



### WARNING

#### **WARNING — THE INSTALLATION MUST BE CARRIED OUT BY A QUALIFIED ELECTRICIAN.**

1. For general ventilating use only. DO NOT use to exhaust hazardous or explosive materials and vapours
2. This product is designed for installation in ceilings up to a 12/12 pitch (45°).  
Duct connector MUST point up. DO NOT mount this product in a wall
3. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit
4. Read specification label on product for further information and requirements

#### **Application Notice**

1. Use this unit only in the manner intended by the manufacturer. Contact the manufacturer in case of questions
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switching on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities
5. When cutting or drilling into wall or ceiling, DO NOT damage electrical wiring and other hidden utilities
6. Ducted fans MUST always be vented to the outdoors
7. Acceptable for use over a tub or shower when connected to a GFCI (Ground Fault Circuit Interrupter) —protected branch circuit (ceiling installation only)
8. To reduce risk of fire and to properly exhaust air, be sure to duct air outside — DO NOT vent exhaust air into spaces within walls or ceilings or into attics, crawl spaces, or garages. This fan is NOT for use in kitchens
9. DO NOT use this fan with any solid-state speed control device
10. The fan MUST NOT be installed in a ceiling thermally insulated to a value greater than R40
11. This unit must be grounded

### CAUTION

#### **PLEASE READ INSTRUCTION BEFORE COMMENCING INSTALLATION AND RETAIN FOR FUTURE REFERENCES.**

**Electrical products can cause death or injury, or damage to property.**

**If in any doubt about the installation or use of this product, consult a competent electrician.**

### CLEANING & MAINTENANCE

For quiet and efficient operation, long life, and attractive appearance — lower or remove grille and vacuum interior of unit with the dusting brush attachment. The motor is permanently lubricated and never needs oiling. If the motor bearings are making excessive or unusual noises, replace the motor with the exact service motor. The impeller should also be replaced.

### OPERATION

**Fan with no accessories** — Use an ON/OFF switch to operate this fan. See the wiring diagram on page 4 of this instruction manual.

**Fan with ADD on Humidity Sensor and no wall switch** (see the wiring diagram on page 5 of this instruction manual)

**Fan with ADD on Humidity Sensor and wall switch to manually activate the fan** (The fan and humidity sensor can be operated separately by wall switch. See the wiring diagram on page 4 of this instruction manual for more details)

#### **Humidity Sensor**

The humidity-sensing fan uses a sophisticated humidity sensor that responds to: (a) rapid to moderate (adjustable by user) increases in humidity or (b) humidity above a user-adjustable set-point (50%-100% relative humidity). The humidity sensor may occasionally turn the fan ON when environmental conditions change. If the fan continuously responds to changing environmental conditions, "H" (means "humidity") adjustment may be required. This figure is factory-set for about 75% (ambient temperature of +25°C)

### OPERATION

#### Sensitivity Adjustment

The "H" has been factory set for most shower applications. However, if the fan is in a tub area or is being used for dampness control, the "H" may need to be increased toward maximum "+". If the control is responding too often to changing environmental conditions, movement toward less "-" "H" may be required. To adjust the "H":

1. Disconnect the power at service entrance
2. Through the grille, locate the slot marked "H"
3. Carefully rotate the "H" adjustment toward "+" or "-"
4. Turn ON power and check operation by turning on the shower or other humidity source until the fan turns on
5. Repeat above steps if necessary. When the temperature changes, humidity sensor values will have deviation

#### Timer Adjustment

The humidity sensing fan has a "T" (means timer) that can be adjusted from 5 to 60 minutes (factory-set at about 20 minutes).

This controls the length of time that the fan remains ON after the sensor has stopped sensing a rise in humidity and the humidity level is below the user-adjustable set point. To adjust the "T":

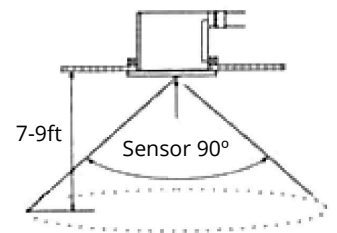
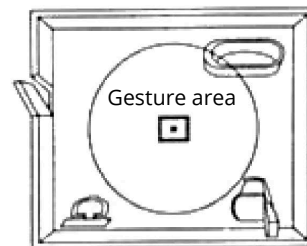
1. Disconnect the power at service entrance
2. Through the grille, locate the slot marked "T"
3. Carefully rotate the "T" adjustment to desired setting
4. Check the operation by turning ON a humidity source until the fan turns on
5. Turn humidity source off and time the unit
6. Repeat above steps if necessary

#### Fan with ADD on Motion Sensor Grille

The fan and motion sensor can be operated separately. See the wiring diagram on page 4 of this instruction manual for details. Sensing distance will be impacted of the body's own situation (for example, the thinner people wearing the more remote sensing distance).

Turn on the switch sensor system begins working, the fan run continuously at a pre-set lower level. When entering the gesture area fan will run at the certified airflow rate, indicator light turns on.

When person leaves, indicator light turns down, the fan remains working until the delay time (3-30 minutes) has passed, and then the fan is transferred to the pre-set lower level. Installation distance is 7-9ft. Sensing range is within the cone angle of 90°



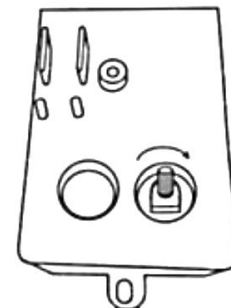
#### Fan with ADD on Speed Controller

Use a 2 function wall control. See the wiring diagram on page 4 for details. Set the motor speed as you need.

Max airflow is HVI certified performance based on HVI procedures 915, 916 and 920. Other airflow reference performance based on HVI procedures 915, 916 and 920.

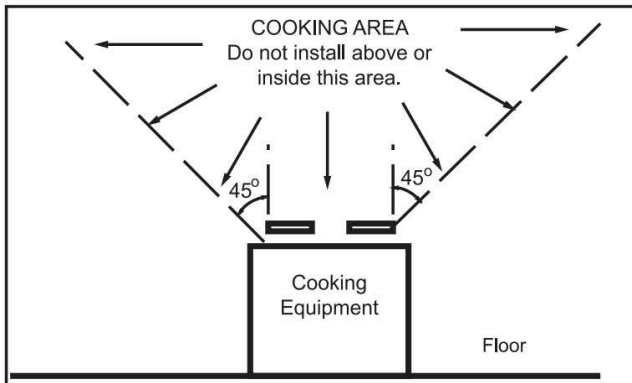
#### Fan with ADD on Light Kit and Night Light

Use a 3 function wall control. See the wiring diagram on page 5 for details.

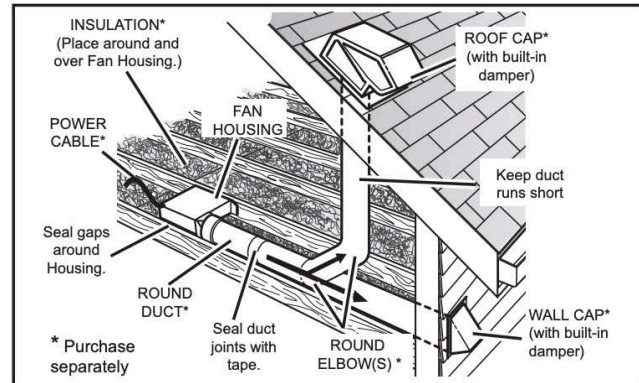


### INSTALLATION GUIDE

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1. DO NOT use in a cooking area



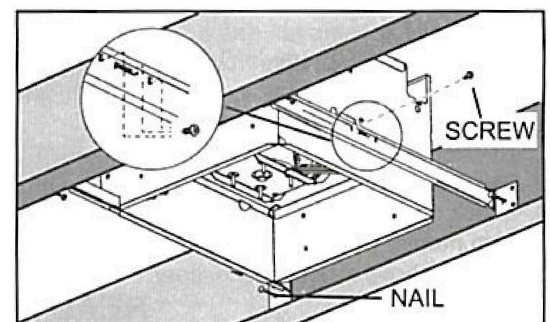
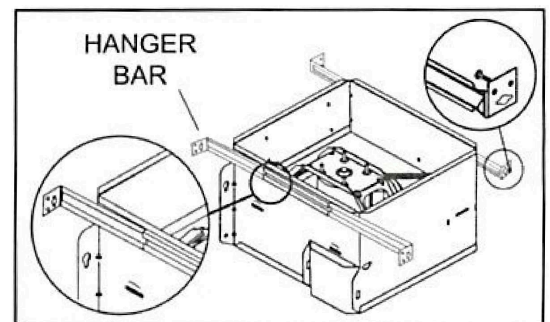
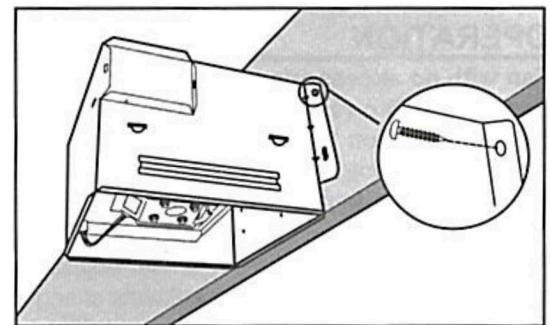
2. Two ways to connect ductwork to a factory-shipped unit

### Types of Typical Installation

1. Housing mounted to I-joists (start at "Assembly Instructions 1" below)
2. Housing mounted to joists (start at "Assembly Instructions 1" below)
3. Housing mounted to truss (start at step "Assembly Instructions 2" below)

### Assembly Instructions

1. Mount Housing to Joist or I-joist  
Hold the housing so that it is in contact with the bottom of the joist. Attach the housing with four (4) screws to joist through the holes in each mounting flange.
2. Mount with Hanger Bars
  - a) Sliding hanger bars have been provided, which allow the housing to be positioned accurately anywhere between the framing. The bars span up to 24" and can be used on all types of framing: I-joist, standard joist, and truss construction. Slide hanger bars onto housing and adjust as needed to fit between framing
  - b) Extend the hanger bars to the width of the framing. Position the ventilator with the hanger bar tabs wrapped around the bottom edge of the framing, holding the ventilator in place. Secure hanger bars to framing using one screw on each end of hanger bar. Select a proper hole and secure the hanger bars together using flange screws.



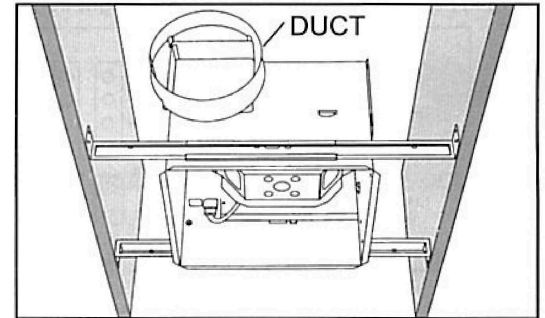
### INSTALLATION GUIDE

#### Assembly Instructions

##### 3. Attach Damper/Duct Connector

Snap the damper/duct connector onto the fan housing. The connector **MUST** be flush with the top of the housing, and the damper flap should fall closed.

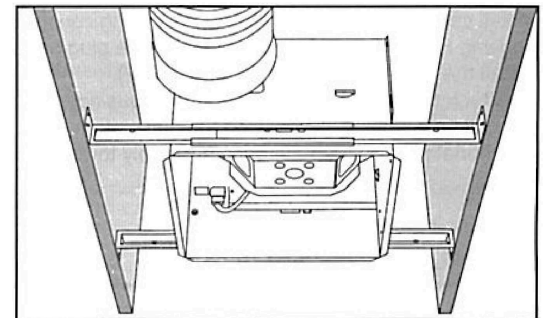
Insulated flexible duct is recommended for the quietest possible installation. If rigid duct is used, a short (1-3ft) section of insulated flexible duct will ensure quiet operation.



##### 4. Install Round Ductwork

Connect the round ductwork (not included) to the damper/duct connector, and run the ductwork to a roof or wall cap (not included). Using tape (not included), secure all the ductwork connections so that they are air tight.

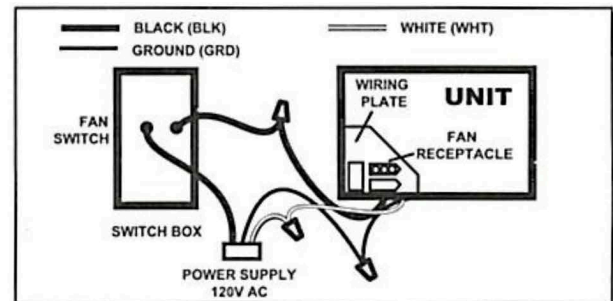
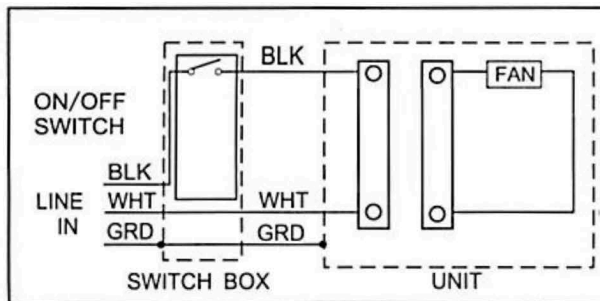
The ducting from this fan to the outside of building has a strong effect on the air flow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated air flow.



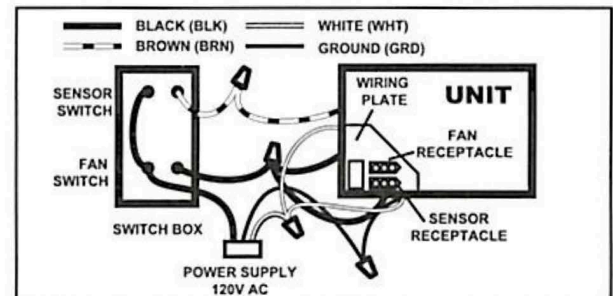
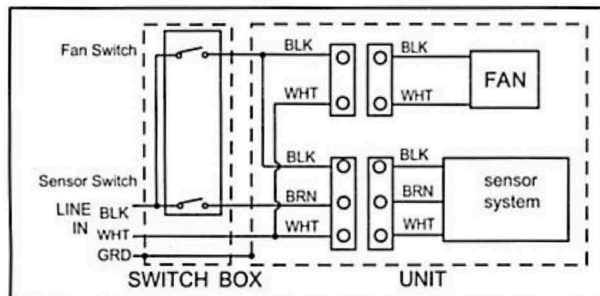
#### Connect Electrical Wiring

Run 120V AC house wiring to the location of the fan. Use only UL-approved connectors (not included) to attach the house wiring to the wiring plate. Refer to the wiring diagram below, and connect the wires as shown.

Fan with No Accessories



Fan with ADD on Humidity Sensor and wall switch to manually activate the fan  
Fan with ADD on Motion Sensor Grille & Fan with ADD on Speed Controller

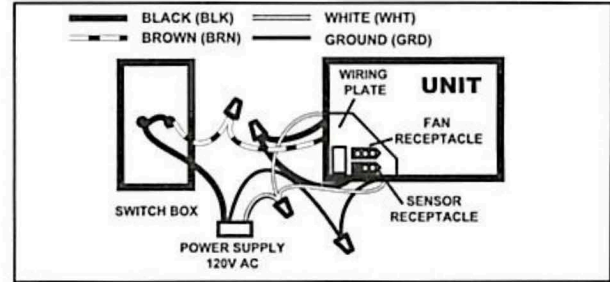
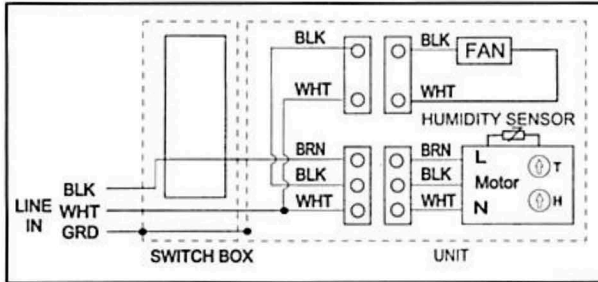




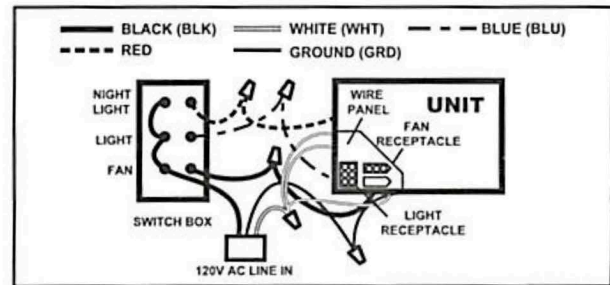
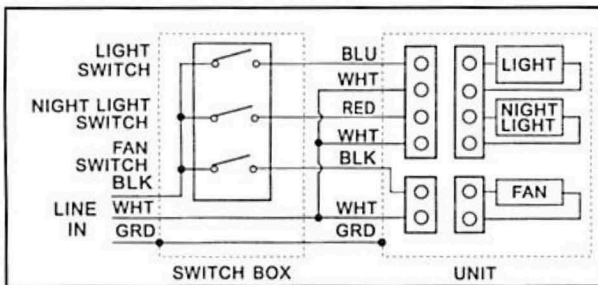
## INSTALLATION GUIDE

### Connect Electrical Wiring

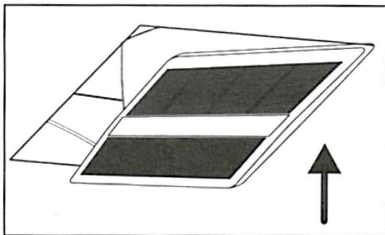
Fan with ADD on Humidity Sensor and no wall switch



Fan with ADD on Light Kit and Night Light



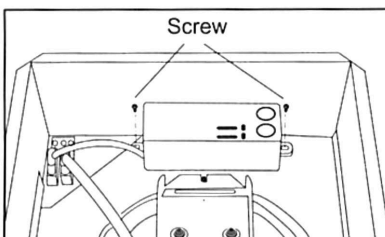
### Install Grille



Install ceiling material to complete the ceiling construction. Then, cut around the fan housing. First, insert the sensor plug into the plug base on the power box, and then install the grille (for fan with motion sensor).

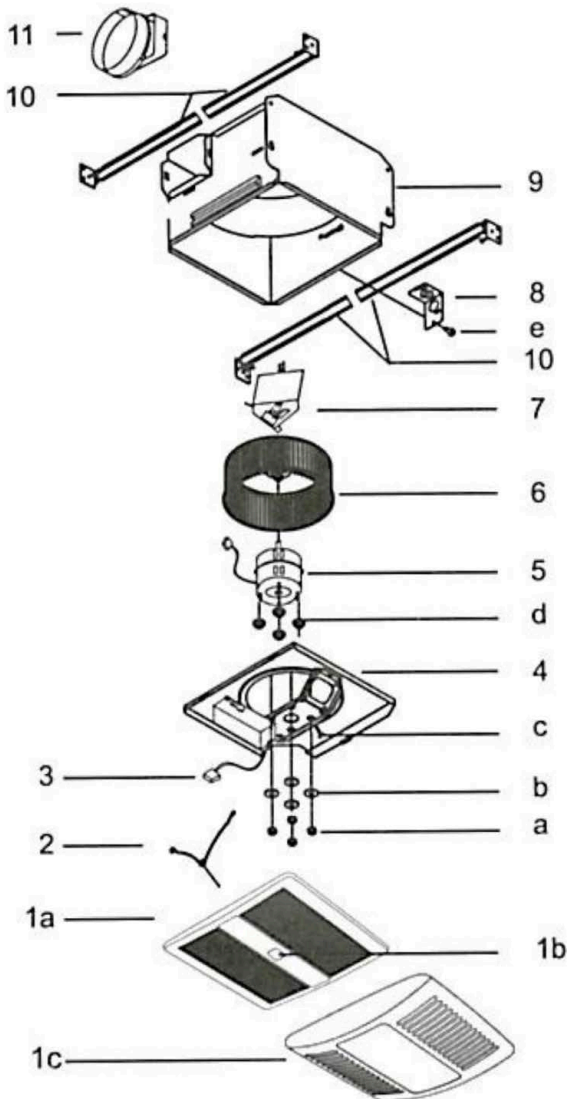
To attach the grille assembly to the fan housing, pinch the grille springs on the sides of the grille assembly, and position the grille into the housing with the grille springs in the appropriate slots. Push the grille assembly towards the ceiling to secure.

### Install Accessories



If need to add accessories function (humidity sensor, motion sensor, speed controller, etc.), put relevant power box in the place like the diagram on the left, fix it with screws, and insert the plug from the box into the suitable wire panel. (Motion function also need to change grille with sensor system). Connect electrical wiring while referring to the wiring diagram above on this page of the instruction manual.

## SERVICE PARTS



### WARNING

Before replacing, be sure to turn OFF power at power source.

PART	PART NAME	Qty.
1a	Grille Assembly (includes part 2)	1
1b	Motion system (For fan with motion sensor)	1
1c	Grille Assembly ( For light and night light)	1
2	Grille Spring	2
3	Sensor System (for sensor model)	1
4	Motor Plate	1
5	Motor	1
6	Blower Wheel	1
7	Wire Panel / Harness Assembly	1
8	Wiring plate	1
9	Housing	1
10	Hanger Bar Kit	4
11	Damper / Duct Connector	1
a	Nut, Hex Lock	4
b	Washer	4
c	Screw	1
d	Isolator	4
e	Screw	1

\* Blower Assembly includes part 6, 5, d, 4, c, b, a.

### Replacement installation:

Remove the screw (part c), then take out the motor plate (part 4) from the housing (part 9) by pushing down the rib in the plate while pulling out on the side of the housing. Replace the broken parts.

ORTECH reserves the right to modify at any time, without notice, any or all of our product's features, designs, components and specifications to meet market changes.