

ORDER # \_\_\_\_\_  
S/N: \_\_\_\_\_  
(Required for warranty)



# KOHILO 2.8 WHOLE HOUSE FAN INSTALLATION AND OPERATION MANUAL

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## WHAT'S INCLUDED

Prior to beginning installation, please verify that you received all the accessories with the whole house fan. The packages should include:

- BOX 1: Transition plate, cube core grille, IOM, S-hooks (4), wood screws (8), self-tapping sheet metal screws (12), dual speed switch and wall plate
- BOX 2: Fan assembly, chain (25'), duct tape (20')
- BOX 3: 20" insulated acoustical flex duct (7')
- BOX 4: Backdraft Damper

CONGRATULATIONS on your purchase of the AirScape Kohilo 2.8 Whole House Fan. This fan is designed to provide you with quiet, natural, energy-efficient cooling for many years.

Please take a few minutes to read over the sections below to make sure you are prepared for the installation. The building owner/occupant should read the **Where to locate** section below so that the Kohilo 2.8 WHF will be correctly located to maximize effectiveness and efficiency of operation.

If you (or your installer) have any questions regarding the installation, operation, or maintenance, please contact AirScape technical support at [experts@airscapefans.com](mailto:experts@airscapefans.com) or call 1.866.448.4187.

## WHAT YOU WILL NEED

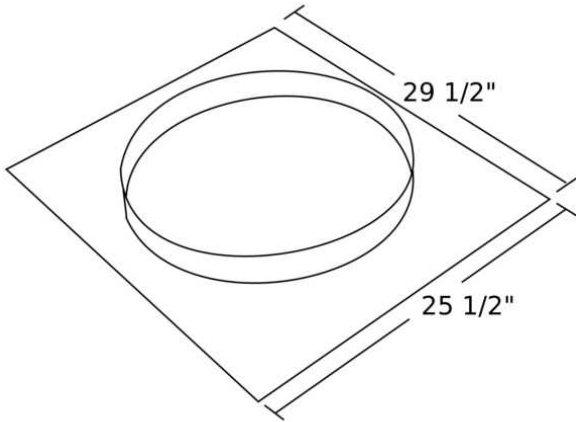
- wire and electrical box for mounting wall switch
- flat head screwdriver
- cordless screwdriver w/ Philips head and drill bits
- lumber to match dimensions of the attic joists (2x6, 2x8, etc...)
- drywall cutter
- high quality latex caulk
- pliers

## UNIT SPECIFICATIONS

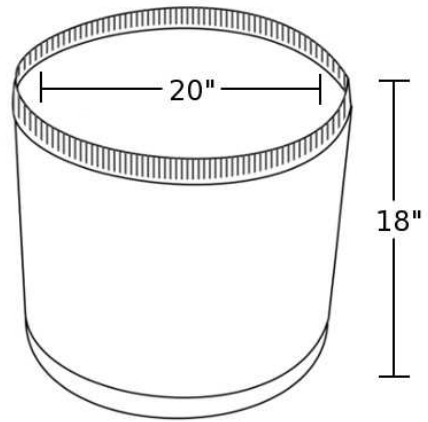
<b>Back Draft Damper:</b>	20"x20"x18" -- LxWxH
<b>Transition Plate:</b>	29.5"x25.5"x2.5" -- LxWxH
<b>Duct Length:</b>	7 feet
<b>Duct Diameter:</b>	20"
<b>Rough Opening:</b>	22.5"x26.5"
<b>Grille Outer Dimensions:</b>	24.5"x28.5"
<b>Grille Build:</b>	Aluminum with cube core center - powder coated white
<b>Electrical:</b>	115 VAC, 60 Hz
<b>Speeds:</b>	2
<b>Installation:</b>	Installs easily on 24" O/C or 16" O/C joists
<b>Operation:</b>	Dual switch (Decora style). Supplied with unit
<b>Warranty:</b>	3 years
<b>Fan Energy Consumption:</b>	297 watts high / 263 watts low
<b>Airflow - High Speed:</b>	2850 CFM
<b>Airflow – Low Speed:</b>	2501 CFM
<b>Acoustical:</b>	47.5 dBA high / 44.5 dBA low

# UNIT PARTS AND DIMENSIONS

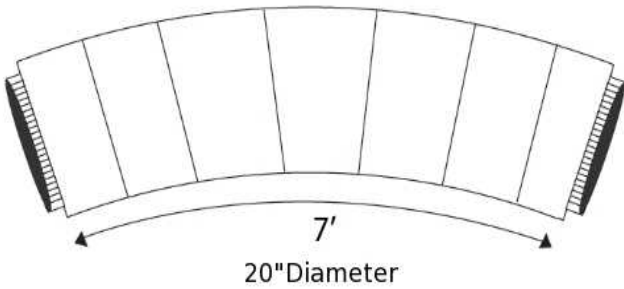
## TRANSITION PLATE



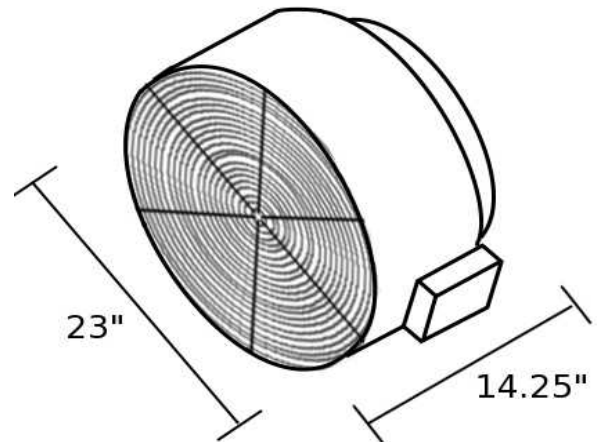
## BACKDRAFT DAMPER



## ACOUSTIC INSULATED FLEX DUCT



## TWO SPEED FAN ASSEMBLY



## SAFETY INFORMATION



### Not so obvious - Please Read:

- Do not operate the Kohilo 2.8 WHF without a window or door open.
- This fan is meant for general ventilation. It has **NOT** been designed to vent particle laden and/or explosive mixtures of air.
- Not for use in kitchens.
- The AirScape Kohilo does not provide an airtight, insulated seal between the attic and living space. It is the homeowner's responsibility to ensure the unit is sealed when not in use.

## REQUIRED VENTING AREA

For proper operation of your AirScape unit, it is CRITICAL that your attic have sufficient venting area. Without adequate venting, the hot air cannot easily escape from the attic and creates back-pressure that can substantially reduce the performance of your new whole house fan. The AirScape Kohilo 2.8 requires a **MINIMUM of 5** square feet of "net-free" venting area in your attic to allow for proper exhaust. This means that it requires the equivalent of a 2 ft by 2½ ft unobstructed hole. Since most attics have multiple vents of different types, and since most vents are partially obstructed by grilles, screens and/or louvers, you'll need to do some calculations to make sure your venting is sufficient. While it is our experience that most properly constructed houses have the required venting, not all do. And because this is so critical to the proper operation of your unit, it is important that you verify it.

Different types of vent designs have different ratios of obstruction caused by louvers and screening and manufacturers typically publish these numbers. If this information is not available to you, a ratio of 50% is a good rule of thumb. For example, a typical 24" x 24" louvered gable vent, with a gross area of 4 sq ft would have a net free area of 2 sq ft.

Vent Type	Length	Width	Net Free Area (NFA%)	Calculation L x W x NFA / 144
Louver	16"	16"	50 %	= 16 x 16 x 0.5 / 144 = 0.89 sq ft
Ridge Vent	48"	not used	13 %	= 48 x 0.13 / 12 = 0.52 sq ft
Eave Vent	12"	4"	50 %	= 12 x 4 x 0.5 / 144 = 0.16 sq ft

- In practice, less net-free area (than recommended) will decrease the airflow performance of the unit.
- If you are unsure as to how much net-free venting you have, please consult a roofing professional.
- Net-free venting area can be acquired by any combination of gable, eyebrow, soffit, or ridge vents, or any other means that provides ventilation to the attic space.

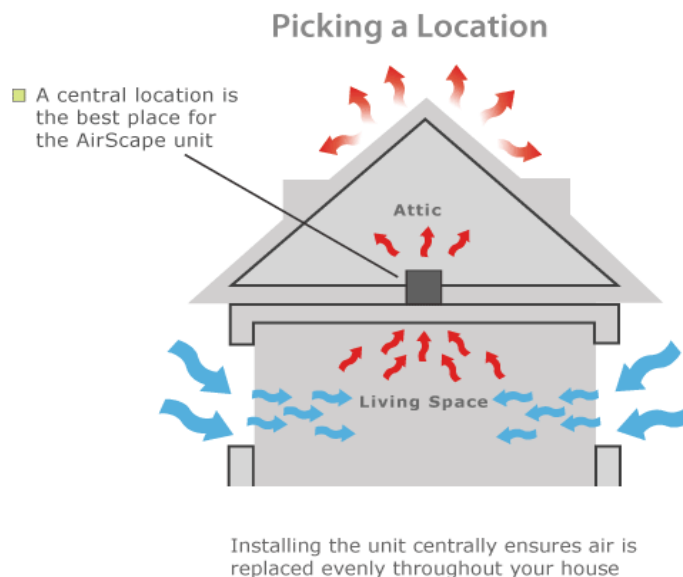
## WHERE TO LOCATE

Let's start with a little theory of operation: As your house heats up during the summer day, a large amount of heat is retained in the building structure. Even though many summer evenings offer very comfortable outdoor conditions, we are forced to either endure the hot conditions of our houses or turn on the air conditioning and subject ourselves to the expense and possibly unhealthy air conditions.

AirScape Whole House Fans have been designed to run quietly and efficiently all night long. Building materials give up their heat slowly (touch the brick on your house after sunset), and this method of slow cooling extracts as much heat as possible from your house structure. Since the AirScape is one of the quietest whole house fans on the market, it also allows you to get a good night's sleep.

The diagram below illustrates how cool air enters an open window and replaces hot air that is exhausted by the fan into the attic.

### LOCATION



### Ceiling or Wall?

The AirScape Kohilo 2.8 can be mounted in the horizontal or vertical orientation. *NOTE: For vertical installations make sure to rotate the backdraft damper until the door flaps are in the closed position.* Our recommended location is in a ceiling in the horizontal orientation -- keep in mind that it makes sense to place the unit as high as possible to eliminate the hottest air first.

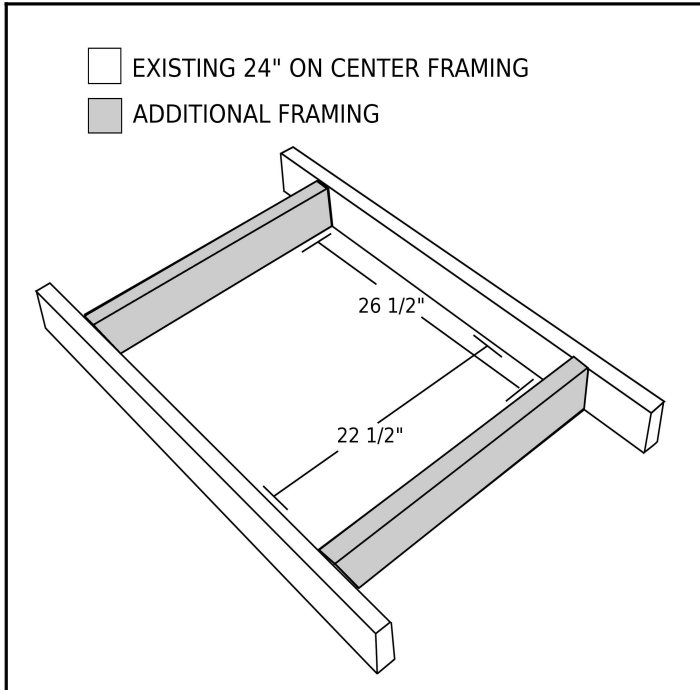
### Acoustics:

Even though the fan is extremely quiet, we do not recommend installing the fan in a bedroom, since our perception of noise is far greater when the house is quiet. Hallways may be convenient, but the fan may "sound" noisier because of acoustic reflections from hard surfaces such as plaster. Generally, it is not recommended to place the fan in the direct line of sight from a bedroom or other acoustically sensitive location. We recommend placing the fan in a central location. Because halls are essentially large "ducts" the fan can be placed virtually anywhere in your house.

# INSTALLATION

The Kohilo 2.8 WHF has been designed to fit on top of a 22½" x 26½" wall or ceiling opening. Since most modern houses have been built with either 24" or 16" on-center (O/C) spaced joists or studs, a simple "box" is constructed in the wall/ceiling.

## STEP 1:

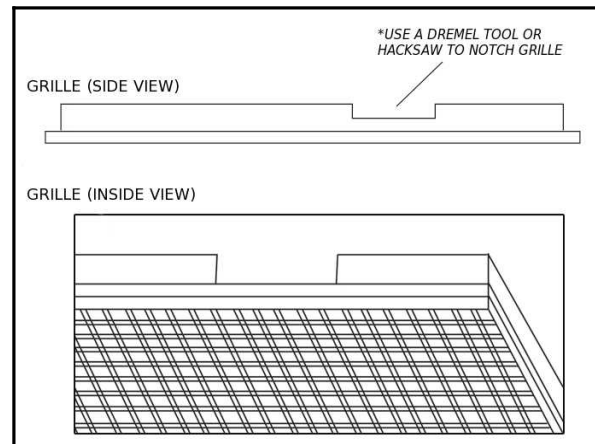
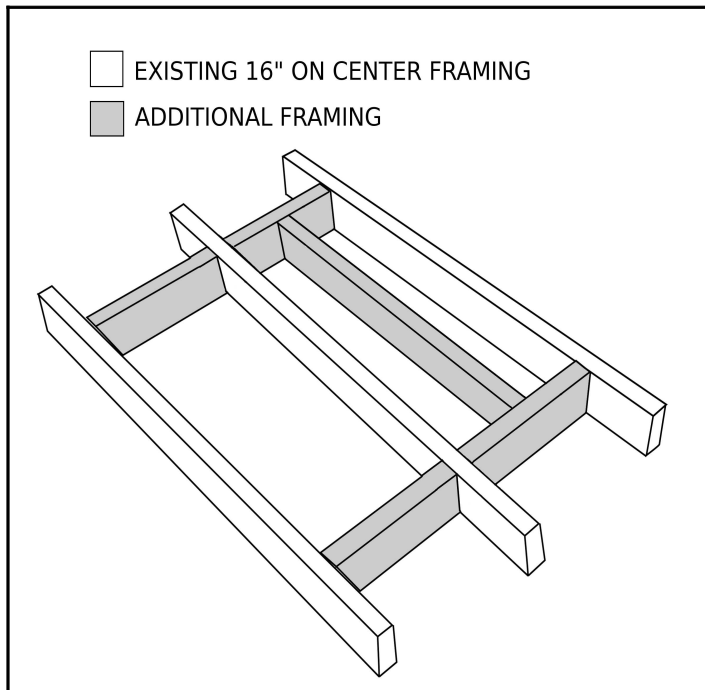


### 24" O/C installations:

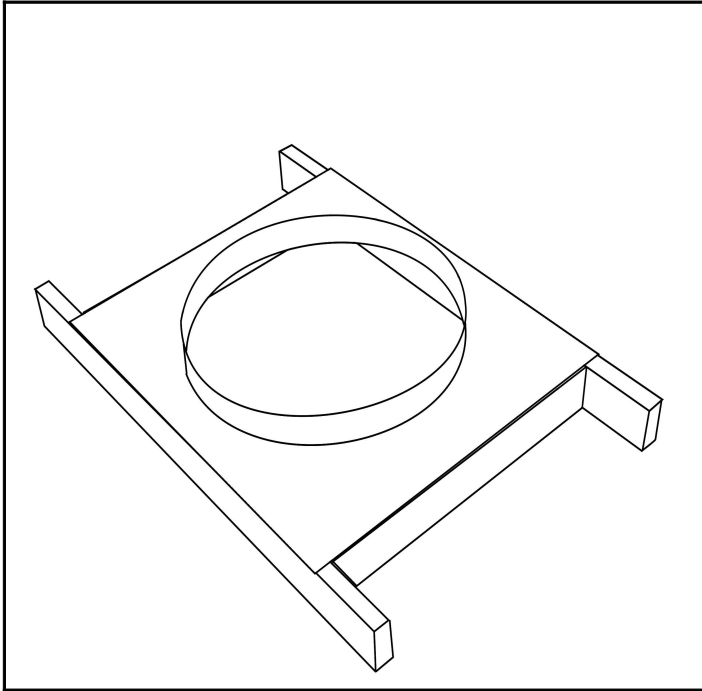
- Install two 22½" cross pieces creating a box with inside dimensions of 22½" x 26½"
- Cut out the drywall inside the framed box to create the opening to the attic

### 16" O/C installations:

- Install four 14½" cross pieces and one 26½" cross piece creating a box with inside dimensions of 22½" x 26½"
- Cut out the dry wall inside the framed box to create the opening to the attic
- Note: The center joist running across the opening will not significantly disturb the airflow
- Note: The grille flange will need to be notched to fit around the center joist

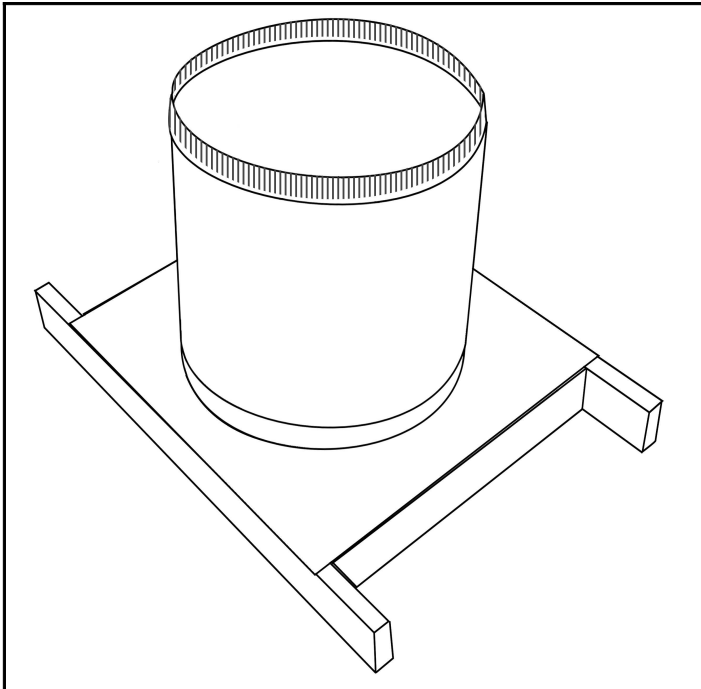


## STEP 2:



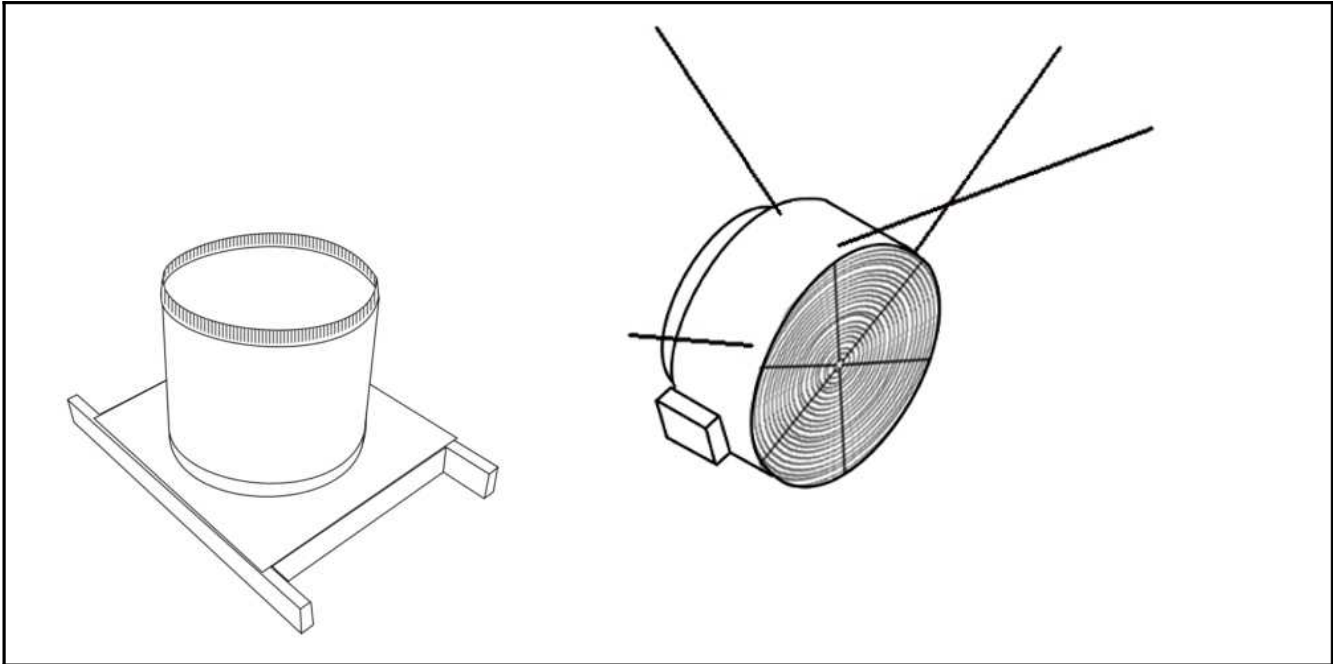
- Lay down a bead of latex caulk on top of the joists that create the framed box
- Position the transition plate on top of the framed opening. The edges of the plate should line up with the edges of the joists
- Using the 8 provided wood screws, secure the transition plate to the joists at 8 of the 16 pre-drilled holes

## STEP 3:



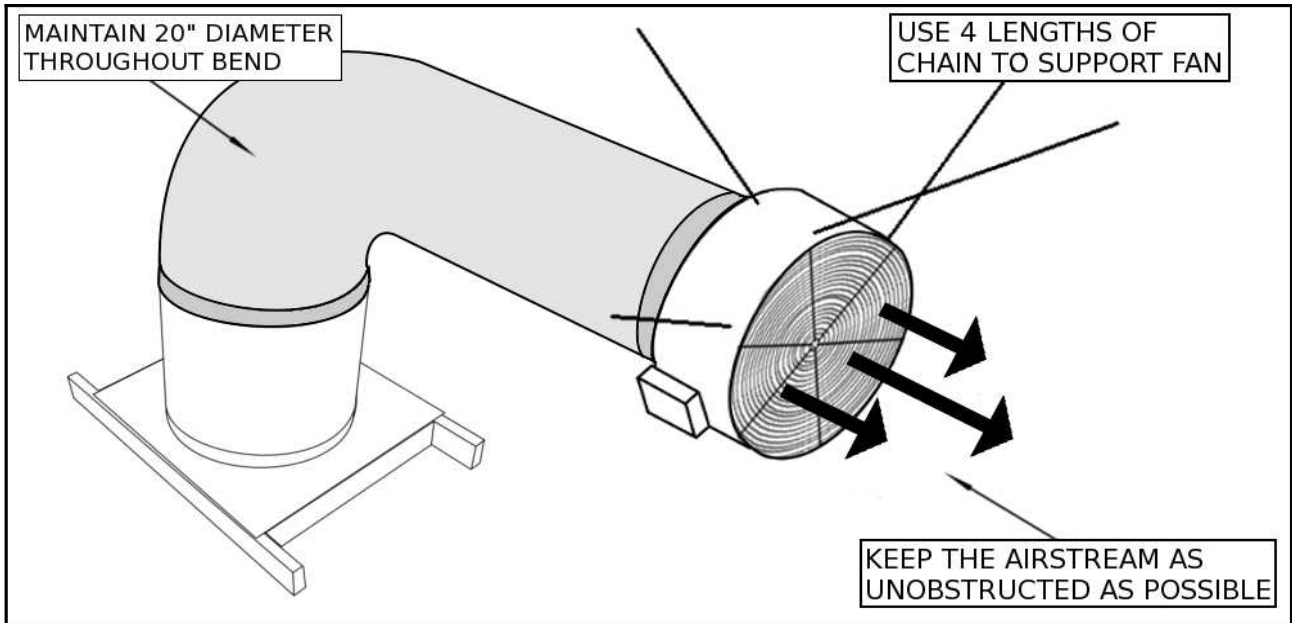
- Position the backdraft damper over the transition plate collar so that the damper doors are in the closed position (if the doors fall open, flip the backdraft damper over)
- Secure the backdraft damper to the transition plate using 4 of the 12 provided self-tapping sheet metal screws (no pre-drilling is required)

#### STEP 4:



- Hang the fan from the attic rafters using four lengths of the provided chain and S-hooks. Ensure that the fan is as level as possible and that the nearest obstruction to the path of the airflow is at least 24" from the face of the fan.
- Once the fan is properly positioned, use pliers to close all of the S-hooks.
- Attach one end of the 7' section of insulated acoustic ductwork to the backdraft damper using 4 of the remaining 8 self-tapping sheet metal screws.
- Gently bend the duct work to a 90 degree angle and use the last 4 self-tapping sheet metal screws to attach the duct work to the fan collar.
- Make sure to maintain the 20" diameter of the ductwork throughout the bend to ensure proper airflow and noise levels.
- Use 3 lengths of the provided duct tape to seal the joints between the transition plate and the backdraft damper, the ductwork and the backdraft damper, and the fan and the ductwork.

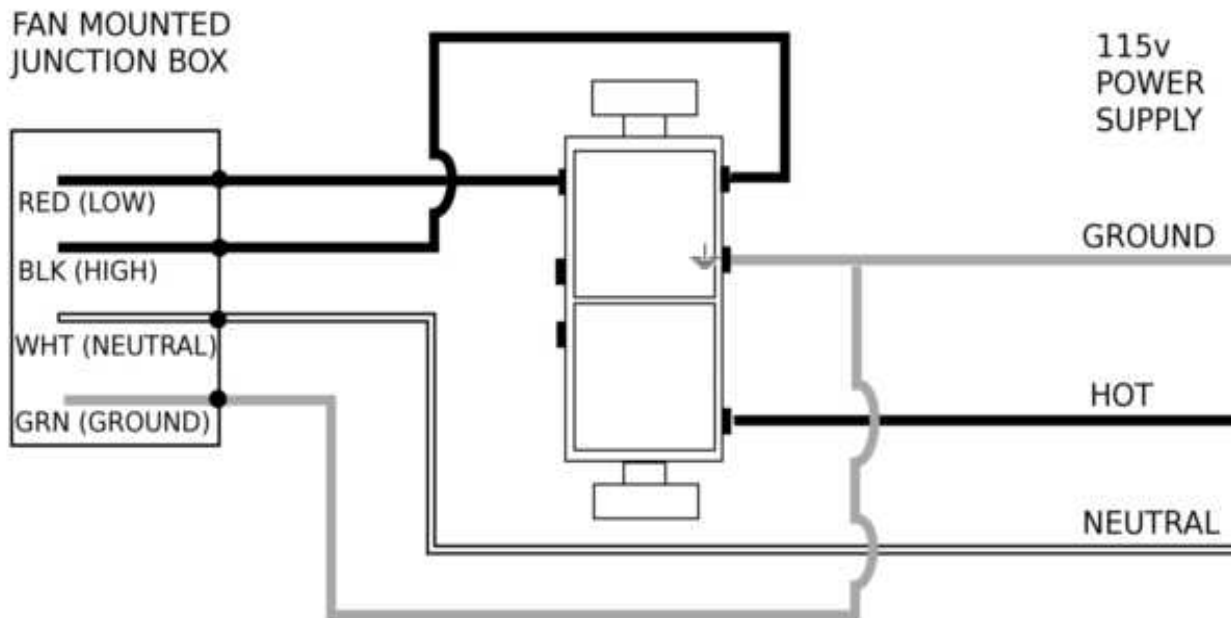
### FULLY INSTALLED ATTIC VIEW



### INSTALLATION - WIRING (HARDWIRED SWITCH)



Please make sure that local codes and standards are followed when performing the following steps. Make sure that the appropriate circuit breakers are turned off and that the unit is unplugged when performing these steps.



**Step 1:** Run a 3-wire cable with ground, 16 gauge or thicker, from the fan mounted electrical box in the attic down to the wall switch (Romex 14/3 is used most commonly). The wire is NOT supplied with the unit but is widely available.

Connect wire ends to the terminal connections on the electrical box of the fan using wire nuts. Connect black to black, red to red and white to white. Attach the ground wire to the ground screw in the electrical box.

**Step 2:** Run household power (14/2 Romex) from the main breaker box to the wall switch.

**Step 3:** Wire the wall switch

- Attach the (2) GROUND wires (1) from the breaker and (1) from the fan to the grounding lug in the switch box.
- Wire nut the (2) NEUTRAL (WHT) wires together.
- Connect HOT wire from the breaker to the lower right screw on the wall switch.
- Attach the High SPD (BLK) wire from the fan to the upper right screw of the wall switch.
- Attach the Low SPD (RED) wire from the fan to the upper left screw.

Secure the face plate once all connections have been made.

**Step 3:** Make sure the switch is in the OFF position before proceeding to the **Start up and Operation** section.

The wall switch must be mounted in an approved electrical box large enough to accommodate the entering wires. Use approved methods such as wire nuts to connect wire ends.

## TIMECLOCKS - AUTOMATED CONTROLS

Please contact AirScape at 866.448.4187 or by email [experts@airscapefans.com](mailto:experts@airscapefans.com) for information on using a timeclock or other automated device with an AirScape Whole House Fan.

## START UP AND OPERATION

- Make sure that all wiring and connections have been made per this manual and acceptable wiring standards and that all local codes and standards have been followed in the installation of this unit
- Make sure that no tools or construction debris have been left in the Kohilo 2.8 WHF
- Verify that the Kohilo 2.8 WHF power switch is OFF and turn on electrical power at circuit breaker
- Turn the unit ON in LOW speed. The fan will turn on and the damper flaps will open. Once the fan starts running, switch the unit to HIGH
- When the unit is turned OFF, the fan will shut down and the damper flaps will close

## MAINTENANCE

- There is no routine maintenance required for the Kohilo 2.8 WHF other than to make sure that the fan blades and damper are kept clean of any possible build up of lint or other debris.
- Blocking the fan discharge during operation could cause premature fan failure if internal temperatures rise to a very high level. Ensure that no items are placed within 2 feet of the fan discharge path.

## TROUBLESHOOTING



Before servicing the unit, switch power off at the electrical panel to reduce the risk of electrical shock, fire, or injury.

The Kohilo 2.8 WHF has been factory tested. If you have problems with the unit please take a few minutes to run through the following troubleshooting procedures before calling for assistance.

### **Symptom: Unit does not start**

*Possible causes: No power to unit.*

Suggestion 1: Check power to the unit and wiring at both the switch and the unit mounted junction box.  
Suggestion 2: Check the re-settable circuit breaker on damper enclosure electrical box.

### **Damper does not open and/or close**

*Possible causes: Damper is jammed*

Suggestion: Visually inspect the damper for debris obstructing movement

### **Symptom: Unit does not run on low speed and/or high speed**

*Possible causes: Wiring issue.*

Suggestion: Verify wiring connections to the wall switch and electrical control box

*If you continue to have issues with the unit, or have questions about the installation and wiring, please contact AirScape technical support by email at [experts@airscapefans.com](mailto:experts@airscapefans.com) or call 1-866-448-4187.*

## LIMITED WARRANTY

### **Hardware**

AirScape warrants the original end user (“Customer”) that new AirScape Whole House fan products, including all moving parts, motors, dampers, and damper actuators will be free from defects in workmanship and materials, under normal use, for three (3) years from the original purchase date.

### **Software**

AirScape warrants to Customer that the AirScape Whole House Fan software will perform in substantial conformance to its program specifications for a period of three (3) years from the date of the original purchase.

### **Exclusions**

This warranty excludes (1) physical damage to the surface of the product, including cracks or scratches on the outside casing; (2) damage caused by misuse, neglect, improper installation, unauthorized attempts to open, repair, or modify the product, or any other cause beyond the range of intended use; (3) damage, caused by accident, fire, power changes, other hazard, or Acts of God; or (4) use of the product with any unauthorized device if such device causes the problem.

### **Exclusive Remedies**

Should a covered defect occur during the warranty period and Customer notifies AirScape, Customer’s sole and exclusive remedy will be, at AirScape’s sole option and expense, to repair or replace the product. Replacement products or parts may be new or reconditioned or a comparable version of the defective item. AirScape warrants any replaced product or part for a period of ninety (90) days from shipment, or through the end of the original warranty, whichever is longer.

### **Obtaining Warranty Service**

Customer must contact and return product to AirScape, Product dealer or Installer within the applicable warranty period to obtain warranty service. Dated proof of original purchase will be required. AirScape will not be responsible for Customer’s memory data contained in, stored on, or integrated with any products returned to AirScape for repair, whether under warranty or not.

### **Warranty Exclusive**

The forgoing warranties and remedies are exclusive and in lieu of all other Warranties, express or implied, including warranties of merchantability, Fitness for a particular purpose, correspondence with description, and Non-infringement, all of which are expressly disclaimed by AirScape and its suppliers.

### **Disclaimer**

Neither AirScape nor its suppliers shall be liable for incidental, consequential, indirect, special, or punitive damages of any kind, or financial loss arising out of or in connection with the sale or use of this product, whether based in contract, Tort (including negligence) or any other theory, even if AirScape has been advised of the possibility of such damages AirScape’s entire liability shall be limited to replacement or repair of the product.