



ORDER #: _____

S/N: _____

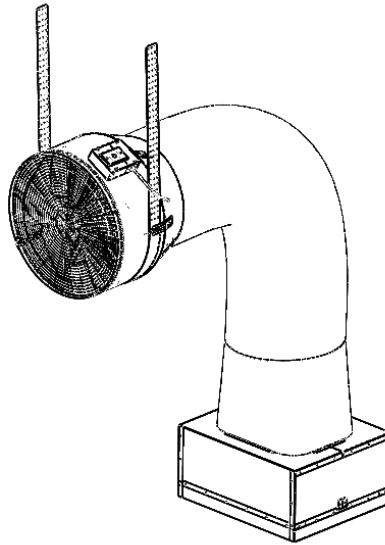
MAC: _____

(Required for Warranty)

5.0e & 5.0eXR

WHOLE HOUSE FAN

INSTALLATION AND OPERATION MANUAL



Thank you for purchasing an AirScape® whole house fan. Your fan has been designed to provide your home with natural, quiet, and energy-efficient cooling for many years.

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

- The green THEORY OF OPERATION insert provides information critical to locating this fan within the home, and to ensuring the home's attic has adequate ventilation for its operation.
- This manual's ELECTRICAL REQUIREMENTS section described the electrical supply necessary to operate this fan.

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 AirScape technical support by phone at 1.866.448.4187, or email at experts@airscapefans.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. Connect the fan to its controls and to a power supply, and ensure it operates properly by turning it on and cycling through its speed settings.** If any difficulties are encountered, contact AirScape technical support at the numbers listed above.

SAFETY INFORMATION



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.***
- This fan is NOT for use in kitchens.
- **Never** force open the damper doors, this could severely damage the actuators. **Always** use the yellow clutch releases located on the actuators before attempting to manually open or close the damper doors.
- 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.

SUPPLIES INCLUDED IN THE BOX

Prior to beginning installation, please verify all of the following items were received with the fan:

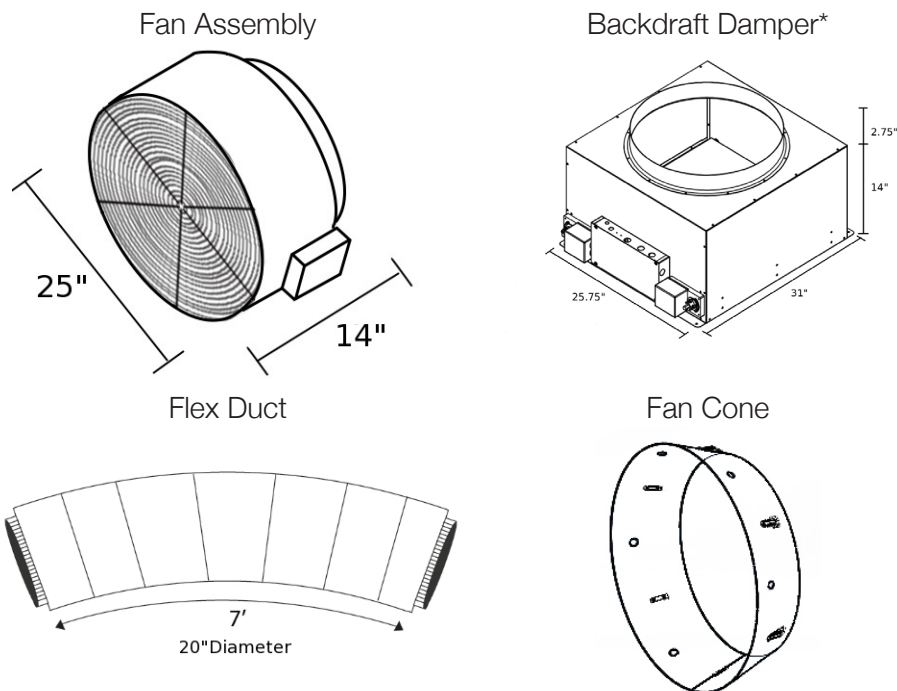
- Box 1 of 3: damper door enclosure with damper assembly kit, grille, IOM, metal and wood screws, collar screws, fan cone bolts, and 2nd generation control package—including one hard-wired wall control, one wall mounting bracket, and 50 feet of red CAT5 cable.
- Box 2 of 3: fan assembly, duct tape, 20 ft. of 1 $\frac{3}{4}$ " polypropylene webbing.
- Box 3 of 3: 20" diameter insulated flex duct, fan cone.

REQUIRED TOOLS & SUPPLIES NOT INCLUDED

In addition to the included items listed above, the following tools and supplies are required to install the fan:

- Flat head screw driver
- Socket wrench with 9/16" socket
- Hammer
- Scissors or Knife
- Pliers
- Drywall Cutter
- Cordless screwdriver with Phillips head and 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 (at least 1 $\frac{1}{2}$ " at minimum)

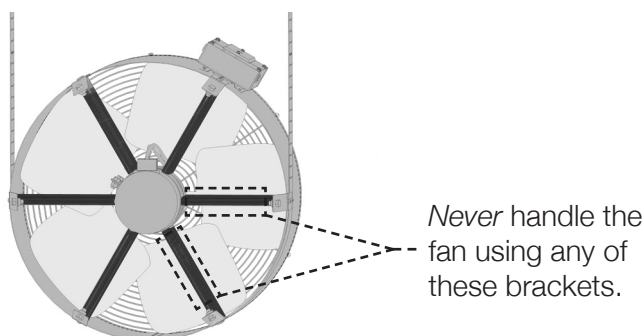
UNIT PARTS AND DIMENSIONS



*Backdraft Damper is shown above as it appears once assembled.

▲ HANDLING INSTRUCTIONS ▲

This fan's aluminum construction is corrosion-resistant and extremely durable. However, this fan should *never* be handled using any of the aerodynamic brackets that mount the motor within the assembly. These brackets are highlighted in the illustration below. *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.



ELECTRICAL REQUIREMENTS

This fan requires a 120 volt, 15 amp uninterrupted electricity supply. We strongly recommend providing a dedicated circuit for this fan.

This fan has two factory-installed, 10 ft. power cords. One originates at the control box, and the other at the fan-mounted electrical box. Consider these lengths when choosing a location for this fan. 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.

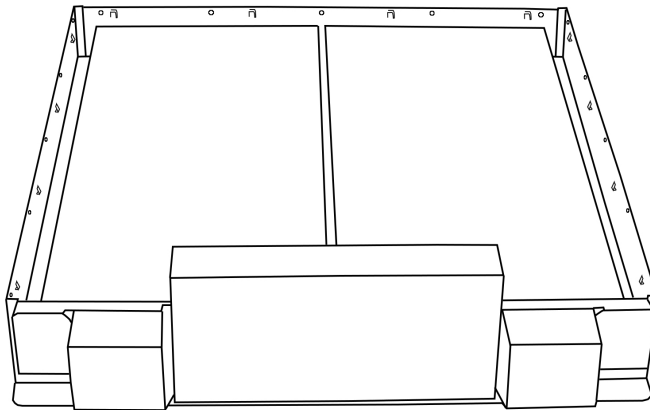
INSTALLATION: BACKDRAFT DAMPER ASSEMBLY

This fan's backdraft damper should be assembled before it is moved into the attic. 37 damper screws, 8 plastic rivets, 12 collar screws, and a roll of 2 inch foil tape have been included in the provided damper assembly unit.

All part identification labels ("A" through "E") have been affixed so as to face the interior of the fully-assembled damper. Thus, once it is assembled, no such labels should be visible.

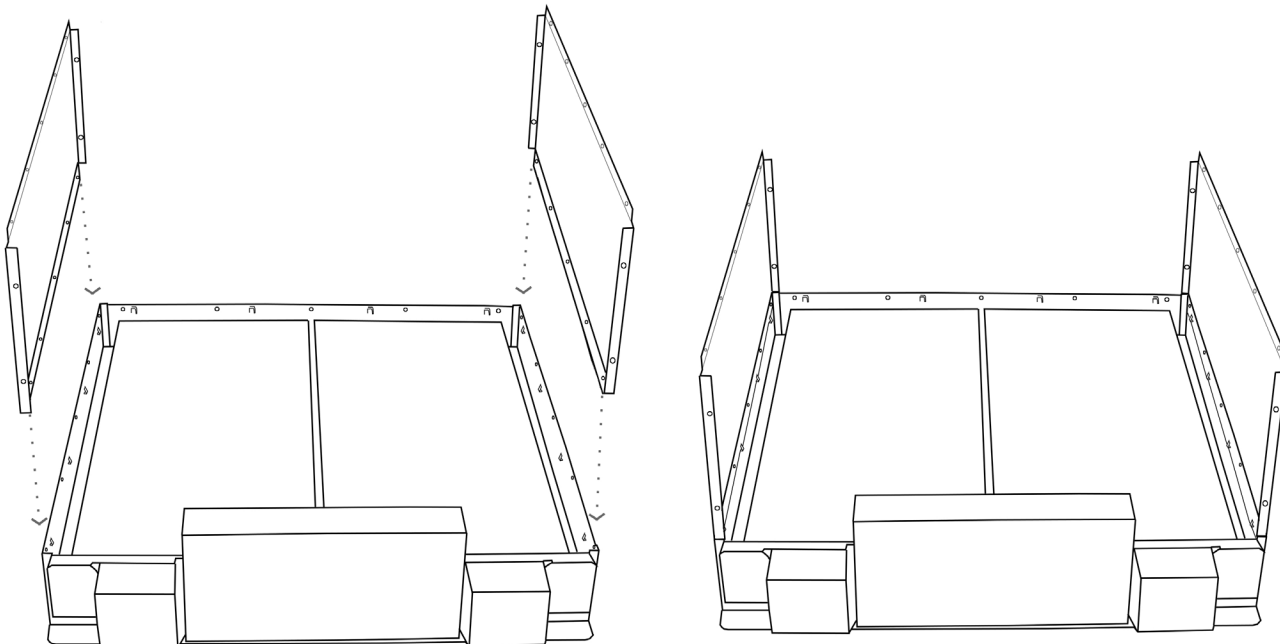
First, pull out all sections of the damper box until you have the base. Set all peices off to the side with the label identifying their assembly order facing up. Position base so that the electrical box and actuators are facing you as shown below in Figure 1.

Figure 1



Then, slide both of the side panels labeled "A" into the base as shown below in Figure 2. Be sure the panels slide into the locking tabs on the base. The "A" label must be facing the interior of the damper on both sides.

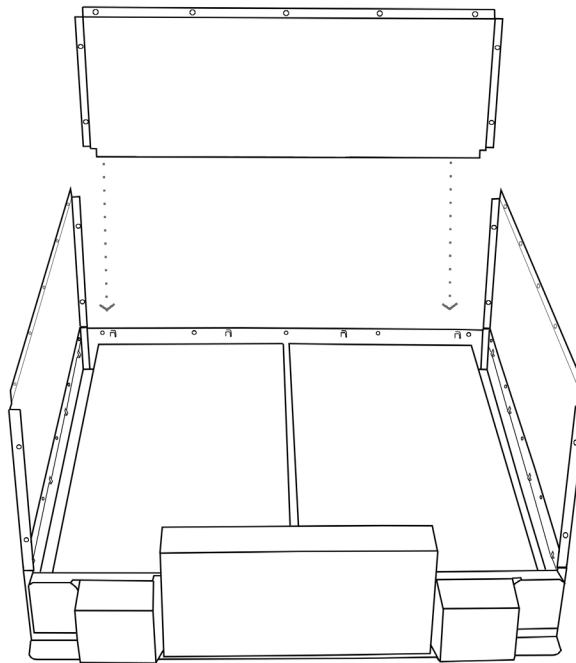
Figure 2



Attach the bottom seams of the side panels to the base using 5 of the provided screws per side. *Do not over torque. Use a manual flat head screw driver instead of a cordless screwdriver to avoid over-tightening and stripping.*

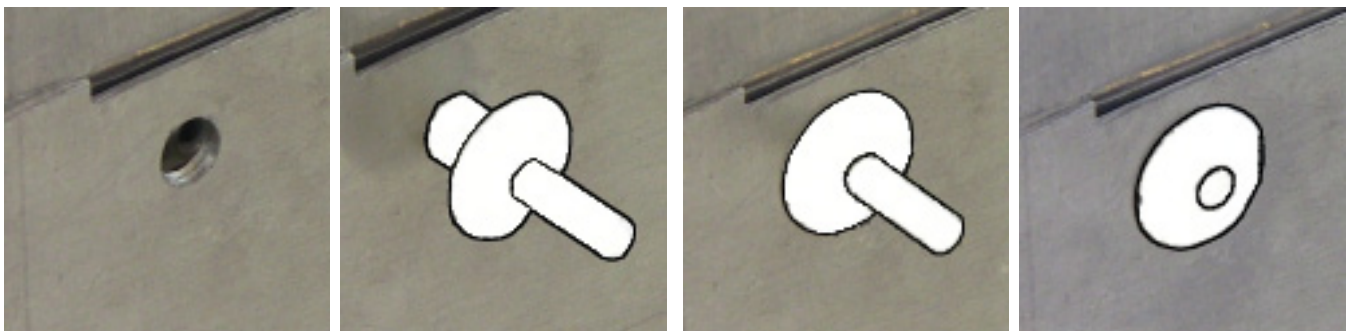
Next, slide the back panel (labeled “B”) onto the base as shown below in Figure 3. Make sure the panel fits securely into its locking tabs. The “B” label must face the interior of the unit. The side panels’ flanges are placed to the inside of the back panel so that they are not seen once the back panel is in position. Attach the bottom seam of the back panel to the base using 5 of the provided screws.

Figure 3



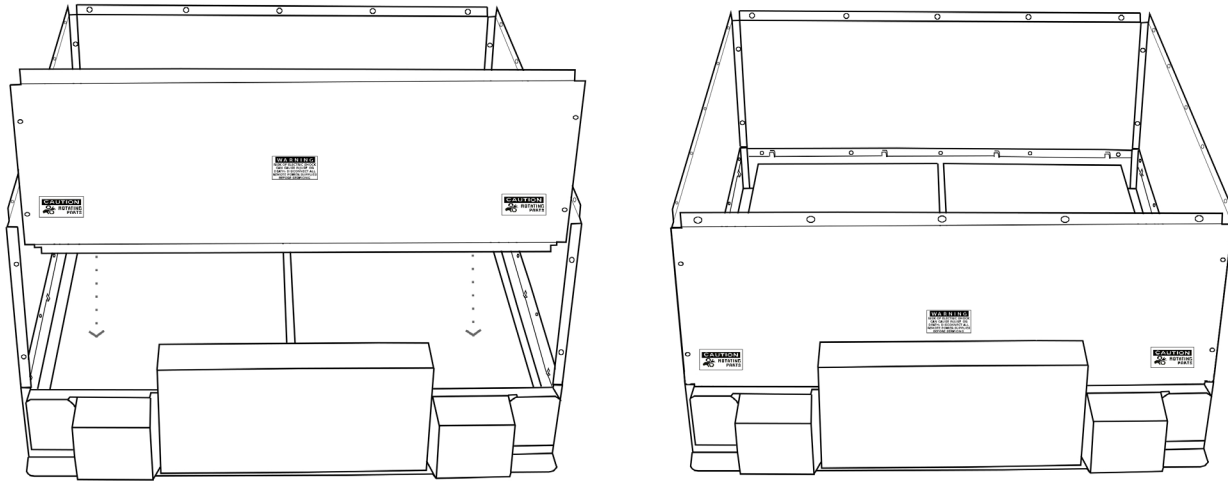
To secure the side panels to the back panel, insert 2 plastic rivets along each side seam. As shown below in Figure 4, first press the rivets in by hand. Then, use a hammer to completely set each rivet as shown below.

Figure 4



As shown in Figure 5 on the next page, slide the front panel (labeled “C”) onto the base, making sure the panel fits securely into its locking tabs. Make sure the “C” label face inward and the warning and model stickers face outward. Once in position, the front panel should sit outside the side panel’s flanges.

Figure 5



As with the back plate, secure the side plates to the front plate with 2 plastic rivets along each side seam. Remove the electrical box cover and attach the front panel to the base using 2 of the provided screws at the pilot holes located inside the electrical box. Using the provided 2 inch foil tape, firmly tape along the bottom seam on the interior of the front plate. Make sure the tape is securely attached, and will not interfere with the operation of the damper doors when they open.

As shown below in Figure 6, set the top panel (labeled “D”) onto the sides of the unit, making sure that the flange sits outside the side panels and all side panels fit securely into the top panel’s locking tabs. Attach the top panel to the sides using 20 of the provided screws (5 per side).

Figure 6

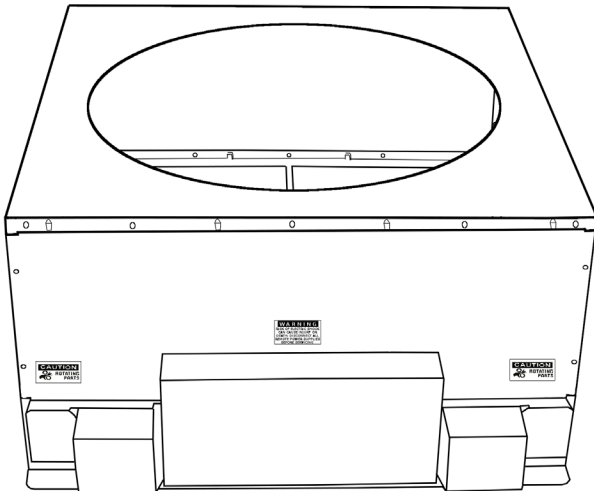
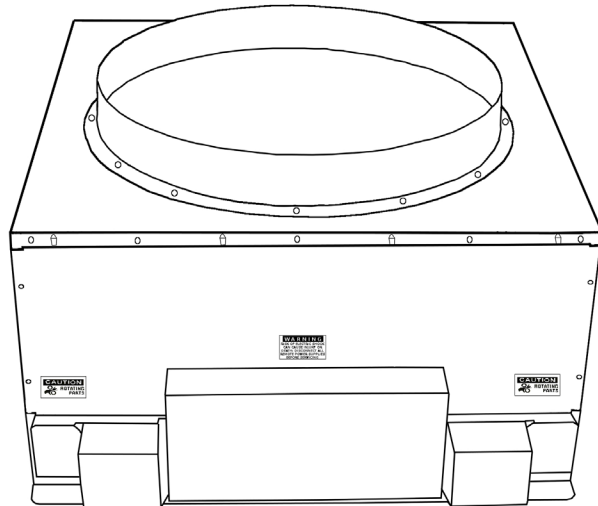


Figure 7



As shown above in Figure 7, place the damper collar (labeled “E”) over the opening on top of the damper and align the screw holes. Attach the collar using the 12 provided collar screws.

Use the remaining 2 inch foil tape to tape around the damper box’s outside corner seams, bottom seams (except on the front panel), top seams, and the seam between the damper collar and the damper’s front plate.

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. This fan’s backdraft damper has been designed to fit within a 22½” x 26½” ceiling opening. Most modern homes have been constructed with either 24” or 16” on-center (i.e. 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 8 below shows the framing and cross pieces as they should be installed.

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.

Figure 8

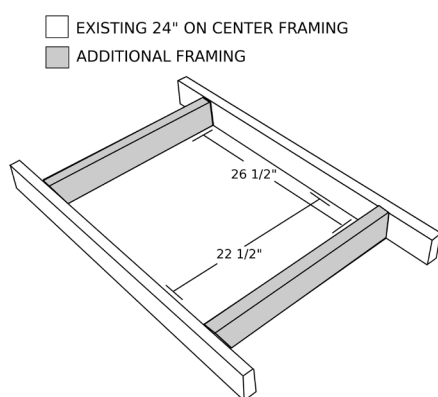
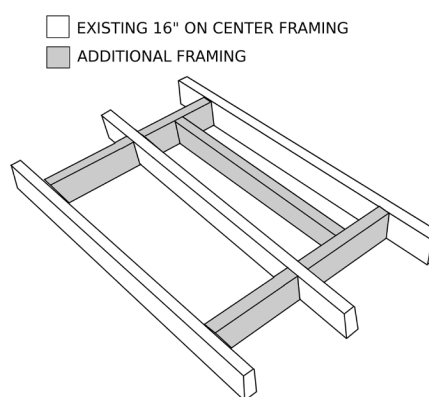


Figure 9



For 16” O/C Framing:

Using appropriately sized lumber (e.g. 2”x4”, 2”x6”, etc.), install four 14½” long and one 22½” long cross pieces between the existing framing, creating a box with interior dimensions of 22½” x 26½”. Figure 9 above shows the framing and cross pieces as they should be installed.

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 accommodate 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.

INSTALLATION: BACKDRAFT DAMPER INSTALLATION

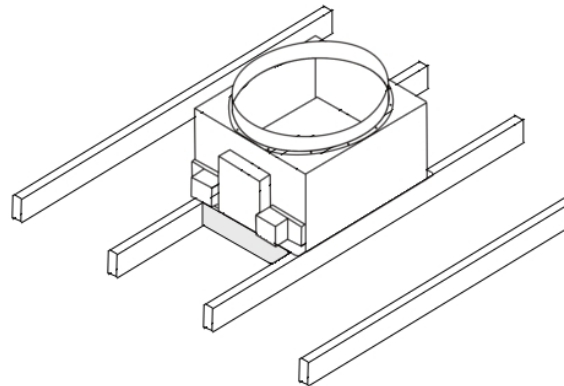
The next step in this fan’s installation is to install the backdraft damper within the “box” that was built in the previous step.

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

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 10 at right. Rotate it as needed for ease of access to the control box and 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 10



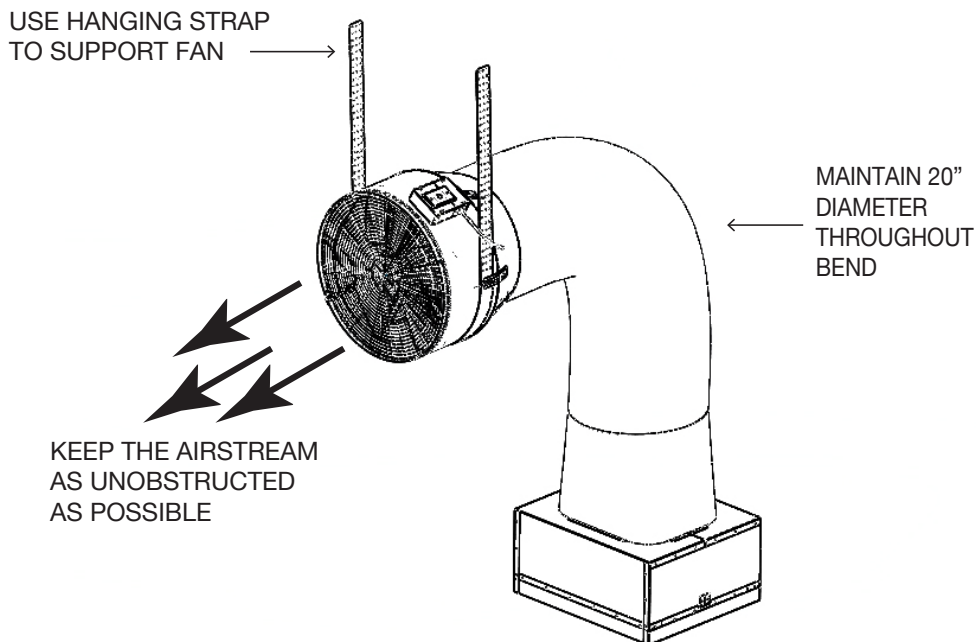
The actuator end of the damper box has two keyholes that are used to attach the damper box to the joists. Mark the location of the keyholes on the joists by placing the damper box over the rough opening. Remove the damper box and fasten two of the provided wood screws so that the screw head is slightly above the joist. Position the damper box over the keyholes and slide to lock into 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 1½") 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.

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 11 below shows the fan assembly, ductwork, and backdraft damper as they should appear when fully installed,

Figure 11



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 at any of the pilot holes on each end of the strap. These screws must be at least 1½" long at minimum, and are NOT provided with this fan.

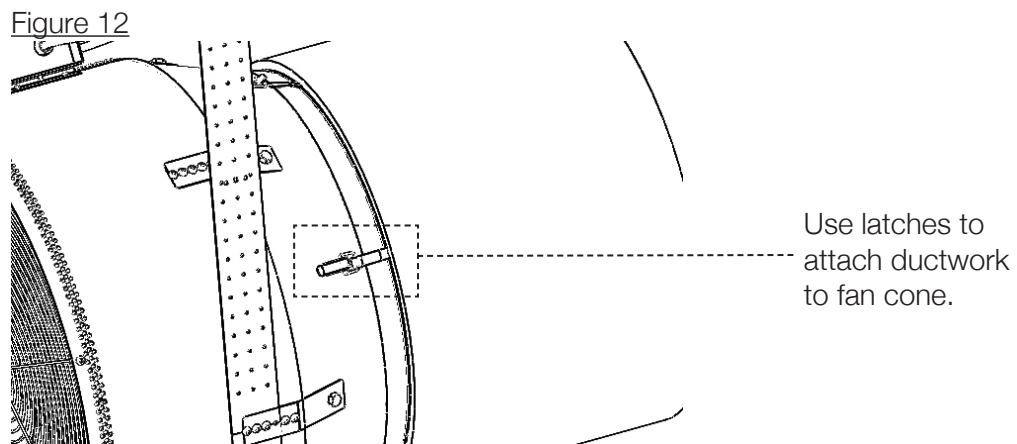
When hanging the fan assembly:

- Both sides of the attached hanging strap must be used to support the fan's weight and to eliminate any swaying motion.
- The fan must be as level as possible.
- 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.

Attach the fan cone to the fan assembly. The bolts required to make this attachment will arrive already inserted into their fasteners. 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.

Next, identify the damper end of the flexible ductwork. This end terminates in a circular metal collar with 6 pilot holes punched into it. Slide this collar over the backdraft damper's collar and fasten it thereto using 6 self-tapping sheet metal screws and the pilot holes on the ductwork's collar.

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 attached to the fan cone. Note the use of the latches to attach the ductwork to the cone, as shown in Figure 12 below.



Adhere to the following guidelines when attaching the duct to the fan and damper:

- 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.
- Keep the section of ductwork immediately before the fan should be as straight as possible.
- Support the ductwork under the bend using the provided polypropylene webbing. To fasten the webbing to the attic joists, fold over the end of the webbing and screw at least 2 1½" or longer wood screws (NOT provided) through both layers of webbing and into the joists.

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.

INSTALLATION: GRILLE

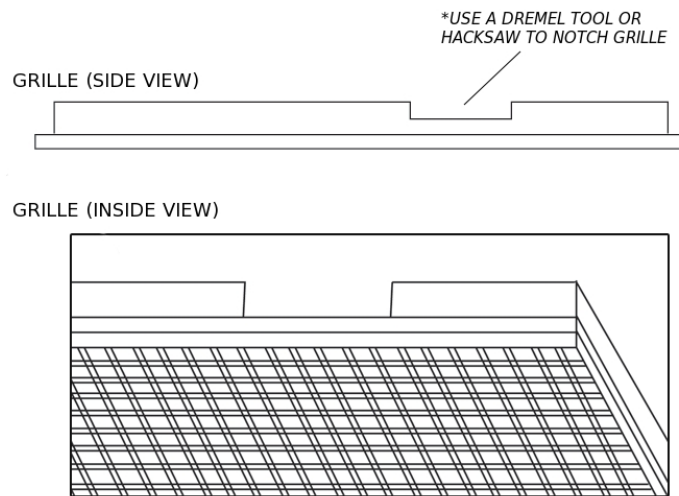
The final step in this fan's installation is to mount the cube core grille over the interior opening in the ceiling previously created.

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 strongly 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 accommodate the middle stud (Figure 13 below illustrates this notch).

Figure 13: Grille Notch (16" O/C Framing ONLY)



INSTALLATION: WIRING & CONTROLS

The standard control package included with this fan contains: the control box; 1 hardwired wall switch; 1 mounting bracket for the wired switch; 50 ft. of red CAT5 cable; and, 10 ft. of green CAT5 cable.



Because a hardwired switch is necessary for providing technical support, the wall switch included with this fan **MUST** be connected to the fan's control box regardless of whether or not it will be installed in a wall. **FAILURE TO CONNECT THE HARDWIRED WALL SWITCH WILL VOID THIS FAN'S WARRANTY!** If it is not desired to be installed in a wall, the hardwired switch can be connected to the control box and left in the attic with the CAT5 cable kept spooled.



First, locate the control box mounted on the side of the damper. Look for a series of 5 RJ45 ports on one side. These ports are labeled with the following label:



WEB



W/S



RMT



AUX



FAN

Next, connect the green CAT5 cable into the electrical box mounted on the fan assembly using either of its RJ54 ports. Run the cable down to the control box and connect its free end to the green **FAN** port. **This cable is unshielded: Do not run it parallel to the fan assembly’s power cord.**

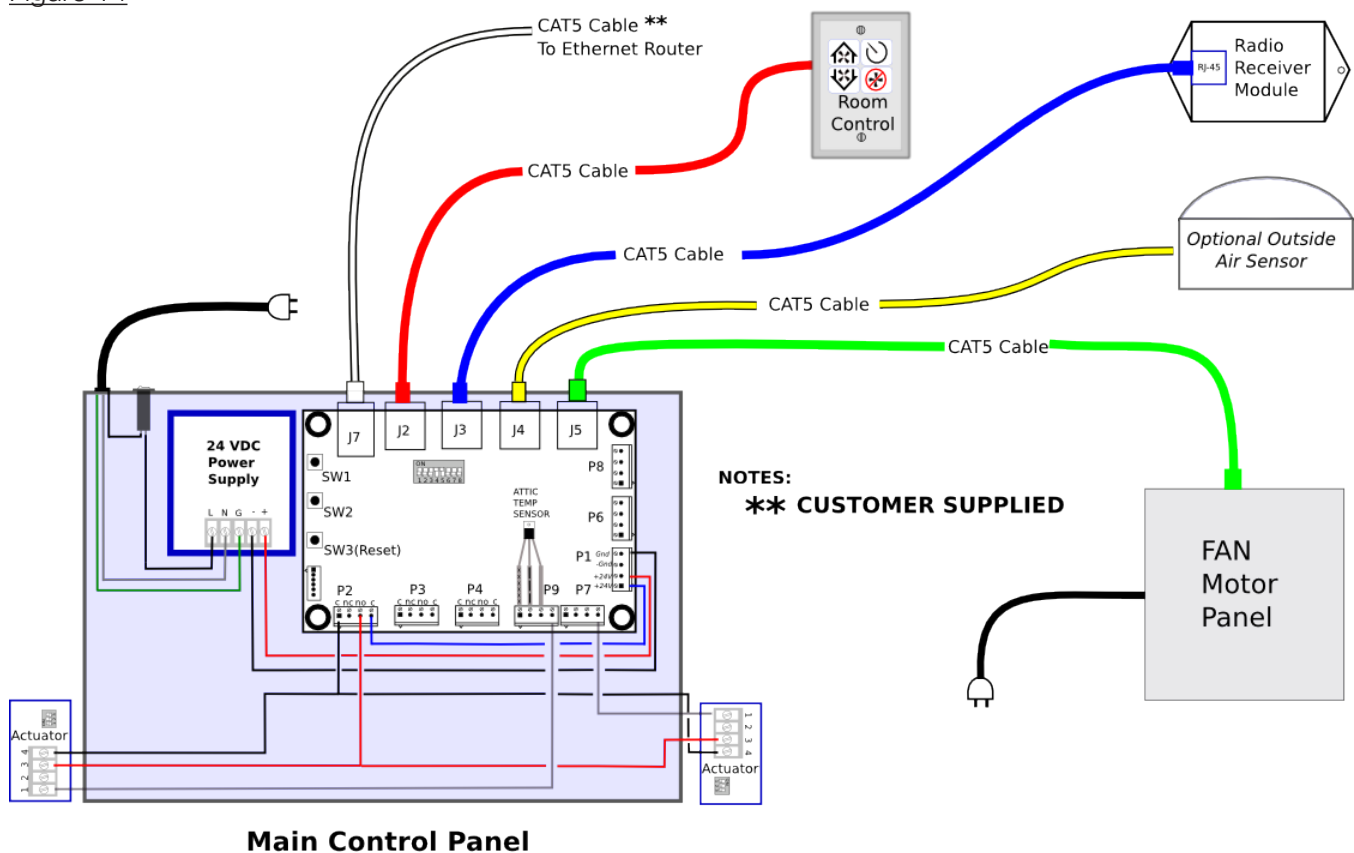
Connect the red CAT5 cable to the red **W/S** port. Then, run the cable through the attic and down a wall to the desired location for the hardwired wall switch. **Note: This cable is low-voltage but unshielded. Building Codes require unshielded low-voltage wiring to be run through shielded conduit.**

Using the provided mounting bracket as a template, trace an outline on the wall where the switch is desired. 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 in 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.

Finally, plug each of the two power cords (one from the fan assembly and one from the control box) into 120-volt outlets with uninterrupted power.

For reference, Figure 14 below describes this fan’s and its accessories’ general wiring scheme.

Figure 14



START-UP, OPERATION, & TECHNICAL SUPPORT

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;
3. Each of the two power cords (one from the fan assembly and one from the control box) have been plugged into 120-volt outlets with uninterrupted power; and,
4. The area in front of the fan is as unobstructed as possible, with no object closer than 24" to the face of the fan.

When running 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).

Turn the unit on using the arrow up button on the wall switch control. The damper doors will open and there will be a 10 second delay before the fan turns on. The fan will start in it's lowest speed. Press the arrow up button again to increase the fan's speed to it's next higher setting, allow for a slight delay when changing speeds.

Use the arrow up button to increase the fan's speed incrementally until it has reached it's highest speed setting. Then, use the arrow down button to decrease the fan's speed incrementally until it has returned to it's lowest speed setting.

Press the timer button 1 time for 1 hour, up to 12 times for 12 hour operation. You can vary speeds while the timer is programmed, but turning the unit off will cancel any remaining time.

When the power is turned OFF, the fans will shut down and the damper door(s) begin to close. The door(s) will shut tightly within 60 seconds.

For additional operating tips, maintenance information, or troubleshooting tips, please see the Warranty card and Controls manual included with this fan. **Please contact AirScape technical support at 1.866.448.4187 or experts@airscapefans.com with any questions regard the installation, operation, or maintenance of this fan.**

MAINTENANCE & TROUBLESHOOTING

There is no routine maintenance required for this fan other than making sure the fan assembly and back-draft damper are kept clean of any possible build up of debris, and that the area in front of the fan remains as unobstructed as possible, with no object closer than 24" to the face of the fan.

Resettable circuit breakers are 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.

If problems are encountered, please take a few moments to run through the troubleshooting procedures described on the Warranty card. If these suggestions do not work, contact AirScape technical support at 1.866.448.4187 or by email at experts@airscapefans.com for further assistance.

WIRELESS REMOTE (OPTIONAL) & WEB CONTROLS

A wireless remote is an available accessory for this fan. It is not included as part of this fan's standard control package. See the yellow "Controls" manual for specific instructions for this accessory's installation and operation. Briefly, the steps for installing the remote are as follows:

- Plug the provided blue CAT5 cable into the remote receiver and the blue **RMT** port on the fan's control box. Remove the top cover of the remote receiver.
- Press and release the black button on the receiver's circuit board to begin the merge sequence; the transmission LED on the receiver will illuminate.
- Press and release any button on the wireless transmitter while the transmission LED on the receiver is illuminated; replace the top cover on the receiver.

This fan is network-enabled and can be connected to your home's local area network by running CAT5 cable from the white **WEB** port on the control board to your router. If it is so connected, this whole house fan can also be controlled by any computer, smartphone, or tablet with access to your home's local area network. For more details, visit our blog at blog.airscapefans.com and type "web control" into the search field.

Contact AirScape technical support at 1.866.448.4187 or experts@airscapefans.com with any questions.

SPECIFICATIONS

Speed Setting	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
Tested Airflow (CFM):	1316.6	2092.4	2652.0	3141.2	3988.6	4348.6	5064.8
Tested Electricity Consumption (watts):	27.7	75.1	137.8	214.0	401.3	511.4	809.8
Tested Efficiency (watts/CFM):	47.5	27.8	19.2	14.6	9.9	8.5	6.2
Tested Noise (dBA)*:	39.0	45.0	48.0	52.0	57.0	59.0	65.0
Rough Opening Dimensions:	22.5" x 26.5"						
Grille Outer Dimensions:	24.5" x 28.5"						
Grille Build:	Cube Core, Aluminum, White Powder Coat						
Backdraft Damper Dimensions:	26.375" x 22.25" x 12.5" (L x W x H)						
Duct Length:	7 ft.						
Duct Diameter:	20"						
Electrical:	120VAC, 60 Hz, 15 amps						
Insulation:	R-10 Standard, R-49 XR models						
Controls:	Low Voltage; Hardwired Wall Switch, web interface, optional wireless remote						
Installation:	Installs easily on 24" or 16" O/C framing						
Warranty:	3 years						

*tested at 45° and 1 meter from source

**Actual performance will vary from installation to installation. Due to our continual product improvement efforts, performance ratings and specifications are subject to change without notice.*