

**OWNER'S
MANUAL**
Read and save
these instructions

COMFORT COOLER®

Whole House Fans

INSTALLATION AND OPERATION

IMPORTANT: Carefully read these instructions before you install or operate your new whole house fan. Proper installation is important to achieve maximum cooling efficiency. It is necessary to provide adequate ventilation to meet

minimum exhaust requirements. This prevents pressure build-up in the attic which will reduce the fan's efficiency. Refer to the ventilation work sheet on the back page of this instruction sheet to determine the exhaust air requirements.

CAUTION - SAFETY RULES

WARNING - TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

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 disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

Installation Work And Electrical Wiring Must Be Done By Qualified Person(s) In Accordance With All Applicable Codes And Standards, Including Fire-rated Construction.

Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air

Conditioning Engineers (ASHRAE), and local code authorities.

When cutting or drilling into wall or ceiling, DO NOT damage electrical wiring and other hidden utilities.

CAUTION - For General Ventilating Only, Do Not Use To Exhaust Hazardous Or Explosive Materials And Vapors.

CAUTION - This Unit Has An Unguarded Impeller. Do Not Use In Locations Readily Accessible To People Or Animals.

Your whole house fan will operate only on 120 Volt, A.C., 60 Hz (cycle) current.

Permanent **THREE WIRE** (grounded) wiring must be used. **DO NOT USE AN EXTENSION CORD.**

To avoid risk of electrical shock, fire and other injuries **DISCONNECT MAIN POWER SUPPLY** prior to installation.

This fan is to be mounted in a location where the entrance of drawn in water (rain) is unlikely.

If shutter is removed for servicing, replace before normal operation.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT USE THIS FAN WITH ANY SOLID-STATE FAN SPEED CONTROL DEVICE.

Do not operate this fan in areas where gas or oil fired equipment are in operation.

Wear safety goggles when drilling, hammering or cutting materials.



INSTALLATION RECORD Please complete for future use.

Model # _____

Serial # _____

Purchased from _____

Date Purchased _____ Date installed _____



TRIANGLE ENGINEERING OF ARKANSAS, INC.

E-mail: mail@trianglefans.com • Website: www.trianglefans.com

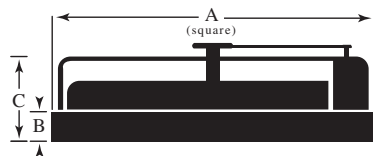
1101 North Redmond Road • Jacksonville, Arkansas 72076 • (501) 982-7558 • Fax (501) 982-5691 • 1-800-255-9014

Tools required for installation

- Hammer
- Utility Knife or sheetrock saw
- Power or handsaw
- Pencil
- Framing square
- Straight edge
- Measuring tape
- Screwdriver
- Safety goggles
- Power or hand drill

Other materials required

- Framing lumber
- Platform lumber
- Automatic ceiling shutter
- Code required electrical materials



VERTICAL INSTALLATION:

Contact the factory for information and instructions on vertical installation of the Comfort Cooler Fan.

SPECIFICATIONS - FANS

Model	H.P.	C.F.M. Hi-Lo	Blade Dia.	Weight LBS.	Dimensions A B C			Cools Sq. Ft.
CC 2422	1/3	5,600 / 3,700	24"	57	30"	4"	15"	up to 800
CC 3022	1/3	7,600 / 5,100	30"	62	34"	4"	15"	800 - 1,200
CC 3023	1/2	8,400 / 5,600	30"	67	34"	4"	15"	900 - 1,500
CC 3622	1/3	9,700 / 6,400	36"	77	40"	4"	15"	1,200 - 1,800
CC 3623	1/2	10,600 / 7,100	36"	82	40"	4"	15"	1,500 - 2,500
CC 4223	1/2	12,600 / 8,400	42"	91	46"	4"	15"	2,200 - 3,200
CC 4823	1/2	14,500 / 9,700	48"	107	52"	4"	15"	2,500 - 4,000

STOP! SHUTTER INSTALLATION NOTICE!!!

If you have purchased this fan with a Model "CSS" shutter, read the section for "CSS" shutter installation only. (See pages 4,5).

If you have purchased this fan with a Model "AS" shutter, read the section for "AS" Shutter installation only. (Pages 2,3).

LOCATION OF FAN: The most logical place to locate your whole house fan is near the central part of the house. Check attic area to be certain there is a clearance space above the fan equal to the diameter of the fan blade. Inspect the area where the fan is to be installed. The area must be free of electrical wiring and pipes.

CAUTION: DO NOT OPERATE THIS FAN UNTIL SHUTTER IS INSTALLED!

"AS" SERIES SHUTTER INSTALLATION

"AS" SHUTTERS

Model	Fan Size	Outside Dimension	Inside Dimension
AS10	24"	26" x 26"	24" x 24"
AS11	30"	32" x 32"	30" x 30"
AS13	30"	32" x 38"	30" x 36"
AS14	30"	34" x 36"	32" x 34"
AS15	36"	35" x 38"	33" x 36"
AS16	36"	34" x 45"	32" x 43"
AS18	42"	36" x 48"	34" x 46"
AS26	48"	38" x 58"	36" x 56"

**CAUTION:
DO NOT CUT
THE SHUTTER
OPENING
THE SAME SIZE
AS THE FAN
OPENING.**

**Use the shutter
inside dimensions
as shown in this
chart.**

STEP 1. After the installation site has been selected, clear the area of all insulation.

Establish the location of the shutter on the finished side of the ceiling. Use the INSIDE DIMENSIONS of the shutter and draw the four corners of the opening. Drill a 1/4" hole at each corner. Return to the attic and inspect the area to make certain that the fan and shutter installation area will not be obstructed and that area is conveniently located for ease of

installation. Use a utility knife or sheetrock saw and carefully cut the shutter opening. (See fig. 1).

STEP 2. From the attic side cut the ceiling joist 1 1/2" back from shutter opening. This is to accommodate additional framing to support the joists that have been cut. (See fig. 1).

STEP 3. Frame the opening using lumber EQUAL TO THE EXISTING JOISTS. Attach the new framing to the existing joists. Before fastening, make sure that the existing joists that were cut DO NOT sag below the uncut joists and new framing. (See fig. 2).

STEP 4. If additional framing or blocking is needed to support the shutter, install it at this time. (See fig. 4).

STEP 5. Remove the two (2) screws that secure the fan to the plenum. Pass the fan and plenum into the attic through the framed opening in the ceiling and set them aside at this time.

STEP 6. Build a platform to support the fan using lumber, plywood or other material a minimum of 3/4" thick. The platform must be constructed so that it supports all four sides of the fan, and should be wide enough to prevent Attic Air from being drawn

“AS” SERIES SHUTTER INSTALLATION, continued

into the fan. With some combinations of fan and shutter, a portion of the opening may be blocked by the platform. This will not effect the efficiency of the fan. Fasten the platform to the joists and new framing. (See fig. 2).

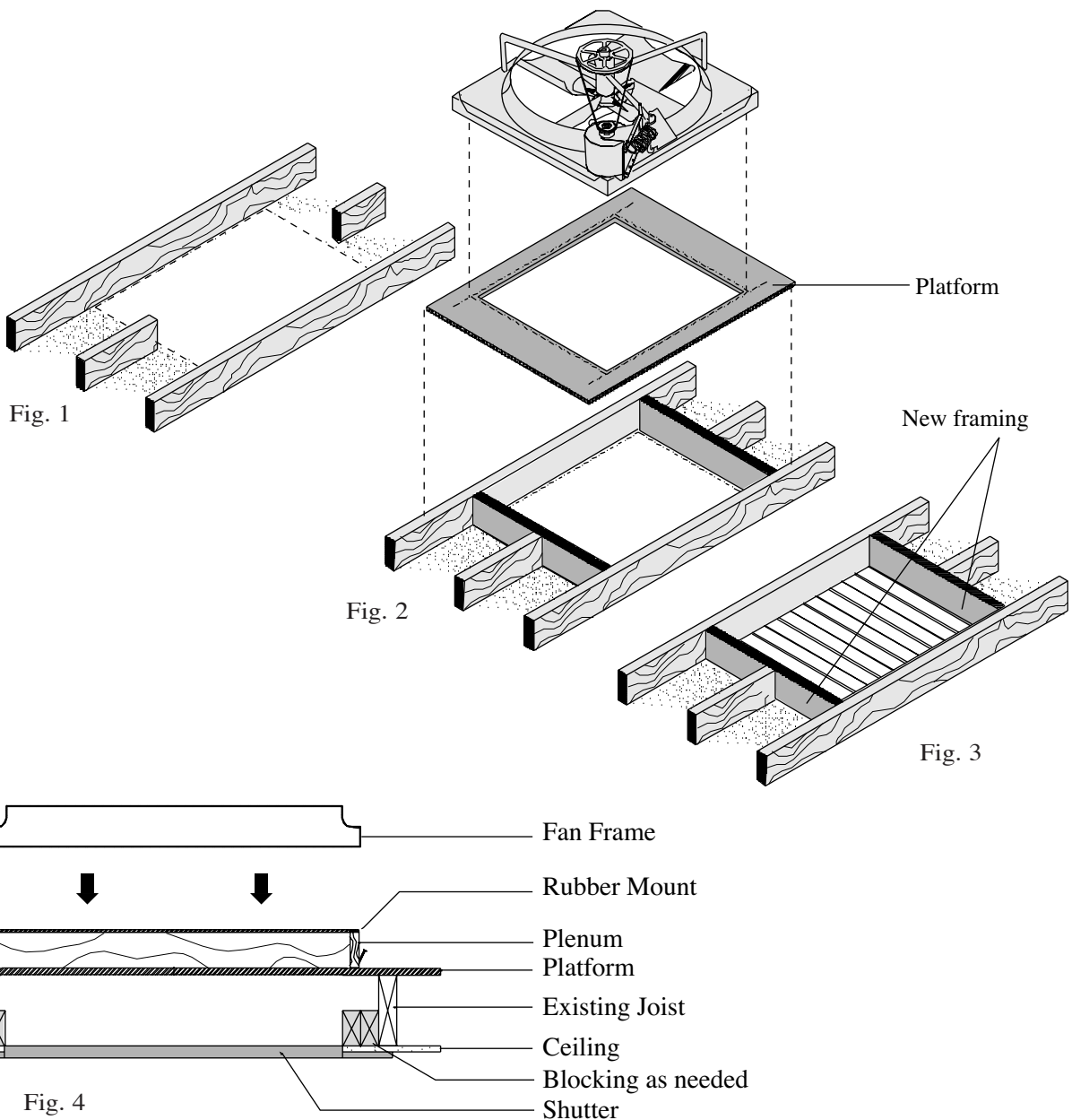
STEP 7. Center the plenum on the platform and toe nail it in place. **NOTE: WHEN TOE NAILING PLENUM TO PLATFORM MAKE CERTAIN THAT THE SIDES OF THE PLENUM REMAIN STRAIGHT AND SQUARE OR THE FAN WILL NOT FIT PROPERLY.**

STEP 8. To prevent Attic Air from entering the plenum, tape all of the joints of the new framing, platform and plenum with duct tape or aluminum foil tape.

STEP 9. Place the fan on the plenum making sure that the rubber isolation mount is in place between the fan and plenum. **DO NOT REPLACE SCREWS.** This is to permit the fan to “float” on the rubber mount which helps reduce noise. (See fig. 4).

STEP 10. Install the flush mounted ceiling shutter into the ceiling opening using the screws provided. Caution should be taken not to effect the free operating action of the shutter. (See figs. 3 & 4).

REFER TO THE “ELECTRICAL WIRING” SECTION ON PAGES 5 & 6.



"CSS" SERIES SHUTTER INSTALLATION

Models CSS-24, CSS-30 & CSS-36, install on joists with 16" or 24" centers.
Model CSS-42 installs on 24" centers only.

CAUTION: DO NOT CUT THE SHUTTER OPENING THE SAME SIZE AS THE FAN OPENING.
Use the shutter inside dimensions as shown in the shutter specification chart below.

"CSS" SHUTTERS

OPENING SIZES - Installs centered on a joist with 16" or 24" centers.
Cut two openings, one on each side of center joist per shutter model:

Model	Fan Size	Outside Dimension	Opening Size
CSS-24	24"	24" x 32"	10 $\frac{1}{4}$ " x 30 $\frac{1}{4}$ "
CSS-30	30"	32" x 35"	14 $\frac{1}{4}$ " x 33 $\frac{1}{4}$ "
CSS-36	36"	32" x 43"	14 $\frac{1}{4}$ " x 41 $\frac{1}{4}$ "
*CSS-42	42"	38" x 49"	17 $\frac{1}{4}$ " x 47 $\frac{1}{4}$ "

*For 24" o.c. joists only

STEP 1. After the installation site has been selected for the fan, remove any insulation from the area and select a ceiling joist to be the center line of the fan.

Use the shutter carton to make a template for the opening your shutter requires. (See above) FROM THE ATTIC SIDE OF THE INSTALLATION SITE place

the template on the ceiling and against the joist that will be the center of the fan. With a pencil trace around the template. Repeat this procedure on the exact opposite side of the joist. Drill a $\frac{1}{4}$ " hole at each corner of the pencil lines. YOU SHOULD HAVE EIGHT (8) HOLES. From directly below the attic, check to be sure that the location is correct.

STEP 2. Return to the attic, and using a utility knife or sheetrock saw carefully cut the shutter opening following the pattern on both sides of the joist. (See fig. 5).

DO NOT REMOVE THE SHEETROCK FROM THE CENTER JOIST.

STEP 3. Frame the opening using lumber EQUAL TO THE SIZE OF THE EXISTING JOISTS. (See fig. 6).

STEP 4. If the opening is less than the distance between the joists, fasten supports between the new framing along the edge of the opening. (See fig. 8.).

STEP 5. Remove the two (2) screws that secure the fan frame to the plenum. Pass the fan and plenum into the attic through the framed opening in the ceiling.* Set them aside at this time.

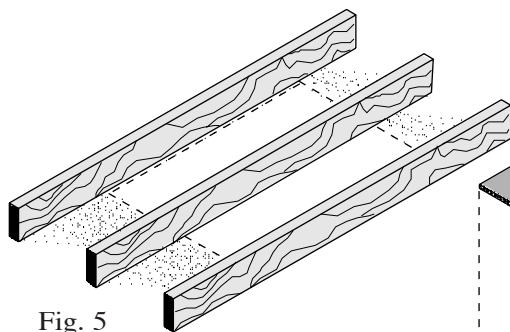


Fig. 5

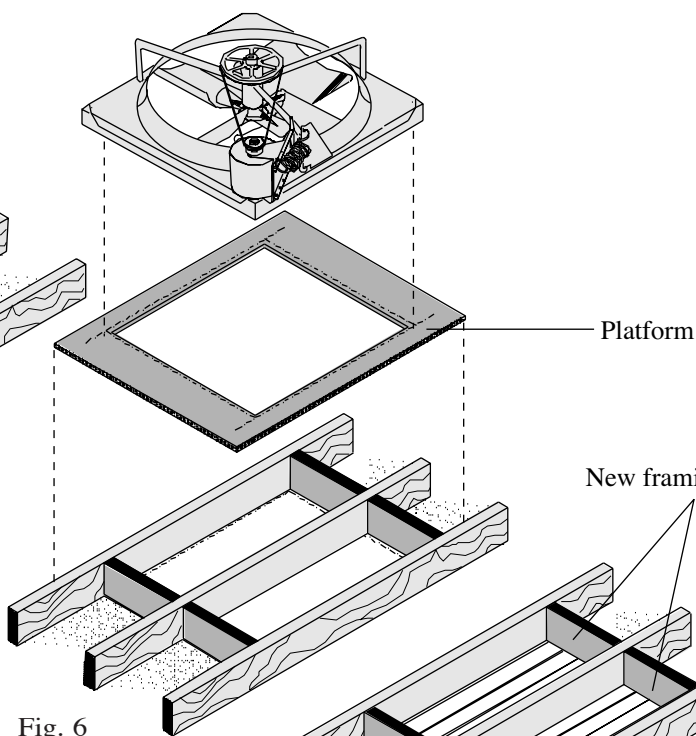


Fig. 6

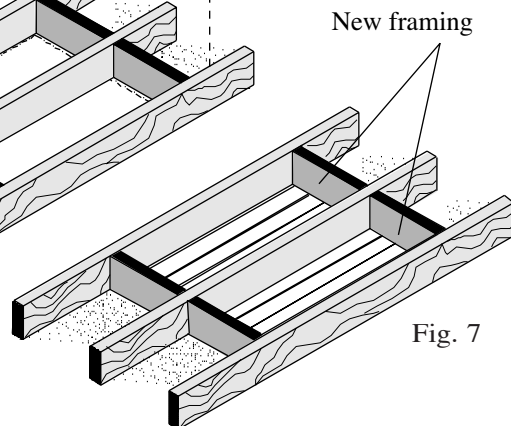


Fig. 7

*If the fan does not fit through the framed opening, use your attic access opening. The current building code requires this access opening to be at least 22" x 30".

"CSS" SERIES SHUTTER INSTALLATION, continued

STEP 6. Build a platform to support the fan using lumber, plywood or other suitable material a minimum of $\frac{3}{4}$ " thick. The platform must be constructed so that it supports all four sides of the fan, and should be wide enough to prevent Attic Air from being drawn into the fan. With some combinations of fan and shutter, a portion of the opening may be blocked by the platform. This will not effect the efficiency of the fan. Fasten the platform to the joists and new framing. (See fig. 6).

STEP 7. Center the plenum on the platform and toe nail it in place.

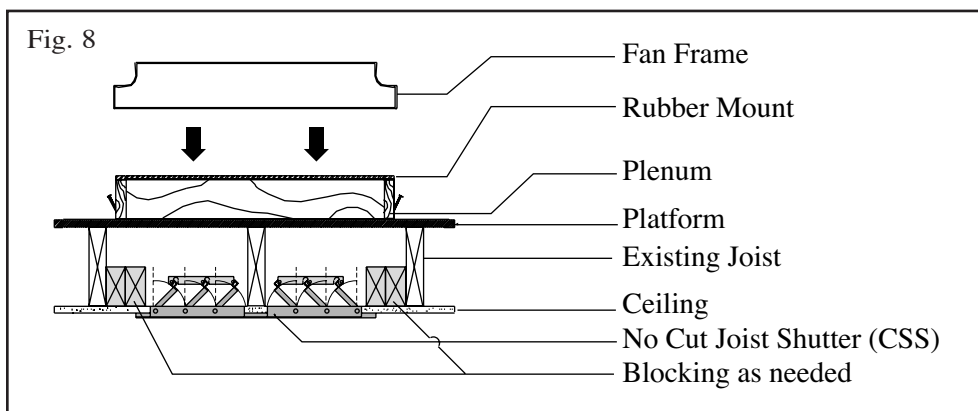
NOTE: WHEN TOE NAILING PLENUM TO PLATFORM MAKE CERTAIN THAT THE SIDES OF THE PLENUM REMAIN STRAIGHT AND SQUARE OR THE FAN WILL NOT FIT PROPERLY.

STEP 8. To prevent Attic Air from entering the plenum, tape all of the joints of the new framing, platform and plenum with duct tape or aluminum foil tape.

STEP 9. Place the fan on the plenum making sure that the rubber isolation mount is in place between the fan and the plenum. **DO NOT REPLACE SCREWS.** This is to permit the fan to "float" on the rubber mount which helps reduce noise. (See fig. 8).

STEP 10. Install the flush mounted ceiling shutter into the ceiling opening using the screws provided. Caution should be taken not to effect the free operating action of the shutter. (See fig. 8).

REFER TO THE "ELECTRICAL WIRING" SECTION BELOW.



ELECTRICAL WIRING

This fan requires a 120 Volt AC. power source with at least 15 amp capacity. All electrical wiring must be in accordance with local electric codes. Use 12 gauge or larger for all the fan wiring.

STEP 1. Get professional help If you are not familiar with electrical wiring and local wiring codes.

STEP 2. Turn OFF power at the Fuse/Circuit Breaker Box before wiring. (See safety rules on pg. 1).

STEP 3. WARNING: TO REDUCE THE RISK OF ELECTRICAL SHOCK AND DAMAGE TO THE FAN MOTOR, DO NOT USE THIS UNIT WITH ANY SOLID STATE OR VARIABLE SPEED CONTROL DEVICE.

STEP 4. For ease of electrical wiring installation it is recommended that a junction box is mounted in the close proximity of the fan motor. This should be mounted to a ceiling joist within a few feet of the fan. **REFER TO THE WIRING DIAGRAMS (figs. 9 & 10) BEFORE STARTING INSTALLATION.**

STEP 5. Select a wall in the structure in a convenient location and as close to the fan as possible, to mount the switch that will operate the fan. Once selected, cut a rectangular hole in the wall to mount a standard electrical box. This hole should be next to a stud and at the height of the standard wall switches throughout the structure.

STEP 6. Once this hole is cut, and before the electrical box is mounted inside the wall, return to the attic space and drill at least a 1" diameter hole in the wall top plate directly above the location where the hole was cut in the wall.

STEP 7. Feed the electrical wire through the 1" hole in the top plate until the wire extends down through the wall to the point it can be brought through the hole in the wall at the switch location. Working from the switch location, pull at least 18" of wire through the switch hole.

STEP 8. Feed the wire through the top hole of the switch box making sure that the wire is anchored to the box correctly, and insert the box into the rectangular hole. When the box is installed correctly, the sides of the box should be flush with the outside surface of the sheetrock and the box must be secured to the stud.

NOTE: SINCE THERE ARE VARIOUS TYPES OF ELECTRICAL BOXES THAT CAN BE USED, CONSULT YOUR LOCAL ELECTRICAL SUPPLIER FOR HIS SUGGESTIONS.

STEP 9. Return to the location of the junction box and insert the opposite end of the wire from the switch through one of the holes in the side of this box. After the wire is inserted and anchored properly, the wire may be

ELECTRICAL WIRING, continued

cut off leaving approximately 12" inside the junction box. (See fig. 10).

STEP 10. Go to the fan motor and connect the wires as shown in appropriate wiring diagram. (See fig. 9). Route the wire from the motor through the junction box, anchor securely, and cut leaving approximately 12" in the box. (See fig. 10).

STEP 11. For the power source, it will be necessary to route from the fuse/circuit breaker box to the junction box in the attic space. To accomplish this, it will be necessary to add a circuit breaker. An alternate method is to use an existing electrical source already in the attic space. With either method, route this wire to another hole in the junction box and cut off leaving approximately 12" of wire in the box. **YOU SHOULD NOW HAVE THREE SEPARATE LINES (WIRES) IN THE JUNCTION BOX, ONE FROM THE SWITCH LOCATION, ONE FROM THE FAN MOTOR AND ONE FROM THE POWER SOURCE.**

STEP 12. Using wire nuts connect all wires as shown in the wiring diagram. It will be necessary to cut off some of the excess wire in the switch and junction boxes since these wires must be placed inside these boxes with the covers anchored securely in place. When the switch is installed in the switch box **BE SURE THAT THE WALL SWITCH IS IN THE OFF POSITION.**

STEP 13. Return to the attic. **MAKE CERTAIN THAT THE FAN BLADES ARE CLEAR AND THAT NO WIRES OR OTHER OBSTRUCTIONS ARE NEAR THE BLADES.**

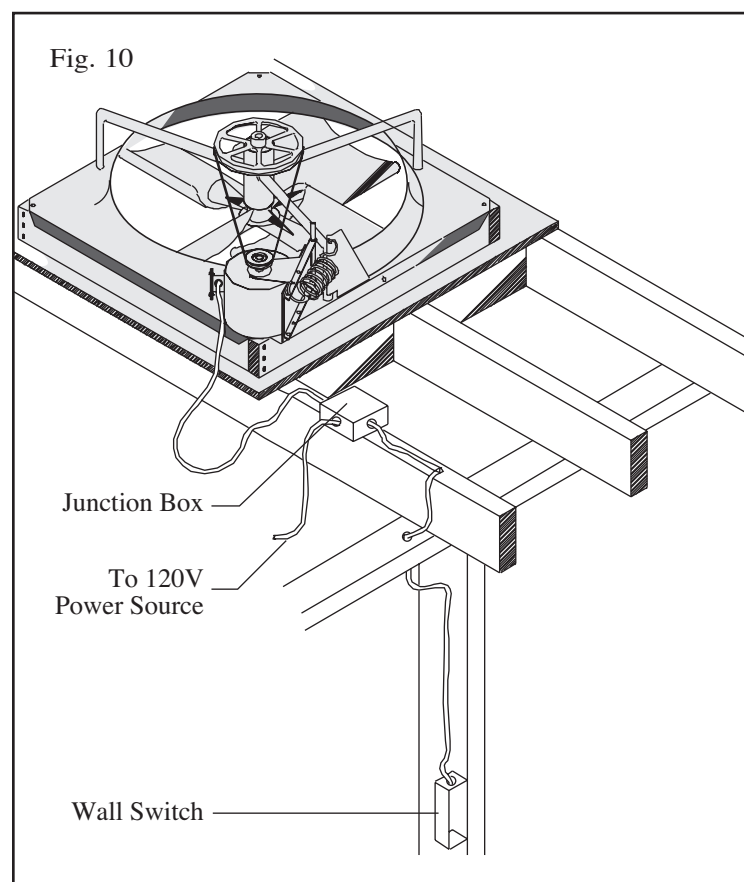
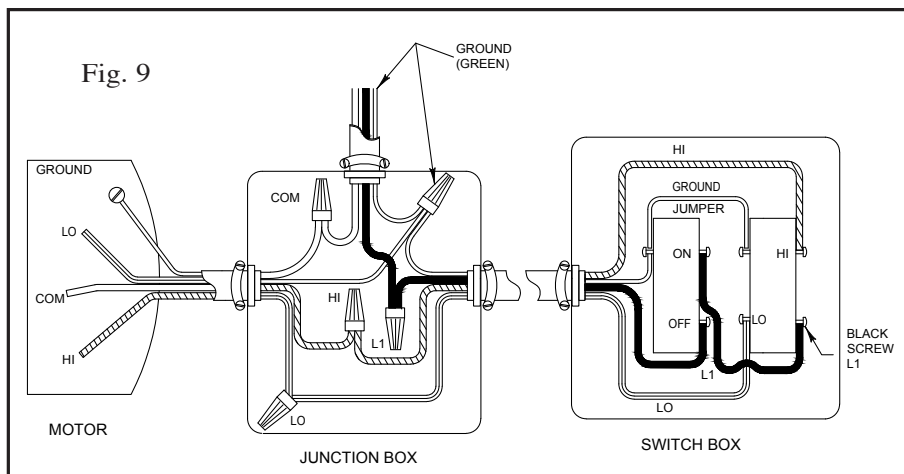
STEP 14. Verify all electrical connections. Switch power ON at the Fuse/Circuit Breaker Box.

NOTE: WINDOWS IN AT LEAST ONE ROOM OF STRUCTURE MUST BE OPEN BEFORE TESTING THE FAN.

STEP 15. TESTING THE FAN. (See fig. 9). Turn the switch on to High, allow the fan to run for several seconds, then turn the switch to Low.

STEM 16. With the fan operating, return to the attic and observe the fan. If the V-Belt is vibrating, turn OFF the fan, and switch the power at the Fuse/Circuit Box to the OFF position. See the SAFETY RULES on page 1. Move the fan spring to the end hole of the motor-mounting plate. (See page 7). After repositioning the spring, switch the power at the Fuse/Circuit Breaker Box to the On position. Re-test the fan.

STEP 17. After testing, replace the insulation around the plenum and new framing.



WARNING:
TO REDUCE THE RISK OF FIRE OR
ELECTRICAL SHOCK DO NOT USE THIS FAN
WITH ANY SOLID STATE
FAN SPEED CONTROL DEVICE.

REPAIR & REPLACEMENT PARTS

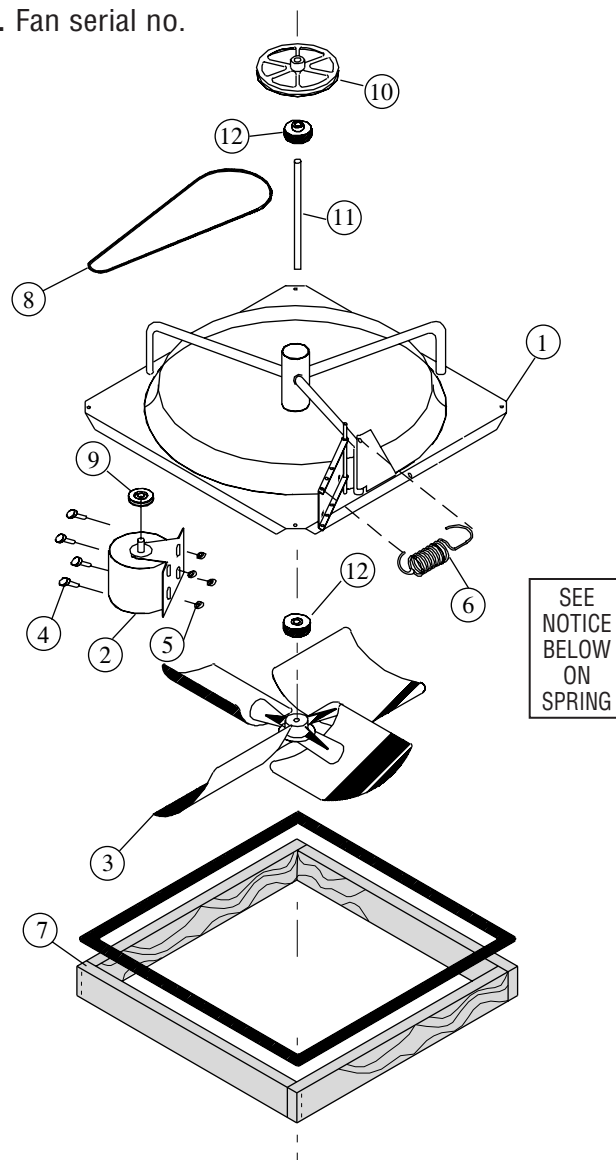
Key No.	Description
1	Fan Frame 24" (Venturi) Fan Frame 30" (Venturi) Fan Frame 36" (Venturi) Fan Frame 42" (Venturi) Fan Frame 48" (Venturi)
2	Motor 1/3 HP, 2 Speed Motor 1/2 HP, 2 speed
3	Blade Assembly 24" Blade Assembly 30" Blade Assembly 36" Blade Assembly 42" Blade Assembly 48"
4	Carriage Bolt 5/16" 18x3/4" (4 req'd)
5	Nut 5/16" 18 (4 req'd)
6	Fan Spring
7	Wood Frame 24" Wood Frame 30" Wood Frame 36" Wood Frame 42" Wood Frame 48"
8	V-Belt 24" V-Belt 30" V-Belt 36" V-Belt 42" V-Belt 48"
9	Motor Pulley 24" Motor Pulley 30" Motor Pulley 36" Motor Pulley 42" Motor Pulley 48"
10	Fan Pulley 24" Fan Pulley 30" Fan Pulley 36" Fan Pulley 42" Fan Pulley 48"
11	Fan Shaft
12	Bearing (2 req'd)
†*	2-Speed Wall Switch
†*	12 Hour Timer

†* = optional

REPAIR PARTS

When ordering repair parts, always give the following information:

1. Part description
2. Fan model no.
3. Fan serial no.



NOTICE: Replace spring (6) in area shown if it has been removed.

TO REPOSITION OR REPLACE SPRING:

- Remove V-Belt (8).
- Hook spring (6) as shown.
- Position V-Belt (8) onto motor pulley (9) while pulling the V-Belt to position it onto the fan pulley (10).

SAFETY WARNING: Do not rotate fan by pulling on V-Belt. Severe injury could result if fingers are entrapped between the V-Belt and pulley. Read the safety rules on page 1 of this manual.

VENTILATION REQUIREMENTS

The following work sheet is provided so you may determine the existing ventilation in your attic. It is necessary that you provide adequate ventilation to meet the minimum exhaust requirements for the fan you have selected. Should

you calculations show your exhaust area is inadequate, additional ventilation must be provided. Failure to meet minimum exhaust requirements will result in a reduction of fan efficiency and motor failure.

Type	QTY.	x	A (ft.)	x	B (ft.)	x	NET VENT (sq. ft.)	x	LOSS FACTOR	=	NET FREE AREA (sq. ft.)
1									.5		
2									.6		
3							1				
4							.13				
5									.6		
OTHER FORMS OF VENTILATION											
TOTAL NET FREE EXHAUST AREA											
							(sq. ft.)				

Model	Min. Free Exhaust Area Req'd
CC 2422	8 sq. ft.
CC 3022	10 sq. ft.
CC 3023	11 sq. ft.
CC 3622	12 sq. ft.
CC 3623	16 sq. ft.
CC 4223	18 sq. ft.
CC 4823	22 sq. ft.

LIMITED ONE YEAR WARRANTY

Do not return product to original place of purchase

Triangle Engineering of Arkansas, Inc. (Manufacturer) warrants, from the date of purchase, to the original purchaser only, that the product manufactured by Manufacturer is free from defects in material and workmanship for a period of **ONE (1) YEAR**. Motors, capacitors, v-belts and switches are excluded from this warranty, but shall have a limited one year warranty from date of purchase to the original purchaser.

If a failure of the product occurs, contact the Manufacturer at: **1-800-255-9014** and give the model number of the product, the purchase date, and a description of the problem to the customer service agent.

Once the problem is diagnosed, and proof of purchase date is verified, Manufacturer will have the option of shipping the necessary repair part(s) to the Customer, freight prepaid or having the product returned to Manufacturer for repair or replacement. If the product is returned to the Manufacturer, Customer is responsible for prepayment of all inbound freight charges. Upon repair or replacement, which shall be at the discretion of Manufacturer, the Manufacturer will prepay all outbound freight charges for the return of the product to the customer. However, if Manufacturer finds product to be in operating condition and no problems are diagnosed, product will be returned to customer freight collect.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF except as provided by this express warranty, the goods are sold "as is" without any implied warranties.

This limited warranty does not cover labor to replace warranted parts

or motors, nor does it cover failure of the installer to provide adequate ventilation to meet minimum exhaust requirements, damage resulting from accident, misuse or abuse, lack of proper maintenance, improper installation, affixing of any parts or attachments not authorized by Manufacturer, or loss of parts.

In no event shall Manufacturer be liable for any special, incidental, or consequential damages; which may result from any defect in material or workmanship.

It is expressly understood that Buyer's sole and exclusive remedy shall be repair or replacement of defective parts, and that Triangle Engineering shall not be liable for injury to persons or property. Should the goods prove so defective, however, as to preclude the remedying of warranted defects by repair or replacement, the Buyer's sole and exclusive remedy shall then be a refund of the purchase price.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

MOTOR REPLACEMENT DURING WARRANTY PERIOD:

If the motor on your **WHOLE HOUSE FAN** should fail during the first year of operation, simply remove the **LABEL ONLY** from the motor and mail the original label and copy of purchase receipt to Triangle Engineering. Once the label is received, and if the motor is still under warranty, we will ship a new motor within 24 hours, UPS prepaid. **DO NOT RETURN MOTOR.**