

READ AND SAVE THESE INSTRUCTIONS

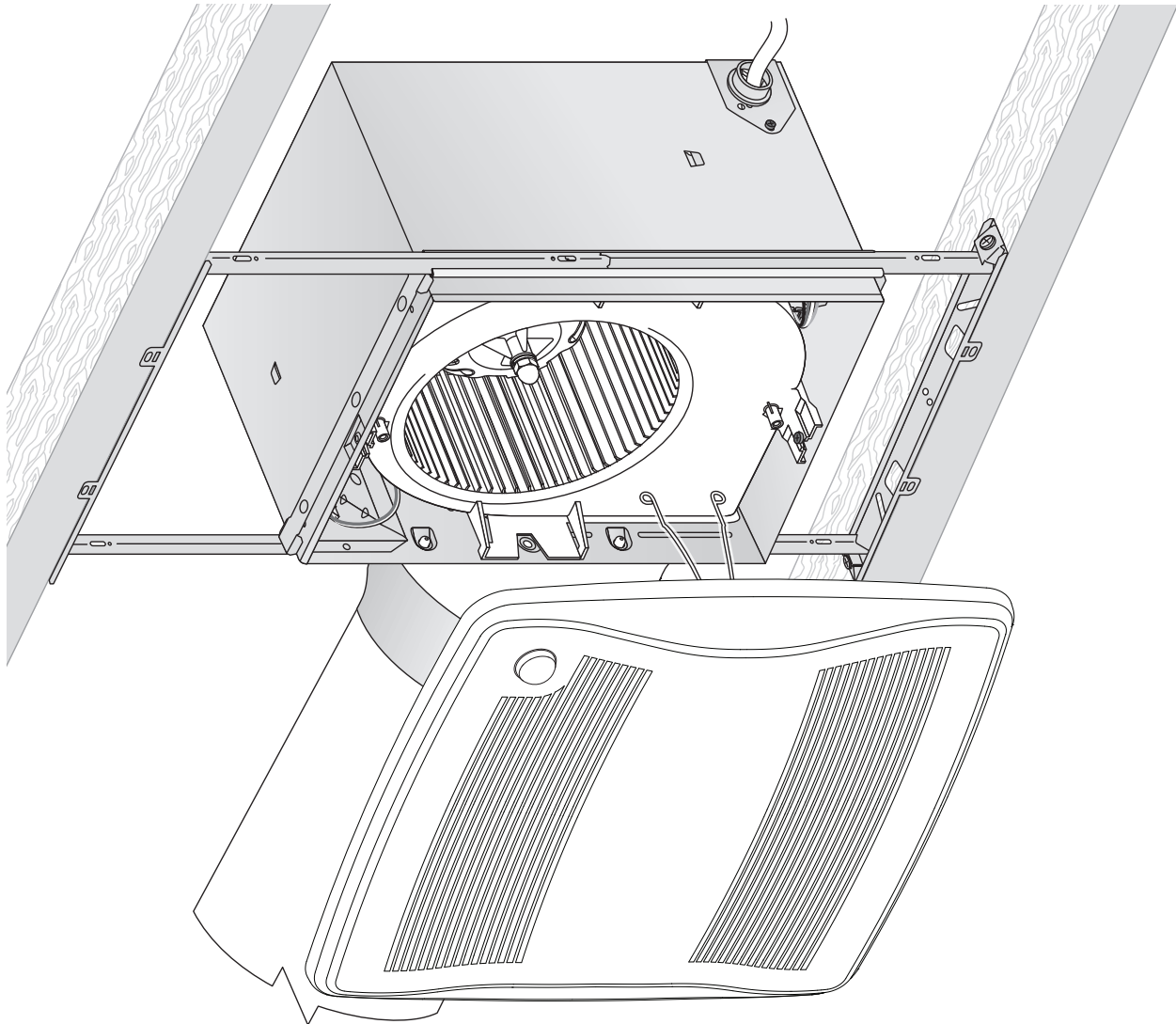
Installer: leave this guide with homeowner.

Register your product online at www.broan.com/register.

ZB80M ■ ZB110M

X2 | Multi-Speed
Ventilation Fan
with Motion Sensor

INSTALLATION GUIDE



**Easy installation in both
new construction and retrofit**

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WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched 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 backdrafting. 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. Use only ON/OFF switch, mechanical timer or relay-switched control.
8. Acceptable for use over a tub or shower when connected to a GFCI (Ground Fault Circuit Interrupter) - protected branch circuit.
9. This unit must be grounded.

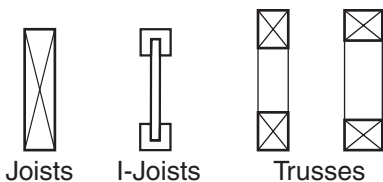
CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. This product is designed for installation in flat ceilings. Sensor will not function reliably if product is not installed in flat ceiling. **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. Please read specification label on product for further information and requirements.

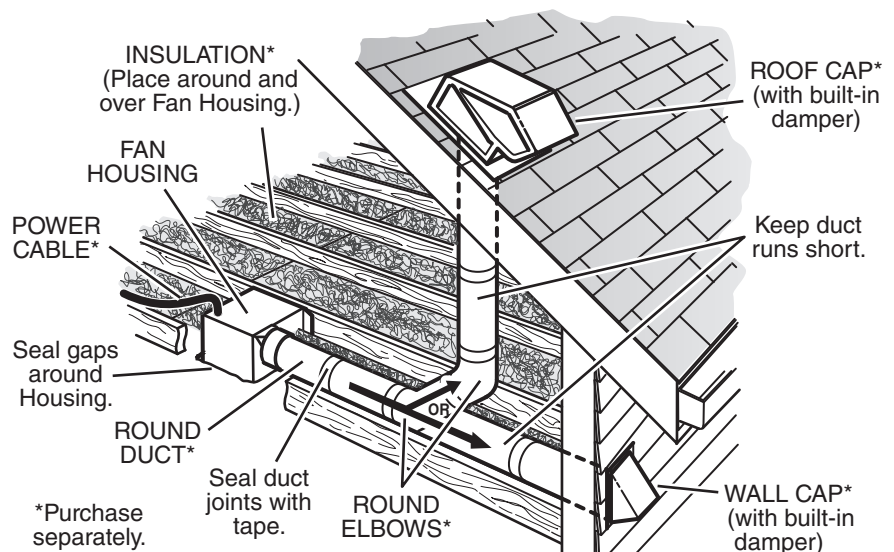


Typical Installation

- Installation is the same for:



- Fits in 2" x 8" ceiling construction.
- Infinitely adjust the fan position between joists from 14" to 24" on center.



The ducting from this fan to the outside of the 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 airflow.

6-inch round rigid metal duct is recommended for best performance.

New Construction Installation

Tools needed

- Power screwdriver with a Phillips bit
- Phillips screwdriver
- Flathead screwdriver
- Pliers
- Wire insulation stripper
- Wire cutter

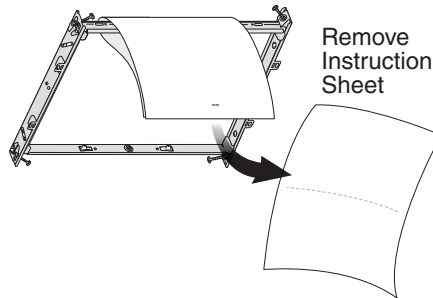
Materials needed

- 6" round metal ducting recommended for best performance.
Use of other ducting is acceptable but may impact performance.
- Roof cap or wall cap (built-in damper recommended)
- Tape to seal duct connections
- Electrical wiring and supplies per local code requirements

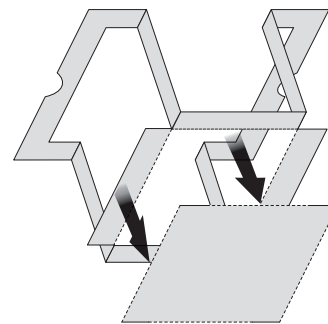
1 Remove Packaging



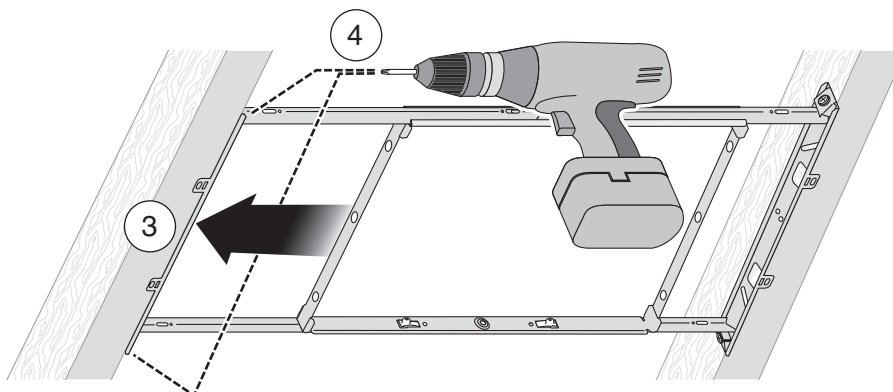
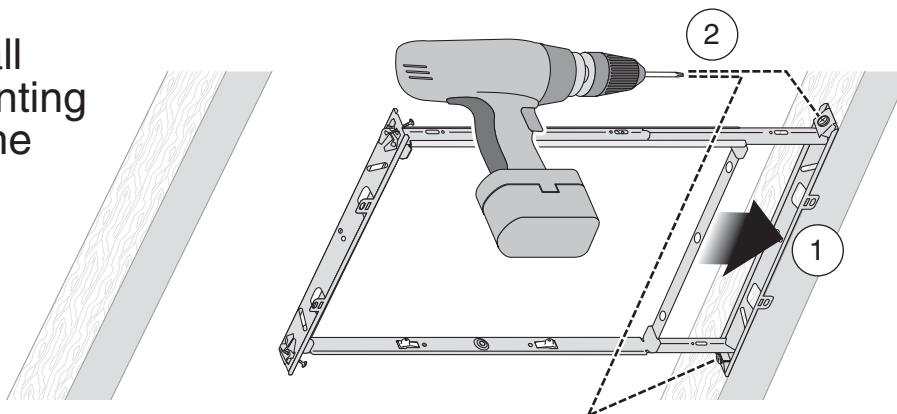
Parts Bag holds Knockout Plate and six (6) screws



Punch out Mask from packaging. See Step 6.

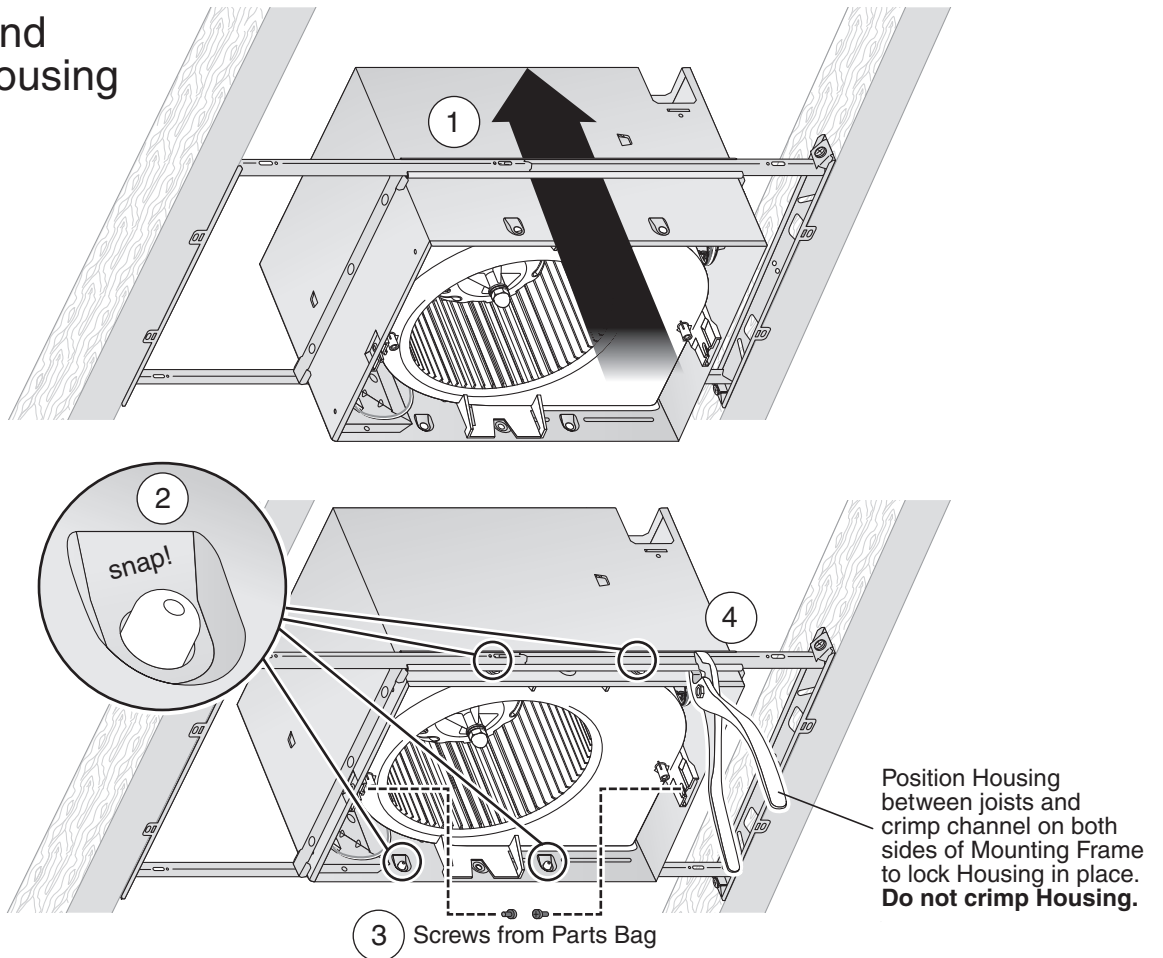


2 Install Mounting Frame

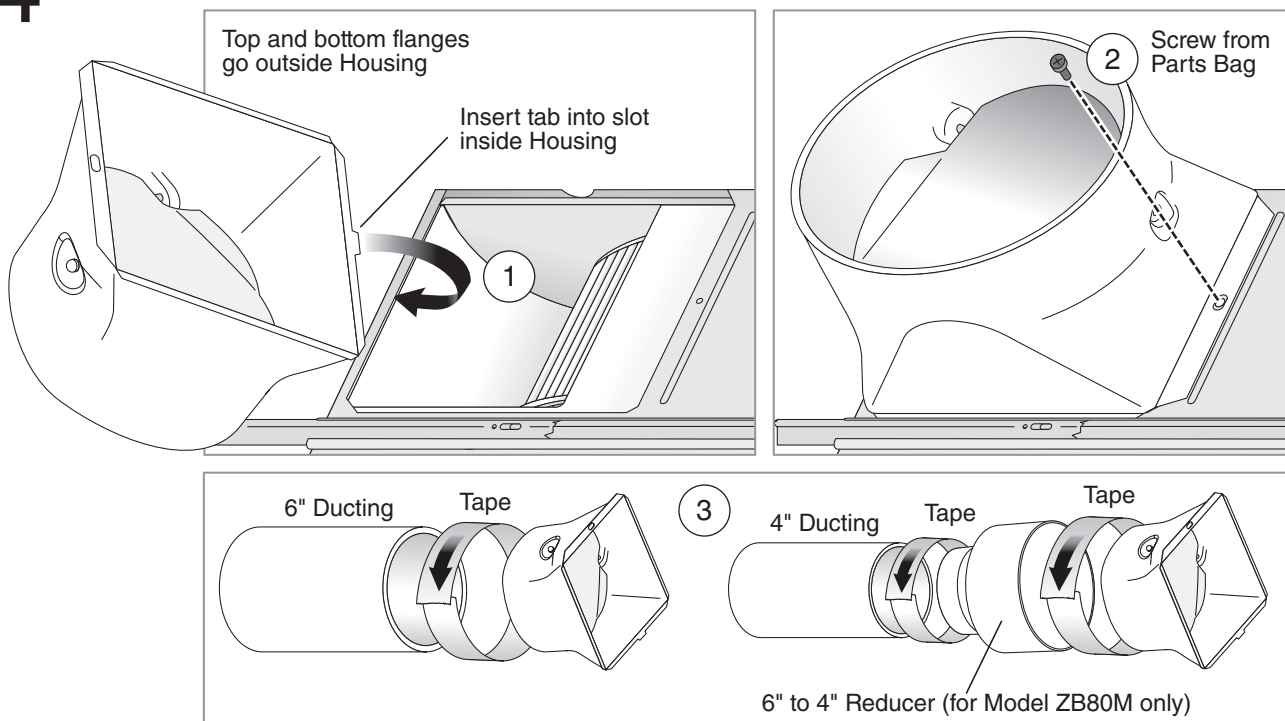


New Construction Installation

3 Snap-in and Secure Housing



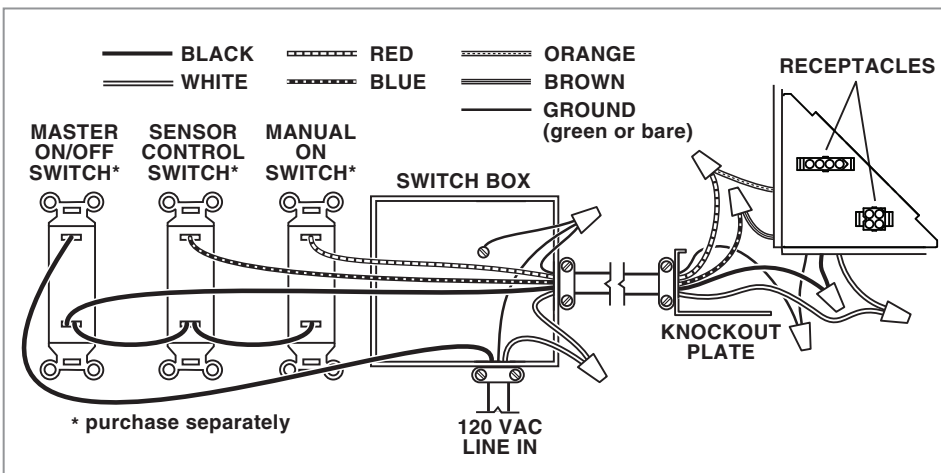
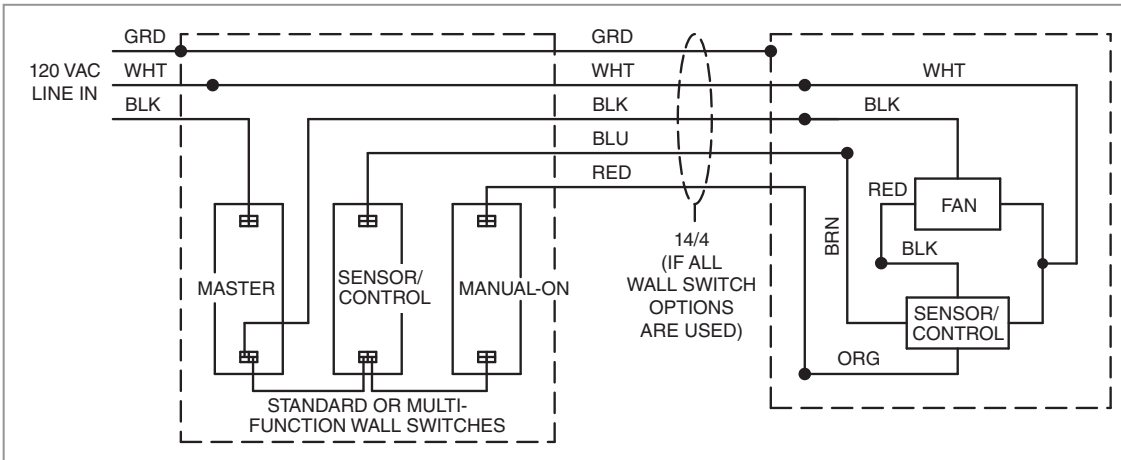
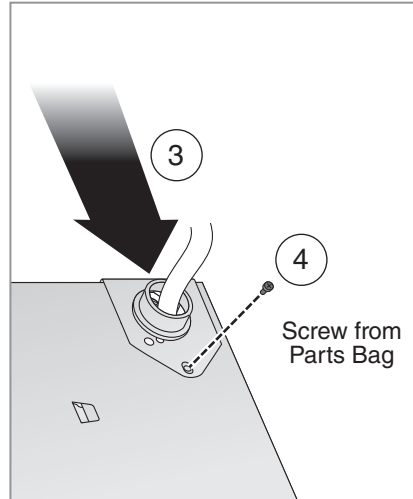
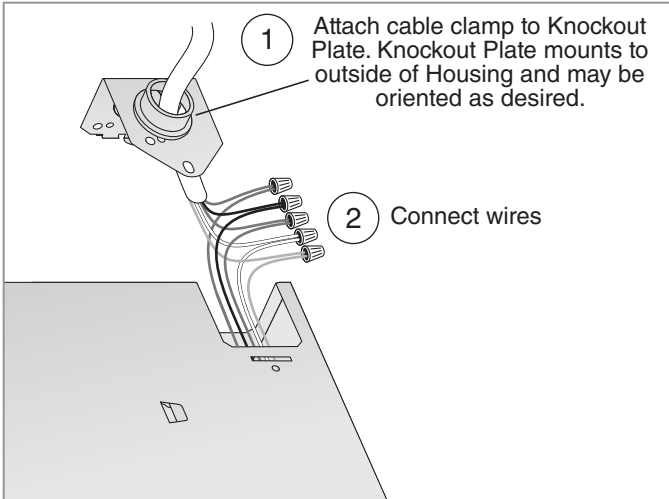
4 Attach Duct Connector and Ducting



New Construction Installation

5 Connect Wires and Install Knockout Plate

- Run 120VAC electrical wiring to the installation location.
- Use proper UL-approved connectors to secure wiring to the Knockout Plate provided in Parts Bag.
- Connect wires as shown in wiring diagram.

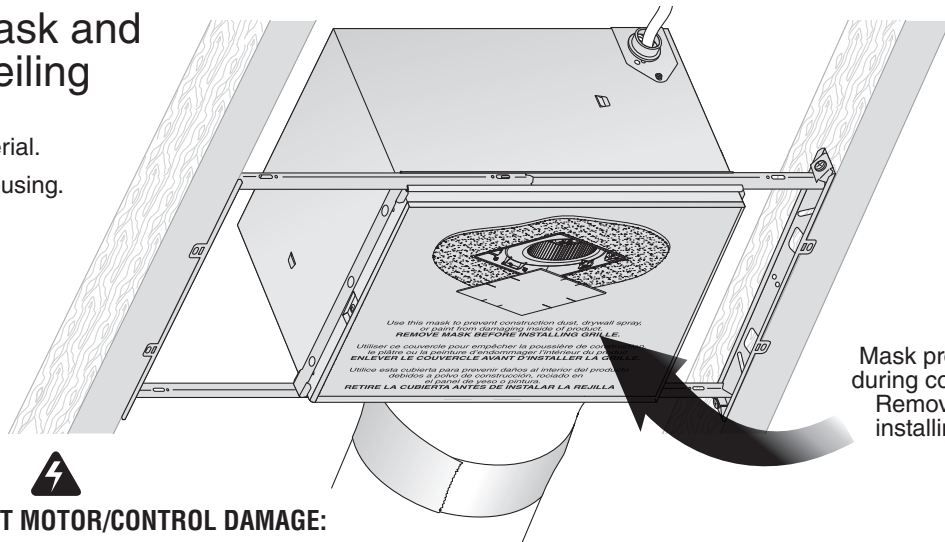


- See OPERATION section on page 12 for details.
- MASTER switch turns fan system on and shuts it off for fan cleaning and maintenance purposes.
- SENSOR/CONTROL switch turns motion control automatic operation on/off.
- MANUAL-ON switch directly increases fan operation to certified airflow rate.
- MASTER and SENSOR/CONTROL switches can be combined (see page 10).
- MASTER switch along with or separate from SENSOR/CONTROL switch may be located where it is not easily accessed for everyday usage; they may need to be labeled and located where it can't be turned on without being seen from fan to comply with local and national codes.

New Construction Installation

6 Insert Mask and Finish Ceiling

- Install ceiling material.
- Cut out around Housing.



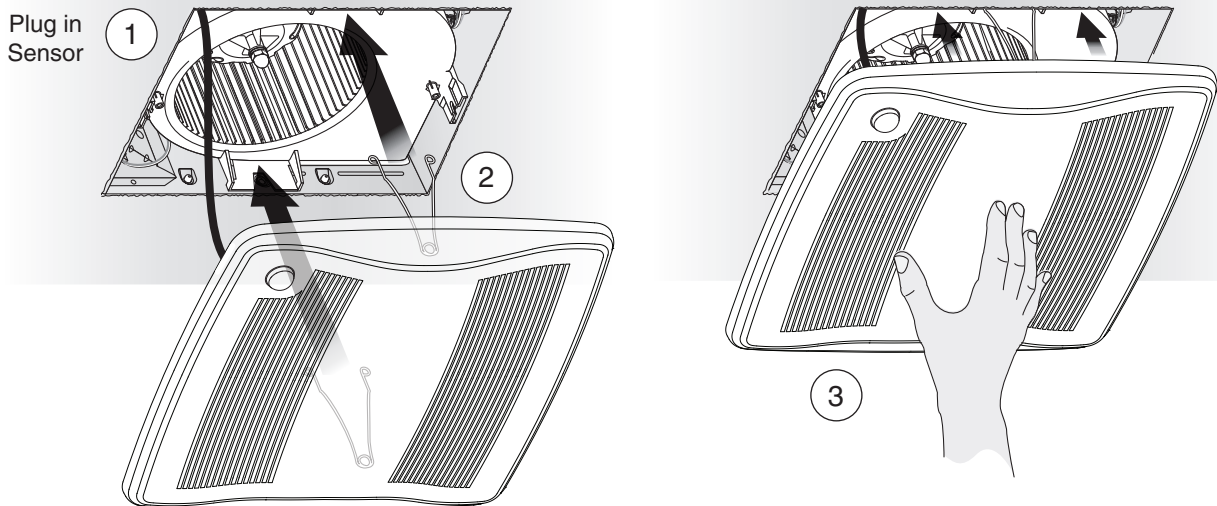
Mask protects unit during construction. Remove before installing Grille.

CAUTION

IN ORDER TO PREVENT MOTOR/CONTROL DAMAGE:

If the blower was unplugged, power must be disconnected (see page 2, WARNING item 2) before inserting motor plugs into control assembly.

7 Install Grille



See Page 12 for Operations, Cleaning and Maintenance, and Troubleshooting.

Retrofit Installation

Tools needed

- Power screwdriver with a Phillips bit
- Phillips screwdriver
- Flathead screwdriver
- Pliers
- Wire insulation stripper
- Wire cutter
- Ruler
- Pencil
- Drywall saw
- Claw hammer or pry bar
- Utility knife

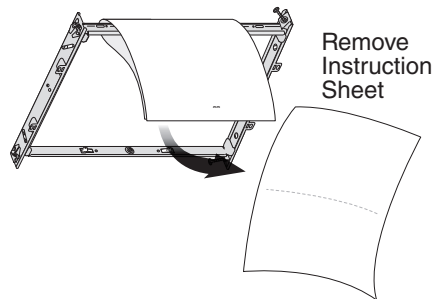
Materials needed

- Tape to seal duct connections
- Existing rigid duct will require the addition of a short length of flexible duct
- Electrical wiring and supplies per local code requirements

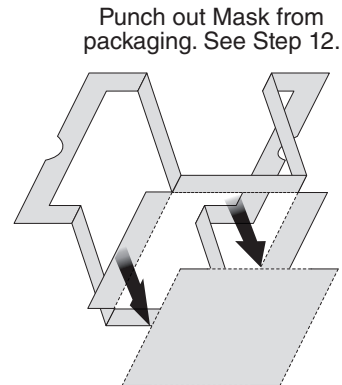
1 Remove Packaging



Parts Bag holds Knockout Plate and six (6) screws



Remove Instruction Sheet



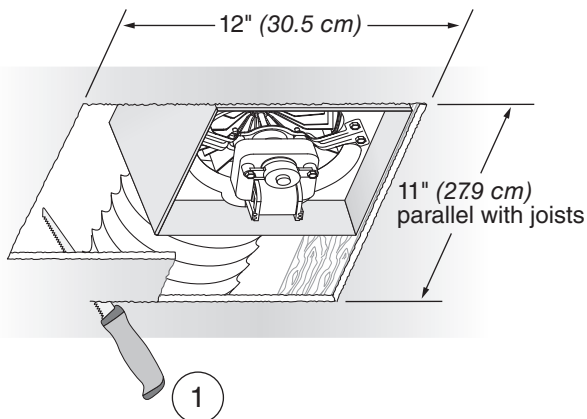
Punch out Mask from packaging. See Step 12.

2 Switch Off Power

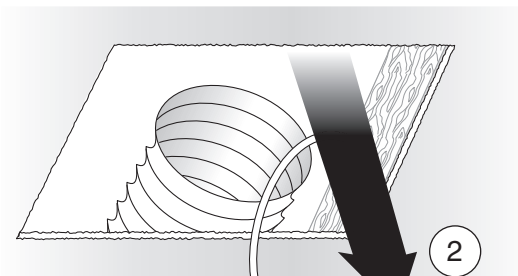
WARNING ⚡

Before removing existing fan, switch power off at service panel and lock the service disconnecting means to prevent power from being switched 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 Enlarge Ceiling Opening and Remove Existing Fan

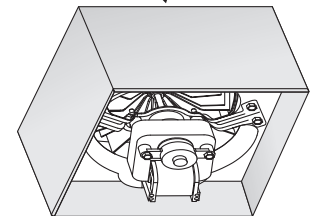


1



Existing ductwork and wiring left in place

2

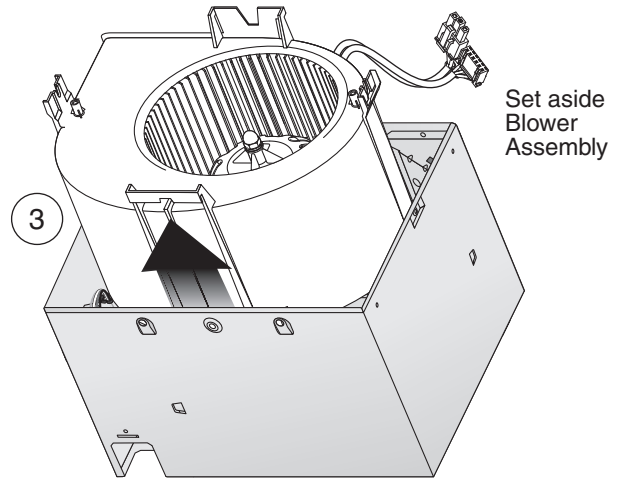
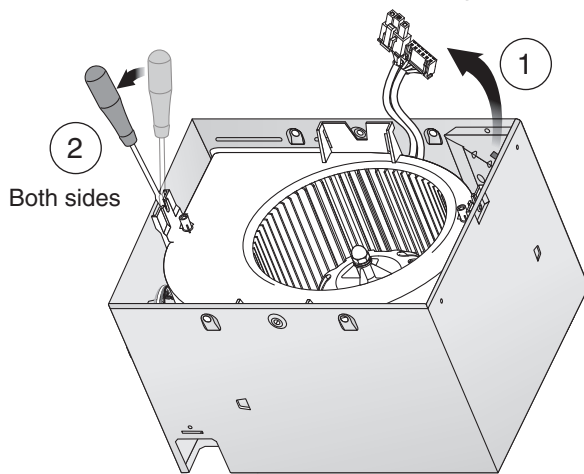


4 Examine Wiring

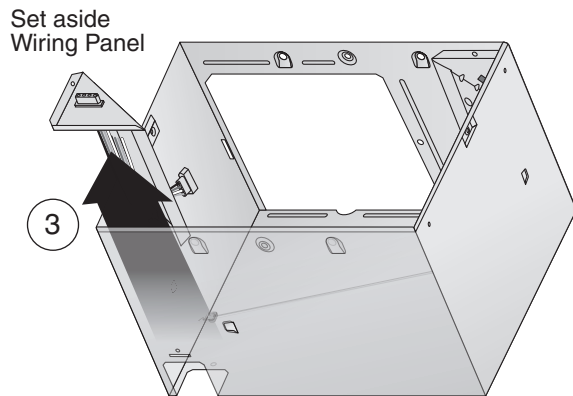
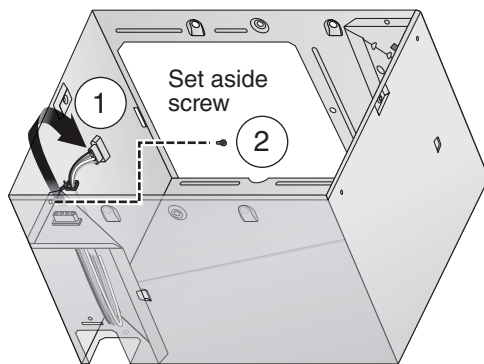
Examine the existing wiring to make sure it is not damaged. If any damage is found, **DO NOT CONTINUE INSTALLATION** of this product. Contact a qualified person(s) for repair.

Retrofit Installation

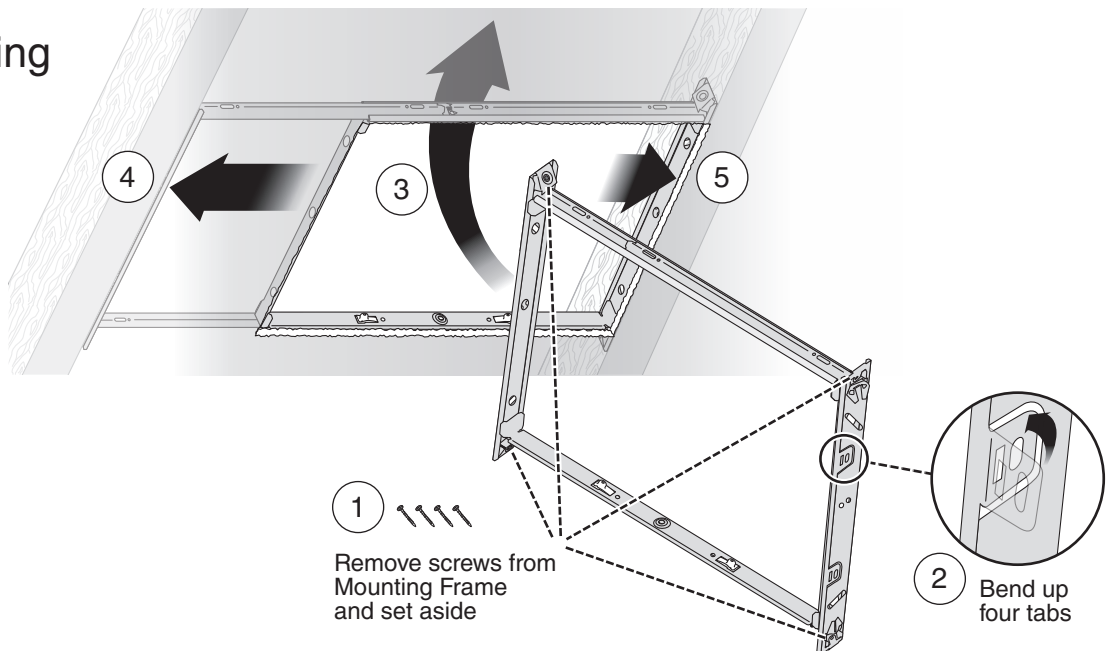
5 Remove Blower Assembly



6 Remove Wiring Panel

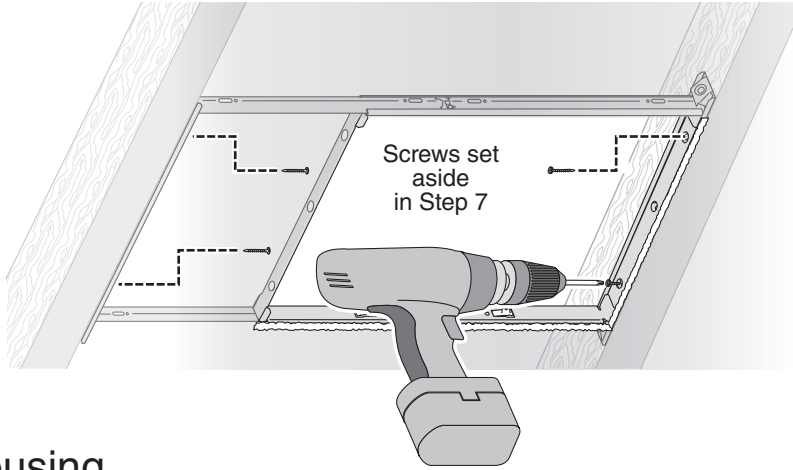


7 Insert Mounting Frame

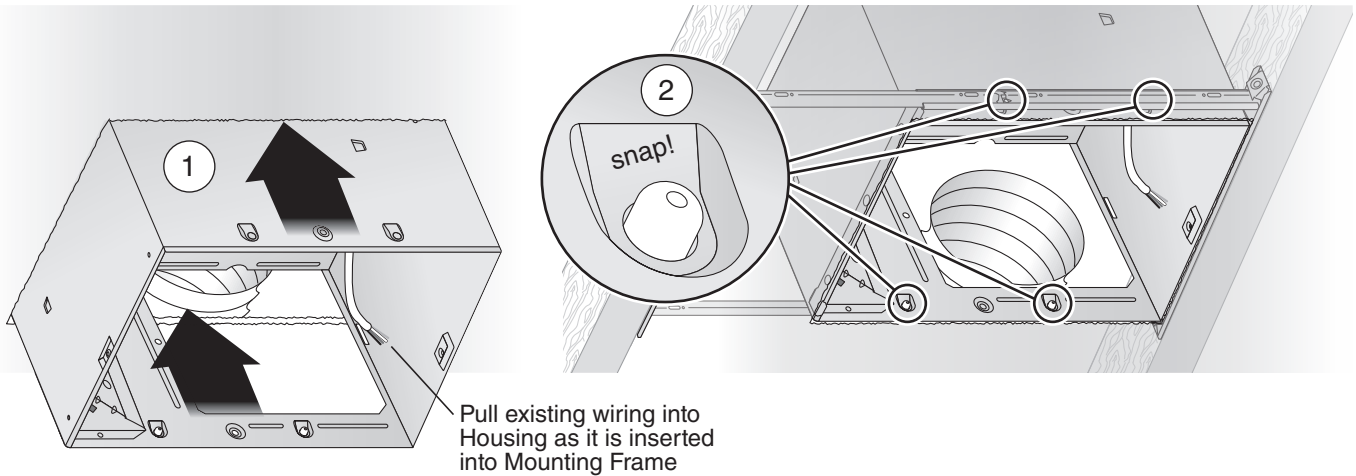


Retrofit Installation

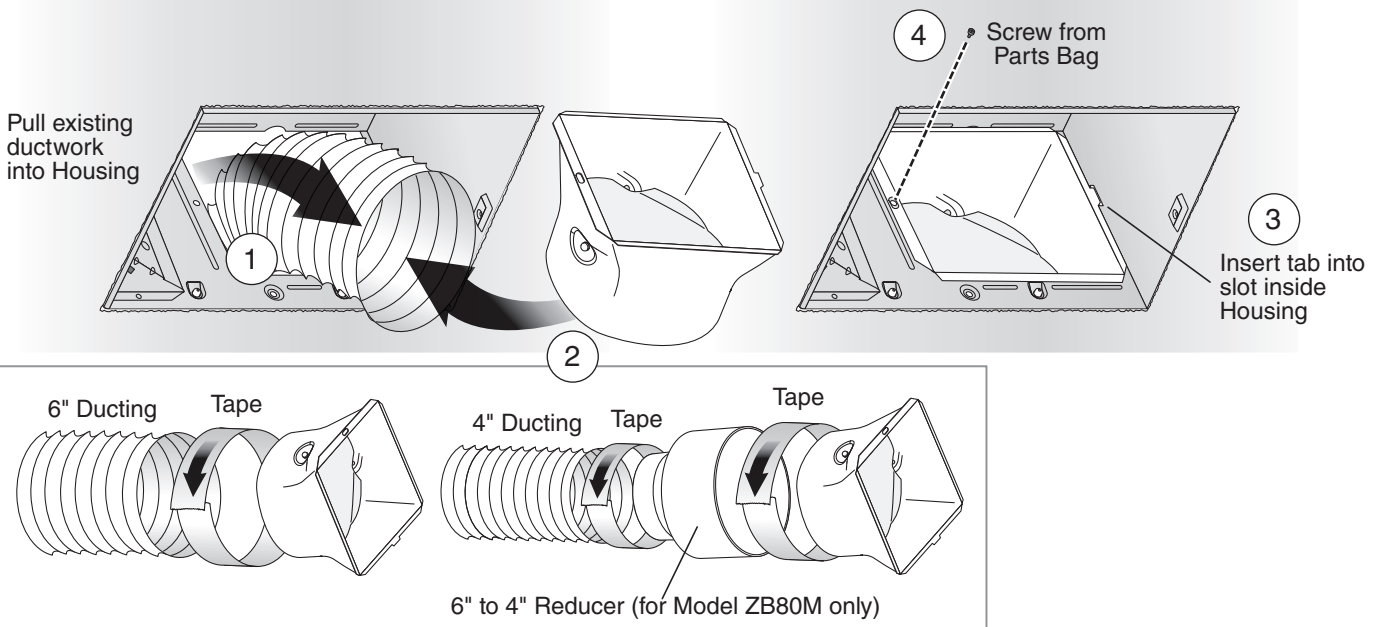
8 Secure Mounting Frame



9 Snap-in Housing



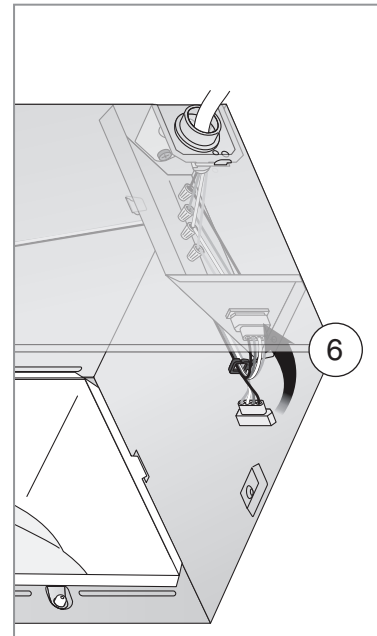
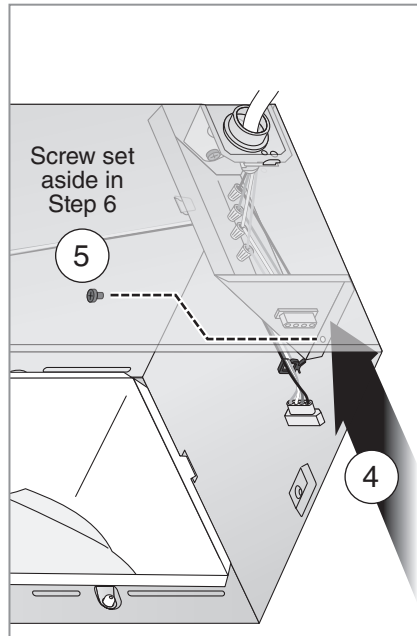
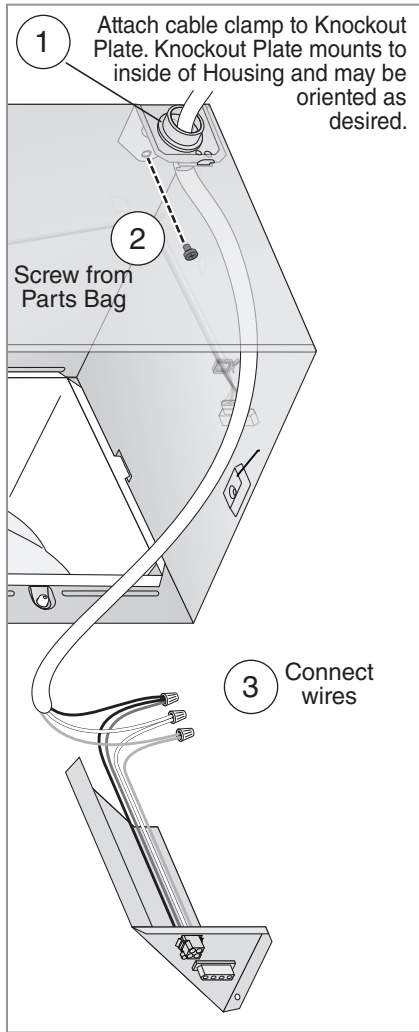
10 Attach Ducting and Duct Connector



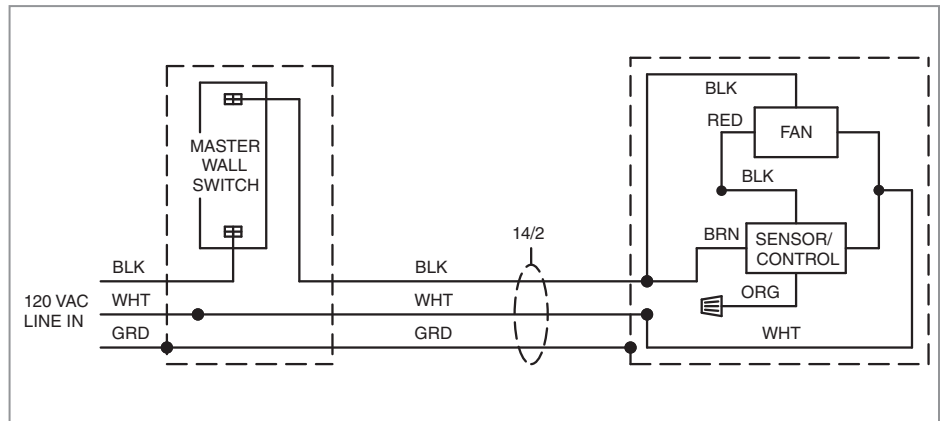
Retrofit Installation

11 Install Knockout Plate, Connect Wires and Reinstall Wiring Panel

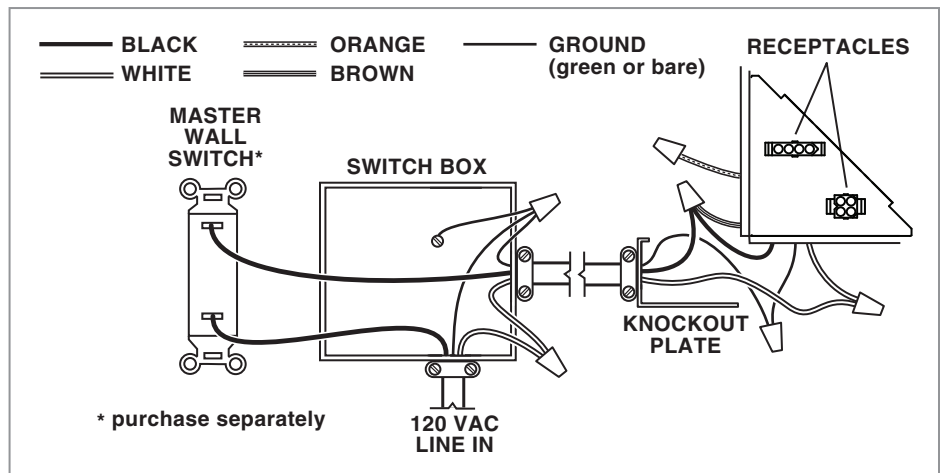
- Use proper UL-approved connectors to secure wiring to the Knockout Plate provided in Parts Bag.
- Connect wires as shown in wiring diagram.



3 Connect wires



- See OPERATION section on page 12 for details.
- MASTER switch turns fan system on along with motion control and shuts them off for cleaning and maintenance purposes.
- MASTER switch may be located where it is not easily accessed for everyday usage; it may need to be labeled and located where it can't be turned on without being seen from fan to comply with local and national codes.

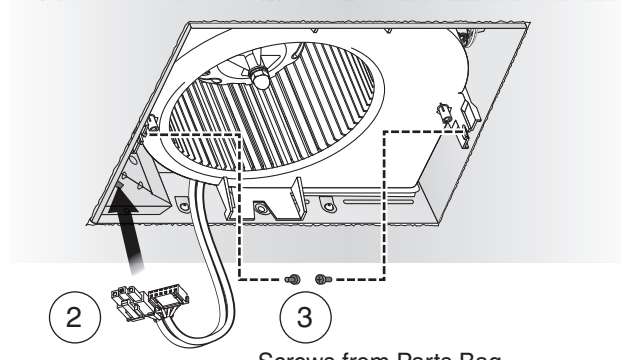
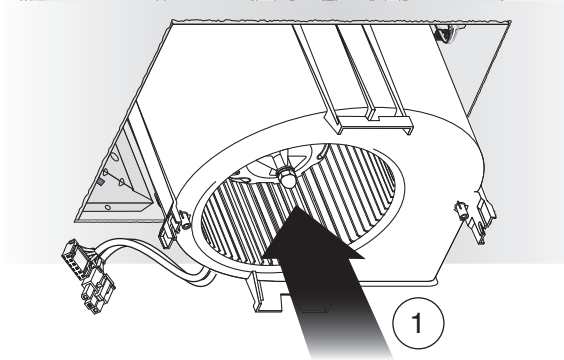


Retrofit Installation

12 Reinsert and Secure Blower Assembly

CAUTION ⚠ ⚡ **IN ORDER TO PREVENT MOTOR/CONTROL DAMAGE:**

Power must be disconnected (see page 2, WARNING item 2) before inserting motor plugs into control assembly.

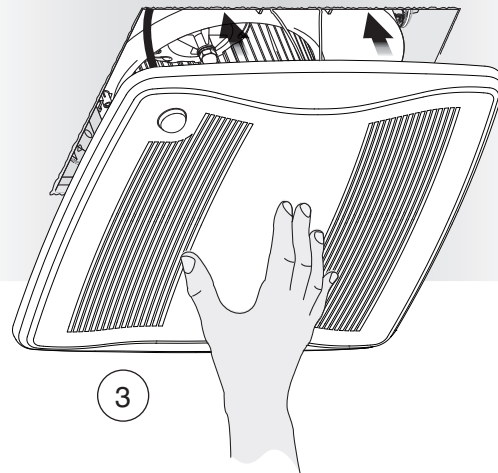
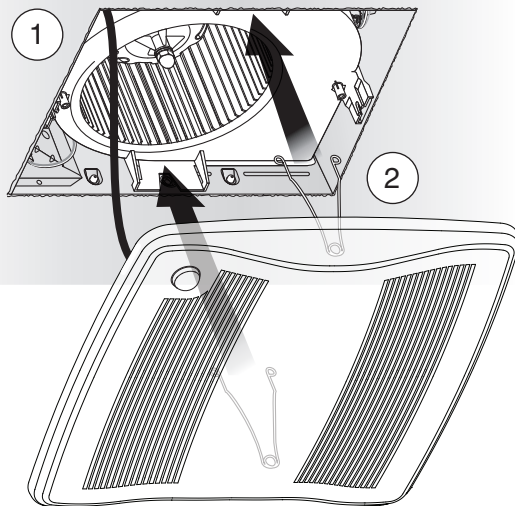


Screws from Parts Bag

If ceiling repairs are needed, place Mask in Housing after Blower Assembly is secured. See New Construction Installation Step 6. Remove Mask before installing Grille.

13 Install Grille

Plug in Sensor



WARNING ⚠ Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

Operation

It is normal for this ventilation fan to take approximately 5 seconds to start running after it is turned on.

Modes

(For reference, wiring diagrams are on pages 5 and 10.)

Continuous ventilation:

1. Turn master wall switch on.
2. Fan operates at user-adjustable airflow rate.

Motion sensing:

1. If master wall switch is not already on, turn it on.
2. Turn sensor/control wall switch on. Some installations may not have a separate sensor/control wall switch; where it is combined with master wall switch.
3. Fan operates at certified airflow rate and sensor detects motion.
4. When no more motion is detected, fan enters time delay mode. (See below.)

Manual-on (optional manual-on wall switch must be installed):

1. Turn master and manual-on wall switches on (sensor/control wall switch can be on or off).
2. Fan operates at certified airflow rate.
3. When manual-on wall switch is turned off, fan enters timed-off mode. (See below.)

Time Delay:

Fan continues to run at certified airflow rate until user-adjustable TIME delay has passed, then fan reverts to user-adjustable airflow rate.

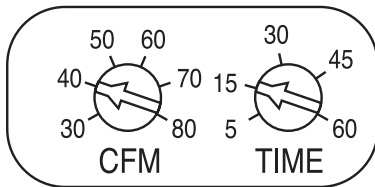
To Set the User-Adjustable Airflow Rate*

Using a small, flat-blade screwdriver, carefully rotate the CFM adjustment until the arrow points to the desired airflow rate.

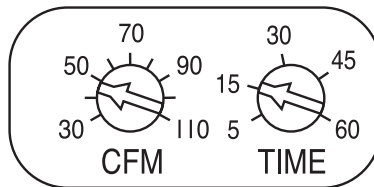
To Set the User-Adjustable Time Delay*

Using a small, flat-blade screwdriver, carefully rotate TIME adjustment until the arrow points to the desired minutes of time delay.

* *The user-adjustable controls are located in one corner of the Fan Housing, behind the Grille.*



ZB80M User-adjustable controls



ZB110M User-adjustable controls

Cleaning and Maintenance

CAUTION ⚠ ⚡

IN ORDER TO PREVENT MOTOR/CONTROL DAMAGE:

DO NOT remove motor plug to stop spinning motor.

Power must be disconnected (see WARNING at top left of this page) before motor plug is removed or inserted into control assembly.

To Clean

For quiet and efficient operation, long life and attractive appearance, remove Grille and vacuum interior of unit with a dusting brush attachment.

Do not use cleaning sprays, solvents or water on, or near, the sensor.

Motor is permanently lubricated and never needs oiling. If motor is making excessive or unusual noises, replace Control Assembly and Motor.

To Turn Fan OFF

Turn the master switch OFF.

Troubleshooting

Before continuing, turn off power as previously noted in WARNING and CAUTION sections at the top of the previous page.

Symptom: Fan does not run.

- Check for an open fuse or circuit breaker in building's service panel.
- Check two (2) plug-in connections for Motor and its Control are seated firmly in place.
- Check two (2) plug-in connections for Sensor and its Control are seated firmly in place.
- Check that Blower Wheel spins freely.

Symptom: Motion mode does not operate fan at certified air flow rate.

- Check two (2) plug-in connections for Sensor and its Control are seated firmly in place.

Symptom: Fan runs erratically.

- Check that Blower Wheel is firmly attached to Motor shaft and both spin freely.

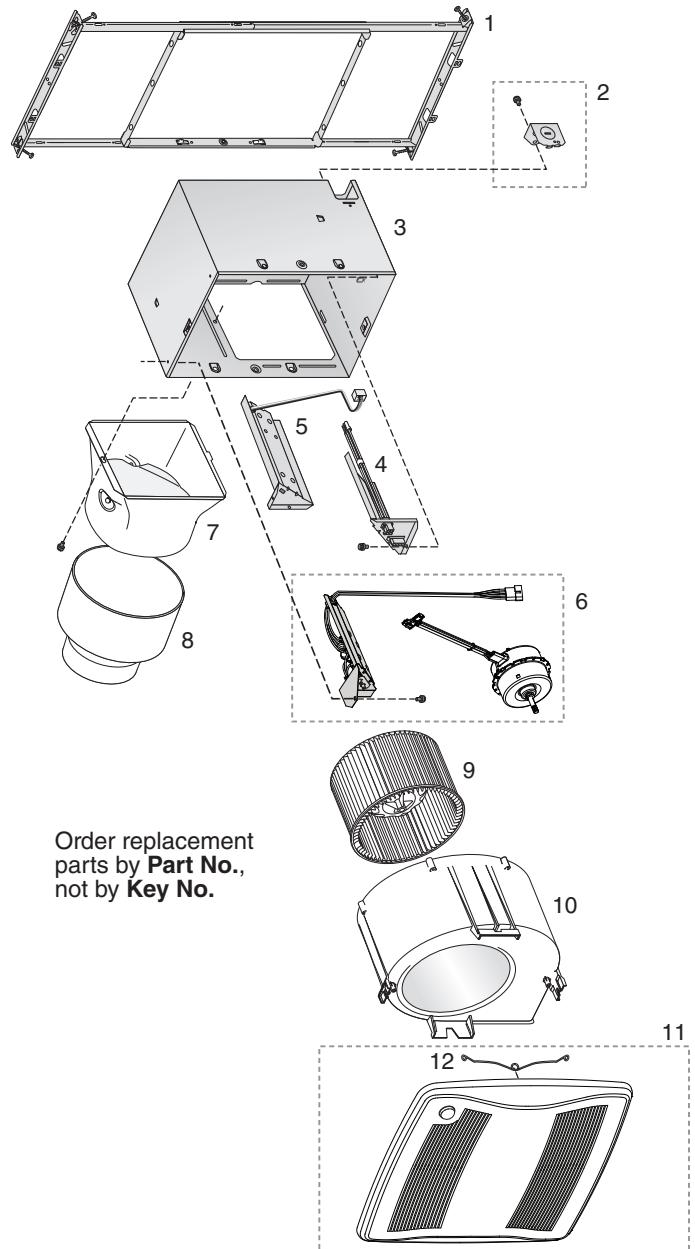
Symptom: Fan seems noisy.

- Check that back draft damper in fan's Duct Connector pivots freely. Screws used to attach duct to Duct Connector may prevent damper from opening.
- Check that back draft damper in wall or roof cap pivots freely. Dampers are sometimes mistakenly painted shut or obstructed by bird or insect debris.

Symptom: Fan does not properly ventilate room.

- For spot ventilation, turn both master switch and sensor/control wall switch ON, so sensor/control operates fan at certified airflow rate.
- For spot ventilation followed by continuous ventilation, increase the "TIME" setting of user-adjustable time delay.
- For continuous ventilation, increase "CFM" setting of user-adjustable airflow rate.

Service Parts



Order replacement parts by **Part No.**, not by **Key No.**

Key No.	Part No.	Description
1	97018349	Mounting Frame
2	97018721	Knockout Plate & Screws
3	97018382	Housing
4	97018472	Wiring Panel/Harness Assembly
5	97018846	Motion Control Assembly
6	1102582	Control Assembly & Motor (ZB80M)
	1102583	Control Assembly & Motor (ZB110M)
7	97018331	Duct Connector
8	99111513	6" to 4" Reducer (ZB80M only)
9	99020301	Blower Wheel
10	97019371	Scroll Assembly (ZB80M)
	97018768	Scroll Assembly (ZB110M)
11	97018775	Grille Assembly (includes 12)
12	99140208	Grille Spring (2 req'd)