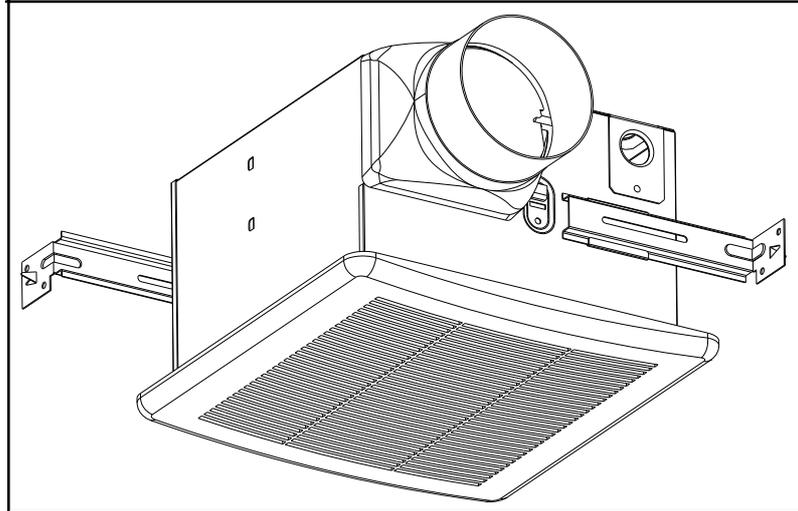


# Installation Manual



## Ventilation Fan

▶ CFA-D90  
(BPT16-14E-1)

It is very important you read this manual before installation for your safety and efficiency of the unit.

Please be advised that all units should be installed by a licensed electrician.

**READ AND SAVE THESE INSTRUCTIONS**

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# Safety Information

## UNPACKING

Unpack and carefully remove unit from carton.  
Refer to the supplier Accessories list to verify that all parts are present.

## GENERAL SAFETY INFORMATION & WARNING

1. Electric Service supply must be 120V 60Hz.
2. Follow all local safety and electrical codes as well as NEC (National Electrical Code) and the OSHA(Occupational Safety and Health Act).
3. This unit must be properly grounded.
4. Always disconnect the power supply prior to servicing the fan, motor or junction box.
5. Do not bend or kink the power wires.
6. Do not install where the air temperature will exceed 40°C(104 °F).
7. This ventilating fan is approved for use over a bathtub or shower when installed in a GFCI protected circuit.
8. Do not use to exhaust hazardous or explosive vapors.
9. Do not install in a cooking area.
10. Use this unit in the manner intended by the manufacturer. If you have any questions please call the manufacturer .Customer service number located on last page.
11. Installation work must be carried out by qualified person(s) in accordance to all local and safety codes including the rulers for fire-rated construction.
12. Sufficient air supply is required for proper combustion and the exhausting of gases through the chimney(flue) of fuel burning equipment to prevent back –drafting .See the standards of NFPA (National Fire Protection Association ) and ASHRAE(American Society for Heating Refrigeration and Air Conditioning Engineers) and the local building code authorities.
13. Exercise care to not damage existing wiring when cutting or drilling into walls or ceilings.
14. Fans should always be vented to the exterior.
15. If this ventilating fan is installed over a tub or shower, it must be marked as approved for the application.
16. Prior to service or cleaning this unit, shut off power supply at the panel and lock to prevent the power from being turned on. If the panel cannot be locked clearly mark the panel with a warning tag not to turn on the power.
17. Do not install in a ceiling with insulation greater than R40.
18. Ductwork should be installed in a straight line with minimum bends.
19. Duct work size must be a minimum of the discharge and should not be reduced.
20. For UL: the fan is intended to be mounted at least 2.1m(7feet) above the floor.

## Safety Information (Continued)



**WARNING:** Not suitable for use as a range hood or in areas where hazardous or explosive vapors are present.



**WARNING:** FOR USE IN NON FIRE-RELATED INSTALLATIONS ONLY.



**WARNING:** FOR USE IN ONE-AND-TWO FAMILY DWELLINGS ONLY.



**CAUTION:** For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.



**CAUTION:** Do not install in locations where the air temperature will exceed 104°F (40°C).



**IMPORTANT:** You may want to consult with a professional electrician regarding the wiring of your ventilation fan.



**IMPORTANT:** Exercise care to not damage existing wiring when cutting or drilling into walls or ceilings.



**NOTE:** Make sure the duct work size is a minimum of the discharge. Do not reduce. Reducing the duct size can increase fan noise.



**NOTE:** Ensure the insulation around and over the fan body is properly installed to minimize building heat loss and gain.

# Pre-Installation

## PLANNING FOR SUCCESSFUL INSTALLATION

When installing the ventilation fan in a new construction site, install the main body of the fan and duct work during the rough-in construction of the building. The grill should be installed after the finished ceiling is in place.

When installing in existing construction, use the dimensions on page 10 to determine the required hole size for the ceiling. The grill edges should overlap the finished ceiling.

The unit will operate most quietly and efficiently when located where the shortest possible duct run and minimum number of elbows will be needed.

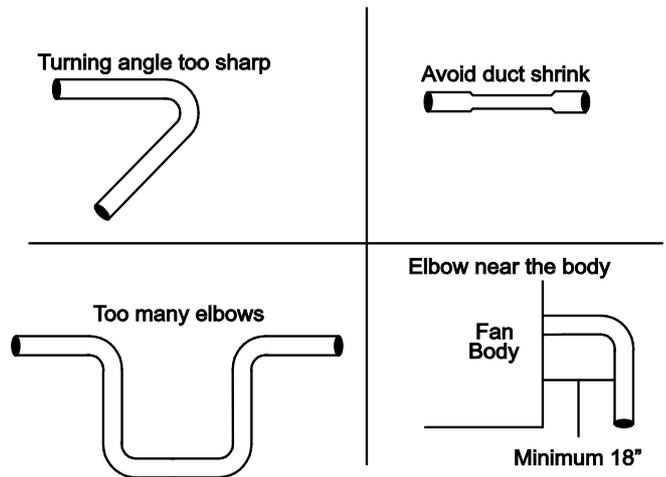
Recommended ductwork lengths should be 2-3 foot straight run before elbow.



**NOTE:** If installing in existing construction, you must have access to space above and below the installation location.

Do not install the ventilation fan in areas where the duct work will require configurations as shown in the following figure:

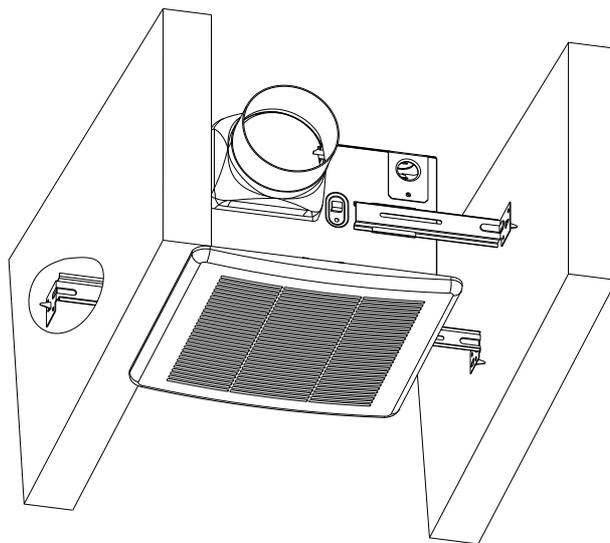
Short piece of flexible duct helps alignment and absorbs sound.



## INSTALLATION OPTIONS

We recommend installing the ventilation fan by securing the main body of the fan against one ceiling joist and using the header bars as necessary for support of the adjoining joist.

There are multiple installation configurations possible for this ventilation fan. Not all configurations are shown. If your installation requires a variation other than those shown, consult with a licensed contractor to determine the best installation for your project. If you are replacing an existing fan, ensure that the new grill will adequately cover the existing opening.



# Pre-Installation (continued)

## TOOLS REQUIRED



Hammer



Safety goggles



Phillips screwdriver



Level

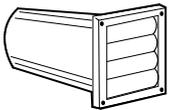


Electrical tape



Drill

## MATERIALS REQUIRED



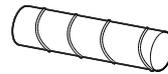
Duct vent



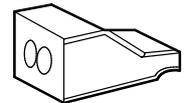
Duct clamp



Duct tape



Duct piping

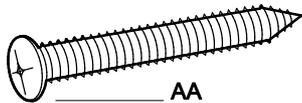


Wire nuts

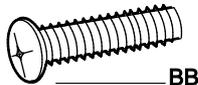
## HARDWARE INCLUDED



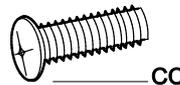
NOTE: Hardware shown to actual size.



AA



BB

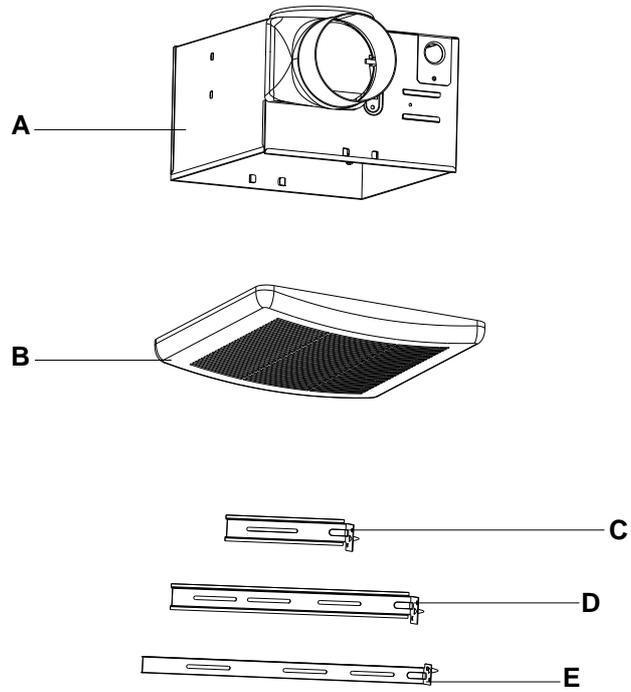


CC

Part	Description	Quantity	Specification
AA	Long wood screw	8	M4 × 30
BB	Short screw	2	M4 × 12
CC	Short screw	1	M4 × 10

# Pre-Installation (continued)

## PACKAGE CONTENTS

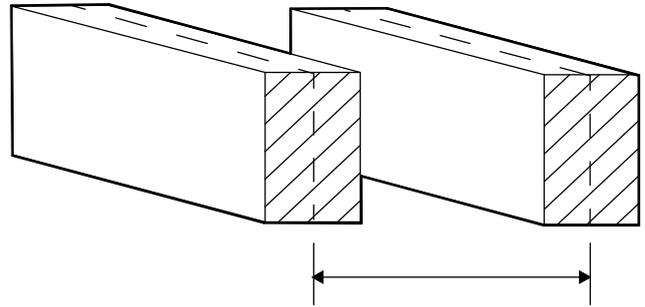


Part	Description
A	Fan body
B	Grill
C	Suspension bracket I
D	Suspension bracket II
E	Suspension bracket III

# Installation

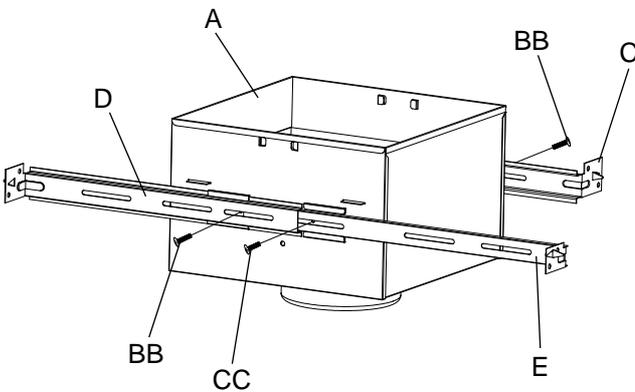
## 1 Determining joist width

- Measure the distance from the center of the two ceiling joists where you will be installing the ventilation fan.



## 2 Suspension bracket installation

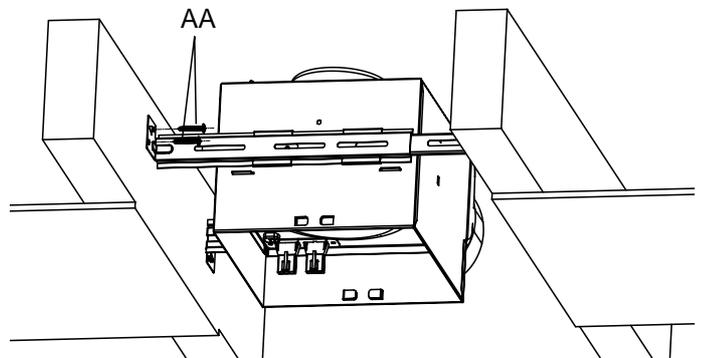
- For ceiling joist installations between 20 in. and 24 in., insert suspension brackets I (C), II (D), and III (E). Proceed to step 3.
- Use screw (CC) to secure the suspension bracket (E) to the fan body.
- Use screws (BB) to secure the suspension bracket (C and D) to the fan body.



**NOTE:** Sliding hanger bars are provided to allow for accurate positioning of the main body between joists.

## 3 20 – 24 in. joist installation

- Use long wood screws (AA) to loosely attach the main body of the fan to one ceiling joist.
- Extend the hanger bars to the opposite ceiling joist.
- Secure the suspension brackets (C, D, and E) to the joist using long wood screws (AA).
- Ensure the main body is level and square to the joists.
- Tighten all screws.

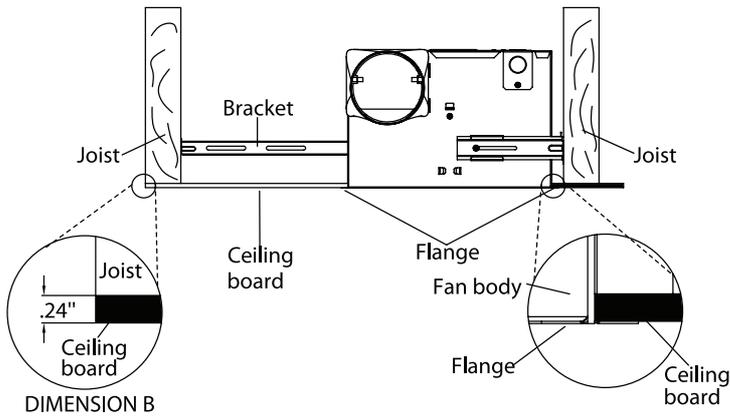


**CAUTION:** Do not mount the fan flush against the joist. The flange should be flush with the ceiling board.

## Installation (continued)

### 4 Flush flange with ceiling board

- Dimension "B" should allow for the thickness of the ceiling board used in your applicaton. Do not flush mount to the joist. The flange should be flush with the ceiling board.



### 5 Connecting wiring from the unit to the house



**WARNING:** Make sure that the main power is off.

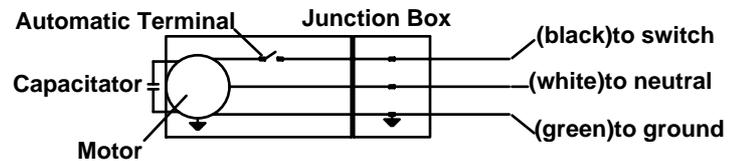


**WARNING:** Failure to wire this product correctly could result in electrical shock, fire hazards, or damage to the product. Consult a licensed electrician if you are unsure of your ability to correctly install wiring.



**CAUTION:** If your house wires do not match these colors, determine what each house wire represents before connecting. You may need to consult a licensed electrician to determine this safely.

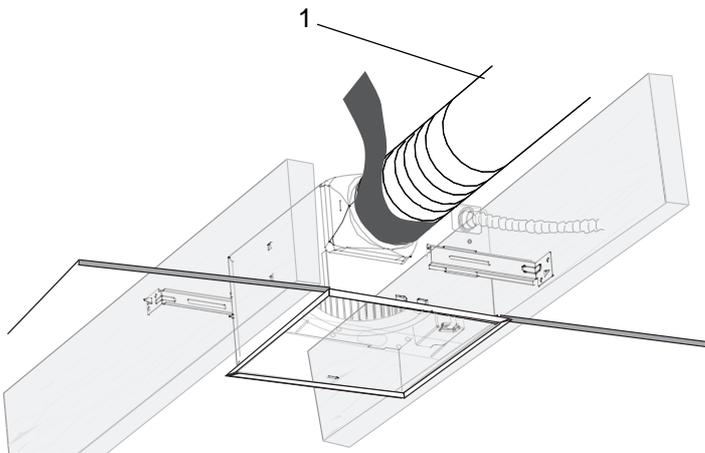
- Connect house wires to ventilation fan wires.
- Match colors as shown (black to black, white to white, and green to green) using wire nuts (not provided).
- Replace the junction box cover. Do not pinch the lead wires.



## Installation (continued)

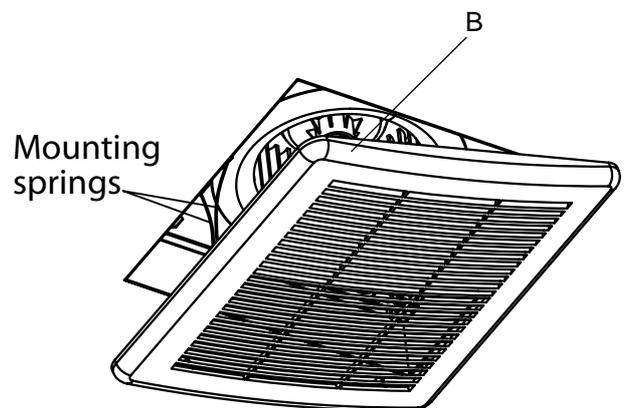
### 6 Connecting the duct

- Install a circular duct(1) to the outlet and secure it with duct tape or clamps to the outlet.
- Install the duct with a gradient of  $1^{\circ} \sim 2^{\circ}$  to the outside.



### 7 Mounting the grill

- Use the spring clips to pinch mount and insert the grill (B) into the narrow rectangular slots inside of the fan housing next to the fan motor.



## Care and Cleaning

- Before servicing or cleaning the unit, disconnect the power supply at the panel and lock to prevent the power from being turned on. If the panel cannot be locked, clearly mark the panel with a warning tag to prevent the power from being turned on.
- Remove the grill by squeezing the springs and pulling the grill down.
- Wash and clean the grill in a sink and dry with a cloth.
- Remove dust and dirt from the fan housing with a vacuum cleaner.
- Dampen the cloth with dish detergent, wipe the fan housing and dry with a cloth.
- Replace the grill.
- To reduce the risk of fire, always vent fans to the exterior and in compliance with local codes. Do not vent exhaust air into spaces within walls, ceilings, attics, crawl spaces, or garages.
- Unplug or disconnect the appliance from the power supply before servicing.



**CAUTION:** Do not use solvents, thinner or harsh chemicals for cleaning the fan.



**CAUTION:** Do not allow water to enter the motor.



**CAUTION:** Do not immerse resin parts in water over 140°F (60°C).

## Specifications

<b>Model No.</b>	CFA-D90(BPT16-14E-1)
<b>Air direction</b>	90 cfm
<b>Voltage</b>	120 V
<b>Hertz</b>	60 HZ
<b>Duct diameter</b>	4 in. (10.2 cm)
<b>Noise</b>	1.5 Sone
<b>Power consumption (Watts)</b>	31W
<b>Speed</b>	780 rpm
<b>Air deliver at 0.1" WG</b>	90 cfm
<b>Weight</b>	6.42 lbs. (2.9 kg)

## DIMENSIONS

<b>Ceiling opening - length</b>	9.4 in. (24 cm)
<b>Ceiling opening - width</b>	9.4 in. (24 cm)
<b>Ceiling opening - depth</b>	7.5 in. (19 cm)
<b>Housing dimension - length</b>	9.4 in. (24 cm)
<b>Housing dimension - width</b>	9.4 in. (24 cm)
<b>Housing dimension - depth</b>	7.28 in. (18.5 cm)

Questions, problems? Please contact  
**Factory Service Department**  
**Phone: 1-866-784-6900**  
**Fax: 1-919-554-9374**