INSTALLATION MANUAL

VentCool® 2.5, 3.5 & 5.0

WHOLE HOUSE FAN

ITEMS INCLUDED (Generation 3):

- Fan assembly with electrical control box
- Duct tape (30 ft.)
- 7 ft. of acoustically insulated flexduct (20" diameter)
- 20 ft. of 1¾" polypropylene webbing
- Power Seal™ Motorized Backdraft Damper; Backdraft Damper Transition Collar; and, ¼" Phillips head screws (40)
- Fan Collar
- White Cube Core Grille & White Phillips head screws (8)
- Wood screws (8)
- Control Package, including: Control box; Wall Switch with Mounting Bracket and Orange CAT-5 cable (50 ft.)

SUPPLIES NOT INCLUDED & REQUIRED TOOLS:

- Phillips head screw driver
- Socket wrench with ½" socket
- Scissors or Knife
- Pliers
- Drywall Cutter
- Cordless screwdriver with Phillips head & miscellaneous drill bits
- High quality latex caulk
- Lumber matching dimensions of the attic joists (e.g. 2"x6", 2"x8", etc.) and cut to fit according to the INSTALLATION: FRAMING section.
- At least 6 additional wood screws
- A ladder

This device MUST be installed by a qualified agency in accordance with the manufacturer's installation instructions. The definition of a qualified agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of HVAC appliances, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction.

Please retain these instructions after installation.

Installed By: _____ Phone: _____ Installation Date: _____

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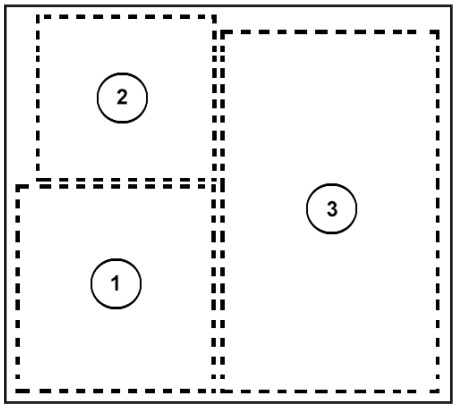
Thank you for purchasing a VentCool® Whole House Fan by Field Controls. This system has been designed to provide many years of natural, quiet, and energy-efficient cooling.

Please take a few minutes to read over this manual and its accompanying documents to make sure you are prepared to install the Whole House Fan. In particular:

- The homeowner/resident should read the WHERE TO LOCATE section so that the fan will be correctly located to maximize its effectiveness and efficiency.
- The ELECTRICAL REQUIREMENTS and VENTILATION REQUIREMENTS sections are also particularly important, as they describe the electrical supply and attic ventilation required to operate the fan.
- The INSTALLATION: BACKDRAFT DAMPER section contains important information regarding the constraints within which this fan's backdraft damper must be installed.

Before installing this fan, inspect it and all of its parts for any damage it may have sustained during shipping. DO NOT INSTALL DAMAGED EQUIPMENT. If you suspect this fan has been damaged during shipping, contact Field Controls technical support by phone at 1.800.742.8368, or email at fieldtec@fieldcontrols.com. Whole House Fans are designed to be installed within a home's attic, which makes them and their sub-components extremely difficult to access once installed. **TEST THIS FAN OUTSIDE OF THE ATTIC BEFORE INSTALLING IT PERMANENTLY.**

The Ventcool Whole House Fan by Field Controls is shipped in one box and inside this box are three individual boxes or packages separating the three main components of this system. The three main components are: Fan Assembly, Interconnecting Flex Duct and Damper Assembly.



BOX/PACKAGE	
1	Fan Assembly (Labeled as Box 1 of 3) with either: p/n: 60510003324 for Ventcool 2.4/2.5 p/n: 60510003334 for Ventcool 3.4/3.5 p/n: 60510003349 for Ventcool 4.9/5.0
2	Interconnecting Flex Duct (Labeled as Box 2 of 3) with: p/n: 750100052000 for Ventcool 2.4/2.5/3.4/3.5/4.9/5.0
3	Damper Assembly (Labeled as Box 3 of 3) with either: p/n: 60510003924 for Ventcool 2.4 p/n: 60510003925 for Ventcool 2.5 p/n: 60510003934 for Ventcool 3.4/4.9 p/n: 60510003935 for Ventcool 3.5/5.0

Box 1 of 3: The fan assembly box contains the fan assembly, fan mounted control box, fan mounted metal mounting strap and a disassembled fan transition cone for Ventcool 3.5 and 5.0 models. The Ventcool 2.5 model does not require a fan transition cone.

Box 2 of 3: The interconnecting Flex Duct box contains the flex duct and a hardware kit. The hardware kit includes aluminum tape, a polystrap and a bag of self-drilling/tapping screws.

Box 3 of 3: The damper assembly box or package contains the damper assembly, hardware kit, painted inlet grill and controller kit. The hardware kit includes aluminum tape and bag of self-drilling/tapping screws. The controller kit includes wall switch, wall mounting bracket and RJ45 interconnection cable.

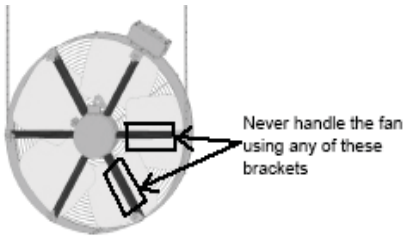
SAFETY CONSIDERATIONS

Some of the principles of this product's safe installation and operation are not immediately obvious. Read the following safety information before continuing further:

- **Never** operate this fan without a window or door opened.
- This fan is meant for general ventilation. **It has NOT been designed to ventilate particle laden and/or explosive mixtures of air and must not be used for such.**
- **This fan is NOT for use in kitchens**
- Before installing or servicing this fan, switch power off at the home's electrical panel to reduce the risk of damaging circuit boards, fire, electrical shock, or injury.
- Install this fan in accordance with this manual and all local codes and standards.

HANDLING INSTRUCTIONS

This fan's aluminum construction is corrosion-resistant and extremely durable. However, this fan should **never** be handled using any of the aerodynamc brackets that mount the motor within the assembly. These brackets are highlighted in the illustration. **Always** handle this fan by either its external casing or the motor itself. You can also handle this fan by its hanging straps, but be careful as their edges are sharp.



UNIT PARTS AND DIMENSIONS

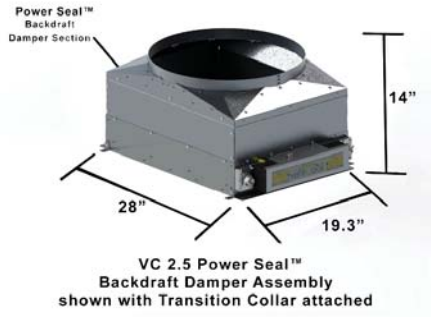
FAN ASSEMBLIES

VC 2.5
FAN ASSEMBLY

shown with fan cone attached

VC 3.5 and VC 5.0
FAN ASSEMBLY

BACKDRAFT DAMPER ASSEMBLIES

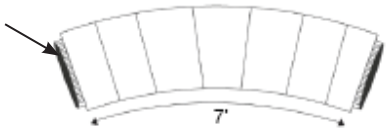


VC 2.5 Power Seal™
Backdraft Damper Assembly
shown with Transition Collar attached

VC 3.5 and VC 5.0 Power Seal™
Backdraft Damper Assembly
shown with Transition Collar attached

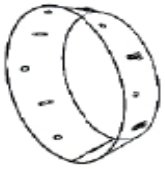
FLEX DUCT

metal collar for hooks



20" Diameter

FAN CONE



*NO FAN CONE REQUIRED FOR VC 2.5

BACKDRAFT DAMPER INFORMATION

The actuated backdraft damper provided with the VentCool® 2.5, 3.5 & 5.0 units provide an airtight seal and insulated barrier between the living space and attic. It is the homeowner's responsibility to verify the unit is sealed and/or insulated during the winter.

ELECTRICAL REQUIREMENTS

The VentCool 2.5, 3.5 & 5.0 models requires a 120 volt, 15 amp uninterrupted electricity supply. We strongly recommend providing a dedicated circuit for this fan.

This unit is provided with a ten speed wall (controller) switch and a 10 ft power cord measured from the electrical control box to power cord plug end. Consider this length when choosing a location for this fan to be mounted. Depending on the location of existing outlets in the attic, the installation of an additional outlet may be required. Consult an electrician if necessary.

All wiring and connections must be made according to this manual and acceptable wiring standards. All local codes must be followed.

VENTILATION REQUIREMENTS

It is **critical** that the attic be sufficiently ventilated for this fan to operate properly. Without adequate ventilation, hot air cannot easily escape from the attic, which creates back-pressure that can substantially reduce the fan's performance. Venting requirements vary by fan. We recommend **a minimum** of 1 sq. ft. of "net free" ventilation area per 500 cfm at a fan's highest speed. **Therefore, the VentCool 2.5, 3.5 and 5.0 Whole House Fans require a minimum square feet of net free ventilation area for proper operation. Refer to Table 1 for net free ventilation area per model.**

TABLE 1: MInimum Net Free Ventilation Area Required

Model	Minimum Net Free Ventilation Area (sq ft)
VentCool 2.5	6.5
VentCool 3.5	6.9
VentCool 5.0	10.7

Operating this fan in an attic with less net free ventilation area than recommended will decrease its airflow and energy efficiency. Net free ventilation area can be provided by any combination of gable, eyebrow, roof cap, soffit, or ridge vents, or any other method of ventilating the attic space.

The openings of most vents are partially obstructed by grilles, louvers, and/or screens. A vent's "net free" ventilation area is then the surface area of its opening minus the surface area of any grilles, louvers, or screening covering it. Different types of vents have different ratios of net free area to total area. Manufacturers typically publish these ratios with their vents' specifications, but if this information is not available to you, a ratio of 50% net free area to total area is usually a good rule of thumb. For example, according to this rule of thumb, a typical 24" x 24" louver with a gross area of 4 sq. ft. would have a net free area of 2 sq. ft. A notable exception to this rule are ridge vents. The industry standard net free ventilation area for ridge vents is 13% of the vent's length in feet.

While in our experience most properly constructed homes have adequately ventilated attics, not all do. Because sufficient ventilation is so critical to this fan's performance, it is important that the home's existing ventilation be verified before it is installed. Since most attics have multiple vents, often of different types, it is necessary to count each vent, noting its type and s ize. Then, apply the appropriate ratio to each vent to find its net free area, and sum these values to find the attic's total ventilation. An example of how these calculations are made is given in TABLE 2 below:

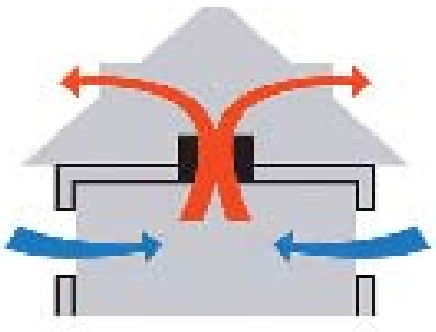
TABLE 2: Net Free Attic Ventilation Example of Calculations

Vent Type	Dimensions	Total Area	Net Free Area Ratio ("NFA")	Net Free Ventilation Area (Total Area x NFA)
Louver	24" x 24"	24" x 24" / 144 = 4 ft²	50%	4 ft 2 ft² x 0.50 = 0.89 ft²
Ridge	10 feet	n/a	13%	10 feet x 0.13 = 1.33 ft²
Round Soffit	10" diameter	3.14 x 5" x 5" / 144	50%	0.55 ft² x 0.50 = 0.28 ft²
			Total Net Free Ventilation Area =	3.61 ft²

Please consult a roofing professional if the attic's net free ventilation area remains uncertain.

WHERE TO LOCATE THIS FAN

The best location for this fan is dictated by its theory of operation: As a home heats up during the day, a large amount of heat is retained in its structure and contents. These materials give up their heat slowly and, in doing so, continue to heat the home's interior even though the outdoor temperature may, in fact, be very comfortable in the evening and at night. Thus, homeowners are forced to either endure the hot conditions inside of their homes or turn on their air conditioners and bear the expense thereof.



When operated properly, this whole house fan can resolve this dilemma by forcing the hot air inside a home out and drawing cool air from outside in. The illustration, to the right, depicts how this fan exhausts hot air into the attic and draws cool air into the house from outdoors through open windows and/or doors.

By running this fan through the night, homeowners can extract the maximum possible amount of heat from their home's structure and contents. This essentially "pre-cools" the home ahead of the rise in temperature the next day, which reduces or can even eliminate the need for air conditioning. This VentCool Whole House Fan has been designed specifically for quiet and efficient operation. As such, we strongly recommend homeowners run this fan through the night to reduce their energy expense.

With the above theory of operation in mind, adhere to the following guidelines when choosing a location for this fan:

- Locate this fan in a central location, away from windows that will be opened during its operation. Installing this fan centrally promotes an even replacement of air throughout the home, and the longer the path of air travels from an open window to the fan, the greater the cooling effect.
- The damper provided with this fan can only be installed in a horizontal orientation, thereby requiring the unit to be installed in the ceiling.
- Locate this fan at the highest point possible. This exploits natural convection and helps the fan exhaust the hottest indoor air from the home.
- Typically, the ideal location for this fan in a two-story home is in the open area at the top of the stairs.
- Avoid locating this fan in a narrow space or over hard flooring as sound reflecting off of hard surfaces can amplify its perceived noise.
- Even though this fan is extremely quiet, we specifically recommend against installing it in a bedroom as humans' perception of noise is far greater when the surrounding environment is quiet (such as within a bedroom at night).
- Within the attic, locating the fan near an electrical outlet or power supply can minimize the need for additional electrical work.

INSTALLATION: FRAMING

The first step in installing this fan is to build a simple "box" between the framing in the ceiling and to create an opening into the attic. The fan's backdraft damper has been designed to fit within a 14½" x 22½" ceiling opening, for VentCool 2.5 (See Figure 1A) and 22½" x 26½" ceiling opening, for VentCool 3.5 & 5.0 (See Figure 1B). Most modern homes have been constructed with either 24" or 16" on-center (O.C.) spaced joists or studs. This step varies slightly depending on whether the home's framing is either 24" or 16" O.C.

For 24" O.C. Framing:

Using appropriately sized lumber (e.g. 2"x4", 2"x6", etc.), install two 22½" long cross pieces between the existing framing, creating a box with interior dimensions of 22½" x 26½". Figure 1B at right shows the framing and cross pieces as they should be installed.

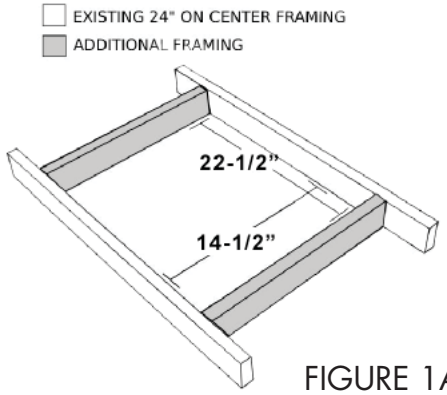


FIGURE 1A:
Box opening for VentCool 2.5

For 16" O.C. Framing:

For VentCool 2.5 Actuated Damper, using appropriately sized lumber (e.g. 2"x4", 2"x6", etc.), install two 14½" long cross pieces 26½" apart as shown in Figure 2A.

For VentCool 3.5 & 5.0 Actuated Damper, using appropriately sized lumber (e.g. 2"x4", 2"x6", etc.), install four 14½" long and one 26½" long cross pieces between the existing framing, as shown in Figure 2B to create 22½" x 26½" opening for VentCool 3.5 & 5.0 Gravity Damper.

Next, use lumber to construct a second frame with interior dimensions of 14½" x 22½" for VC 2.4 or 22½" x 26½" for VC 3.5 and 5.0. Figure 2C shows a second 22½" x 26½" frame. Mount this new frame on top of the frame created within the joists.

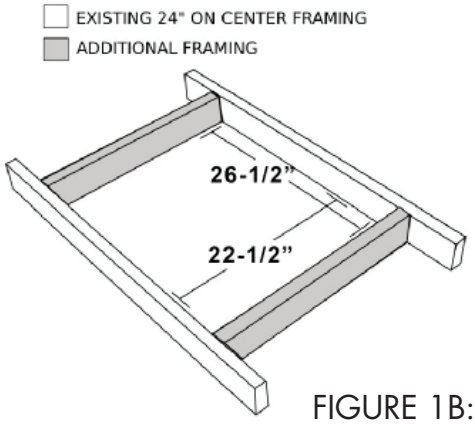


FIGURE 1B:
Box opening for VentCool 3.5 & 5.0

From below, cut out the drywall inside the framed box to create an opening to the attic. To know where to cut, use a stud finder to locate the studs from below or drill pilot holes from above.

In this configuration, a notch will need to be cut in the Grille in order to accomodate the center joist running across the opening. Procedures for this step are included in the INSTALLATION: GRILLE section of this manual. The center joist across the opening will not significantly disturb the flow of air to the fan. For Figure 2B & 2C configuration, the fan components will need to be lifted into the attic area using another access point that has a clear opening of 22-1/2" x 26-1/2" dimensions.

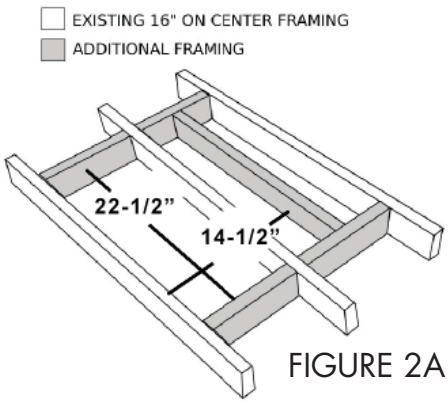


FIGURE 2A

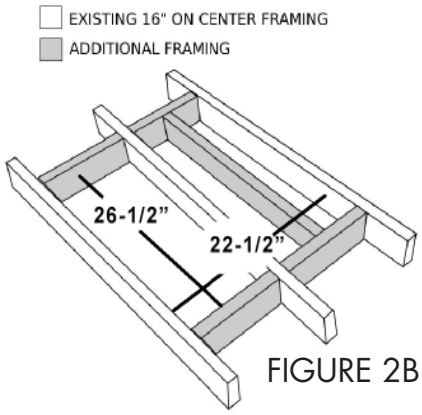


FIGURE 2B

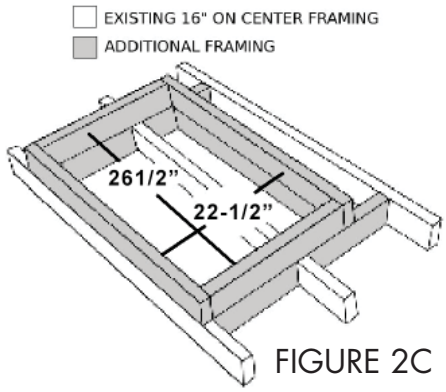


FIGURE 2C

INSTALLATION: DAMPER ASSEMBLY

The motorized actuated damper assembly is shipped in a protective metal frame which requires some minor assembly. Remove the damper assembly from the shipping box and place on flat surface with damper doors facing downward. Remove shipping frame screws as shown in Figures 3 and 4 and discard shipping frame parts.

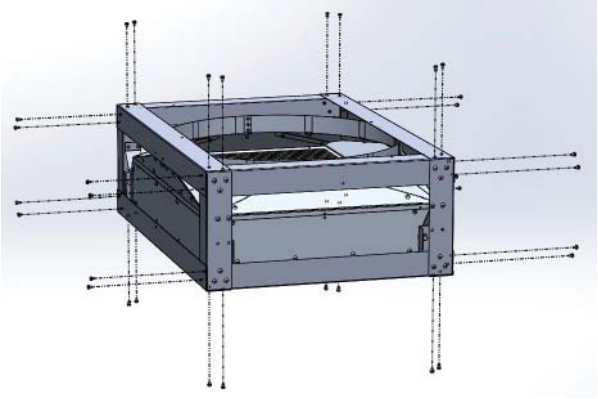


FIGURE 3 - Remove Screws from Shipping Frame

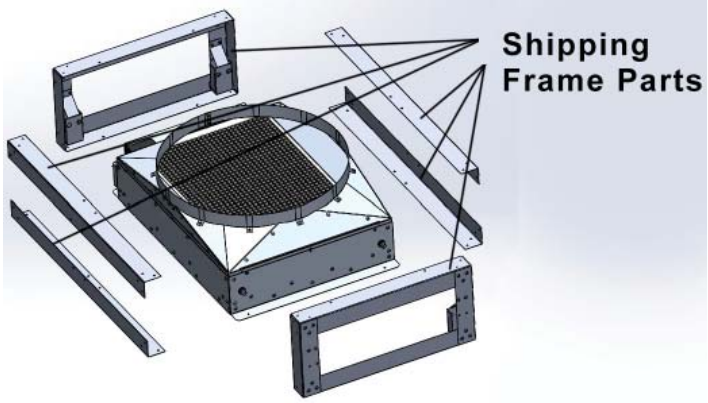


FIGURE 4 - Exposed Damper Assembly

Remove screws securing damper inlet collar part to damper base housing to expose internal components shipped inside of damper housing (refer to Figure 5). Set aside painted grill, control package box, damper inlet collar, hardware kit and side wall panels. The hardware kit contains self-tapping screws and aluminum tape for assembling damper walls to damper base and damper inlet collar. The control package box contains the wall control switch, wall bracket and RJ45 connection cable.

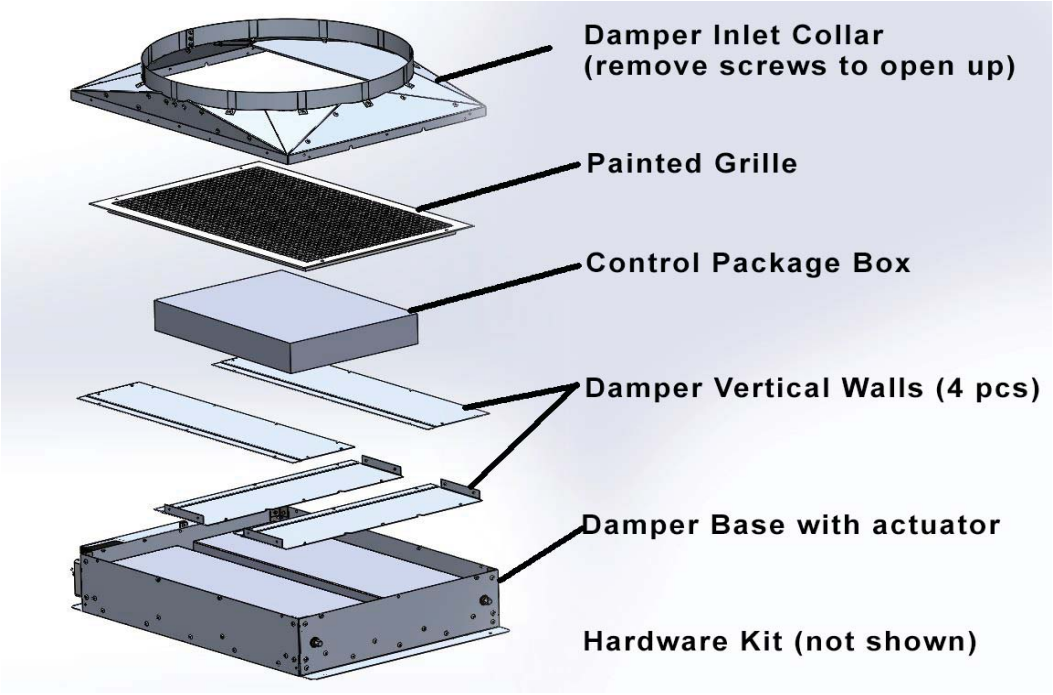


FIGURE 5 - Exploded View of Damper Assembly Contents

Insert the long wall part into the damper base and secure in place with four (4) self-tapping screws provided from hardware kit as shown in Figure 6. Insert short wall part into the damper base and secure in place with three (3) self-tapping screws provided then install two (2) additional screws to wall joint shared with long wall as shown in Figure 7.

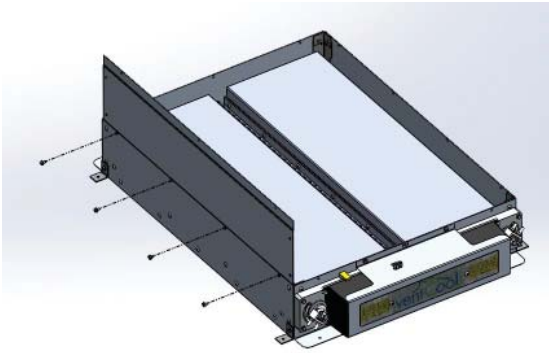


FIGURE 6 - Long Wall Assembly

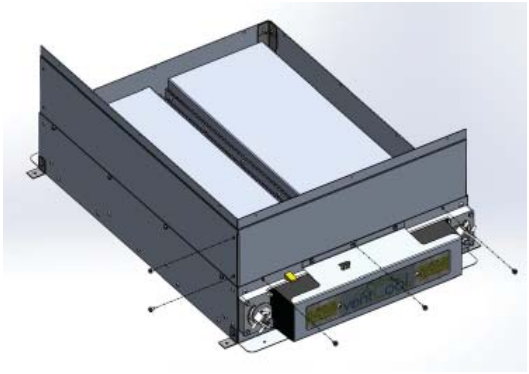


FIGURE 7 - Short Wall Assembly

Insert the 2nd long wall part into the damper base and secure in place with four (4) self-tapping screws provided then install two (2) additional screws to wall joint shared with short wall as shown in Figure 8. Insert 2nd short wall part into the damper base and secure in place with three (3) self-tapping screws provided then install four (4) additional screws to wall joint shared with long wall as shown in Figure 9.

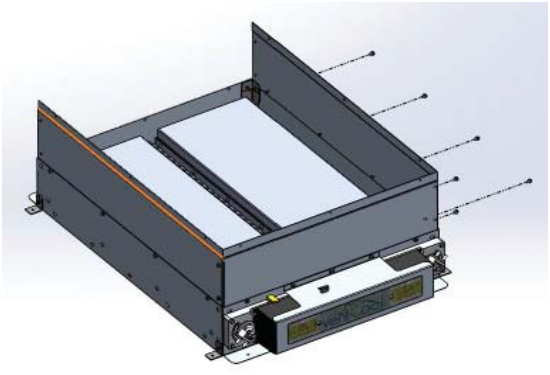


FIGURE 8 - Long Wall Assembly

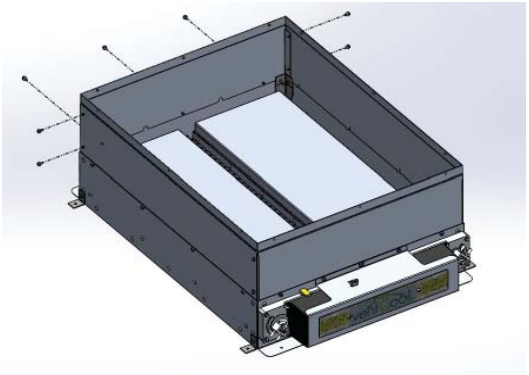


FIGURE 9 - Short Wall Assembly

Place damper inlet collar over top of damper walls and secure in place with twelve (12) self-tapping screws provided as shown in Figure 10. Use the aluminum tape to seal up any seam and joint openings in the damper assembly prior to final installation. Remove any damper door shipping/secure in place packaging.

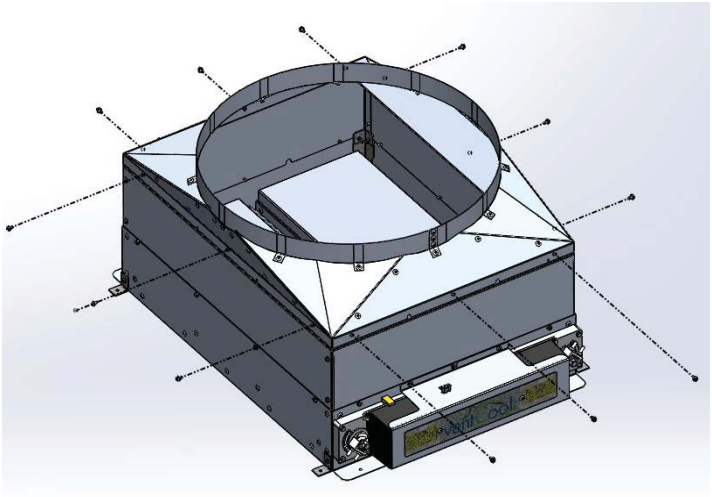


FIGURE 10 – Install Damper Inlet Collar

INSTALLATION: BACKDRAFT DAMPER

The next step in this fan's installation is to install the backdraft damper within the "box" that was built in the previous step.

However, before proceeding further, please make sure to pass the fan assembly, back draft damper, fan cone, and ductwork through the opening created in the previous step and into the attic. Do not attach the fan cone to the fan assembly before they are in the attic; they will not fit.

These items have been designed to fit through this opening. Since they may not fit through the attic's crawl hole, they **must** be in the attic before proceeding further.

Once the above items are in the attic, the backdraft damper can be installed.

Position the damper on top of the joists as shown in Figure 11. Rotate it as needed for ease of access to the actuators so that the damper doors are centered over the opening to the living space (this can be checked from below by depressing the yellow clutch releases located on the sides of the actuators and opening the damper doors manually).

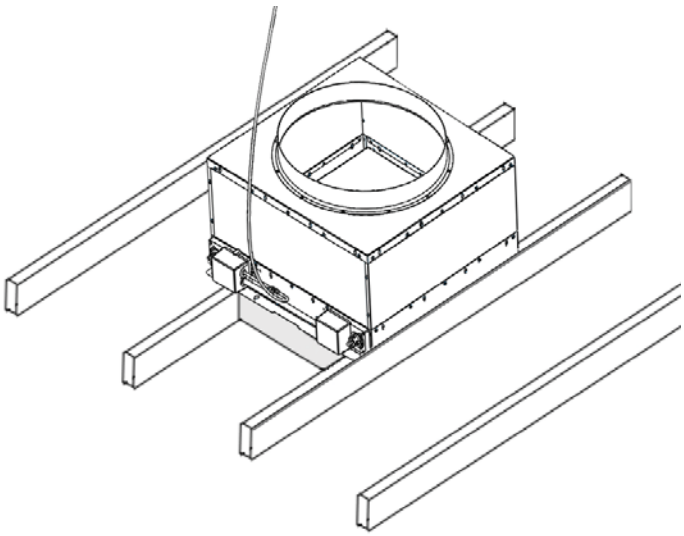


FIGURE 11

The actuator end of the damper box has two keyholes that are used to attach the damper box to the joists. Mark the location of the keyholes on the joists by placing the damper box over the rough opening. Remove the damper box and fasten two of the provided wood screws so that the screw head is slightly above the joist. Position the damper box over the keyholes and slide the lock in position. Use the remaining wood screws to finish attaching the damper box to the joists.

If installing the damper vertically in a wall, frame a box with the same dimensions as above. However, use longer wood screws than those provided (at least 1 ½") to mount the damper to the framing, and make sure the damper door(s) open about their vertical axis. Also, consider bracing the underside of the damper with additional framing.

Manually OPEN Damper Door(s)

To manually OPEN motorized damper doors, depress and hold YELLOW button on the actuator attached to each damper door then manually push open or pull close damper door (Refer to Figure 12).

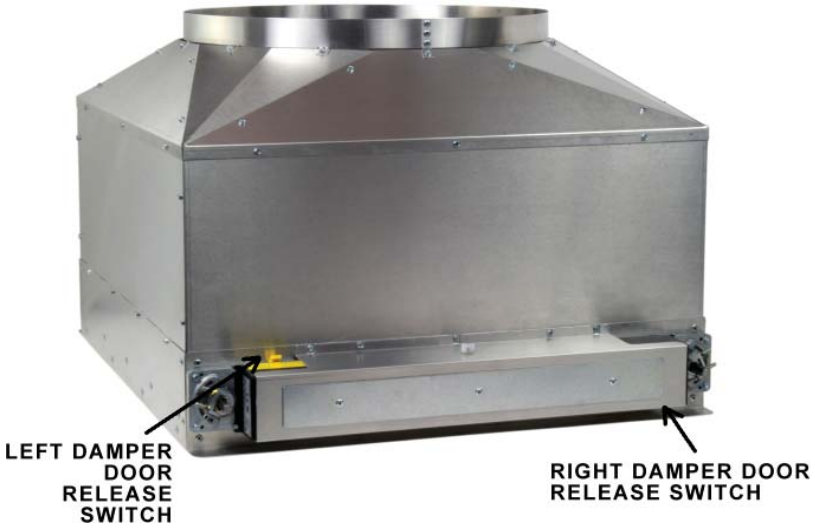


FIGURE 12: Motorized Damper Door Actuator Drive Release Switches

WARNING: Do not manually open motorized damper door(s) without pressing the YELLOW actuator release switch(es). Failure to release actuator switch will damage actuator gear drive and void product warranty.

Backdraft Damper Orientation Note

The ideal orientation of unit's backdraft damper is level within the framing.

FIGURE 13:
Bottom side of backdraft damper assembly
- Damper closed

INSTALLATION: FAN & DUCT

The next step in this fan's installation is to hang the fan assembly from the attic's rafters, and to attach it to the backdraft damper using the provided ductwork. Figure 14 below shows the fan assembly, ductwork, and backdraft damper as they should appear when fully installed.

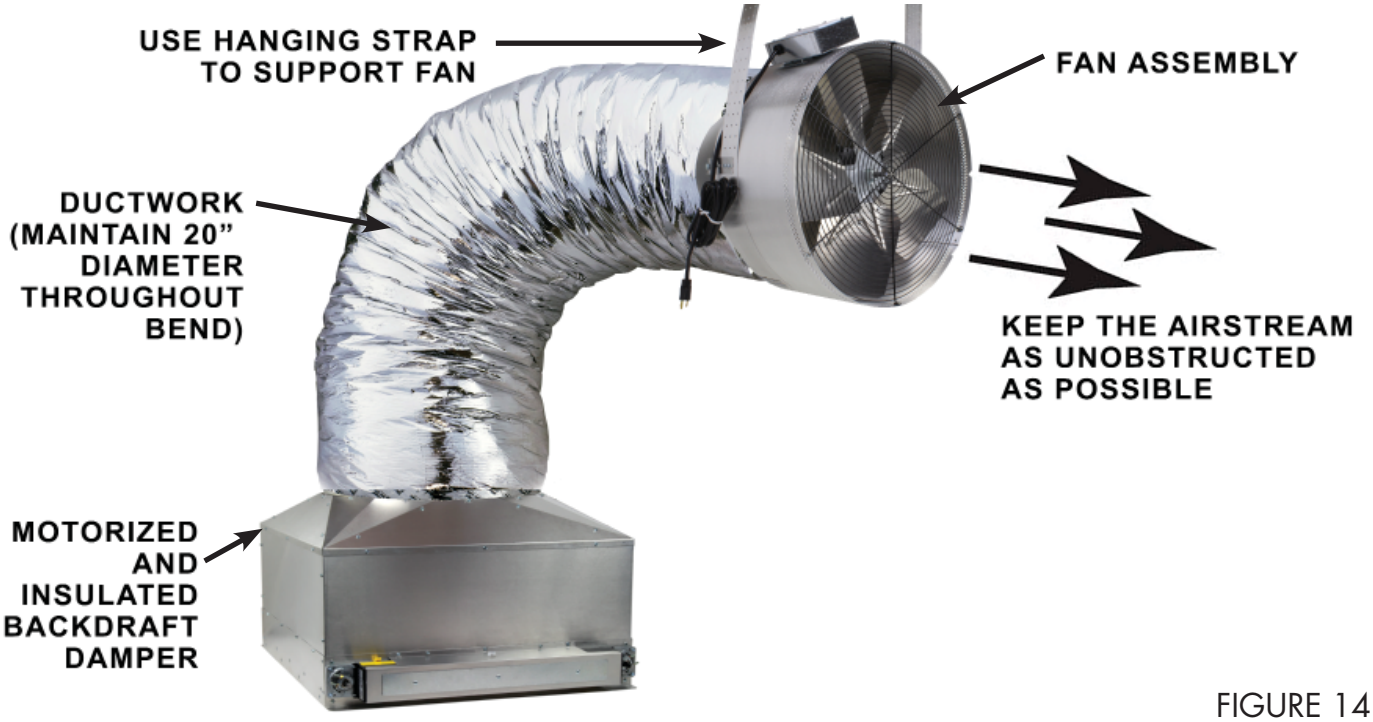


FIGURE 14

First, hang the fan by fastening the hanging strap attached to the fan assembly to two of the attic's rafters. Use at least 3 wood screws (**NOT provided**) at any of pilot holes on each end of the strap.

When hanging the fan assembly, adhere to the following guidlines:

- Both sides of the attached hanging strap are necessary to support the fan's weight and to eliminate any swaying motion.
- Ensure that the fan is as level as possible.
- Keep the area in front of the fan as unobstructed as possible: At the least, the nearest object obstructing the path of fan's exhaust airflow can be no closer than 24" to the face of the fan.

Attach the fan cone to the fan assembly for VentCool 3.5 & 5.0 models. The fasteners necessary to connect the fan cone to fan housing are preinstalled in the fan housing. First, remove these bolts. Then, slide the cone into the brackets on the fan assembly. Align each of the holes in the fan cone with one of the brackets (the first and last hole on the fan cone will overlap). Insert a bolt into each bracket and tighten.

Then, gently bend the ductwork to a 90° angle and slide the free end onto the fan cone and fasten it thereto using the hooks on the ductwork's collar and the latches on the fan cone, as shown at right in Figure 15. The flexible ductwork directly connects to the fan assembly without a fan collar using the latching system on the VentCool 2.5 model.

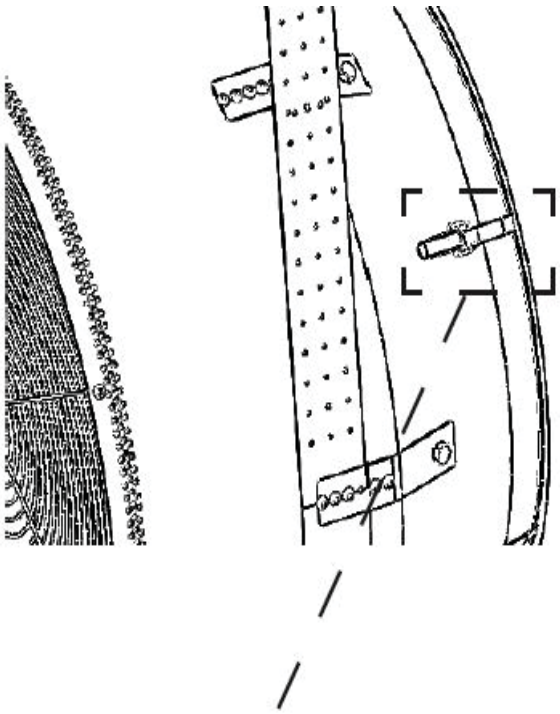


FIGURE 15

Next, slide one end of the flexible ductwork over the backdraft damper's transition collar and secure it thereto into place by sandwiching ductwork between backdraft damper collar and sheet metal ring using sheet metal screws, as shown at right in Figure 16.

If needed, the backdraft damper transition collar can be rotated to better align the hooks and latches. Simply unscrew the screws securing the cone to the backdraft damper (highlighted in Figure 16) rotate the cone, and reattach it to the damper using the screws.

Adhere to the following guidelines when attaching the ductwork to the backdraft damper and fan cone:

- Make sure to maintain the full diameter of the ductwork through the bend; this provides adequate airflow and helps minimize noise.
- Avoid sharp bends in the ductwork or contact with metal fixtures, pipes, or conduits.
- The section of ductwork immediately before the fan should be as straight as possible.
- The ductwork can be supported under the bend using the provided polypropylene webbing. The webbing can be attached to the rafters using wood screws, nails, or staples. Fold over the end of the webbing at the attachment point so that the screw, nail, or staple is securing it to the rafter through 2 layers.

Once the fan assembly is balanced and secure, use the provided duct tape to seal the joints between the ductwork and the backdraft damper; the ductwork and the fan cone; and, the fan cone and fan assembly.

FIGURE 16

INSTALLATION: GRILLE

The next step in this fan's installation is to mount the cube core grille over the interior opening in the ceiling previously created.

First, from the living area, use latex caulk to seal all wood-to-wood and wood-to-metal joints. This ensures that all air drawn into the fan will be from within the living space.

Then, attach the grille to the joists using the 8 provided white head screws. We advise pre-drilling pilot holes for these screws. If the home's framing is 16" O.C., use a dremel tool or hacksaw to cut two notches in the grille's flange to accomodate the middle stud. Figure 17 below shows this notch.

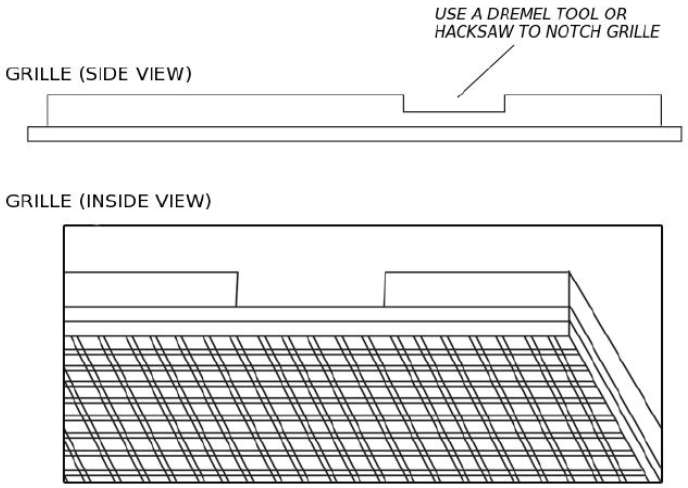


FIGURE 17

INSTALLATION: WIRING & CONTROLS

The final step in this fan's installation is to install its controls. The standard controller kit package included with this fan contains: the control box; 1 hardwired wall switch; 1 mounting bracket for the wired switch and 50 ft. of orange CAT5 cable.

First, locate the control box attached to fan assembly section.. The control box is an 12.375" x 5.5" x 2" galvanized steel electrical box with a series of 3 RJ45 ports on one side. Refer to Figure 18. These ports are labeled with the following label:

FIGURE 18: RJ45 Port Labels on Electrical Control Box

Second, locate the small electrical box on the backdraft damper assembly. The small electrical box is located between the two actuators on the backdraft damper assembly.

Connect the 8 ft cable coming out of the fan assembly control box to the small electrical box with connector on the backdraft damper assembly.

WALL SWITCH INSTALLATION (Refer to Figure 18 for Electrical Control Box Port Labeling)

Connect the orange CAT5 cable to the red **W/S** port located on the electrical control box on the fan housing. Then, run the cable through the attic and down the wall to the desired location for the hardwired wall switch. Refer to Figure 19 for Wall Switch. **Note: This cable is low-voltage but unshielded. Building Codes require unshielded low-voltage wiring to be run through shielded conduit. Do not run cable in parallel with 110V or greater wiring.**

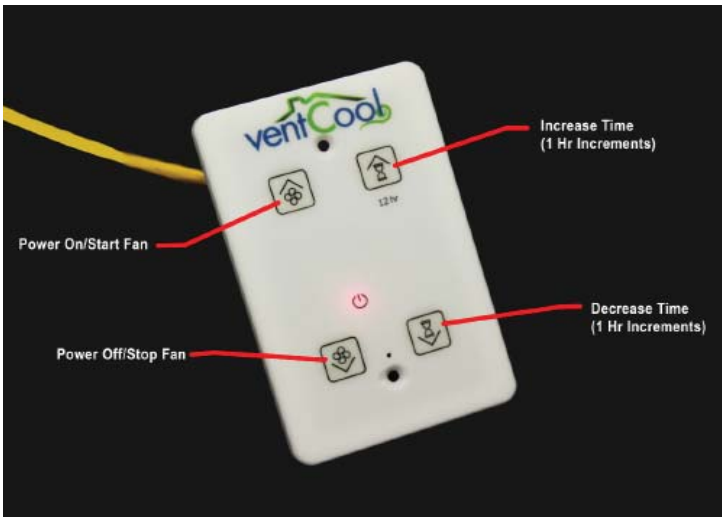


FIGURE 19: Wall Switch

FIGURE 20: Wall Bracket

Connect the included hardwired switch to the fan's control box regardless of whether or not it will be installed in a wall. **Because an accessible hardwired switch is necessary for providing technical support, this switch MUST be installed. FAILURE TO INSTALL THE HARDWIRED WALL SWITCH WILL VOID THIS FAN'S WARRANTY!**

Using the provided wall mounting bracket (Figure 20) as a template, trace an outline on the wall where you would like the switch to be located. Following this outline, cut a hole for the mounting bracket, place it inside, and secure it with the locking tabs by tightening the silver screws. Then, connect the free end of the red CAT5 cable to the port on the back of the wall switch. Set the switch in place and secure its face plate to the mounting bracket using the attached white screws.

The wall switch is configurable for multiple VentCool product lines which means it can be configured to operate in different modes. Refer to Figure 21 when setting DIP switches for VentCool 2.5, 3.5 and 5.0 operating parameters. **Verify the wall switch control panel DIP switches are set to switch 1 and 4 are ON and 2 and 3 are OFF.** This setting will allow the wall switch to operate as a ten speed, 12 Hr timer configuration. **CAUTION: Failure to properly set wall switch configuration will cause the VentCool WHF system to not work.**

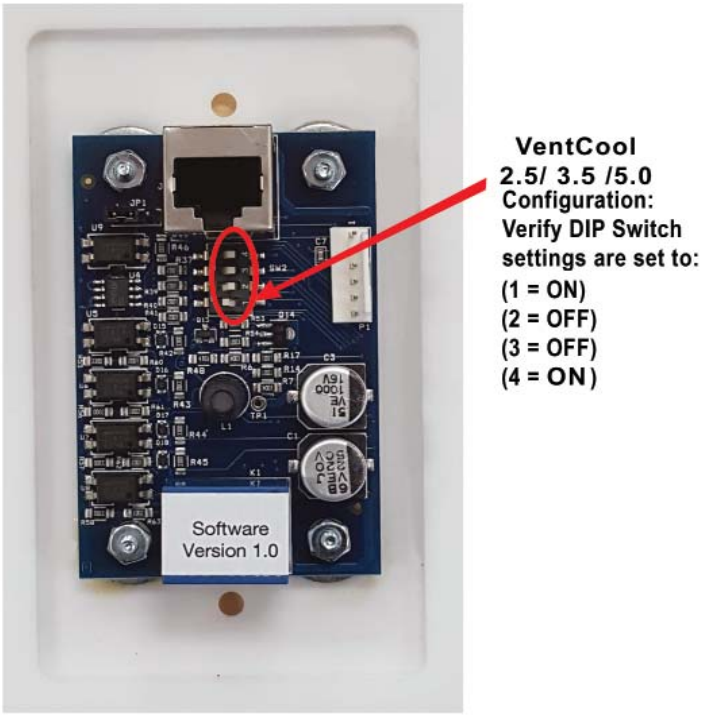


FIGURE 21: Wall Switch DIP Switch Settings
(Rear Surface of Display Switch)

Figure 22 shows the generic wiring schematic of the VentCool 2.5, 3.5 and 5.0 units.

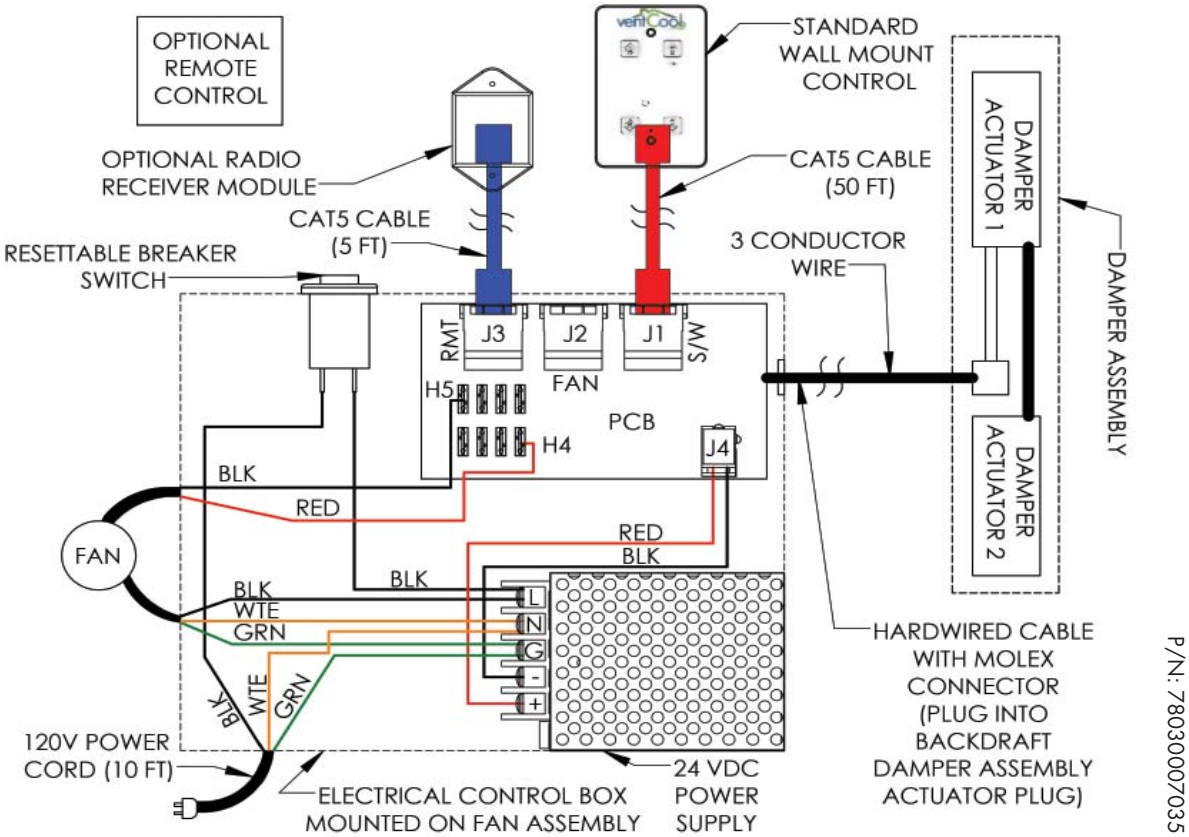


FIGURE 22: VentCool 2.5, 3.5 & 5.0 Wiring Diagram

WIRELESS REMOTE (OPTIONAL)

A wireless remote is an available accessory for this fan. It is not included as part of the ventCool standard control package.

To install a wireless remote with this fan, first mount the wireless remote receiver on an attic joist near the control box using wood screws and the pre-drilled mounting holes. Connect one end of the blue CAT5 cable provided with the remote control kit to the receiver's RJ45 port. Then, run the cable to the fan's control box and connect its free end to the blue RMT port.

Field Controls remote control transmitters and receivers are pre-merged at our factory. They may, however, become unmerged prior to installation. A remote control transimitter that has become unmerged from its receiver will not be able to control the fan. In this case, the transmitter and reciever will need to be remerged.

To merge a remote control transmitter and receiver, follow these steps:

1. Remove the receiver's top cover.
2. On the receiver's circuit board, locate the black button labeled LEARN. Press and release this button to begin the merge sequence; the RJ45 port's yellow transmission LED will illuminate.
3. **Immediately** press and release any button on the wireless transmitter while the transmission LED is illuminated. If the merge is successful, the transmission LED will turn off.
4. Repeat steps 2 and 3 if there are any additional remote control transmitters to merge with the receiver.
5. Replace the receiver's top cover.

START-UP & OPERATION

The following instructions for operating this fan have also been provided in the "How to Operate Your Whole House Fan**" document included with this fan.**

Before starting this fan for the first time, verify that:

1. All wiring and connections have been made according to this manual and acceptable wiring standards, and that this manual and all local codes and standards have been followed in this fan's installation;
2. No tools or construction debris have been left in, on, or around the fan; and,
3. Plug the unit power cord into a 120 VAC outlet. Werify ON/OFF Breaker switch on electrical control box is ON. Turn ON power to 120 VAC outlet.

Each of this fan's control interfaces (the hardwired wall switch or wireless remote) looks and operates the same: There are four buttons that turn the fan on or off, increase or decrease its speed, and set its timer. The appearance of these buttons is shown in the illustration below. (See Figure 23)

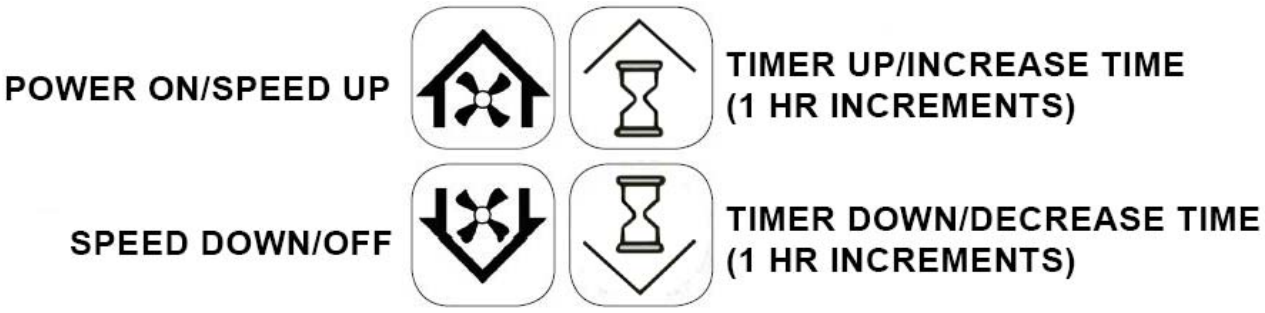


FIGURE 23: Control Button Nomenclature

To turn the fan on, press the POWER ON / SPEED UP button. The fan is programmed to start on its lowest speed setting. To increase the fan's speed, press this button again: its speed will increase to the next higher setting. Pressing this button repeatedly will incrementally increase the fan's speed until it reaches its highest setting.

To decrease the fan's speed, press the SPEED DOWN button. The fan's speed will decrease to the next lower setting. Pressing this button repeatedly will incrementally decrease the fan's speed until it reaches its lowest setting.

To set the fan's timer, press the TIMER UP button. The timer will be set to 1 hour, after which the fan will automatically turn off. To increase the timer's setting, press this button again. Each time this button is pressed, the timer's setting will increase by 1 hour, up to 12 hours total. To increase or decrease the fan's speed while its timer is running, press the appropriate button, doing so will not affect the timer. The timer resets each time the fan is turned off.

To turn the fan off, press the Speed down button (until all LED lights turn off). The fan will turn off at any speed, canceling any remaining time on the timer.

When starting this fan for the first time, make sure to observe it turning on, running at each of its speed settings, and turning off from both the attic (to see the fan itself) and the living space (to see the backdraft damper).

- If the fan does not turn on, check the power to the unit, the control connections, and the circuit breaker on the fan mounted electrical box.
- If the damper flaps do not open or close, visually inspect the damper for any debris obstructing their movement.
- If the steps above do not work, contact Field Controls Tech Support at 800.742.8368 or fieldtec@field-controls.com for further assistance.

IMPORTANT OPERATING TIPS

The following important tips for operating this fan have also been provided in the "How to Operate Your Whole House Fan**" document included with this fan.**

- **NEVER operate this fan without also opening a window or door. Doing so can excessively depressurize the home.**
- Only operate this fan when the outdoor air temperature is cooler than the indoor temperature.
- **Make sure the home's air conditioner and furnace are OFF before turning on this fan.** Running either of these together with this whole house fan wastes money because the fan will force expensively conditioned or heated air out of the home.
- We recommend running this fan through the night. Here's why: The goal of using a whole house fan is to cool the entire home, not just the air inside it. Once heated, the home's structure and contents continue to radiate heat until reaching the temperature of the surrounding air. Running this fan through the night speeds up this cooling process and can then further "pre-cool" the home, reducing or eliminating the need to use air conditioning the next day.
- If the home has a basement, extra cooling can be achieved by drawing in air through the basement windows.
- This fan's cooling effect can be increased or concentrated in particular areas by adjusting the location of open windows. Visualize the path air will travel from the windows to your fan's opening. Generally, the longer the path, the more cooling.

MAINTENANCE & TROUBLESHOOTING

There is no routine maintenance required for this fan other than making sure the fan assembly and backdraft damper are kept clean of any possible build up of debris.

Blocking this fan's exhaust can cause it to fail prematurely. Keep the area in front of the fan as unobstructed as possible. No object should be closer than 24" to the face of the fan.

Resettable circuit breaker is located on the control box and fan mounted electrical box to protect circuit boards from power surges. In the case of a power surge, these breakers can be reset by simply pushing the button back in.

This fan has been factory tested. If problems are encountered, please take a few moments to run through the following troubleshooting procedures before calling for assistance:

- If the fan does not turn on, check the power to the unit, the control connections, and the circuit switch on the fan mounted electrical box.
- If the damper flaps do not open or close, visually inspect the damper for any debris obstructing their movement. Verify that control cable between fan assembly and damper actuator assembly is installed.

If the suggestions above do not work, contact Field Controls technical support at 800.742.8368 or by email at fieldtec@fieldcontrols.com for further assistance.

SPECIFICATIONS

TABLE 1

VentCool 2.5										
Speed Setting	1	2	3	4	5	6	7	8	9	10
Airflow (CFM) *	723	1388	1853	2212	2532	2834	3075	3123	3278	3253
Power (Watts)	17.9	42.1	75.1	116	162	215	272	287	304	321
Sound @ 5 FT (dBA) *	36	37	41	40	42	51	57	58	59	60
Fan Dia/HP	20" DIA / 1/4 HP**									
Rough Opening	14-1/2" x 22-1/2" Rough									
Back Draft Damper	21.4" x 29.5" X 14" Rough									
Attic Opening	6.5 SQ FT									
Open Windows	13.0 SQ FT									
VentCool 3.5										
Speed Setting	1	2	3	4	5	6	7	8	9	10
Airflow (CFM) *	723	1352	1775	2082	2415	2671	2896	3105	3282	3440
Power (Watts)	16.9	33	54.8	79.8	110	142	179	217	259	298
Sound @ 5 FT (dBA) *	36	37	39	40	42	47	48	49	50	52
Fan Dia/HP	24" DIA / 1/3 HP									
Rough Opening	22 1/2"x 26 1/2" Rough									
Back Draft Damper	27.3" x 33.5" x 20.2" Rough									
Attic Opening	6.9 SQ FT									
Open Windows	13.8 SQ FT									
VentCool 5.0										
Speed Setting	1	2	3	4	5	6	7	8	9	10
Airflow (CFM) *	1367	2229	2849	3319	3873	4176	4649	4937	5231	5350
Power (Watts)	34	85.4	152	233	330	435	560	690	807	825
Sound @ 5 FT (dBA) *	36	39	41	47	51	52	55	57	60	61
Fan Dia/HP	24" DIA / 3/4 HP									
Rough Opening	22 1/2"x 26 1/2" Rough									
Back Draft Damper	27.3" x 33.5" x 20.2" Rough									
Attic Opening	10.7 SQ FT									
Open Windows	21.4 SQ FT									

*Air flow and sound is influenced by installation, duct alignment and air door angle.
** Some models of ventCool are shipped with 1/3 HP ECM Motors

TABLE 2

Grille Build	Cube Core, Aluminum, White Paint
Electrical	120 VAC, 15 AMP
Insulation	Duct R4.2/Damper Door R49
Controls	10 Speed Wall Mount
Fan Housing	Brushed Aluminum
Damper Housing	Aluminum

*Due to our continual product improvement efforts, performance ratings and specifications are subject to change without notice.

Spare parts and serviceable components are listed in Figure 24, on page 19.

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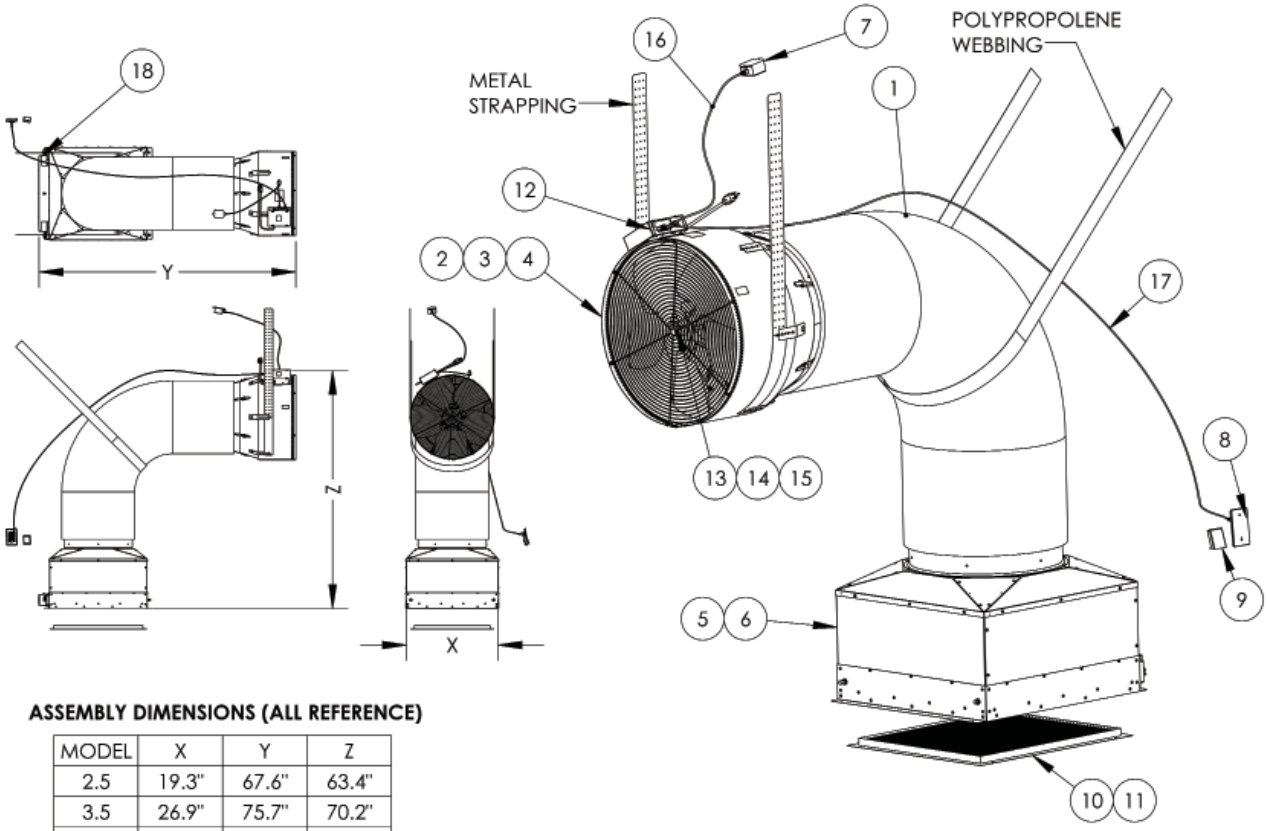

ASSEMBLY DIMENSIONS (ALL REFERENCE)

MODEL	X	Y	Z
2.5	19.3"	67.6"	63.4"
3.5	26.9"	75.7"	70.2"
5.0	26.9"	75.7"	70.2"

ITEM NO.	PART NUMBER	DESCRIPTION	INCLUDES ITEMS	2.5	3.5	5.0
1	60510003200	VC, 20" FLEX DUCTWORK	-	X	X	X
2	60510003324	VC, 20" FAN HOUSING, 1/4 HP ECM MOTOR	12, 13	X	-	-
3	60510003334	VC, 24" FAN HOUSING, 1/3 HP ECM MOTOR	12,14	-	X	-
4	60510003349	VC, 24" FAN HOUSING, 3/4 HP ECM MOTOR	12, 15	-	-	X
5	60510003925	VC ACTUATED DAMPER, 14.5" X 22.5" W/ WALL CONTROL	8, 10, 17	X	-	-
6	60510003935	VC ACTUATED DAMPER, 22.5" X 26.5" W/ WALL CONTROL	8, 11, 17	-	X	X
7	60510003146	VC-RCT-SC TRANSMITTER& CONTROLLER KIT	9, 16	O	O	O

REPLACEMENT PARTS

ITEM NO.	PART NUMBER	DESCRIPTION	2.4	3.4	4.9
8	60510003134	VC-VSC10 (2.4/3.4/4.9) 10 SPEED WALL CONTROLLER	X	X	X
9	60510003145	VC-RC-SC SPARE REMOTE CONTROL MODULE	O	O	O
10	60510003417	GRILLE, 14.5 X 22.5	X	-	-
11	60510003434	GRILLE, 22.5 X 26.5	-	X	X
12	60510003550	PCB REPLACEMENT	X	X	X
13	60510003624	MOTOR REPLACEMENT, 1/4 HP ECM	X	-	-
14	60510003634	MOTOR REPLACEMENT, 1/3 HP ECM	-	X	-
15	60510003649	MOTOR REPLACEMENT, 3/4 HP ECM	-	-	X
16	60510003805	5' BLUE TRANSMITTER CABLE	O	O	O
17	60510003850	50' ORANGEWALL CONTROLLER CABLE	X	X	X
18	60510003717	ACTUATOR REPLACEMENT	X	X	X

X DENOTES INCLUDED/COMPATIBLE
O DENOTES OPTIONAL

Figure 24 Spare Parts

This manual may be downloaded and printed from the Field Controls website (www.fieldcontrols.com)

WARRANTY

For warranty information about this or any Field Controls product, visit:
www.fieldcontrols.com/ventCool

Field Controls Technical Support
1.800.742.8368
fieldtec@fieldcontrols.com

Phone: 252.522.3031 • Fax: 252.522.0214
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P/N 780100600 05/17 Rev A