ORDER #: _____

S/N: _____

MAC: _____

(Required for Warranty)

2.5e & 2.5eXR
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 neccessary 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 and must NOT be used for such.*

- 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 recieved with the fan:

- Box 1 of 3: damper door enclosure with grille, IOM, 8 metal and 4 wood screws, 4 S-hooks, 10 ft. green CAT5 cable, and the 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, chain.

- Box 3 of 3: 20" diameter insulated flex duct.

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

- Scissors or Knife

- Pliers

- Hammer

- Wood screws, or eye bolts and additional s-hooks for attaching chain to rafters.

- 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

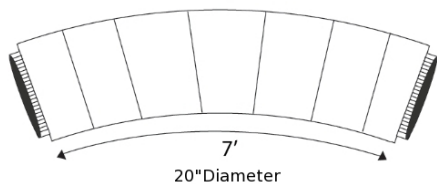- A Ladder

UNIT PARTS AND DIMENSIONS

Fan Assembly

Backdraft Damper*

23"

14.25"

3"

11.5"

20.25"

27"

Flex Duct

7'

20"Diameter
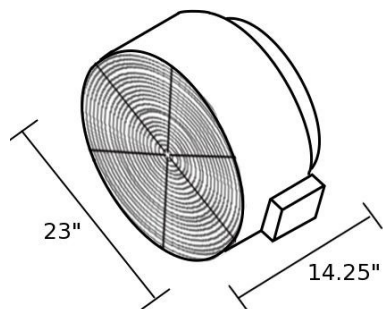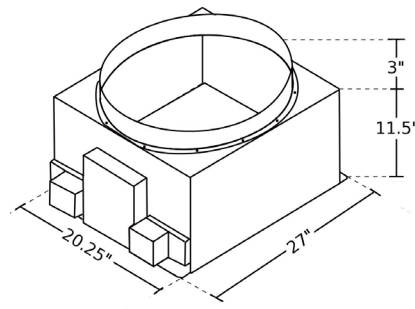
ELECTRICAL REQUIREMENTS

This fan requires a 120 volt, 3.3 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: FRAMING

The 2.5e WHF hasbeen designed to fit on top of a 14½" x 22½" wall or ceiling opening. Since most modern houses have been built with either 16" or 24" on-center (O/C) spaced joists or studs, a simple "box" is constructed in the wall as ceiling, as shown at right in Figure 1.

NOTE: *There are two different installation methods determined by how the 2.5e's fan assembly will be moved into the attic. Follow the instructions that apply to your install.*

<u>Figure 1</u>

If there is an existing attic access large enough for the fan assembly to fit through:

16" O/C Framing
1. Install two 14½" cross pieces creating a box with inside dimensions 14½" x 22½".
2. Cut out dry wall inside the framed box.

24" O/C Framing
1. Install two 22½" cross pieces creating a box with inside dimensions of 14½" x 22½".
2. Cut out dry wall inside the framed box.

If the fan assembly must fit through the hole that is framed for it:

16" O/C Framing (shown in Figure 2 below)
1. Cut out the dry wall between the joists to create a 23" x 14½" rough opening.
2. Fit the fan assembly through the rough opening and into the attic.
3. Install two 14½" cross pieces creating a box with inside dimensions of 14½" x 22½". Make sure each cross piece partially covers the drywall cut out. Approximately ¼" of each cross piece should be visible from below.

24" O/C Framing (shown in Figure 3 below)
1. Cut a 23" x 14½" opening in the dry wall, use an existing joist as the 23" long side.
2. Fit the fan assembly through the rough opening and into the attic.
3. Install cross pieces creating a box with inside dimensions of 14½" x 22½". Make sure each cross piece partially covers the drywall cut out. Approximately ¼" of each cross piece should be from below.
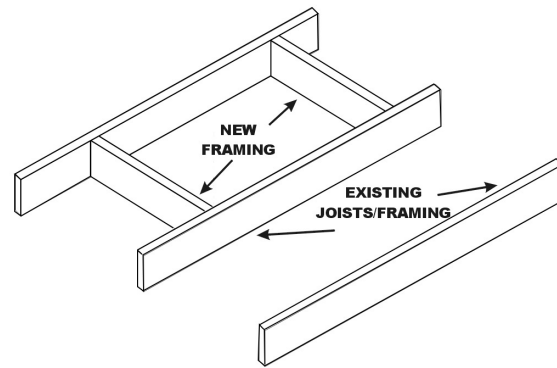
<u>Figure 2</u>

23"
Drywall Cutout Dimensions
14 1/2"
22 1/2"

■ Existing 16 O/C Framing
▨ Additional Framing
▢ Drywall Cutout

<u>Figure 3</u>

23"
Drywall Cutout Dimensions
14 1/2"
22 1/2"

■ Existing 24 O/C Framing
▨ Additional Framing
▢ Drywall Cutout
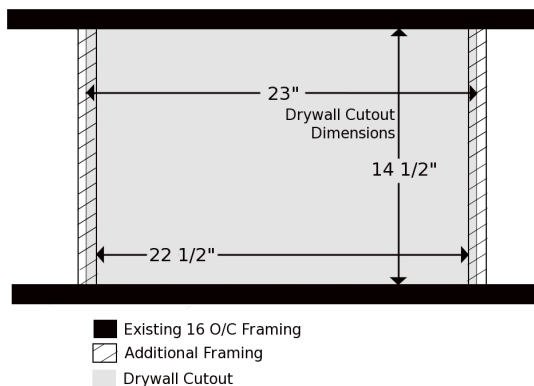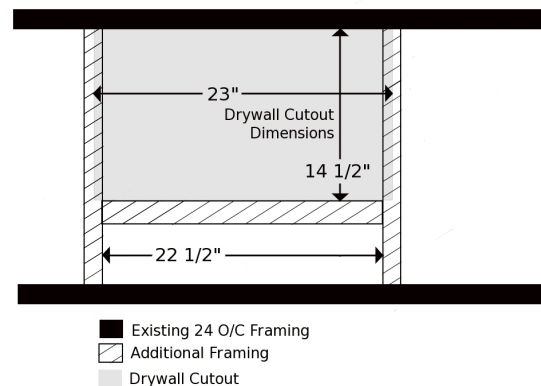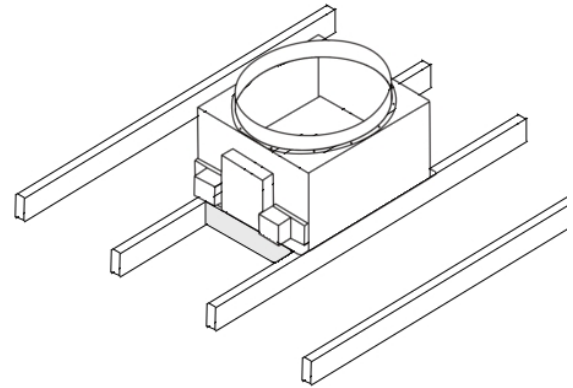
INSTALLATION: BACKDRAFT DAMPER

Position the 2.5e damper enclosure on top of the joists so that the damper doors are aligned with the framed rough opening, as shown at right in Figure 4. *Make sure there is easy access to the electrical box located on the side of the unit.*

Figure 4

The actuator end of the damper box has two "key holes" which are used to attach the damper box to the joists. Mark the location of the "key holes" 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 "key holes" and slide to lock into position. Use the remaining screws to attach the opposite side of the damper box.

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.

Use a good quality latex caulk to seal all wood-to-wood and wood-to-metal joints to create an airtight enclosure. This is important to ensure that all air drawn in by the fan will be from inside the house.

From below, attach the interior grille to the joists with the included wood screws.

INSTALLATION: BACKDRAFT DAMPER COLLAR

First, remove the two screws holding damper collar in place for shipping and flip collar.

Then, position the collar over the damper box opening and fasten the two together using 2 screws in the holes at the top of the collar as shown below in Figure 5.

Next, as shown below in Figure 6, stretch the collar until the bottom 2 holes line up with the cooresponding holes on the damper box body and secure the two peices together using 2 screws at these holes. Finish fastening the damper box and collar together by using screws at each remaining hole.
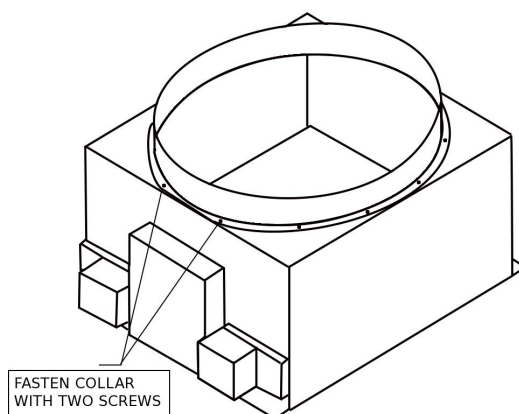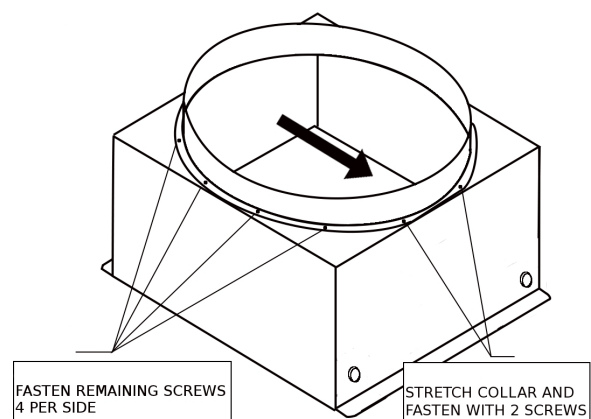
Figure 5

Figure 6

FASTEN COLLAR WITH TWO SCREWS

FASTEN REMAINING SCREWS 4 PER SIDE

STRETCH COLLAR AND FASTEN WITH 2 SCREWS

Attach 4 lengths of the provided chain to the the attic's rafters at four locations using wood screws (*NOT provided*) screwed through a chain link. Alternatively, eye bolts (*also NOT provided*) can be anchored into the rafters and additional S-hooks (*also NOT provided*) used to attach the chain thereto

Attach the 4 provided S-hooks to 4 of the D-rings attached to the fan housing. Hang the fan assembly from the rafters using these S-hooks and the 4 lengths of chain just installed as shown below in Figure 7.

Figure 7

USE 4 LENGTHS OF CHAIN TO SUPPORT FAN

44"

80-84"

KEEP AIRSTREAM AS UNOBSTRUCTED AS POSSIBLE
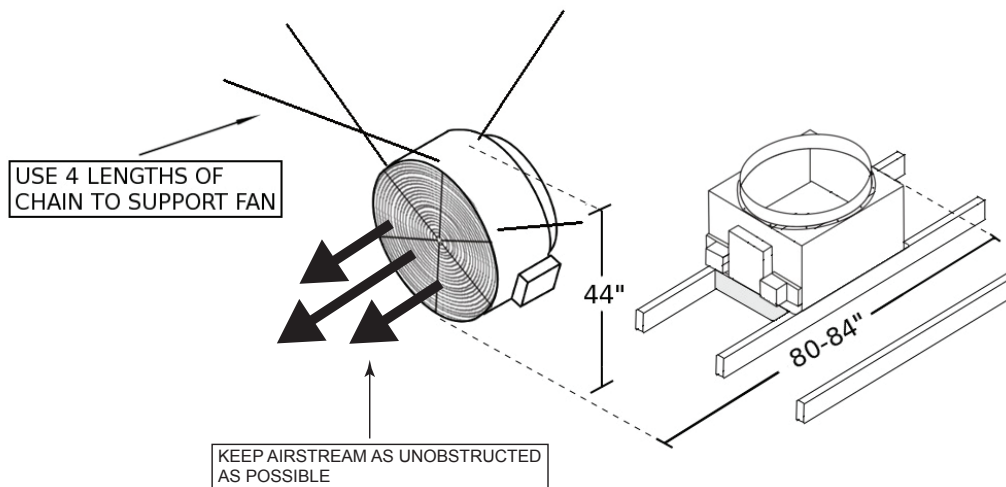
When hanging the fan assembly, adhere to the following guidlines:

- Do not hang the fan using fewer than 4 lengths of chains or eye bolts; all four attachment points are necessary to support the fan's weight and to eliminate any swaying motion.

- Ensure that the fan is as level as possible.

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

Next, slide one end of the flexible ductwork over the backdraft damper's collar and fasten it thereto using 4 of the 8 provided self-tapping sheet metal screws.

Then, gently bend the ductwork to a 90˚ angle and slide the free end over the fan assembly's collar and fasten it thereto using the remaining 4 provided self-tapping sheet metal screws.

Figure 8 at the top of the next page describes the two ductwork conntections. Adhere to the following guidelines when attaching the ductwork to the backdraft damper and fan assembly:

- 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.

- If necessary, the ductwork can be supported under the bend using extra chain wrapped with a protec-tive material (e.g. carpet).

Figure 8
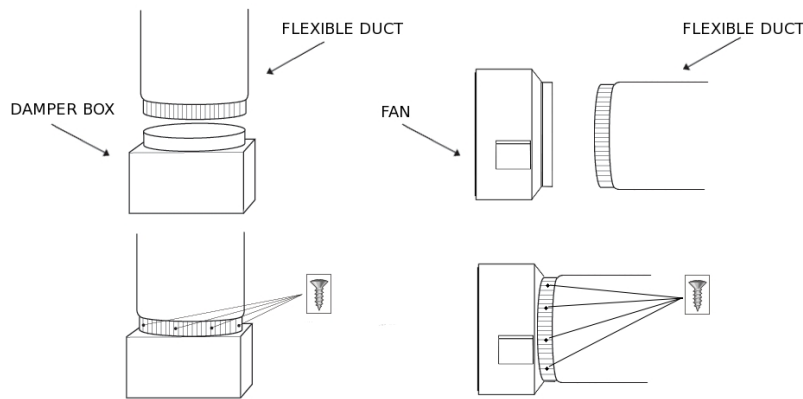
Once the fan assembly is balanced and secure, use pliers to close all of the S-hooks to ensure stability, and tape down all unused D-rings to avoid excess rattling.

Then, use the provided duct tape to seal the joints between the ductwork and backdraft damper, and the ductwork and fan assembly.

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 swich 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 swich. 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 uninterupted power.

For reference, Figure 9 below describes this fan's and its accessories' general wiring scheme.

Figure 9

Main Control Panel
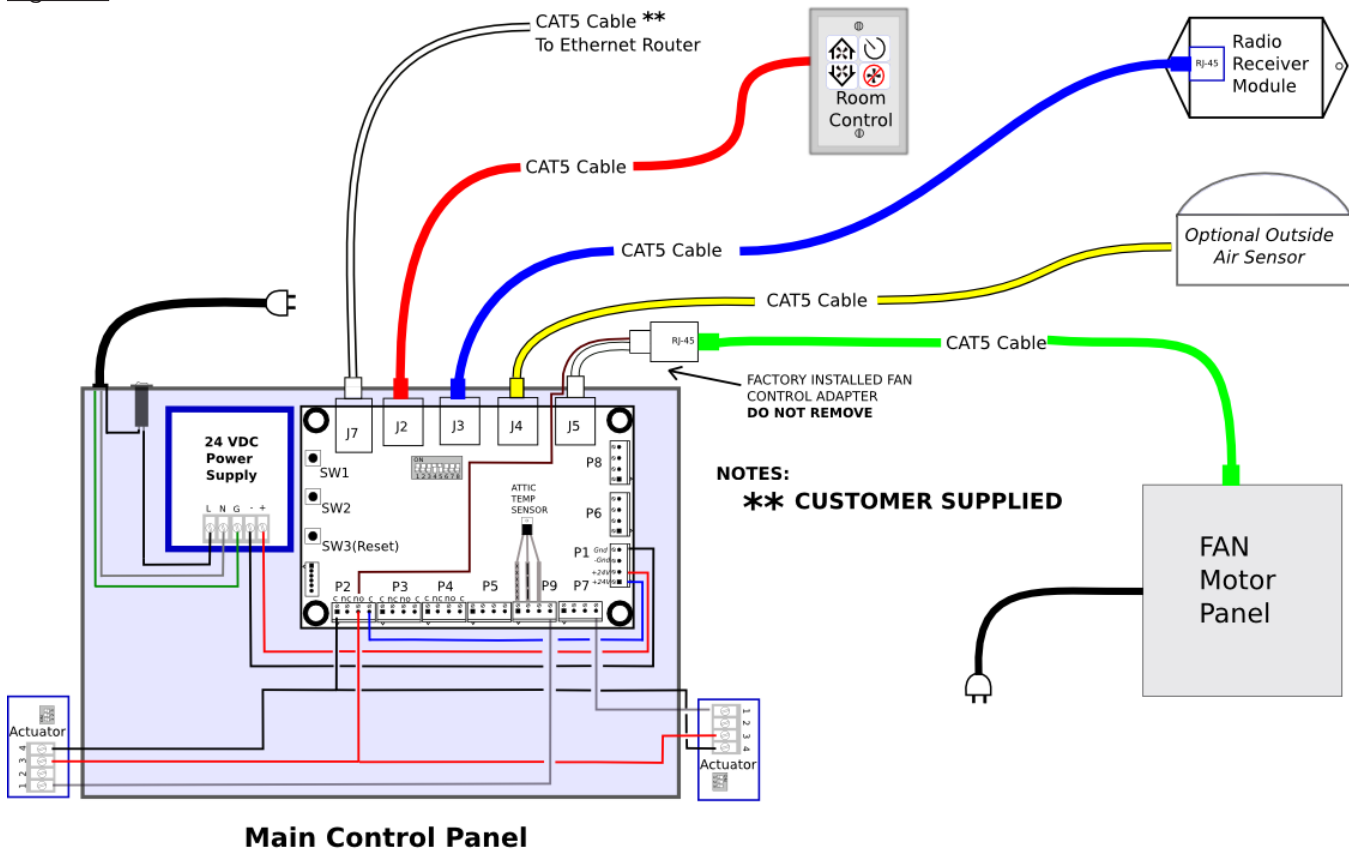
START-UP, OPERATION, & TECHNICAL SUPPORT

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 uninterupted 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 backdraft 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 operartion. 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. Renove 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 botton on the wireless transmitter while the transmission LED on the reciever is illuminated; replace the top cover on the reciever.

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	1	2	3	4	5
Tested Airflow (CFM):	800	1400	1600	1950	2550
Tested Electricity Consumption (watts):	40	50	70	110	205
Tested Efficiency (watts/CFM):	20	28	22	17	12

Tested Noise (dBA):	36 – 54 dBA (min. speed to max. speed; tested at 45˚ and 1 meter from source)
Rough Opening Dimensions:	14.5" x 22.5"
Grille Outer Dimensions:	16" x 24"
Grille Build:	Cube Core, Aluminum, White Powder Coat
Backdraft Damper Dimensions:	27" x 20.25" x 14.25" (L x W x H)
Duct Length:	7 ft.
Duct Diameter:	20"
Electrical:	110VAC, 60 Hz, 3.3 max amps
Insulation:	R-10 standard, R-49 XR
Controls:	Low Voltage; Hardwired Wall Switch, web interface, optional wireless remote
Installation:	Installs easily on 24" or 16" O/C framing
Warranty:	3 years

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.