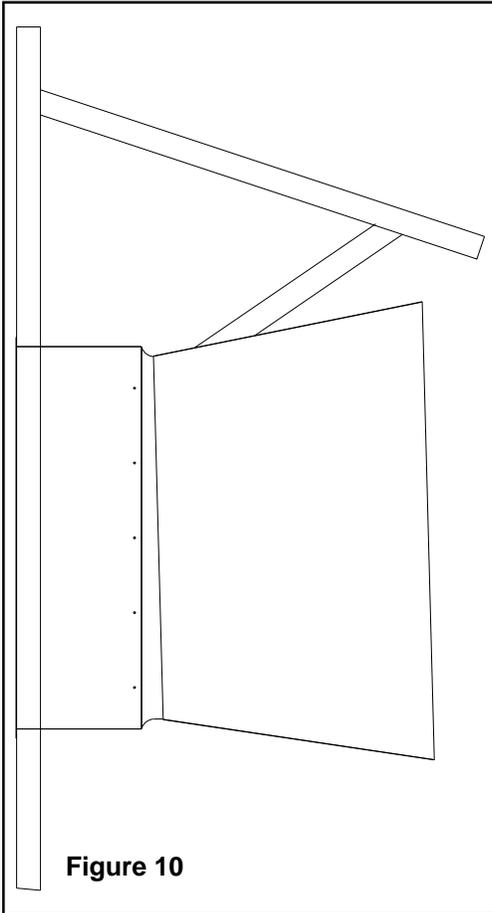


Figure 9 — Tensioner and Belt Showing Tension Alignment Marks

The Auto Belt Tensioner comes from the factory mounted and preset for adequate belt tension. If further tensioning is required, loosen the 3/8" bolt holding the tensioner to the tensioner bracket. Then, using a 15/16" wrench, rotate the tensioner assembly such that the alignment mark is between mark 1 and 2 on the idler arm (see Figure 9). Re-tighten the 3/8" bolt. Turn the blade assembly by hand to insure free rotation. **Do Not Over Tension The Belt.** This will cause premature belt and bearing failure. To check that the belt tension is not too high, place a finger midway between the fan pulley and motor pulley and push inward about 1/2". The force required to do this **is not** to exceed 5 pounds.

For further information, refer to the accompanying Form #912-19.

CONSTRUCTION FOR WINTER WEATHER PROTECTION



If your area is subject to snow, consideration must be taken to protect from the possibility of snow and ice building up on the roof and sliding down onto the fan and cone. One option is to build a small section of roof over the fan and cone. See Figure 10.

WARNING

Fan and/or cone damage caused by this type of external source WILL NOT be covered by AMERICAN COOLAIR warranties.

During winter months, you may not need to operate all of your fans. It is advisable to seal up those fans which will not be used during the colder months to minimize heat loss as well as condensation. To do this, turn the fan control off, and insulate the fan intake.

INITIAL STARTUP

1. With the shutter not installed, spin the blade assembly by hand and make sure that the blade assembly rotates freely and did not shift during shipment. If the blades rub in the fan housing, refer to Page 5 for instructions on centering the blade assembly.
2. Check belt for proper tension.
3. Check motor pulley, driven disc and idler pulley for proper alignment.
4. Check circuit phase, voltage and wiring connection against that shown on motor nameplate.
5. Check for correct fan rotation.
6. Replace the shutter. The fan is now ready for proper operation.

MAINTENANCE

CLEANING

- The fan should be cleaned regularly. Always disconnect power to the fan before cleaning.
- The motor should be wiped with a cloth or a brush. This will keep the motor running cool. **DO NOT** pressure wash the motor.
- The blades should be wiped clean to maintain maximum air performance and minimize fan imbalance. **DO NOT** pressure wash the center of the disc assembly, or premature bearing failure may be induced.
- The shutter blades should be wiped clean so that they will pivot freely, open completely, and close securely.
- The interior sides of the fan, wall housing & doors, should be washed properly after disinfecting the house to prevent rusting. We recommend using Simple Green detergent or a similar product.

CHECK FASTENERS

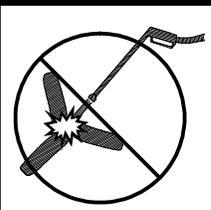
Inspect all fasteners on the fan. This is a very important safety issue. If any loose hardware is found, tighten it immediately.

CHECK BELT TENSION

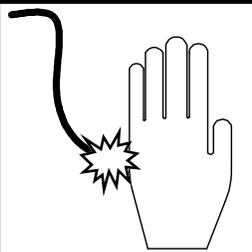
The belt must have proper tension to insure proper fan speed and maximum air performance.

CHECK DRIVE ALIGNMENT

The belt must be properly aligned in the pulleys to minimize pulley and belt wear. Refer to Page 5 for instructions.

WARNING		Precision Bearings Do Not Pressure Wash at blade assembly center
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<u>WARNING</u>	<u>CAUTION</u>
	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.

<u>DANGER</u>

– High Voltage – Disconnect power before servicing the fan

<u>DANGER</u>

– Moving Parts – Disconnect power before servicing the fan



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