

# INSTALLATION INSTRUCTIONS FOR WHOLE HOUSE FANS

Models: CX242DDWT, CX302DDWT, CX24BD2SPD, CX30BD2SPD, CX36BD2SPD

**Read all warnings and instructions before beginning to install this fan.**

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN INJURY OR DEATH

1. Do not attempt to use this fan with any speed control device.
2. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
3. Before servicing or cleaning this unit, switch power off at the service panel and lock out to prevent power from being switched on accidentally. When service disconnecting means cannot be locked, securely fasten a prominent warning tag to the service panel.
4. Installation work and electrical wiring must be performed by a qualified person in accordance with all applicable codes and standards, including fire-rated construction.
5. When cutting or drilling into a wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. The combustion airflow needed for safe operation of fuel-burning equipment may be affected by this unit's operation. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire and Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air-conditioning Engineers (ASHRAE), and the local code authorities.

## CAUTION

**DOUBLE CHECK FAN BLADES ARE SECURE TO HUB PRIOR TO INSTALLATION.  
BLADES CAN BE DAMAGED DURING SHIPMENT AND CAN BECOME A HAZARD  
UPON ACTIVATION OF MOTOR!**

1. **This unit has an unguarded propeller. Do not use in locations readily accessible to people or animals.**
2. **For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.**
3. **Carbon monoxide is an odorless, colorless gas that can kill. It may be drawn into the house by operating this fan if your fuel-burning equipment is not properly maintained, or if you lack adequate attic space.**

# INSTALLATION INSTRUCTIONS

## VERY IMPORTANT

Please read before attempting installation

The fan and shutter are designed for horizontal installation only—the louvers will not function in the vertical position.

The wooden fan frame is installed *on top* of the joists, and the shutters open up *between* the joists, so the rough opening will be *smaller than* the fan frame size.

Fan Size	Shutter Rough Opening (L X W)
24-in.	28" X 26"
30-in.	32 1/4" X 29 1/2"
36-in.	34" X 37 1/2"

**Veins run lengthwise in 24-in and 30-in shutters, and width-wise in 36-in shutters**

Center vein is stationary to allow no-cut joist installation

*\*For model CX36BD2SPD – The joist-in method may be used only if the joists are 24" on center, or greater, and if there is enough space between the involved joists and any walls.*

**24-in Fans**- Requires attic space of at least 1200 sq ft. and 8-10 sq ft. of Net Free Exhaust Area

**30-in Fans**- Requires attic space of at least 1800 sq ft. and 10-12 sq ft. of Net Free Exhaust Area

**36-in Fans**- Requires attic space of at least 3000 sq ft. and 14 sq ft. of Net Free Exhaust Area

*\*When measuring vents for NFA, remember that louvers and screens cut down considerably on the available free air — this can be factored in by measuring the length by the width of the open vent area and dividing the resulting surface size in half.*

**DO NOT OVERSIZE YOUR FAN!** Additional installation of exterior vents may be required to provide sufficient Net Free Exhaust Area (NFA) for your fan to operate safely and effectively. Remember – bigger is not always better with Whole House Fans. A smaller fan that operates efficiently will always be preferable to a fan that is too big for its application.

### Tools and Materials Needed:

- Drill
- 1/4" and 1/8" drill bits
- Straight edge ruler (yardstick, 4 ft. level)
- Pencil or marker
- Circular saw
- Ring shank drywall nails (1 1/2")
- #12D nails
- Adjustable wrench
- Flat head screwdriver
- Phillips head screwdriver
- Safety goggles
- Speed square
- Saber saw, reciprocating saw

# Deciding on a Joist-In or Joist-Out Installation

## Joist-In Installation

The ceiling joists will be left intact for this method. You will need another attic access, as the fan will not fit through the shutter opening with the joist(s) in place.

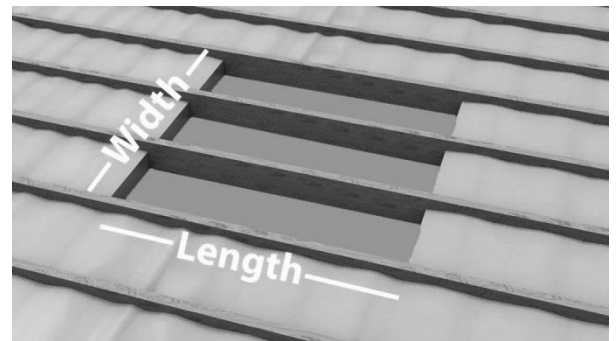
## Joist-Out Installation

This method involves removing one or more ceiling joists. This is the preferred method, as the best location does not necessarily coincide with the position of the joists.

### Step 1: Prepare the Shutter Opening

- Find a spot in the center of the hallway, drill a hole and feed a wire through to mark it.
- Mark space around the wire equal to the area of the rough shutter opening in the chart below in the joist-in or joist-out option below.
- Remove all insulation above the installation site.

Fan Size	Shutter Rough Opening (L X W)
24-in.	28" X 26"
30-in.	32 1/4" X 29 1/2"
36-in.	34" X 37 1/2"



## Joist-In Installation

- Align shutter vein with ceiling joist in the center of the shutter opening.
- Draw a line on the ceiling marking the rough opening size of the shutter frame.
- Double-check the accuracy of the dimensions you have marked and that all the corners are square.

**TIP:** Use the shutter as a template to outline the opening by drawing the cutout line around the inside edges.

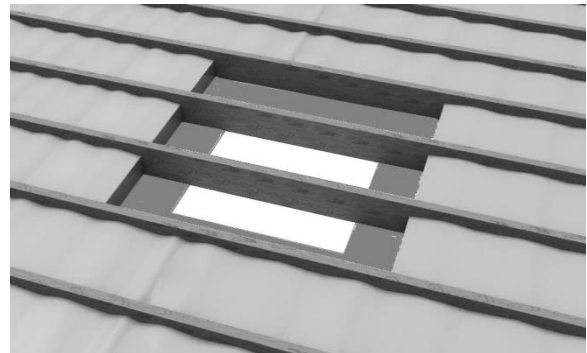
## Joist-Out Installation

- Drill two 1/4" holes (from attic floor through the ceiling) at the two corners that are aligned with one of the ceiling joists.
- On ceiling side, draw a straight line between the two drilled holes. Use this line as a guide to mark the other three sides of the shutter opening, using rough opening dimensions chart above.
- From ceiling side, drill two more 1/4" holes at the remaining corners.

## Step 2: Cut the Shutter Opening

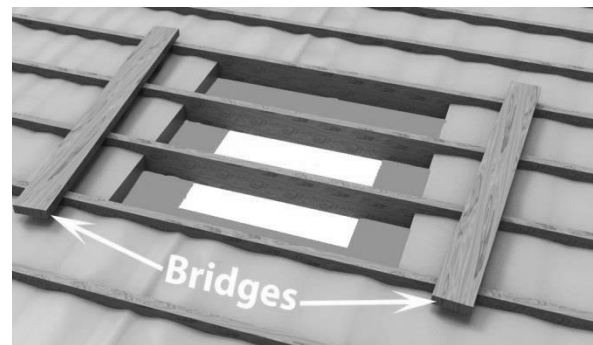
- Cut through ceiling along lines using a circular saw. Measure depth of drywall and adjust the saw so you only cut the drywall and avoid the joists.
- Carefully remove the drywall from the opening

**\*Note\*** Make sure the exposed joist is centered if doing the joist-in installation.



## Step 3: Cut the Ceiling Joist (For Joist-Out Installation Only)

- Stabilize the joists using 2 X 6 lumber to bridge the joist about six inches away from either side of the opening.
- Attach stabilizers to the joists with #12D nails or 2 1/2" deck screws.
- Mark two lines on the joists to be cut about 1 1/2" away from either side of the opening.
- Cut along the lines using a saber saw. Make sure cuts are perpendicular and accurate.

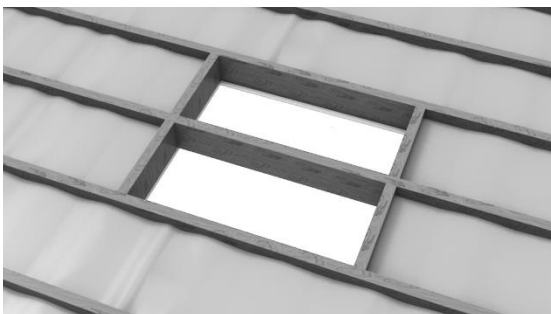


## Step 4: Frame the Shutter Opening

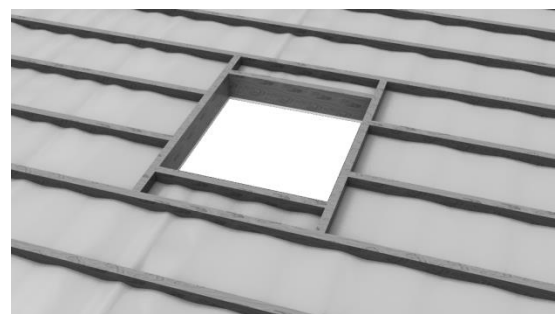
- Use lumber of the **same dimensions as your ceiling joists** and fasten them to the edges of the frame opening using #12D nails.
- Fasten the sheetrock to the new frame using 1 1/2" ring shank drywall nails.
- Seal any gaps between headers and joists with caulk or foam insulation.

**\*Note\*** Remove the two bridges from the previous step if doing a joist-out installation.

### Joist-In Installation



### Joist-Out Installation



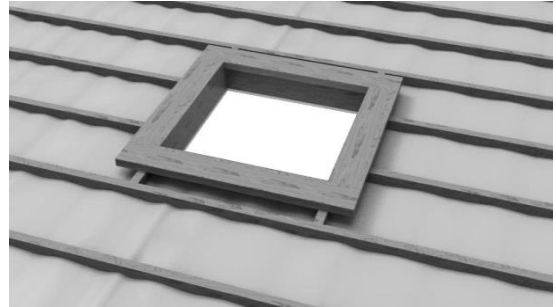
## Step 5: Facing Installation

- Use 2 X 6 boards to create a square with the inside dimensions being the same distance as the shortest dimension of the shutter rough opening (i.e. 26" for a 24-in model, etc.).
- Nail or screw in the facing to the framed opening.

### Joist-In Installation



### Joist-Out Installation

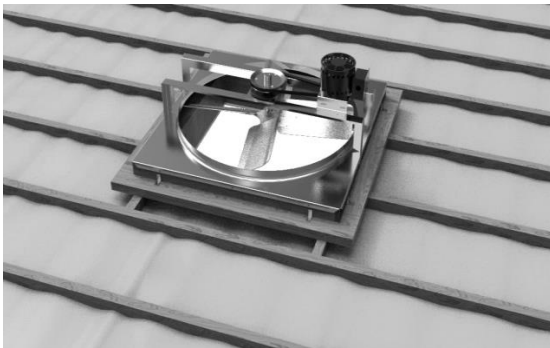


**TIP:** If doing a joist-out installation, use lumber from the support pieces as the long cuts and the removed joists as the short cuts.

**TIP:** For a quieter fan, build a second box frame the same size as the fan frame and install it between the frame and facing. Ensure that there is still a minimum of 36" clearance between the fan blades and attic roof.

## Step 6: Prepare and Install Fan Assembly

### Belt Drive Models



- Remove hardware and remount the motor on the top side of the struts.
- Position fan belt on the pulleys and adjust it to fit snugly with about 1/2" deflection. **DO NOT OVERTIGHTEN THE BELT!**
- Tighten fan blade set screw and make sure the hub of the fan blade assembly is facing up towards the roof.

### Direct Drive Models



- Remove fan blade and wire the motor first.
- Replace and secure the blade so it is about half-in and half-out of the hub.
- Tighten fan blade set screw before operating and make sure the hub of the fan blade assembly is facing up towards the roof.

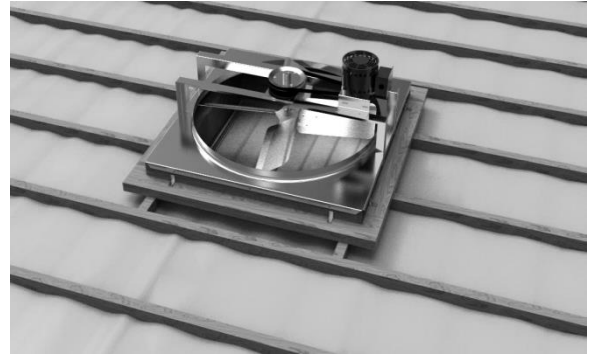
## Step 6: Prepare and Install Fan Assembly (cont.)

- Push fan assembly through the shutter opening diagonally or through another attic access if doing a joist-in installation.
- Place frame on top of facing or additional frame and draw alignment marks around the base of the assembly then secure to the facing using screws.

## Step 7: Install the Shutter

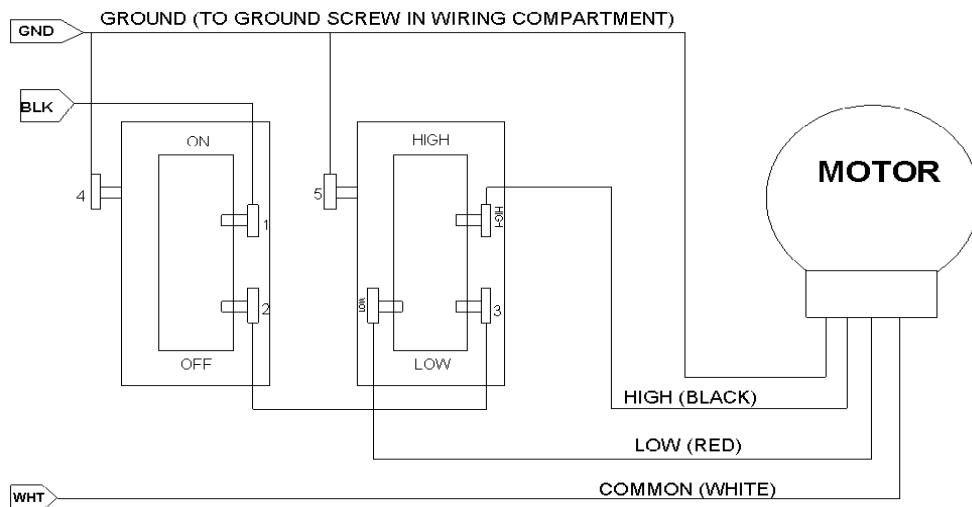
**\*Note\*** Never operate the fan without the shutter installed

- Draw alignment marks on the ceiling 7/8" from the edges to indicate the outer edges of the shutter frame.
- Install the shutter using the white-headed wood screws provided with your fan.
- Caulk the seams for an airtight seal.



## Step 8: Wiring Instructions

**\*Note\*** All wiring supplies and installations must meet or exceed the requirements of local electrical and fire codes. Wire to 120 Volt, 60 Hz circuit only, using 14-3 two-conductor wiring with ground.



- Disconnect the power supply or switch off the appropriate circuit breaker.
- Install included switches in a double gang UL listed wiring box, in a wall close to the fan.
- Connect incoming power supply wire (BLK) to the top right terminal of the On/Off switch (1).
- Connect bottom right terminal of the On/Off switch (2) to the bottom right terminal of the High/Low switch (3) using a jumper wire.

## Step 8: Wiring Instructions (cont.)

- Connect High speed motor lead (BLACK) to the top right terminal of High/Low switch (HIGH).
- Connect Low speed motor lead (RED) to the bottom left terminal of High/Low switch (LOW).
- Connect incoming common wire (WHT) to the common wire (WHITE) from the motor.
- Connect incoming ground wire (GND) to the grounding screw on each switch (4, 5) and to the ground screw (GROUND) in the motor box.
- Manually rotate fan blade to ensure no obstructions before turning on the power to the fan.

## Operating Instructions

Whole House Fans cool your home by pulling in fresh, cooler air from outside through open windows and doors. For best results in a multi-story home, windows should be opened on alternate levels for most efficient cooling. **NEVER operate fan without open windows or doors.**

**CAUTION:** If your home has a fireplace, be sure that the flue damper is closed to prevent chimney soot from being drawn into the house by the fan. **DO NOT operate the fan when a fire is burning in the fireplace.**

## Common Installation Issues

### Motor Stops after 10-20 Minutes

- A tight belt tension can cause the unit to overheat.
- Insufficient intake or exhaust Net Free Air. Open more doors and windows or increase the amount of ventilation in the attic.
- Check the bearing assembly for resistance on belt driven models to ensure there are no rough spots.

### Unit is Noisy

- If the unit is considered to be too noisy in general, install the additional frame between the fan and mounting frame.
- Large fans will make noise while operating. Moving the fan further into the attic will reduce the apparent noise. Make sure you still have 36" of clearance to the roof.
- Make sure all screws and bolts are tightened.
- Ensure enough clearance above the unit, minimum of 36" from fan blades to roof.
- Verify Exhaust NFA. Inadequate NFA will result in the unit working harder and making more noise.

### Not Enough Airflow

- Verify NFA intake and exhaust requirements are being met. Lack of airflow can be the result of lack of fresh air and lack of ventilation to expel the air. Try channeling the air by opening only doors and windows in a certain area to funnel the wind flow.

### Shutter is Hitting the Fan

- Check to make sure there is enough space between the louvers and the fan. There should be around 6"-7 1/2" between the fan blade and the vent.

# VENTAMATIC, LTD.

## LIMITED WARRANTY

Ventamatic, Ltd. extends this warranty to the original occupying owner of the home where this product is installed, that this product will be free from defects of material or workmanship for the time period listed by model number below:

**CX242DDWT, CX302DDWT**

**Limited 10-Year**

**CX24B2SPD, CX30BD2SPD, CX36BD2SPD**

**Limited 10-Year**

No subsequent purchaser of the home in which the product was installed will be entitled to the benefits of this warranty. Ventamatic, Ltd. will replace the defective part or component only and return the new part to you freight prepaid. Customer must bear all other expenses incurred, including labor required for field repair or replacement, and cost of return shipping of the defective part or component to Ventamatic.

Customer must also bear the cost of replacement of any part or component and the shipping charges incurred for the replacement and return of any part or component not covered by this warranty, including parts or components damaged by customer.

Ventamatic, Ltd. reserves the right to demand and receive written evidence of the date of purchase before undertaking to perform its obligations under this warranty. **YOU SHOULD, THEREFORE, RETAIN YOUR SALES SLIP FOR THE DURATION OF THE WARRANTY, AND ATTACH IT TO ANY EVENTUAL CLAIM.** In order to obtain the replacement of a part or component, you must select one of the following methods:

**A) Return to factory.**

Return postage prepaid the fan or part you believe to be defective to the address below:

**Ventamatic, Ltd.  
100 Washington Street  
Mineral Wells, TX 76067**

\*Include your name & address and a copy of your proof of purchase or installation.

**B) Return to place of purchase.**

It is suggested that you first contact the dealer to ascertain if they will honor the warranty.

There is no informal dispute settling mechanism available in the event of a controversy involving this warranty.

Any and all implied warranties shall be limited to the duration of the express warranty set forth above. In some states, limitations of the duration of implied warranty do not apply. Ventamatic, Ltd. shall not be liable for incidental or consequential damages, whether direct or indirect based upon breach of warranty, breach of contract, negligence or tort.

If any suit or other action is brought against Ventamatic by customer, Ventamatic and customer irrevocably waive the right to trial by jury. Purchase and installation of this product constitutes acceptance of the terms of this warranty by customer.