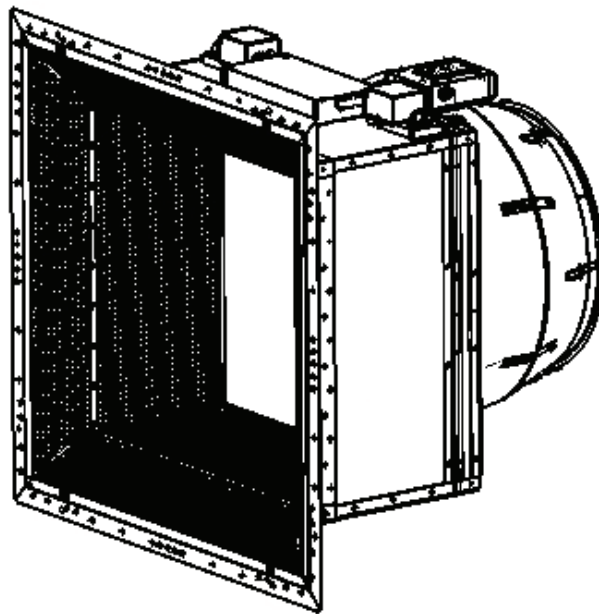




ORDER #: _____
S/N: _____
MAC: _____
(Required for Warranty)

DVS DIRECT-VENT WHF

INSTALLATION AND OPERATION MANUAL



Thank you for purchasing an AirScape® DVS direct-vent whole house fan. Your DVS is a whole house fan specifically designed to exhaust directly to the outdoors. It has been designed to provide your home with natural, quiet, and energy-efficient cooling for many years.

Before installing this unit, 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.

Please take a few minutes to read over this manual and its accompanying documents to make sure you are prepared to install the fan. **WE STRONGLY RECOMMEND CONSULTING A LICENSED ENGINEER OR GENERAL CONTRACTOR TO ASSIST YOU WITH THIS UNIT'S INSTALLATION.**

Once installed, this unit and its sub-components may be extremely difficult to access. **TEST THIS UNIT BEFORE INSTALLING IT. Connect the unit 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 unit without a window or door opened in the house.
- This unit 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.
- **Never** force open this unit's damper doors, as this could severely damage the actuators that open and close them. **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 unit, switch power off at the home's electrical panel to reduce the risk of damaging circuit boards, fire, electrical shock, or injury.
- Install this unit in accordance with this manual and all local codes and standards.
- **WE STRONGLY RECOMMEND CONSULTING A LICENSED ENGINEER OR GENERAL CONTRACTOR TO ASSIST YOU WITH THIS UNIT'S INSTALLATION.**

SUPPLIES INCLUDED

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

- The DVS unit itself
- If you purchased a Ducted DVS, a Duct-to-Fan transition cone, 7 ft. of insulated flex duct, Duct tape, 20 ft. of 1¾" polypropylene webbing, Rectangle-to-Round transition plenum, and white cube core Grille will also be included.
- AirScape's 2nd generation control package—including one hard-wired wall control, one wall mounting bracket, 1 ft. green and 50 ft. red CAT5 cable.
- This installation manual, and the "How to Use your Whole House Fan" insert.

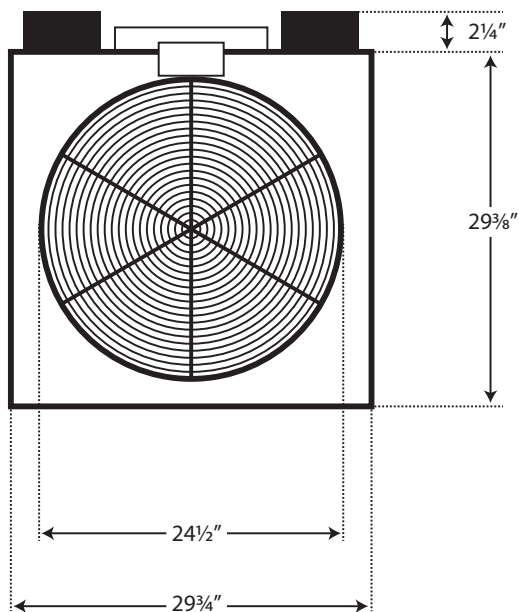
TOOLS & SUPPLIES NOT INCLUDED

Every DVS' installation will vary from house to house. Since we do not know the specifics of your particular installation we cannot anticipate the exact types and number of additional tools and supplies that you will need to complete your installation. However, given the general complexity of installing a DVS, we strongly suggest you be prepared with the following:

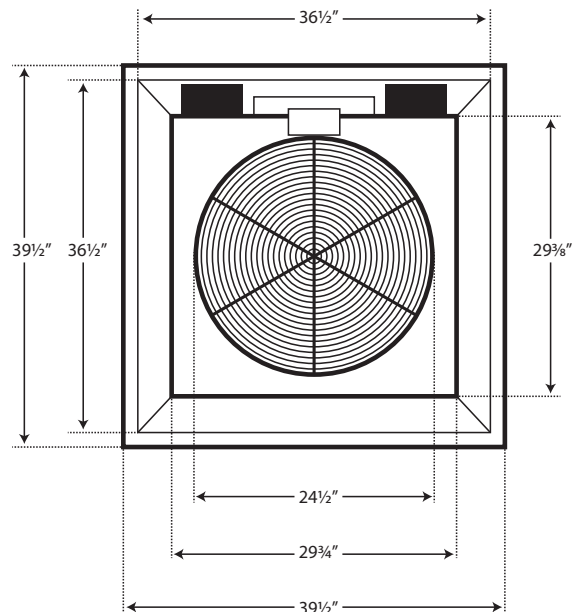
- Hand Tools: Socket Wrench with various sockets (9/16" socket will be required); various Screwdrivers; Hammer; Scissors; Box Cutter; Pliers; Drywall Cutter; Cordless Screwdriver with Phillips head and miscellaneous drill bits.
- Framing Lumber appropriate to your home's construction; Appropriate tools and implements for sizing and cutting this lumber to fit.
- Wood Screws; Bolts; Washers (at least 1¼"); high-quality Latex Caulk.

UNIT PARTS AND DIMENSIONS

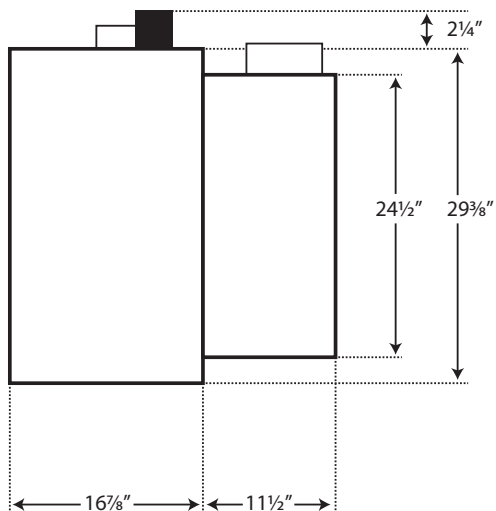
DVS Unit w/o Flange, Front



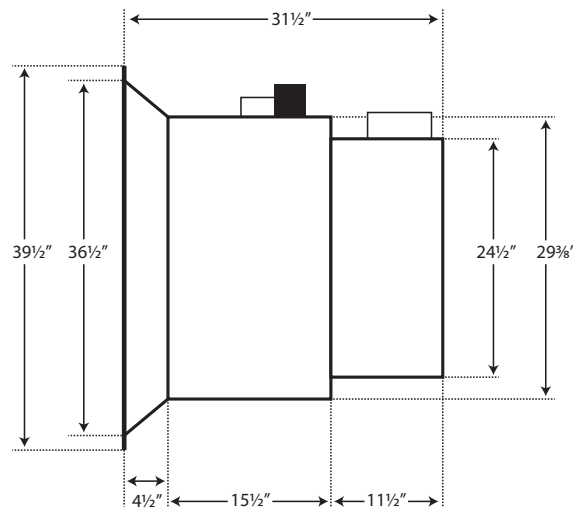
DVS Unit w/Flange, Front



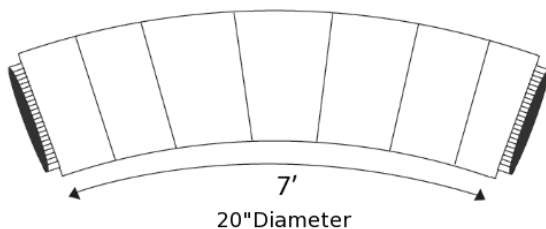
DVS Unit w/o Flange, Side



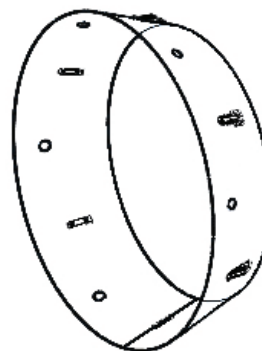
DVS Unit w/o Flange, Side



Flex Duct*



Duct-to-Fan Transition Cone*



CHOICE OF LOCATION

The effectiveness of any whole house fan is a function of how well it promotes the replacement of indoor air with cooler outdoor air. Where you choose to install your DVS and its components will have a significant effect. The best location for them is dictated by the theory of operation behind every whole house fan:

As a house 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 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 houses or turn on their air conditioners and bear the expense thereof.

When operated properly, a whole house fan can resolve this dilemma by forcing the hot air inside a home out and drawing cool air from outside in. By running their 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.

If you purchased an unducted DVS, air will be drawn directly into the fan and exhausted. If you purchased a ducted DVS, air will be drawn into the rectangle-to-round plenum, through the flexible ductwork, and then into the fan to be exhausted. With this, and the above theory of operation in mind, carefully consider the following when choosing a location for your unit:

- An even replacement of air throughout the home will cool the greatest percentage of its living space. Drawing air out of the living space through a central location, away from windows that will be opened during its operation is ideal. Also, the longer the path air travels from an open window to the fan, the greater the cooling effect.
- Drawing air out of the living space at the highest possible point therein exploits natural convection and exhausts the hottest indoor air from the home. In a two story home, the ideal location from which to draw out air is most often the open area at the top of the stairs.
- Avoid locating your DVS or its components in a narrow space or over hard flooring as sound reflecting off of hard surfaces can amplify its perceived noise.
- Even though this unit is extremely quiet, we specifically recommend against installing the plenum and grille within a bedroom, as humans' perception of noise is far greater when the surrounding environment is quiet (such as within a bedroom at night).

If you purchased a ducted DVS, a 7 ft. length of insulated flex duct has been provided to connect the fan unit with the plenum. However, it is important to keep in mind that, depending on the possible and ideal locations for these components, this length of duct may be inadequate. Additional duct lengths are available from airscapefans.com.

Also keep in mind that, the longer the duct run, the less air the DVS will be able to exhaust from your home and the less efficiently it will be able to operate. In addition to the length of the duct run, the number and sharpness of corners in it, as well as the quality of its installation, will all have a significant effect on the DVS' airflow capacity and operating efficiency.

Please contact AirScape technical support by phone at 1.866.448.4187, or email at experts@airscapefans.com with any questions.

ELECTRICAL REQUIREMENTS

This unit 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

Every DVS' installation will vary from house to house. Since we do not know the specifics of your particular house and installation we cannot anticipate the exact steps and procedures you will need to follow to install your unit. In general terms, the process of installing a DVS is as follows:

- Once a location has been determined, an appropriately-sized rough opening is cut in the home's roof or exterior wall (the chart in Figure 1 below provides these specifications). This hole is then "framed-in" with framing lumber appropriate to the home and cut to fit.

Figure 1

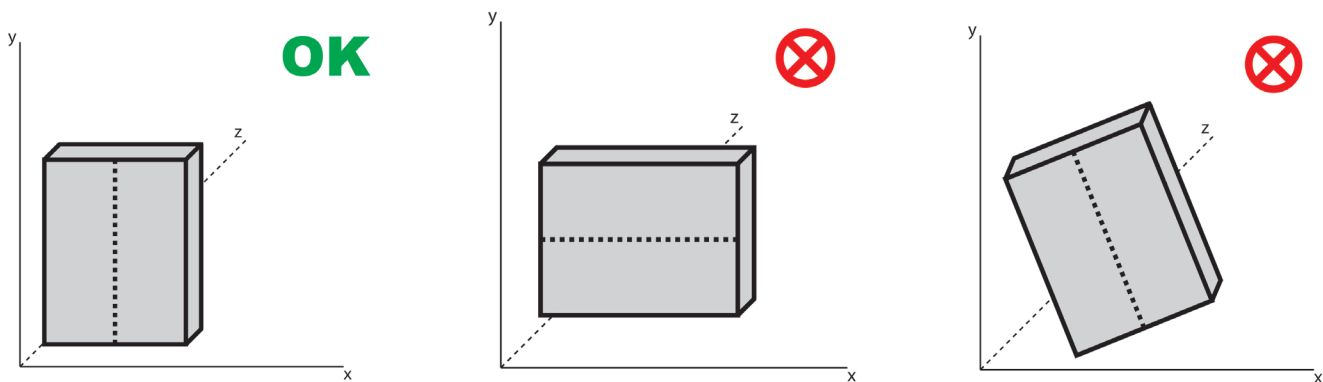
	Rough Opening Dimensions (width x height)
DVS w/o Flange	29.75 x 29.375
DVS w/ Flange	36.5 x 36.5

- The DVS unit is then anchored to the framing on all of its sides. If you purchased a DVS unit without the optional mounting flange, the unit will sit inside the framed-in opening and attach to the framing using wood screws through its factory-installed mounting brackets. If you purchased a flanged DVS, the flange mounts on top of the studs used to frame in the rough opening using washers and wood screws at the pilot holes on the flange.
- The fan portion of the unit can be detached from the damper portion by unscrewing the flat head screws that fasten the two together. This may be helpful in moving or positioning it. *If you choose to separate these parts, make sure to use every screw again when reattaching them.* Four of these sets of screws are highlighted in Figure 3. There are four such sets on each side of the unit.
- If you purchased a ducted DVS, a rough opening for the rectangle-to-round transition plenum and grille is cut and framed in. These components are installed according to their separate installation manuals included with your unit.
- The fan-to-duct transition cone is attached to the fan using the supplied bolts. The duct is attached to the plenum using sheet metal screws, and to the transition cone using the attached latches as shown below in Figure 1. Each of these seams is then sealed using the provided duct tape.

Regardless of the specifics of your installation, the following guidelines must be explicitly adhered to when installing this unit:

- **THE UNIT MUST BE ANCHORED DIRECTLY TO LOAD-BEARING STRUCTURAL FRAMING IN THE ROOF OR EXTERIOR WALL.** It must not be attached simply to drywall, or to non-load-bearing framing. All of its sides must be anchored.
- In units with a flange, washers **MUST** be used between the flange and the screws used to anchor the unit to the framing (as shown in Figure 4). These washers must be at least 1¼" diameter.
- The DVS unit **MUST** be protected from the elements by louvers, a dormer, coupola, or other mechanism appropriate to the climate in which your home is located.
- The DVS must be installed such that the plane through the seam between its damper doors is perpendicular to level as shown below in Figure 2. The unit may be tilted backward and forwards, but this plane must remain perpendicular to level.

Figure 2



To assist you with visualizing your DVS' installation, Figure 3 on the next page depicts a DVS unit without a flange and without duct. Figure 4 depicts a DVS unit with a flange and without a duct.

▲ HANDLING INSTRUCTIONS ▲

Your DVS' aluminum construction is corrosion-resistant and extremely durable. However, be careful as its edges can be very sharp. Make sure to handle the unit using protective gloves.

Aerodynamic brackets are used to mount the DVS' motor within its fan assembly. The unit should *never* be handled using any of these brackets (highlighted in Figure 4). *Always* handle the unit by either its external casing (or the motor itself, if you detach the fan portion from the damper portion).

Figure 3

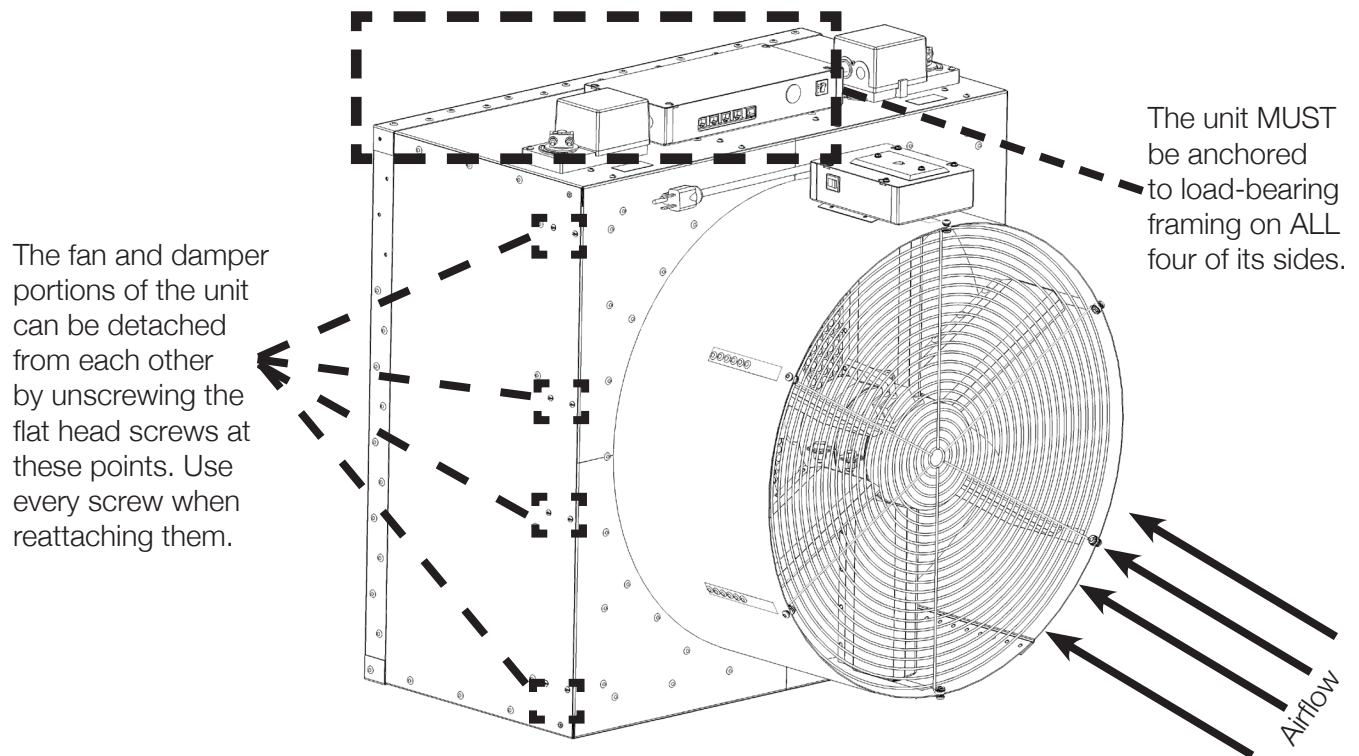
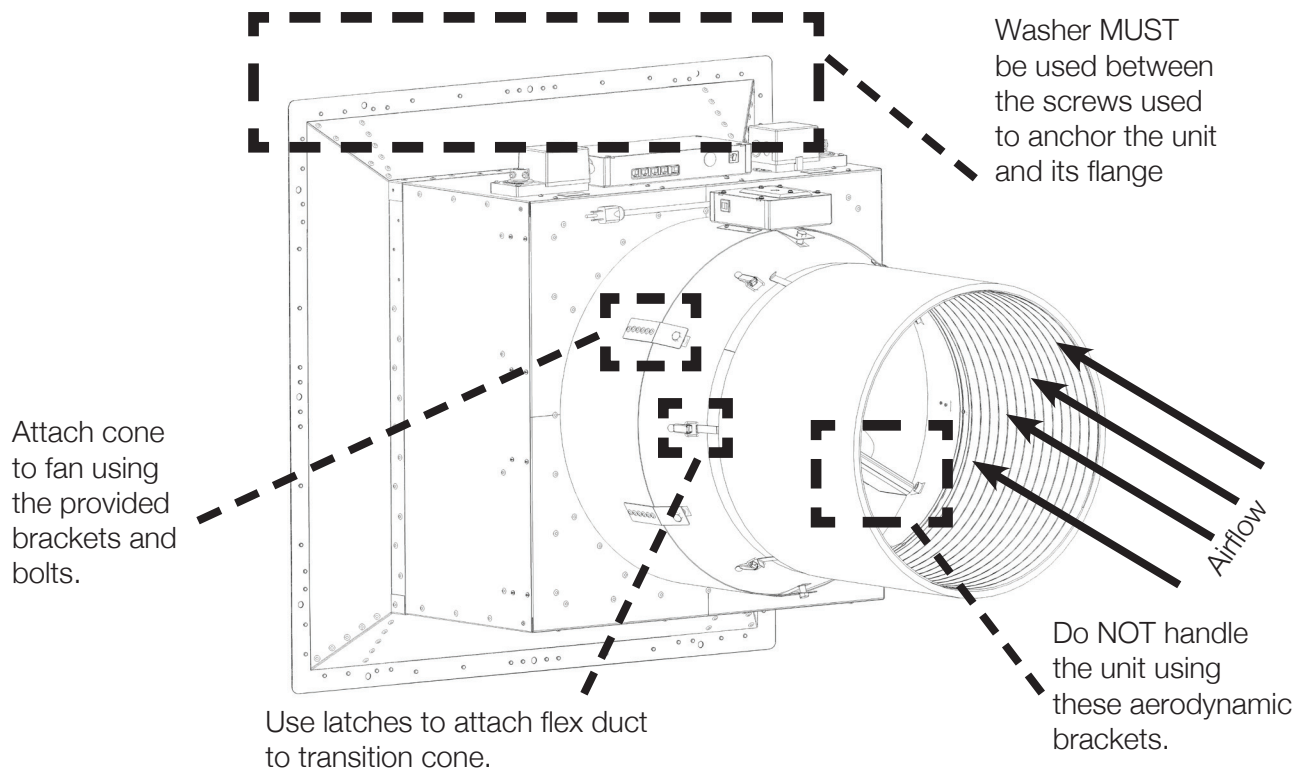


Figure 4



INSTALLATION: WIRING & CONTROLS



THIS FAN WILL NOT OPERATE IF NOT CONNECTED TO THE PROVIDED DIGITAL TOUCH CONTROLLER! If it is not desired to be installed in a wall, the controller can be connected to the fan and kept in the attic with the CAT5 cable kept spooled. **Do not install the Digital Touch Controller in an external, south-facing wall as this may expose its circuitry to excessive heat.**



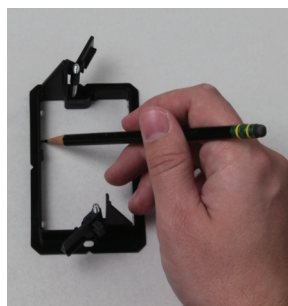
The standard control package included with this fan contains 1 wall-mounted Digital Touch Controller; 1 mounting bracket for the controller; and 50 ft. of red CAT5 cable.

All wiring connections to the fan assembly are made at the fan-mounted electrical box. These include a 10 ft, black, factory-installed power cord, and three RJ45 (“ethernet”) ports for connecting the fans controls and accessories, labeled as follows:



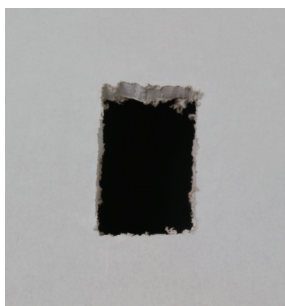
First, locate the desired location for the Digital Touch Controller. Install the mounting bracket according to Figures A–C below.

Figure A



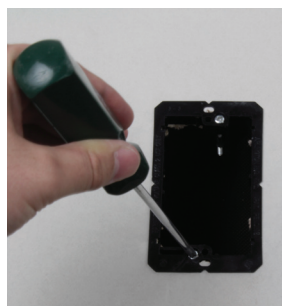
Use the mounting bracket as a template to mark the hole location.

Figure B



Cut out the hole.

Figure C



Place the mounting bracket and secure its locking tabs by tightening the silver screws

Figure D



Connect the CAT5 cable. Mount the faceplate to the bracket with the provided white faceplate screws

Return to the attic and connect the red CAT5 cable to the RJ45 port on the fan electrical box labeled W/S. Run this cable from the electrical box to the location of the controller. NOTE: this is a low-voltage cable, DO NOT RUN IT PARALLEL TO HIGH-VOLTAGE WIRING; building codes generally require low-voltage cable to be run through shielded conduit.

Connect the CAT5 cable to the RJ45 port on the back of the Digital Touch Controller. Mount the controller’s faceplate to the mounting bracket with the provided white faceplate screws, as shown above in Figure D.

WIRELESS REMOTE (OPTIONAL)

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 Remote Control Kit instruction manual for specific instructions for this accessory’s installation and operation.

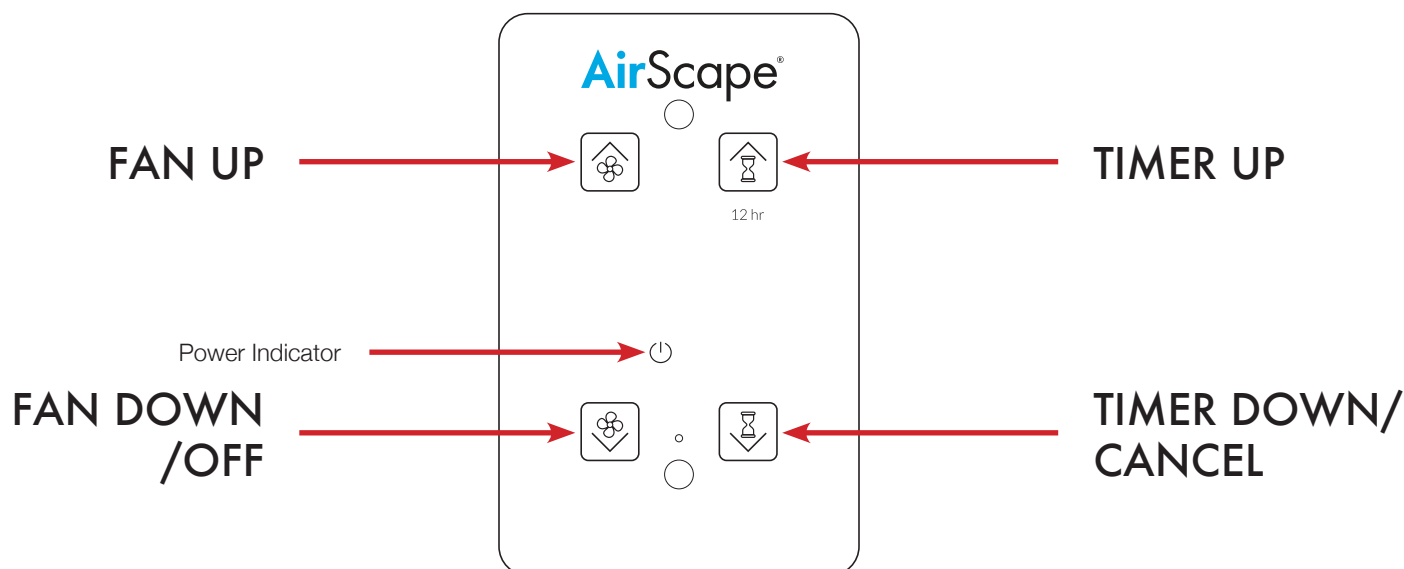
START-UP & OPERATION

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. The fan's power cord has been plugged into a 120-volt outlet 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 observe the fan itself) and the living space (to observe the Powered AirLock's doors).

As shown below, there are four buttons on your fan's control interface:



When the Digital Touch Controller is connected to the fan, and the fan to power, a red LED will illuminate beneath the Power Indicator shown above. If the Power Indicator is not illuminated, double-check the connections between the fan and the controller, and between the fan and the power outlet.

Turn on the fan by touching **FAN UP** or **TIMER UP**. The damper doors will open and there will be a 10 second delay before the fan begins to operate. The fan will start at minimum speed. Green LEDs will illuminate to indicate the speed setting. If the fan was turned on by **TIMER UP**, the timer will be set to one hour and blue LEDs will illuminate to indicate the timer setting.

Press or hold **FAN UP** to increase the speed incrementally until reaching the desired or maximum speed. Press or hold **TIMER UP** to increase the time on the timer in one hour increments until the desired time, or the maximum time of 12 hours, is achieved.

If the fan is already operating at minimum speed, touch **FAN DOWN/OFF** to turn off the fan; any time remaining on the timer will be canceled. If the fan is at any higher speed, press or hold **FAN DOWN/OFF** to incrementally decrease the speed until reaching the desired speed or turning the fan off.

Press or hold **TIMER DOWN/CANCEL** to reduce the time on the timer in one hour increments until the desired time is achieved or the timer is canceled. If the timer is canceled, the fan will remain on at its current speed. If the timer expires, the fan will turn off.

Whenever the fan is turned off, the Damper doors will close tightly within about 60 seconds.

MAINTENANCE, TROUBLESHOOTING & TECHNICAL SUPPORT

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

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.

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

Symptom: Unit does not start.

Check power to unit and wiring at both the switch and control board; Check the re-settable circuit breakers on the control box and fan-mounted electrical box.

Symptom: Damper doors do not open.

Check power to unit and wiring between control board and actuators; Verify the actuator jaws are clamped tight on the damper shaft.

Symptom: Damper doors open but fan does not start.

Check wiring between the fan and control box; Verify the fan is connected to and supplied with 110v power; Check the re-settable circuit breaker on the fan-mounted electrical box.

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.

SPECIFICATIONS

Speed Settings:	10
Tested Airflow (CFM):	1313.6 – 5064.8 (min – max)
Tested Electricity Consumption (watts):	27.7 – 809.8 (min – max)
Tested Efficiency (watts/CFM):	47.5 – 6.2 (min – max)
Tested Noise (dBA)*:	39.0 – 65.0 (min – max)
Duct Length (ducted models only):	7 ft.
Duct Diameter (ducted models only):	20"
Electrical:	120VAC, 60 Hz
Insulation:	R-10 standard
Controls:	Low-voltage; hardwired wall switch; web interface; optional wireless remote
Installation:	WE STRONGLY RECOMMEND CONSULTING A LICENSED ENGINEER OR GENERAL CONTRACTOR TO ASSIST YOU WITH THIS UNIT'S INSTALLATION.
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.*