



Installation, Operation and Maintenance Manual

EQUIPMENT: Greenheck Exhaust Fans

TAGS: EF-1, 2, and 3

PROJECT: Hightower Park Improvements

LOCATION: West Memphis, AR

ENGINEER: Chad Stewart & Associates Inc.

CONTRACTOR: **COMFORT SYSTEMS USA**
A R K A N S A S

DATE: 12/12/2024

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Job Name: Hightower Park Improvement West Memphis

Product IOMs

Mark Name	Model Name
EF-2, EF-1	CSP
EF-3	SP

Installation, Operation and Maintenance Manual

Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.

Direct Drive Ceiling Exhaust Fan

Designed for clean air applications where low sound levels are required. Many options and accessories are available such as lights, motion detectors, ceiling radiation dampers and speed controls.



Direct Drive Inline Exhaust Fan

Designed for clean air applications where low sound levels are required.



WARNING!

To reduce the risk of fire, electric shock, or injury to persons, observe the following:

- Suitable for use with solid state speed controls.
- Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- Before servicing or cleaning unit, switch power off at service panel and lock 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.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- 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.
- When cutting or drilling into wall or ceiling, do not damage electrical wiring or other hidden utilities.
- Select models are acceptable for use over a bathtub or shower when installed in a GFCI protected branch circuit. (Up through size SP-A390)
- Never place a switch where it can be reached from a tub or shower.
- Ducted fans must always be vented to the outdoors.
- These fans are not recommended for cooking exhaust applications. They are designed primarily for low temperature, clean air applications only. The diagram shows the minimum distance these fans should be placed in relation to cooking equipment.
- Fan/Light combination not to be installed in a ceiling thermally insulated to a value greater than R40.

CAUTION!

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

AVERTISSEMENT!

Pour réduire le risque d'incendie, de choc électrique ou de blessure corporelle, respecter ce qui suit:

- Appareil pouvant être utilisé avec un régulateur de vitesse à semi-conducteurs.
- Utiliser cet appareil exclusivement comme prévu par le fabricant. En cas de questions, communiquer avec le fabricant à l'adresse ou au numéro de téléphone figurant dans la garantie.
- Avant tout entretien ou nettoyage de l'appareil, couper l'alimentation sur le tableau électrique et verrouiller le dispositif de sectionnement pour empêcher toute mise sous tension accidentelle. Si le dispositif de sectionnement ne peut pas être verrouillé, attacher un moyen de mise en garde bien visible, tel qu'un panneau, au tableau électrique.
- La pose et le câblage électrique doivent être effectués par des personnes qualifiées en conformité avec les codes et normes en vigueur, y compris pour la résistance au feu du bâtiment.
- Une quantité d'air suffisante est nécessaire pour la bonne combustion et l'extraction des gaz brûlés par le conduit d'évacuation (cheminée) d'appareils à combustible afin d'éviter le refoulement. Veiller à suivre les indications du fabricant du matériel de chauffe, les normes de sécurité telles que celles publiées par la National Fire Protection Association (NFPA) et l'American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) et la réglementation en vigueur.
- Lors de la découpe ou du perçage de murs ou plafonds, ne pas endommager les câbles électriques et autres conduites masquées.
- Certains modèles (jusqu'au modèle SP-A390 inclus) sont approuvés pour une installation au-dessus d'une baignoire ou d'une douche sous réserve d'être raccordés à un circuit de dérivation protégé par un DDFT.
- Ne jamais placer d'interrupteur à un emplacement à portée d'une baignoire ou d'une douche.
- Les caissons d'extraction à gaine doivent toujours être évacués vers l'extérieur.
- Ces caissons ne sont pas conseillés pour les applications d'aspiration de vapeurs de cuisson. Ils sont conçus essentiellement pour l'aspiration d'air propre à basse température. Le schéma indique la distance minimale de placement de ces caissons par rapport à l'équipement de cuisson.
- Le combiné ventilateur/luminaire ne devra pas être installé dans un plafond ayant une isolation thermique d'une valeur supérieure à R40.

ATTENTION!

- À utiliser pour la ventilation générale uniquement. Ne pas utiliser pour l'aspiration de matières et vapeurs dangereuses ou explosives.

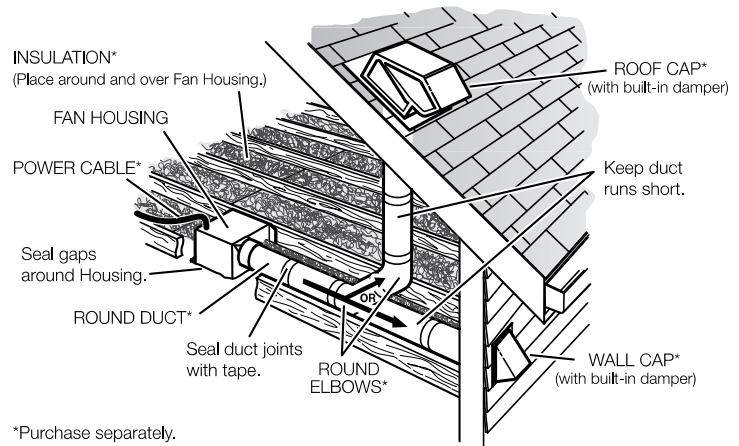
Typical Installation

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.

Rigid metal duct is recommended for optimal fan performance.

Ensure duct joints and exterior penetrations are sealed with caulk or other similar material to create an air-tight path and to minimize building heat loss and gain and reduce the potential for condensation.

Place/wrap insulation around duct and/or fan to in order to minimize possible condensation buildup within the duct, as well as minimize building heat loss and gain.



Energy Star® Certified Fan Model/Size	Recommended Duct Dimensions
SP-A70, SP-A90, SP-A50-90-VG, SP-A90-130-VG, SP-B70, SP-B80, SP-B90	6 inch round
SP-A110, SP-A125, SP-A190	8 x 6 inch rectangular
SP-A200, SP-A250	8 x 8 inch rectangular

Other Installation Considerations

Ductwork and Noise

Fiberglass ductboard is a better choice than metal ductwork for reducing fan noise and is highly recommended for low sound applications. Where metal duct is used, sound transmission can be reduced with flexible duct connections between the fan and the duct.

Sound and Location

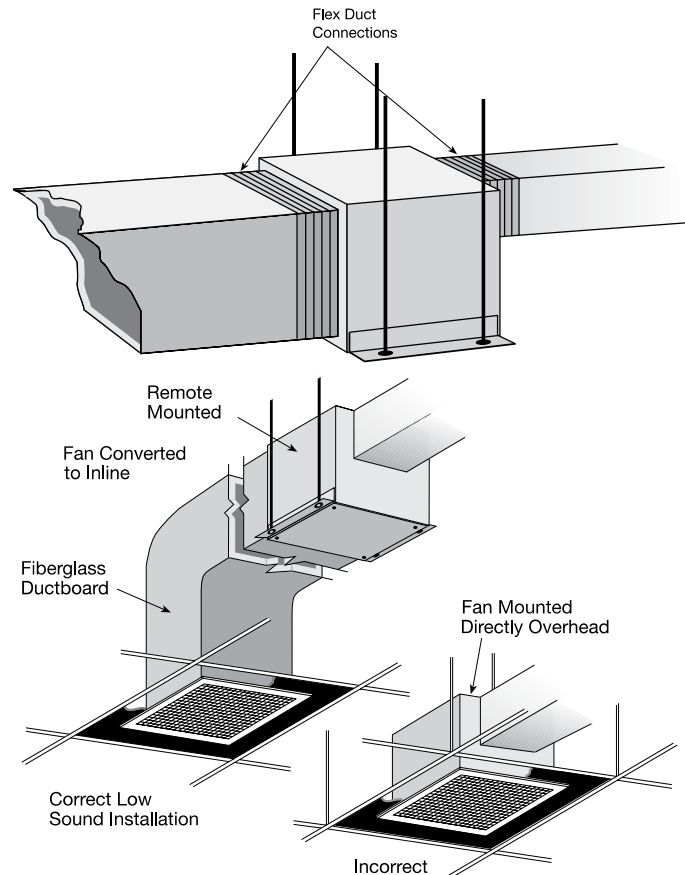
The location of these fans must be taken into consideration before installation. In critical sound installations, insulated ductwork, flexible duct connections or placing the fan in a remote section of ductwork are solutions to meeting the required fan sound levels.

Filters

The addition of an intake filter is highly recommended for these fans, even in clean air environments excess dirt can accumulate on wheels and motors causing reduced performance and imbalance.

Filters, once installed, should be checked and cleaned periodically to maintain performance.

Washable aluminum mesh filters specifically designed for these fans are available, please consult your representative for more information.

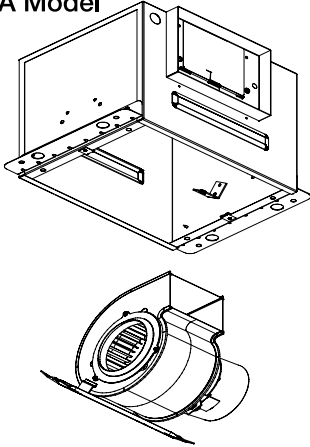


Prepare the Fan

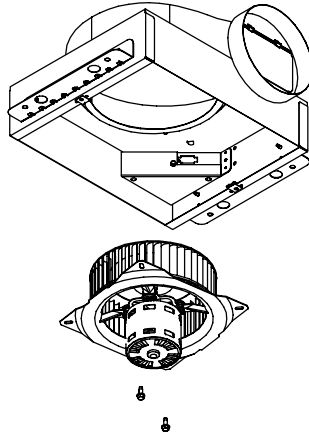
Power Assembly

If power assembly (motor, wheel, and scroll) is not installed in housing, insert the electrical plug into fan socket, then slide scroll end of power assembly into fan housing. Attach by using two sheet metal screws provided.

A Model

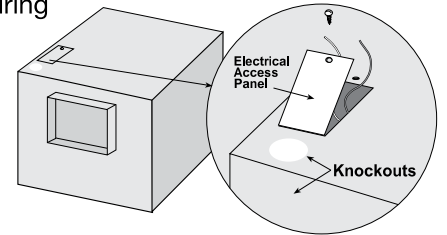


B Model



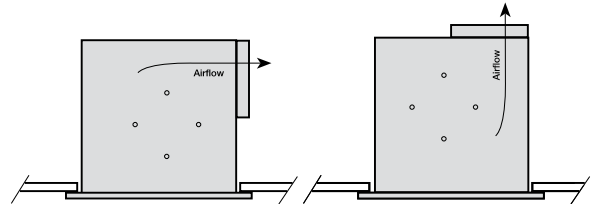
Remove Wiring Knockout

Remove either top or side wiring knockout, depending on wiring direction, by bending it back and forth to break tabs.



Ductwork

Check ductwork to see if the fan's discharge requires rotation from horizontal to vertical discharge.

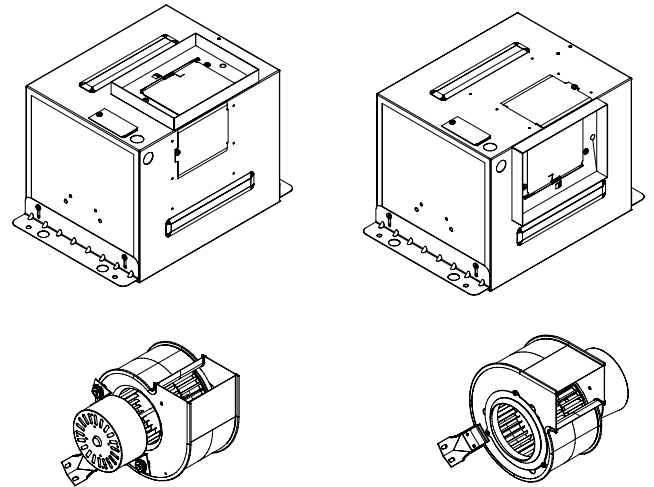


Fan Rotation

To rotate from horizontal to vertical discharge
A Models Only

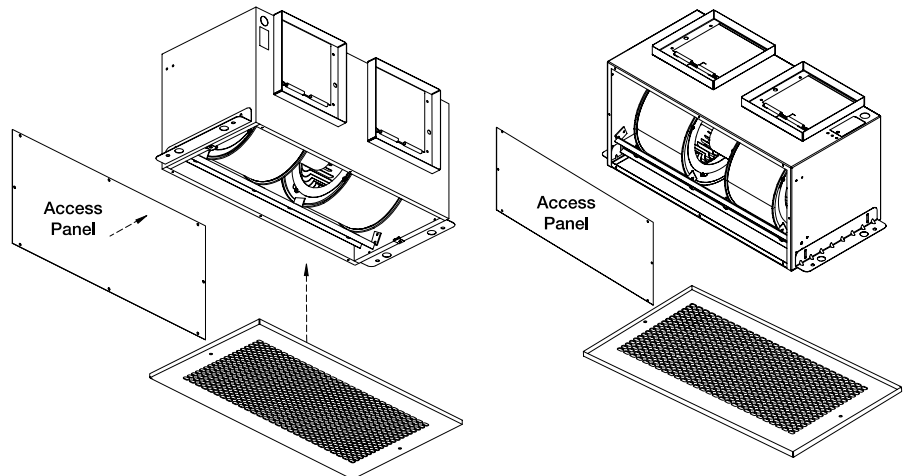
A50-510, 710, 780 Models

Remove the two screws holding the power assembly in and pull power assembly out. Rotate power assembly 180 degrees and put back into fan. Use the same screws to reattach power assembly to fan housing. Flip fan over and remove the four screws holding the discharge duct and damper assembly. Exchange the assembly with plate mounted on top of fan, as shown in these illustrations.



A700, 900-1500 Models

Remove the eight screws holding the access panel or collar as shown in picture. Rotate the fan housing so the discharge is facing up. Replace access panel or collar and screws.



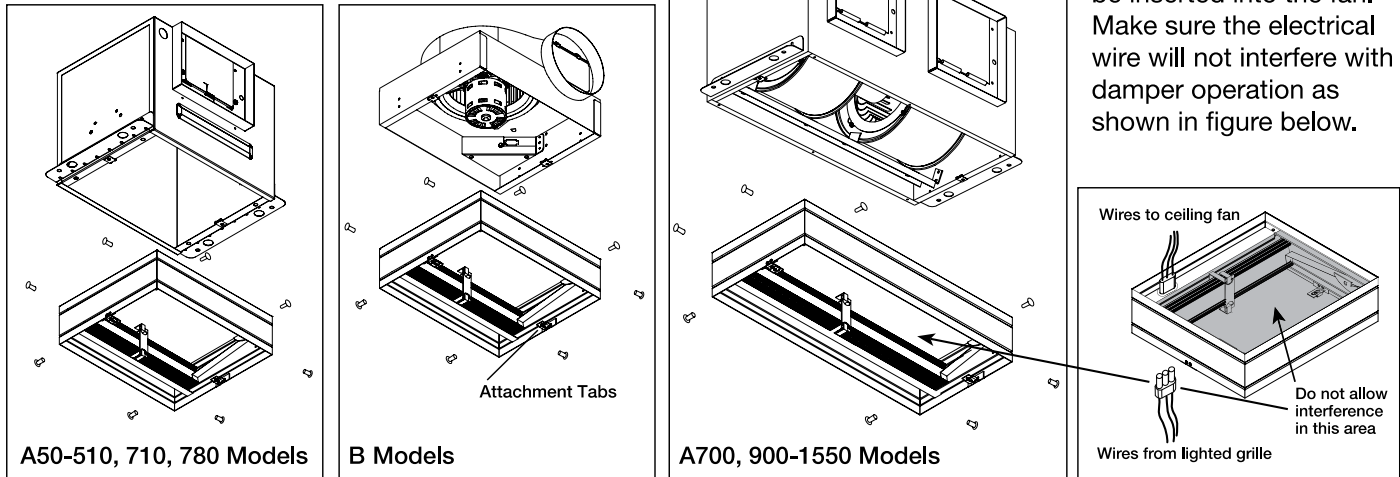
Ceiling Radiation Damper (CRD)

If fan is to be used in a fire resistive membrane ceiling, a ceiling radiation damper must be used.

If the ceiling radiation damper is already mounted to the fan from the factory, proceed to Install the Fan.

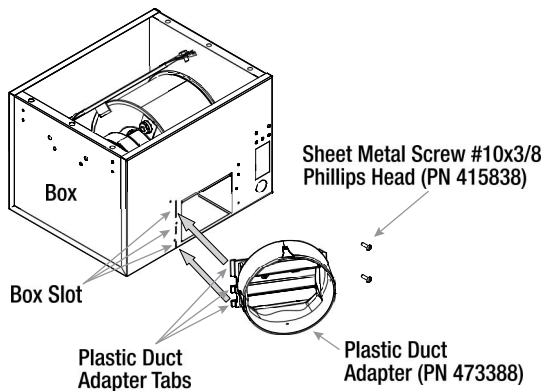
To mount the ceiling radiation damper to fan, make sure grille attachment tabs are facing down. Then place the inlet part of the fan into the ceiling radiation damper collar, and use self-tapping sheet metal screws (by others) to screw through the damper collar and into the fan housing. If the fan/light combination is being used, make sure ceiling

radiation damper has an electrical plug in it. The electrical plug must be inserted into the fan. Make sure the electrical wire will not interfere with damper operation as shown in figure below.

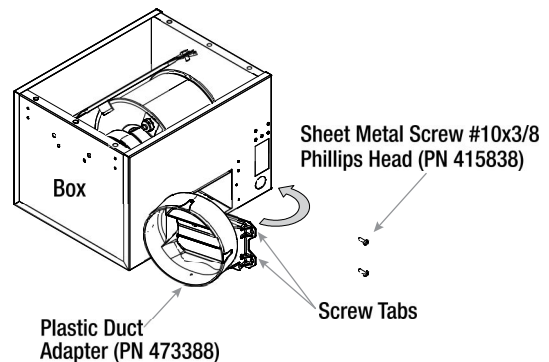


Discharge Installation A50-90 Models

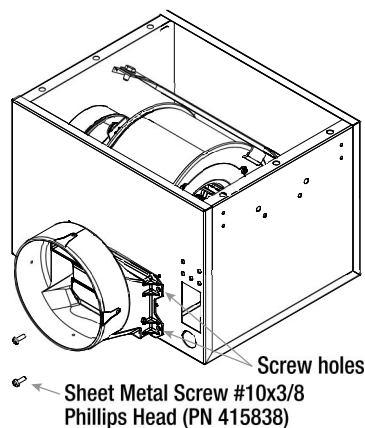
1 Insert plastic duct tab into box slots.



2 Rotate plastic duct adapter (PN 473388) until the screw tabs meet the box.

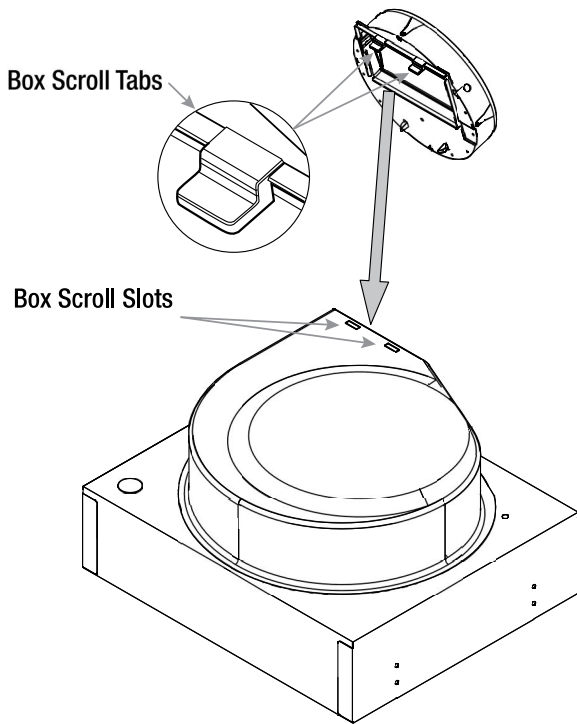


3 Install screws provided to secure discharge.

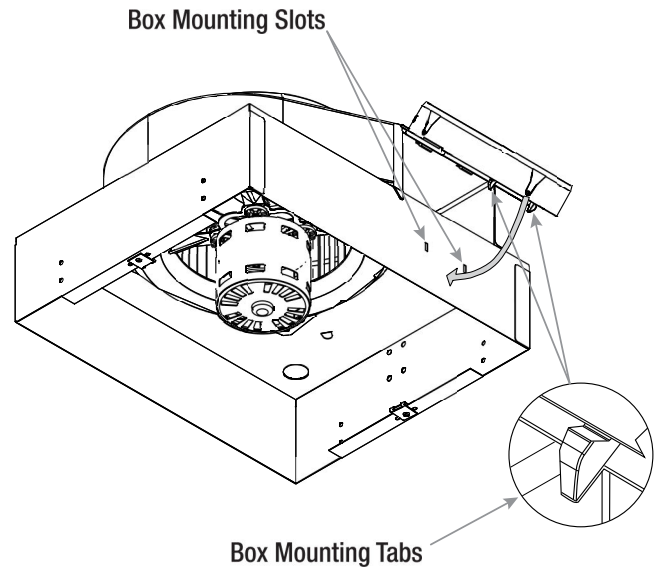


Discharge Installation for Ceiling and Inline Exhaust Models Sizes B50-200

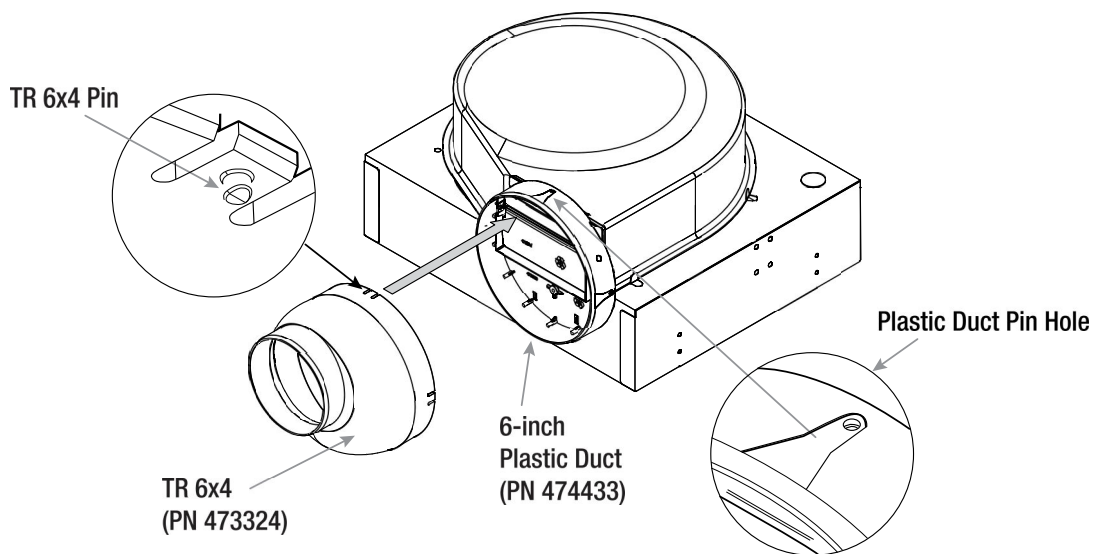
1 Insert box scroll tab into box scroll slots.



2 Rotate plastic duct adapter (PN 474433) until the two mounting tabs fully engage into the two box mounting slots.



3 **OPTIONAL**
Align the pins on the TR 6x4 adaptor to the duct pin hole on the 6-inch duct. Push until the adaptor snaps into place.



Install the Fan

- For best performance, choose a location with the shortest possible duct run and minimum number of elbows. Do not mount near cooking equipment, as shown in Fig. 1.

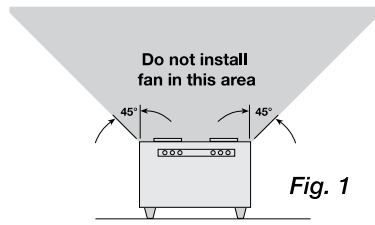


Fig. 1

- Attach adjustable mounting brackets to fan, but leave the screws loose until proper height is determined, shown in Fig. 2. Cut hole to dimensions shown in table below:

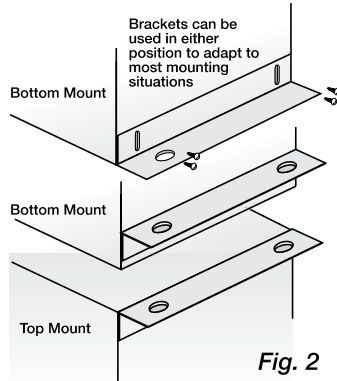


Fig. 2

Ceiling Openings		
Ceiling Exhaust Sizes	Fan or Fan/Light	Fan/CRD
A50, A70, A90, A50-90-VG, A90-130-VG, A110, A125, A190	10 ⁷ / ₈ x 13 ³ / ₈	11 ¹ / ₈ x 13 ⁷ / ₁₆
A200, A250, A290, A390	12 ¹ / ₈ x 14 ¹ / ₄	12 ¹ / ₄ x 14 ³ / ₈
A700	23 ³ / ₄ x 11 ³ / ₄	24 ¹ / ₈ x 12 ¹ / ₄
A410, A510, A510-VG, A710, A710-VG, A780	14 ³ / ₄ x 18 ³ / ₈	14 ⁷ / ₈ x 18 ⁷ / ₁₆
A900, A1050, A1410, A1550	14 ³ / ₄ x 24	14 ⁷ / ₈ x 24 ¹ / ₈
B50 - 200	14 ¹ / ₈ x 11 ³ / ₄	14 ³ / ₈ x 12 ¹ / ₄

NOTE

Model sizes A50-90 are standard with a round duct. Should any model A110-190 require a round duct, Model RDC (Round Duct Connector) may be ordered from manufacturer for field installation.

For Frame Construction:

Position unit between joists. Position brackets such that bottom edge of housing will be flush with finished ceiling, and tighten the adjustable mounting brackets, shown in Fig. 3.

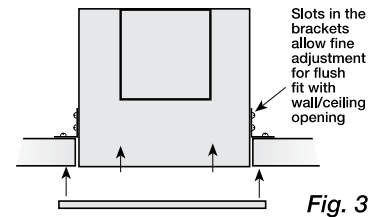


Fig. 3

For Hanging Installations:

Use manufacturer's optional vibration isolator kit Part Number VI Kit. Using the fan's standard adjustable mounting brackets and 10 by 32 threaded rod (by others), hang unit as shown in Fig. 4.

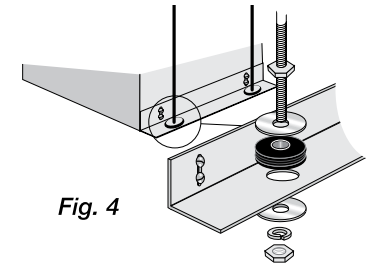


Fig. 4

- Installation of ductwork is critical to the performance of the fan, shown in Fig. 5. Straight ductwork (1) or ductwork that turns in the same direction as the wheel (2) is recommended. Ductwork turning opposite the wheel direction (3) will cause turbulence and back pressure resulting in poor performance.

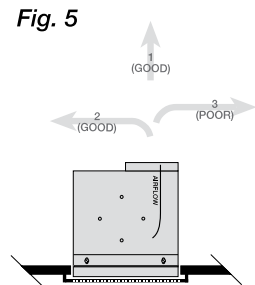


Fig. 5

- Slide ductwork over the fan's discharge collar and securely attach it with sheet metal screws.

Make sure the screws do not interfere with damper operation. Check damper to make sure it opens freely.

Wire the Fan

- Remove wiring cover. If fan/accessory combination is being used, make sure the fan plug is connected to the fan receptacle and the accessory plug is connected to the accessory receptacle, shown in Fig. 6. Using proper wire connectors, wire the fan as shown in Fig. 7a. For wiring of light proceed to Fig. 7b.

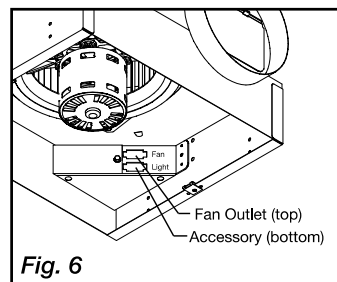


Fig. 6

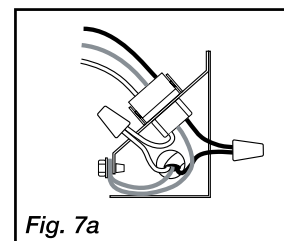


Fig. 7a

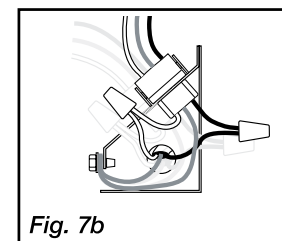


Fig. 7b

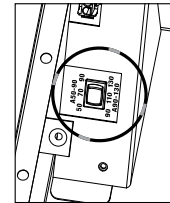
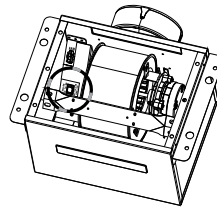
115 & 277 Volt
Black wire is "Hot"
White wire is "Neutral"
Green wire is "Ground"

220 - 240 Volt
Black wire is "Hot"
White wire is "Hot"
Green wire is "Neutral/Ground"

- Push all wiring into the unit's cover and replace wiring cover.

A50-90-VG and A90-130-VG Fan Models

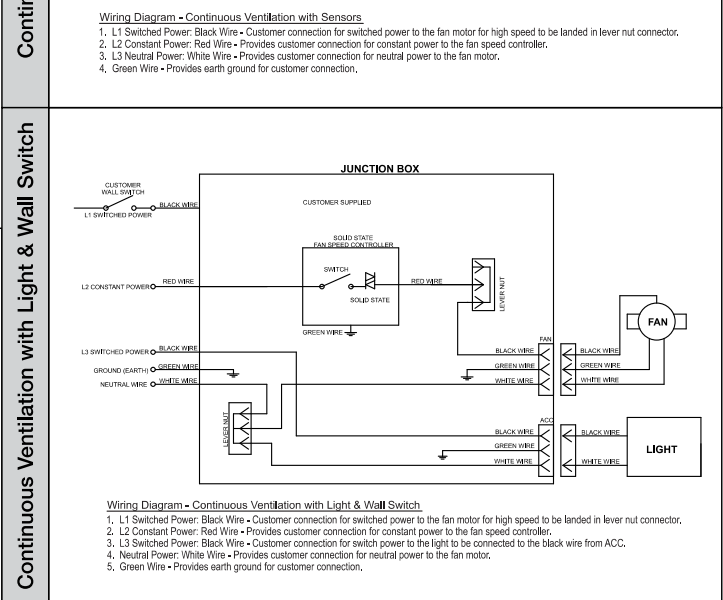
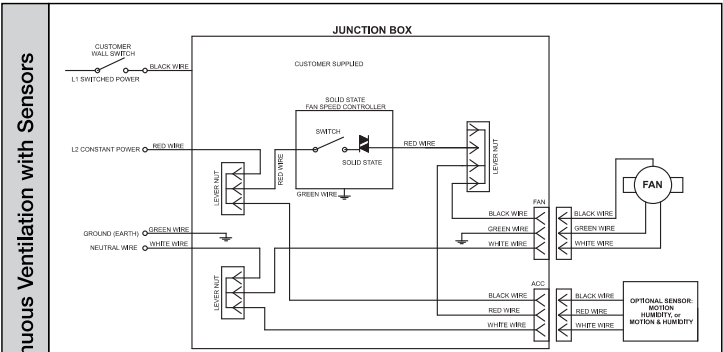
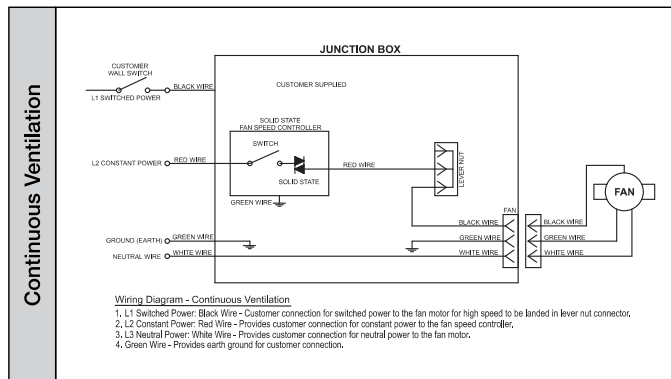
These fan models utilize an internal switch to set the fan to run at one of three flows. Please set three position switch to desired airflow when installing unit.



Whole House Ventilation Two-Speed Operation

A90 and 110, B50, 80 and 110 Models

1. Install fan per standard instructions.
2. Fan will operate at the certified airflow rate when wall switch or integrated sensor is activated.
3. Fan will operate at user set low speed when wall switch or integrated sensor is off.
 - a. User defined flow rate can be set by adjusting the dial pre-installed in the fan. Airflow is dependent on overall static pressure in the ductwork. Airflow will need to be verified with a measuring device.
4. When servicing fan, ensure the circuit is shut off at the breaker.



Attach the Grille

1. If lighted grille is being used, plug wire from lighted grille into accessory socket.
If lighted grille and ceiling radiation damper are being used, plug wire from lighted grille into ceiling radiation damper socket. Do not plug wire directly into the fan socket. Make sure the wire does not interfere with the ceiling radiation damper operation.
2. Attach grille with two screws provided. Make sure not to over tighten; over tightening will damage grille.
3. Slide attachment screw covers over the attachment screws, shown in Figure 8 and 9.
4. If lighted grille is being used, install light bulb(s) into light socket(s). For fluorescent lights, use 27W GU24 bulbs. For LED lights, use 10W GU24 bulbs. Manufacturer has replacement 27W GU24 bulbs, call 1-800-355-5354 to order.

5. If lighted grille is being used, snap lens into place, by pushing on the outside edges of lens, shown in Fig. 9. To remove lens, use a small screw driver and pry on one side of lens.
6. Turn on power and check fan and light operation.

Fig. 8

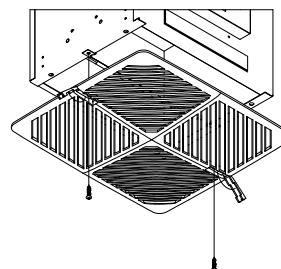
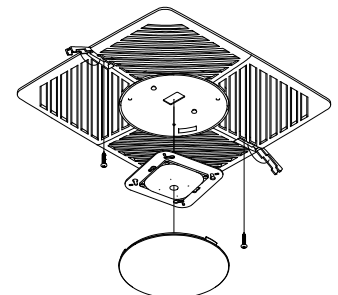
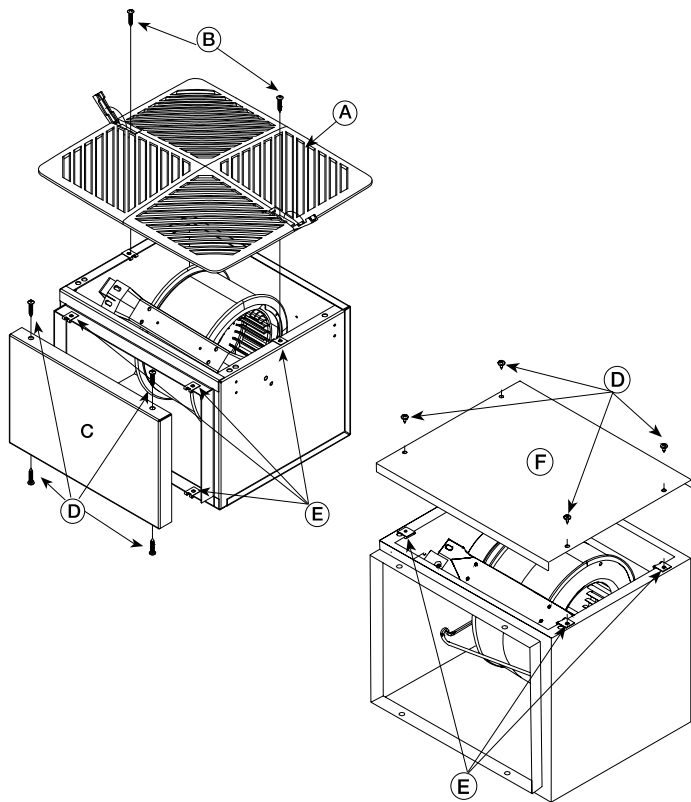


Fig. 9



Converting from Ceiling to Cabinet Design for Ceiling Exhaust Fans



All convertible sizes will be shipped with grille and duct collar cover. Note, this applies only to fans originally ordered as convertible.

Conversion Kit Parts List

- Qty. of 1 Blower Box Cover

Tools Required

- Phillips Head Screwdriver

- Step 1: Remove grille (A) by removing the two grille screws (B).
- Step 2: Remove duct collar cover (C) by removing the four duct collar screws (D).
- Step 3: Discard grille (A), two grille screws (B), and duct collar cover (C).
- Step 4: Remove the six (6) tinnerman clips (E) by twisting them to one side and pulling straight out. Discard two of the six tinnerman clips.
- Step 5: Insert the remaining four tinnerman clips (E) on grille opening side.
- Step 6: Place blower box cover (F) over tinnerman clips (E), which were inserted in step 5.
- Step 7: Screw the blower box cover (F) into place with four blower box cover screws (D).

General Maintenance Suggestions

Ceiling exhaust fans require very little maintenance, but since small problems over time left unchecked could lead to loss of performance or early motor failure, we do recommend that the unit be inspected periodically (once or twice a year).

The fan motor and wheel should be checked for dust and dirt accumulations. Dirt buildup can lead to loss of performance and motor overheating. Cleaning can be accomplished by brushing off any dust that may have accumulated. Even filtered units can accumulate build-up and should be checked when cleaning filters.

The motor should be checked for lubrication at this time. Lubricate only those motors which have an oil hole provided. A few drops of all purpose oil (SAE 20) will be sufficient.

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Specific Greenheck product warranties are located on greenheck.com within the product area tabs and in the Library under Warranties.

Greenheck's Centrifugal Ceiling and Cabinet Exhaust Fans catalog provides additional information describing the equipment, fan performance, available accessories, and specification data.

AMCA Publication 410-96, Safety Practices for Users and Installers of Industrial and Commercial Fans, provides additional safety information. This publication can be obtained from AMCA International, Inc. at www.amca.org.



Phone: 715.359.6171 • Fax: 715.355.2399 • Parts: 800.355.5354 • E-mail: gfcinfo@greenheck.com • Website: www.greenheck.com

Installation, Operation and Maintenance Manual

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Motion Sensor
Part No. 880689



**Motion + Humidity
Combination Sensor**
Part No. 880690



Humidity Sensor
Part No. 386429

General Safety Information

Only qualified personnel should install this product. Personnel should have a clear understanding of these instructions and should be aware of general safety precautions. Improper installation can result in electric shock, possible injury due to coming in contact with moving parts, as well as other potential hazards. If more information is needed, contact a licensed professional engineer before proceeding with installation.

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the National Fire Protection Agency (NFPA), where applicable. Follow the Canadian Electric Code (CEC) in Canada.
2. Motor must be securely and adequately grounded.
3. Do not allow the power cable to kink or come in contact with oil, grease, hot surfaces or chemicals. Replace cord immediately if damaged.
4. Verify that the power source is compatible with the equipment.

DANGER

Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury.

CAUTION

When servicing the fan, motor may be hot enough to cause pain or injury. Allow motor to cool before servicing.

CAUTION

Precaution should be taken in explosive atmospheres.

DANGER

Pour écarter les risques d'incendie, de choc électrique ou de blessure grave, veiller à toujours débrancher, verrouiller et étiqueter la source de courant avant l'installation ou l'entretien.

ATTENTION

Lors de toute intervention sur la soufflante, le moteur peut être suffisamment chaud pour provoquer une douleur voire une blessure. Laisser le moteur refroidir avant toute maintenance.

ATTENTION

Faire preuve de précaution dans les atmosphères explosives.

Receiving

Upon receiving the product, check to ensure all items are accounted for by referencing the delivery receipt or packing list. Inspect each crate or carton for shipping damage before accepting delivery. Alert the carrier of any damage detected. The customer will make notification of damage (or shortage of items) on the delivery receipt and all copies of the bill of lading which is countersigned by the delivering carrier. If damaged, immediately contact your Representative. Any physical damage to the unit after acceptance is not the responsibility of the manufacturer.

Unpacking

Verify that all required parts and the correct quantity of each item have been received. If any items are missing, report shortages to your local representative to arrange for obtaining missing parts. Sometimes it is not possible that all items for the unit be shipped together due to availability of transportation and truck space. Confirmation of shipment(s) must be limited to only items on the bill of lading.

Handling

The sensor amperage and voltage ratings must be checked for compatibility to supply voltage prior to final electrical connection. Wiring must conform to local and national codes. Consult local code authorities for specific requirements.

Storage

Product is protected against damage during shipment. If the product cannot be installed and operated immediately, precautions need to be taken to prevent deterioration of the product during storage. The user assumes responsibility of the product and accessories while in storage. The manufacturer will not be responsible for damage during storage. These suggestions are provided solely as a convenience to the user.

Indoor Only

Do not store this product outdoors. The ideal environment for the storage of product is indoors, above grade, in a low humidity atmosphere which is sealed to prevent the entry of blowing dust, rain or snow. Temperatures should be evenly maintained between 30° to 110°F (-1° to 43°C) (wide temperature swings may cause condensation and “sweating” of metal parts). All accessories must be stored indoors in a clean, dry atmosphere.

Remove any accumulations of dirt, water, ice or snow and wipe dry before moving to indoor storage. Allow cold parts to reach room temperature to avoid “sweating” of metal parts. To dry parts and packages, use a portable electric heater to get rid of any moisture buildup. Leave coverings loose to permit air circulation and to allow for periodic inspection. The product should not be stored on the floor.

Inspection & Maintenance During Storage

While in storage, inspect product once per month. Keep a record of inspection and maintenance performed. If moisture or dirt accumulations are found on parts, the source should be located and eliminated.

Removing From Storage

As parts are removed from storage to be installed in their final location, they should be protected and maintained in a similar fashion until the fan equipment goes into operation.

Installation and Setup Guide

This guide provides instructions for how to install, wire, set and service ceiling fan sensor packages. When installed, this system is capable of automatically signaling the fan to run when desired conditions are met in the space.

Integrated Humidity Sensor

SP-A, sizes 50 to 390, new install or retrofit*, available in 115 volt only

1. For best performance of the humidity sensor, the fan will need to be located as close to the humidity source as acceptable per the fan’s instructions.
2. If sensor is not pre-installed, remove sensor from package, snap onto blower support bracket and slide sensor over the rivets as shown in Fig. 1.

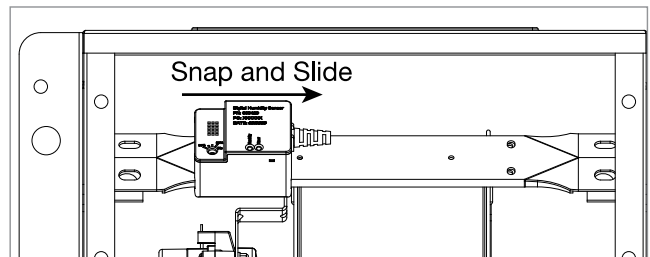


Fig. 1

NOTE

Sensor to be installed after ceiling finish is completed to prevent damage to sensor.

*Integrated humidity sensor (Part No. 386429) is not suitable for use in a retrofit application where the fan is installed directly above a bathtub or shower.

3. Avoid any kinking and/or sharp edges; route sensor cable underneath scroll and plug into “ACC” receptacle on junction box.
 - a. If fan is not equipped with “ACC” receptacle, remove motor connector from “FAN” female receptacle and plug included accessory adapter into “FAN” female receptacle.
 - b. Plug motor into “FAN” receptacle and sensor into “ACC” receptacle of accessory adapter.

- Set relative humidity based on desired performance. The lower the setting, the more sensitive the fan will be to changes in humidity levels as shown in Fig. 2.

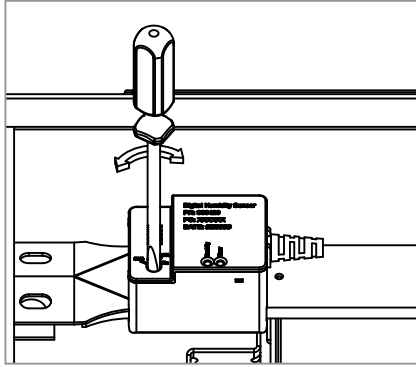


Fig. 2

SP-B, sizes 50 to 200, factory install only, available in 115 volt only

- For best performance of the humidity sensor, the fan will need to be located as close to the humidity source as acceptable per the fan's instructions.
- Set relative humidity based on desired performance. The lower the setting, the more sensitive the fan will be to changes in humidity levels. See Fig. 3.

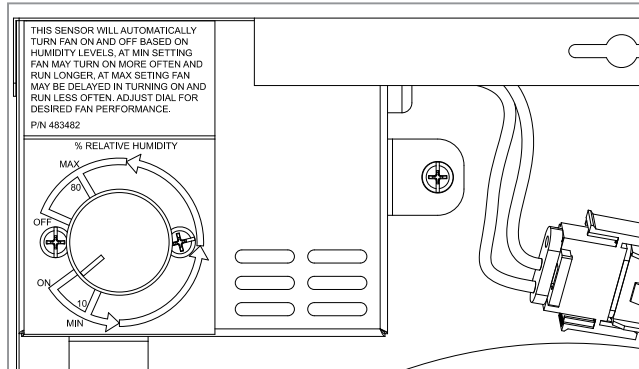
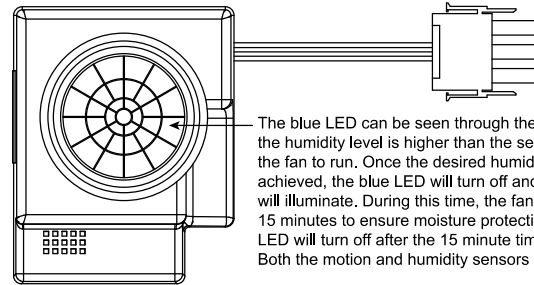
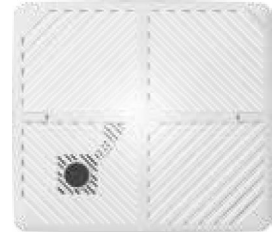


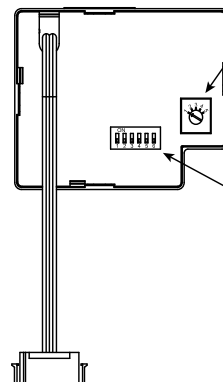
Fig. 3

Motion Sensor or Motion/Humidity Combination Sensor

- For best performance, position fan to not pick up unintended motion. Sensing diameter is set to 6 feet when installed in 8 foot ceilings.
- Adjust time delay as needed: 1, 2, 5, 10, 20 or 30 minutes.
- Avoid any kinking and/or sharp edges. Plug grille into "ACC" receptacle on junction box.
 - If fan is not equipped with "ACC" receptacle, remove motor connector from "FAN" female receptacle and plug included accessory adapter into "FAN" female receptacle.
 - Plug motor into "FAN" receptacle and sensor into "ACC" receptacle of accessory adapter.



Front of Sensor



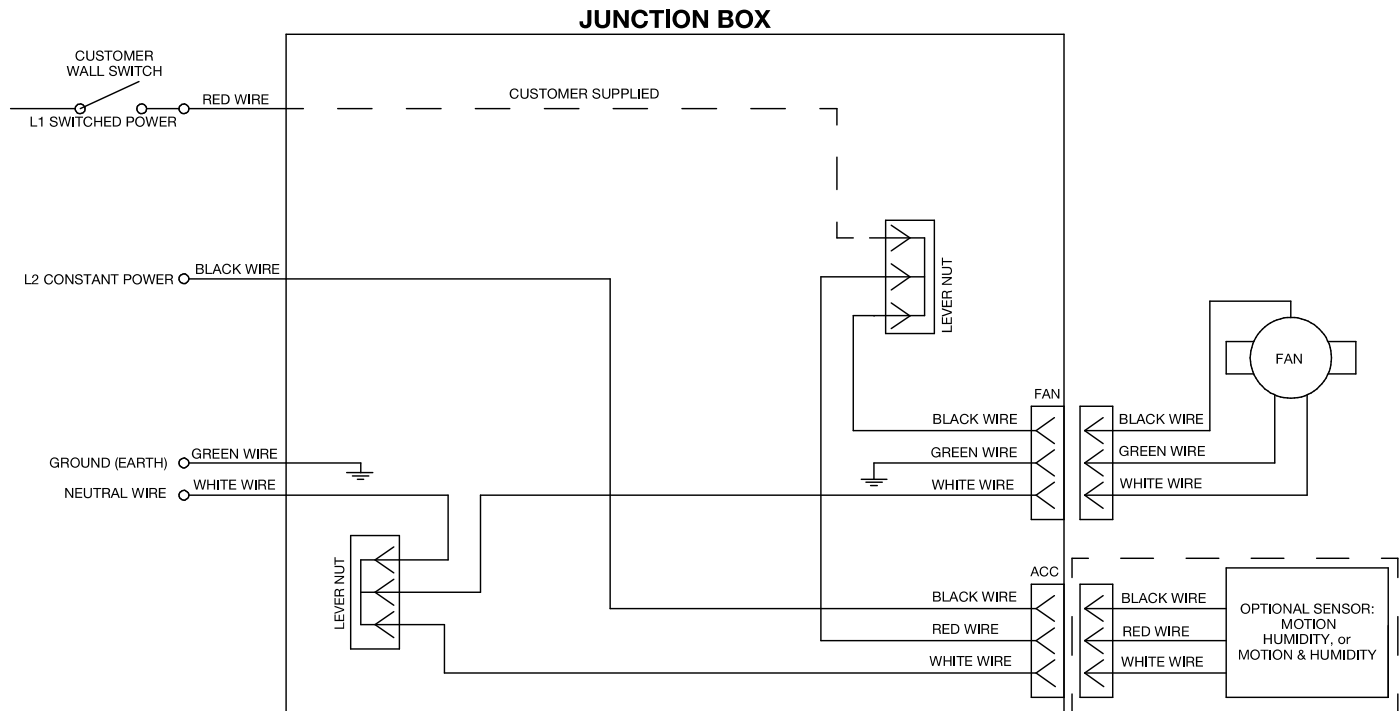
HUMIDITY SENSOR ADJUSTMENT:
 POSITION 1: 50% RELATIVE HUMIDITY
 POSITION 2: 60% RELATIVE HUMIDITY
 POSITION 3: 70% RELATIVE HUMIDITY
 POSITION 4: 80% RELATIVE HUMIDITY
 POSITION 5: DISABLE HUMIDITY SENSOR

TIME DELAY DIPSWITCH
 SWITCH 1 ON: 1 MINUTE
 SWITCH 2 ON: 2 MINUTES (DEFAULT)
 SWITCH 3 ON: 5 MINUTES
 SWITCH 4 ON: 10 MINUTES
 SWITCH 5 ON: 20 MINUTES
 SWITCH 6 ON: 30 MINUTES

SWITCHES 2, 4, & 6 ON: DISABLE MOTION SENSOR
 SWITCHES 1, 3, & 5 ON: TEST MODE (10 SECOND DELAY)

Back of Sensor

Wiring Diagram for Wall Switch Sensor Override



1. L1 Switched Power: Red Wire - Customer connection for switched power to the fan motor for high speed to be landed in lever nut connector.
2. L2 Constant Power: Black Wire - Provides customer connection for constant power to the motion sensor.
3. L3 Neutral Power: White Wire - Provides customer connection for neutral power to the fan motor.
4. Green Wire: Provides earth ground for customer connection.

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Product warranties can be found online at Greenheck.com, either on the specific product page or in the literature section of the website at Greenheck.com/Resources/Library/Literature.

Greenheck's Centrifugal Ceiling Exhaust and Inline Cabinet Fans catalog provides additional information describing the equipment, fan performance, available accessories, and specification data.

AMCA Publication 410-96, Safety Practices for Users and Installers of Industrial and Commercial Fans, provides additional safety information. This publication can be obtained from AMCA International, Inc. at www.amca.org.

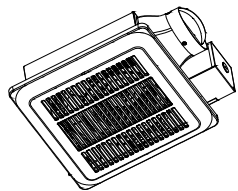


Installation, Operation and Maintenance Manual

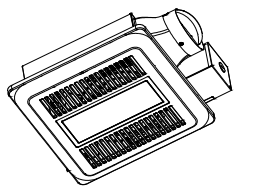
Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.

Ceiling Exhaust Fan

Model SP-LP0511H/L is a low-profile, direct drive wall/ceiling exhaust fan featuring an integrated humidity sensor that helps control bathroom condensation to prevent mold and mildew. Additional accessories and features include lights, flow selection, and constant airflow. These models are UL listed and certified by Home Ventilating Institute (HVI) and ENERGY STAR®.



SP-LP0511H



SP-LP0511HL

General Safety Information

Only qualified personnel should install this fan. Personnel should have a clear understanding of these instructions and should be aware of general safety precautions. Improper installation can result in electric shock, possible injury due to coming in contact with moving parts, as well as other potential hazards.

1. Do not install this ventilation fan where interior room temperature may exceed 104°F (40°C).
2. Make sure that the electric service supply voltage is AC 120V, 60Hz.
3. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the National Fire Protection Agency (NFPA), where applicable. Follow the Canadian Electric Code (CEC) in Canada.
4. Always disconnect the power source before working on or near the fan, motor, light fixture, or junction box.
5. Protect the power cord from sharp edges, oil, grease, hot surfaces, chemicals or other objects.
6. Do not kink the power cord.
7. Do not install the unit where ducts are configured as shown in Fig. 1.
8. Provide make up air for proper ventilation



Fig. 1

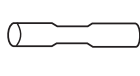


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Features

High Energy Efficiency: The fan uses a brushless DC motor to ensure a high energy efficiency.

Humidity Sensor: The fan's integrated humidity sensor constantly monitors air humidity in the room. When the sensor detects humidity levels above the fan's user-adjustable set-point (30%-80% relative humidity), the fan will turn on to lower the humidity and run for 20 minutes. The sensor will continue to check humidity levels and run in 20 minute intervals until the humidity level is below the user-adjustable set-point. The factory setting is 30%. See Fig. 2.

Constant Air Flow: Duct length, elbows and other factors increase static pressure and negatively impact the performance of most ventilation fans. This fan utilizes adaptive Constant CFM technology that monitors the static pressure in the system and adjusts the speed of the motor.

Flow Selection: Fans are supplied with a flow selection switch which can be set to 50, 80, or 110 CFM. The factory setting is 110 CFM. See Fig. 3.

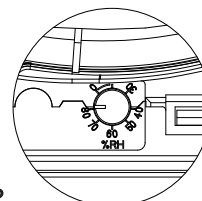


Fig. 2

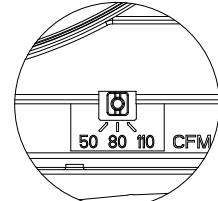
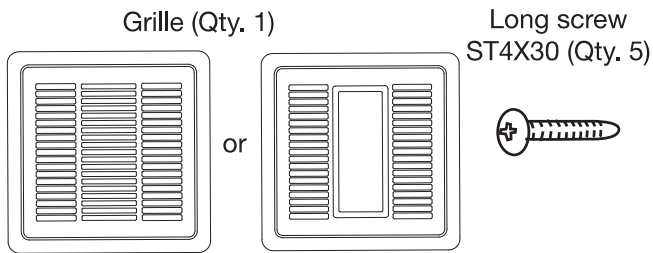


Fig. 3

Supplied Accessories

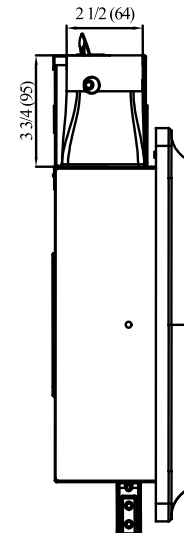
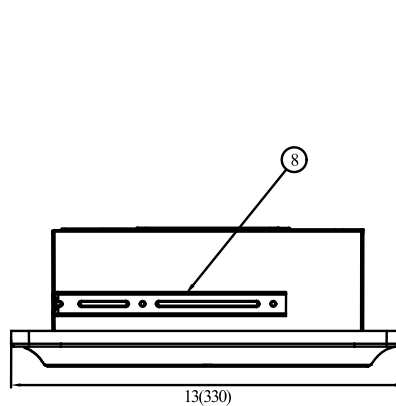
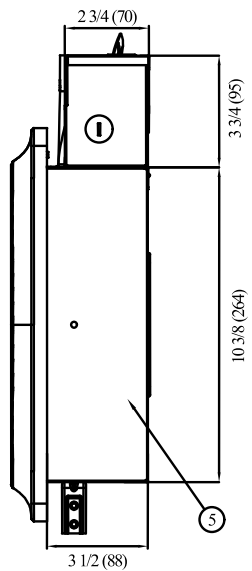
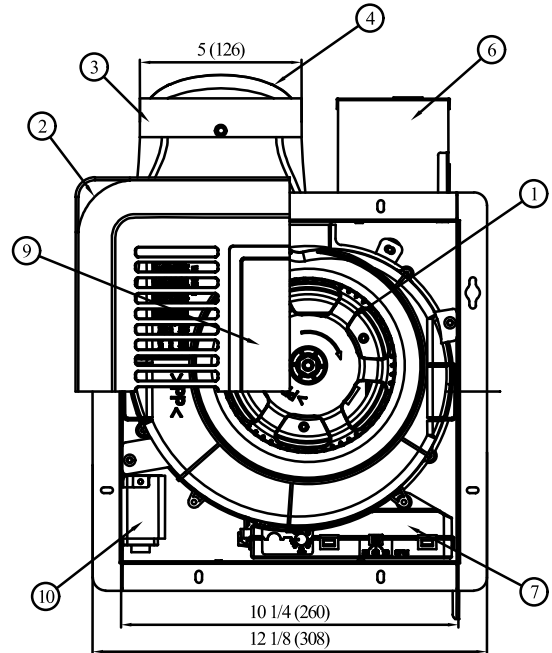
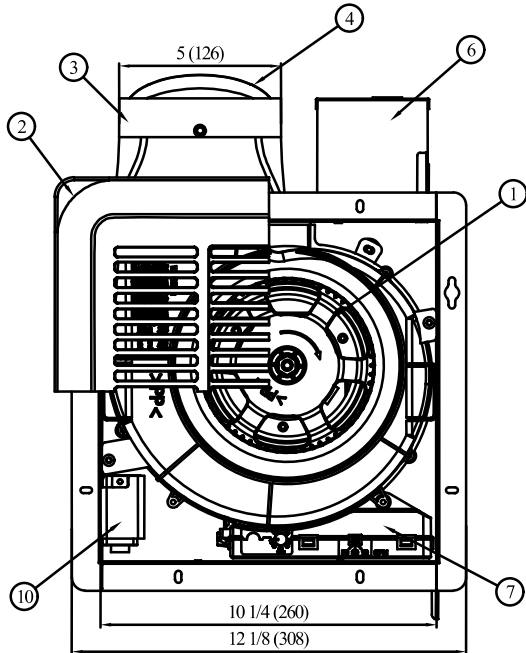


Dimensional Data

SP-LP0511H

Unit: inches (mm)

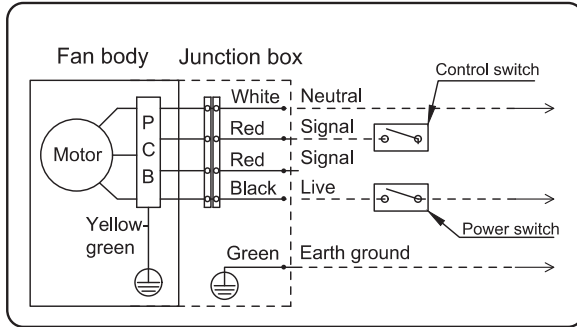
SP-LP0511HL



No.	Part Name	No.	Part Name
1	Wheel	6	Junction Box
2	Grille	7	Base PCB Box
3	Duct Adapter	8	Mounting Bracket
4	Damper	9	LED Light
5	Housing	10	Humidity Sensor

Wiring Diagrams

Fan only model: **SP-LP0511H**

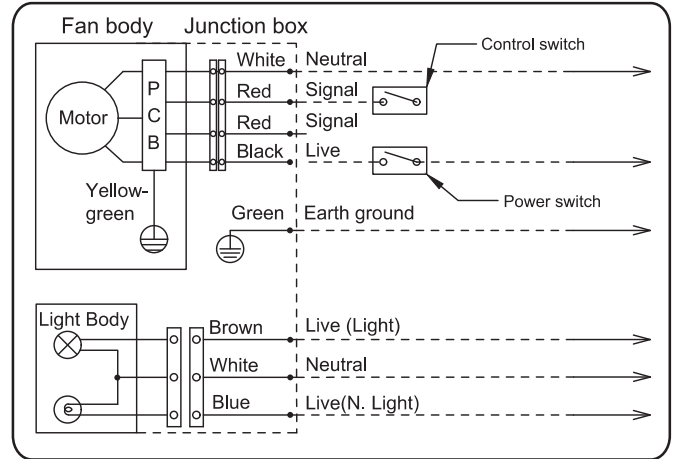


ATTENTION

Do not apply 115V to red wires. Unit damage will occur.

Note: If a control switch is not used, the red wires can be 1) Connected together for continuous operation at your high speed setting, ignoring the humidity sensor or 2) Separated, the fan will run high speed only when the humidity sensor is activated.

With light model: **SP-LP0511HL**



CAUTION!

- For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
- Not for use in cooking areas (Fig. 2)
- This product must be properly grounded.

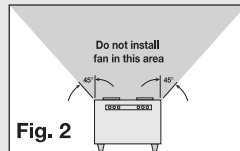


Fig. 2

WARNING!

To reduce the risk of fire, electric shock, or injury to persons, observe the following:

- Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- Before servicing or cleaning unit, switch power off at service panel and lock 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.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
- 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.
- When cutting or drilling into a wall or ceiling, do not damage electrical wiring or other hidden utilities.
- Ducted fans must always be vented to the outdoors.
- Do not use this fan with any solid state speed control.
- If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a Ground Fault Circuit Interrupter (GFCI) protected branch circuit.
- These models are UL listed for tub and shower enclosures.
- These fans are not to be installed in a ceiling thermally insulated to a value greater than R40.

ATTENTION!

- À utiliser pour la ventilation générale uniquement. Ne pas utiliser pour l'aspiration de matières et vapeurs dangereuses ou explosives.
- N'est pas destiné à une utilisation dans des zones de cuisson (Fig. 2).
- Ce produit doit être correctement relié à la terre.

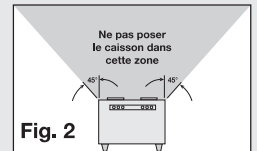


Fig. 2

AVERTISSEMENT!

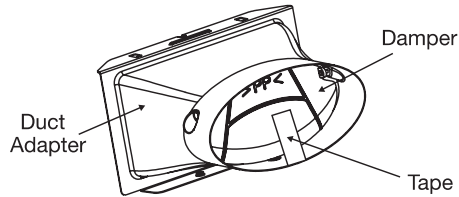
Pour réduire le risque d'incendie, de choc électrique ou de blessure corporelle, respecter ce qui suit :

- Utiliser cet appareil exclusivement comme prévu par le fabricant. En cas de questions, communiquer avec le fabricant.
- Avant tout entretien ou nettoyage de l'appareil, couper l'alimentation sur le tableau électrique et verrouiller le dispositif de sectionnement pour empêcher toute mise sous tension accidentelle. Si le dispositif de sectionnement ne peut pas être verrouillé, attacher un moyen de mise en garde bien visible, tel qu'un panneau, au tableau électrique.
- La pose et le câblage électrique doivent être effectués par des personnes qualifiées en conformité avec les codes et normes en vigueur, y compris pour la résistance au feu du bâtiment.
- Une quantité d'air suffisante est nécessaire pour la bonne combustion et l'extraction des gaz brûlés par le conduit d'évacuation (cheminée) d'appareils à combustible afin d'éviter le reflux.
- Veiller à suivre les indications du fabricant du matériel de chauffage, les normes de sécurité telles que celles publiées par la National Fire Protection Association (NFPA) et l'American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) et la réglementation en vigueur.
- Lors de la découpe ou du perçage de murs ou plafonds, ne pas endommager les câbles électriques et autres conduites masquées.
- Les caissons d'extraction à gaine doivent toujours être évacués vers l'extérieur.
- Ne pas utiliser ce ventilateur avec un quelconque dispositif de régulation de vitesse à semi-conducteurs.
- Si cet appareil doit être posé au-dessus d'une baignoire ou d'une douche, il doit être marqué comme il se doit pour l'application considérée et raccordé à un circuit de dérivation à protection GFCI (disjoncteur différentiel).
- Ces modèles sont répertoriés par UL pour des enceintes de baignoire et des cabines de douche.
- Ces ventilateurs ne devront pas être installés dans un plafond ayant une isolation thermique d'une valeur supérieure à R40.

Installation for Joist Mounting

IMPORTANT

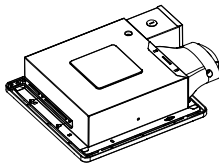
Remove the tape from damper and duct adapter before installation. As shown below:



1. Position fan housing between the joists with the duct adapter aligned to the designed duct run. Fasten housing to joist through the housing flange using two of the provided (ST4X30) screws. Fasten the mounting bracket to the joist using two additional (ST4X30) screws. See Fig. 3.

ATTENTION

Do not remove or replace the screws securing the mounting bracket to the housing, otherwise the cord in PCB box may be damaged and cause fire.



IMPORTANT

Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the National Fire Protection Agency (NFPA), where applicable. Follow the Canadian Electric Code (CEC) in Canada.

2. Remove the knockout plate and secure conduit or strain relief to knockout hole.

Refer to wiring diagrams on page 3.

Use UL approved connectors to connect the incoming power wires to the ventilation fan wires. Then attach knockout plate to the fan body. See Fig. 4.

3. Utilize 4-inch circular duct to connect to duct adapter on the fan housing. Squeeze the circular duct to fit the adapter and seal it with mastic or approved foil tape, then secure it with clamps or ties. See Fig. 5.

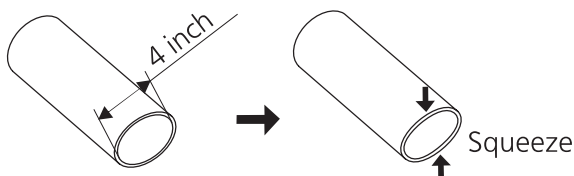
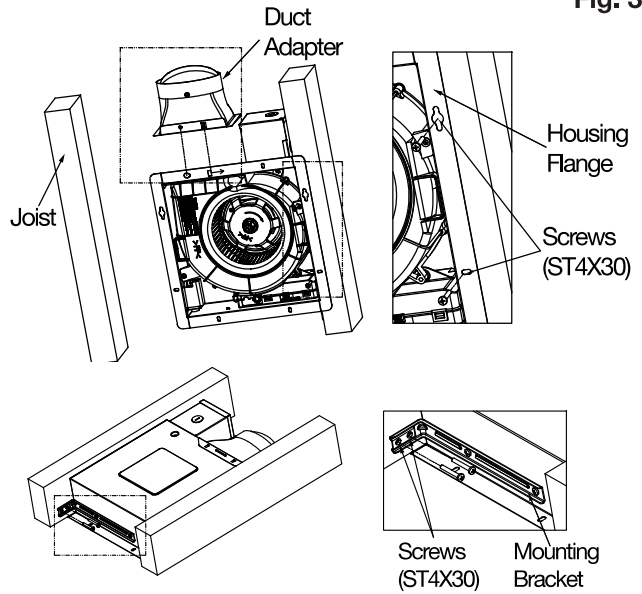
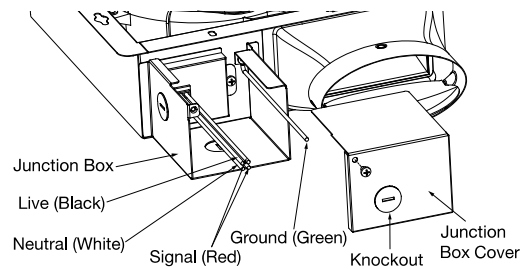


Fig. 3



SP-LP0511H

Fig. 4



SP-LP0511HL

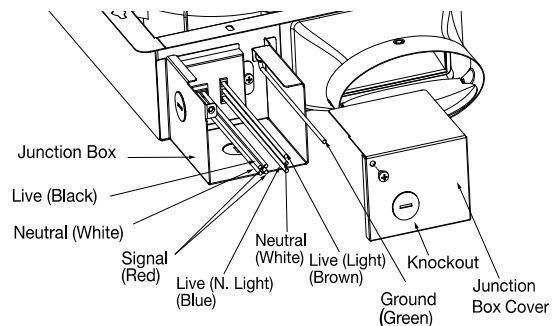
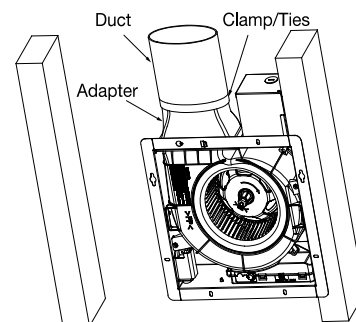
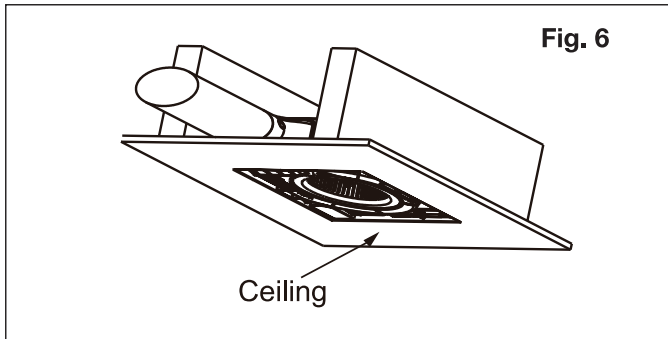


Fig. 5



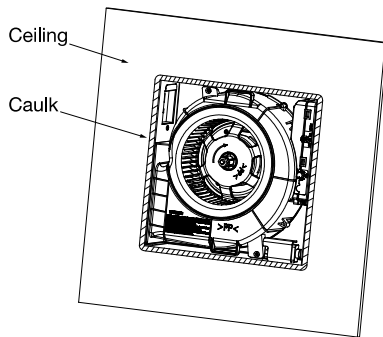
Installation for Joist Mounting Continued

4. Finish ceiling work. Ceiling hole should be aligned with the inside edge of the flange. See Fig. 6.

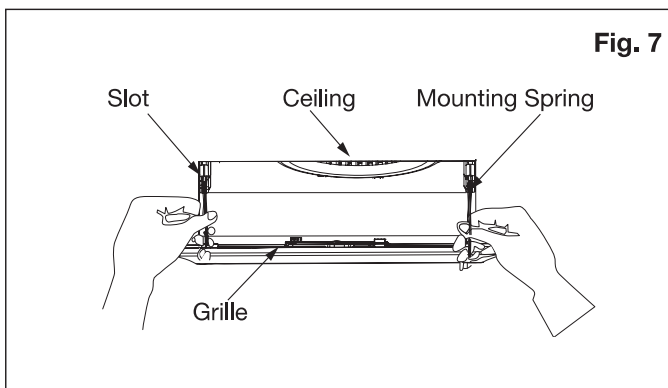


IMPORTANT

After finishing installation, fill gap between flange and ceiling with caulk or other sealant to prevent air leakage.

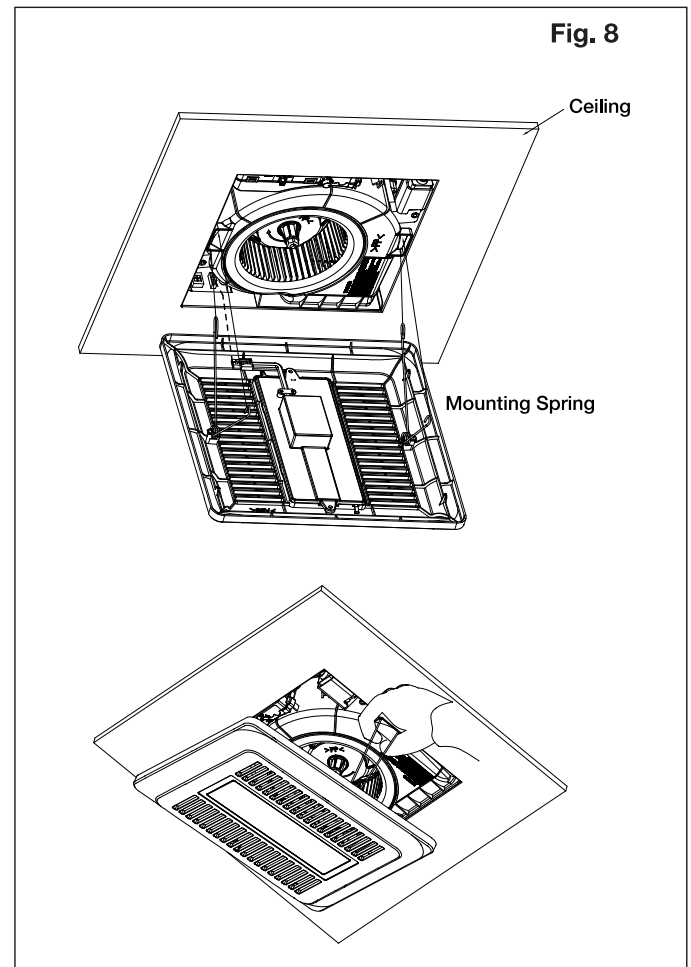


5. Insert the grille mounting springs into slots on the fan body and raise the grille toward the fan body. See Fig. 7.



6. For model SP-LP0511HL, with light.

- Insert the grille mounted spring closest to the light cord into the slot on the fan body closest to the junction box.
- Plug the light cord into the receptacle in the fan housing.
- Insert the remaining grille mounting spring into the remaining slot on the fan body and raise grill toward the fan body. See Fig. 8.



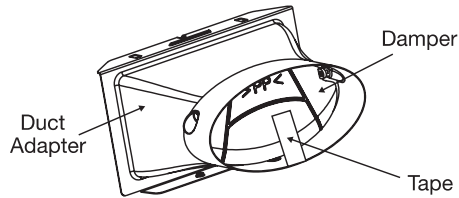
ATTENTION

- Before turning on the light, make sure the plug is fully engaged.
- Mount carefully so that light wiring is not pinched.

Installation for Wall Mounting

IMPORTANT

Remove the tape from damper and duct adapter before installation. As shown below:



1. Position fan housing between the studs with discharge pointing up. Fasten housing to joist through the housing flange using two of the provided (ST4X30) screws. Fasten mounting bracket to stud using two additional screws (ST4X30). See Fig. 9.

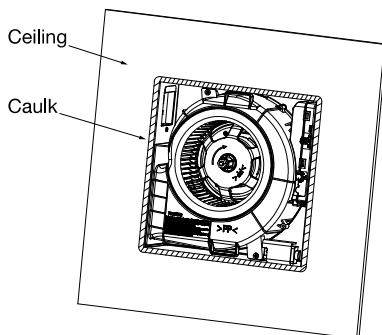
ATTENTION

The duct adapter of product must be installed upward.

2. Complete the wiring and duct work, please refer to steps 2 and 3 of Installation for Joist Mounting (page 4).
3. Finish the wall work. Wall hole should be aligned with the inside edge of the flange. See Fig. 10.

IMPORTANT

After finishing installation, fill gap between flange and wall with caulk or other sealant to prevent air leakage.



4. Install the grille, please refer to step 5 of Installation for Joist Mounting (page 5).

Fig. 9

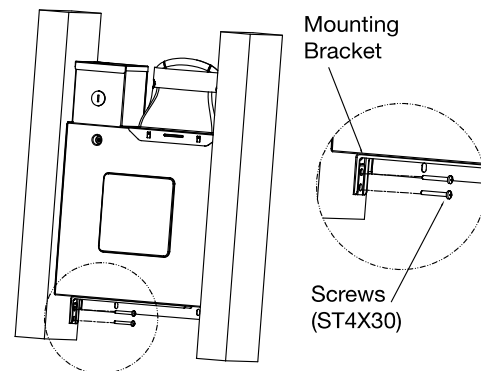
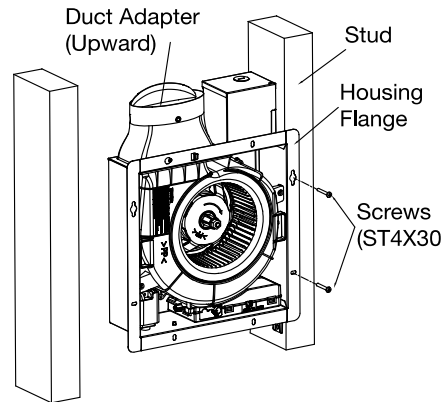
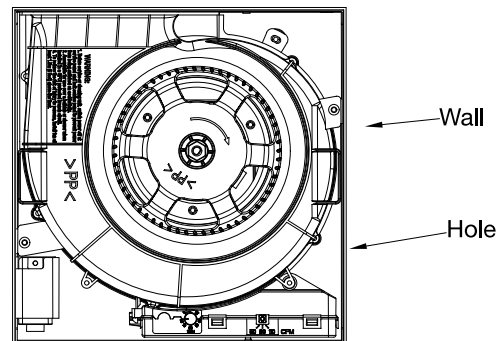


Fig.10



Maintenance

ATTENTION

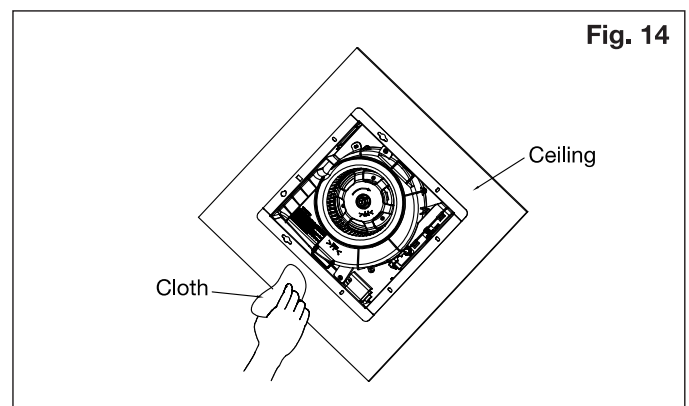
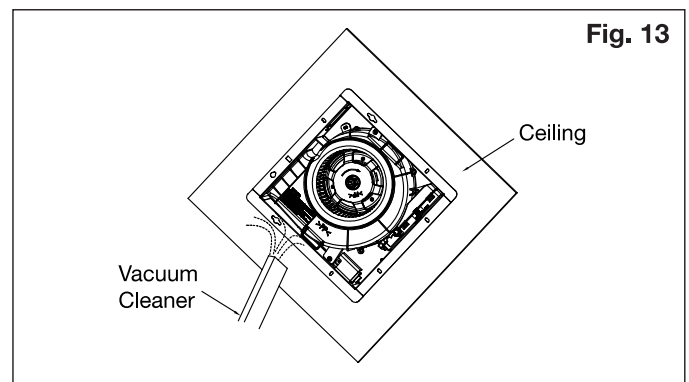
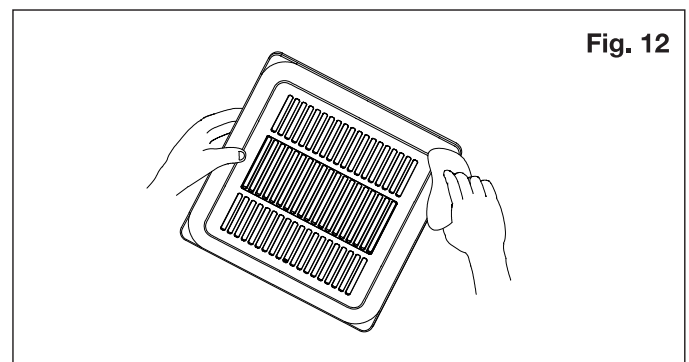
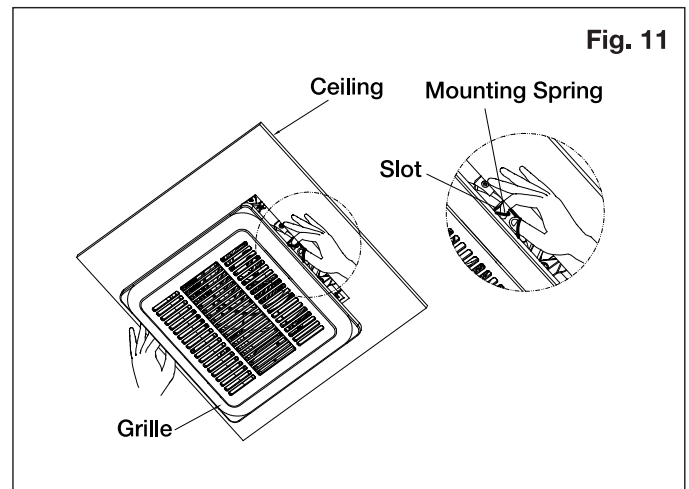
Disconnect power source before working on unit.
Routine maintenance must be performed annually.

IMPORTANT

1. Never use gasoline, benzene, thinner or any other such chemicals for cleaning the ventilating fan.
2. Do not immerse motor in water when cleaning.
3. Do not soak parts in water over 140°F (60°C).

Cleaning

1. Remove grille. Squeeze mounting spring and pull down carefully. See Fig. 11.
2. Clean grille. Do not put into hot water. Use non-abrasive kitchen detergent, wipe dry with clean cloth. See Fig. 12.
3. Remove dust and dirt from fan body using a vacuum cleaner. See Fig. 13.
4. Use a cloth dampened with kitchen detergent to remove any dirt from fan body. Wipe dry with clean cloth. See Fig. 14.
5. Ensure grille is dry and reinstall onto the fan.



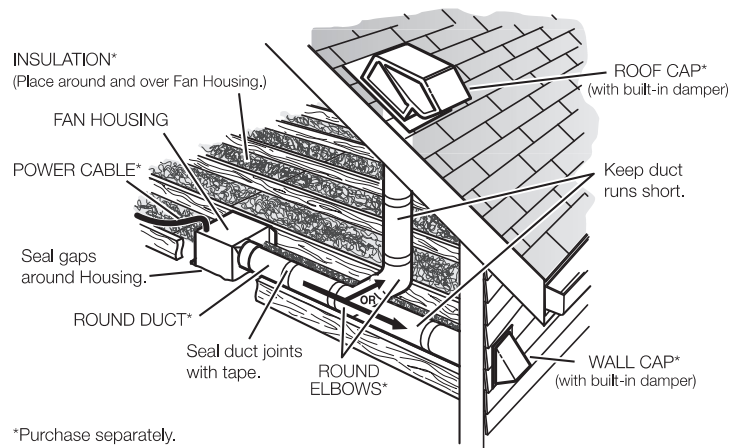
Typical Installation

The ducting from this fan to the outside of the building has a strong effect on the airflow, 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.


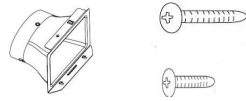

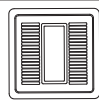
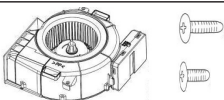
Rigid metal duct is recommended for optimal fan performance.

Ensure duct joints and exterior penetrations are sealed with caulk or other similar material to create an air-tight path and to minimize building heat loss and gain and reduce the potential for condensation.

Place/wrap insulation around duct and/or fan to in order to minimize possible condensation buildup within the duct, as well as minimize building heat loss and gain.



Replacement Parts List

Part	Part Number	Description
	485154	Mounting Bracket with two (2) screws S4X6
	485153	Duct Adapter with six (6) screws S4X30 5pcs • S4X12 1pc
	485152	Grille with spring clips
	486300	Lighted Grille with spring clips
	486344	Power Pack Assembly – includes motor, control board, blower, wheel, and three (3) screws. S4X8 2pcs • S4X6 1pc

Our Commitment

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Product warranties can be found online at Greenheck.com, either on the specific product page or in the literature section of the website at Greenheck.com/Resources/Library/Literature.

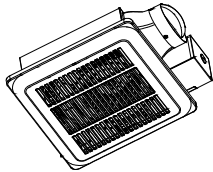


Installation, Operation and Maintenance Manual

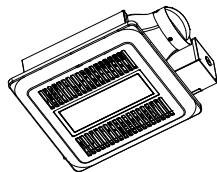
Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.

Ceiling Exhaust Fan

Model SP-LP0810W/L is a low-profile, direct drive wall/ceiling exhaust fan featuring standard two-speed operation (commonly known as whole house) to help comply with ASHRAE 62.2, WSEC, and CAL Title 24 requirements. Additional accessories and features include lights, flow selection, and constant airflow. These models are UL listed and certified by Home Ventilating Institute (HVI) and ENERGY STAR®.



SP-LP0810W



SP-LP0810WL

General Safety Information

Only qualified personnel should install this fan. Personnel should have a clear understanding of these instructions and should be aware of general safety precautions. Improper installation can result in electric shock, possible injury due to coming in contact with moving parts, as well as other potential hazards.

1. Do not install this ventilation fan where interior room temperature may exceed 104°F (40°C).
2. Make sure that the electric service supply voltage is AC 120V, 60Hz.
3. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the National Fire Protection Agency (NFPA), where applicable. Follow the Canadian Electric Code (CEC) in Canada.
4. Always disconnect the power source before working on or near the fan, motor, light fixture, or junction box.
5. Protect the power cord from sharp edges, oil, grease, hot surfaces, chemicals or other objects.
6. Do not kink the power cord.
7. Do not install the unit where ducts are configured as shown in Fig. 1.
8. Provide make up air for proper ventilation



Fig. 1



Table of Contents

Features	1
Supplied Accessories	2
Dimensional Data	2
Wiring Diagrams	3
Installation for Joist Mounting	4
Installation for Wall Mounting	6
Maintenance	7
Typical Installation	8
Replacement Parts List	8

Features

High Energy Efficiency: The fan uses a brushless DC motor to ensure a high energy efficiency.

Multi-Speed: The switch allows the fan to run continuously at low speed. The factory setting is 30 CFM for low speed. When initially turned on, the unit will perform a high-speed test cycle.

Example: Flow Selection setting is 100 CFM, Multi-Speed can be chosen 0, 30, 40, 50, 60 or 70 CFM as a low speed. See Fig. 2.

Time Delay: This sets the time required to return to low speed after high speed input is completed. Setting range is 0, 5, 10, 15, 20, 30, 45 or 60 minutes. See Fig. 2.

Constant Air Flow: Duct length, elbows and other factors increase static pressure and negatively impact the performance of most ventilation fans. This fan utilizes adaptive Constant CFM technology that monitors the static pressure in the system and adjusts the speed of the motor.

Flow Selection: Fans are supplied with a flow selection switch which can be set to 80 or 100 CFM. The factory setting is 100 CFM for high speed. See Fig. 3.

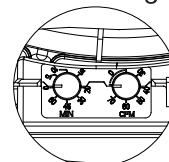


Fig. 2

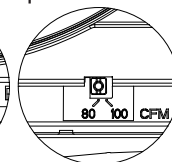
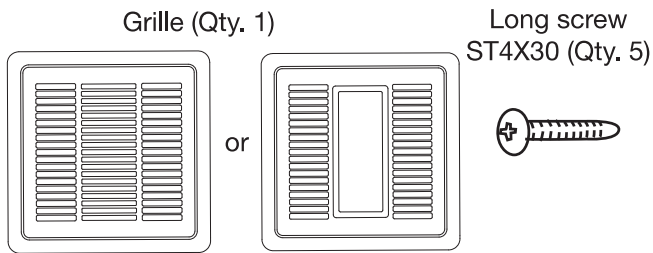


Fig. 3

Supplied Accessories

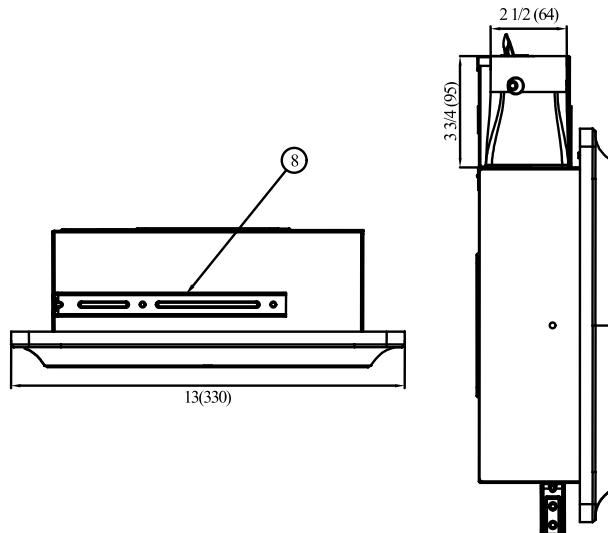
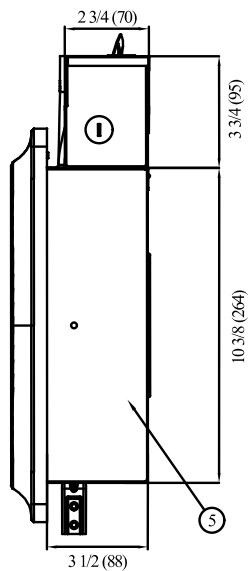
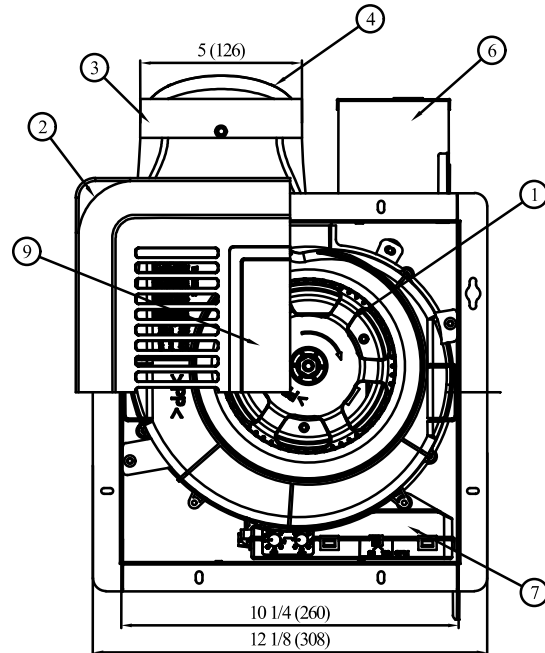
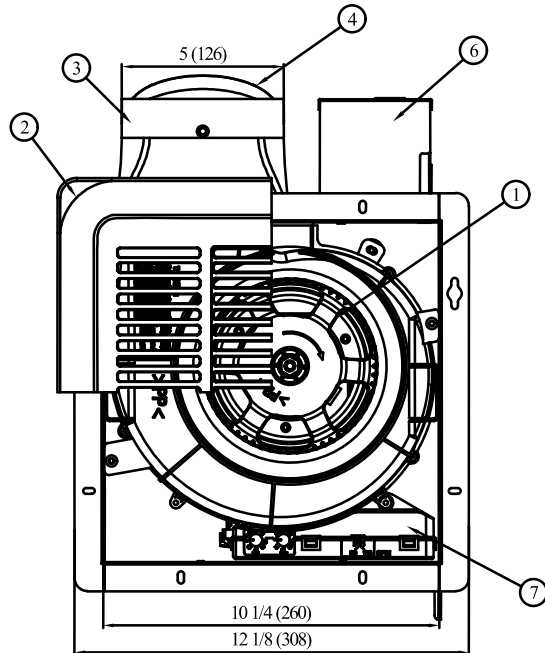


Dimensional Data

SP-LP0810W

Unit: inches (mm)

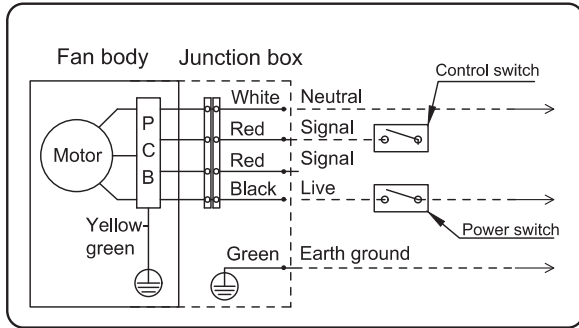
SP-LP0810WL



No.	Part Name	No.	Part Name
1	Wheel	6	Junction Box
2	Grille	7	Base PCB Box
3	Duct Adapter	8	Mounting Bracket
4	Damper	9	LED Light
5	Housing		

Wiring Diagrams

Fan only model: **SP-LP0810W**

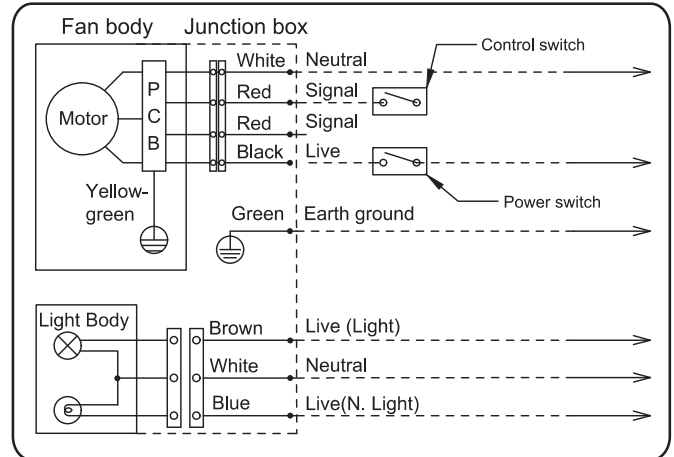


ATTENTION

Do not apply 115V to red wires. Unit damage will occur.

Note: If a control switch is not used, the red wires can be 1) Connected together for continuous operation at the high speed setting or 2) Separated for continuous operation at the low speed setting.

With light model: **SP-LP0810WL**



CAUTION!

- For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
- Not for use in cooking areas (Fig. 2)
- This product must be properly grounded.

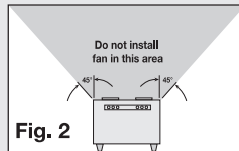


Fig. 2

WARNING!

To reduce the risk of fire, electric shock, or injury to persons, observe the following:

- Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- Before servicing or cleaning unit, switch power off at service panel and lock 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.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
- 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.
- When cutting or drilling into a wall or ceiling, do not damage electrical wiring or other hidden utilities.
- Ducted fans must always be vented to the outdoors.
- Do not use this fan with any solid state speed control.
- If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a Ground Fault Circuit Interrupter (GFCI) protected branch circuit.
- These models are UL listed for tub and shower enclosures.
- These fans are not to be installed in a ceiling thermally insulated to a value greater than R40.

ATTENTION!

- À utiliser pour la ventilation générale uniquement. Ne pas utiliser pour l'aspiration de matières et vapeurs dangereuses ou explosives.
- N'est pas destiné à une utilisation dans des zones de cuisson (Fig. 2).
- Ce produit doit être correctement relié à la terre.

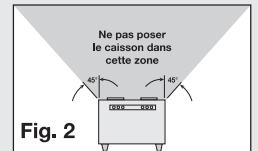


Fig. 2

AVERTISSEMENT!

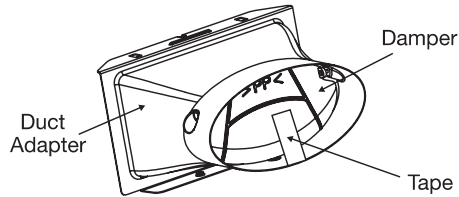
Pour réduire le risque d'incendie, de choc électrique ou de blessure corporelle, respecter ce qui suit :

- Utiliser cet appareil exclusivement comme prévu par le fabricant. En cas de questions, communiquer avec le fabricant.
- Avant tout entretien ou nettoyage de l'appareil, couper l'alimentation sur le tableau électrique et verrouiller le dispositif de sectionnement pour empêcher toute mise sous tension accidentelle. Si le dispositif de sectionnement ne peut pas être verrouillé, attacher un moyen de mise en garde bien visible, tel qu'un panneau, au tableau électrique.
- La pose et le câblage électrique doivent être effectués par des personnes qualifiées en conformité avec les codes et normes en vigueur, y compris pour la résistance au feu du bâtiment.
- Une quantité d'air suffisante est nécessaire pour la bonne combustion et l'extraction des gaz brûlés par le conduit d'évacuation (cheminée) d'appareils à combustible afin d'éviter le reflux.
- Veiller à suivre les indications du fabricant du matériel de chauffage, les normes de sécurité telles que celles publiées par la National Fire Protection Association (NFPA) et l'American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) et la réglementation en vigueur.
- Lors de la découpe ou du perçage de murs ou plafonds, ne pas endommager les câbles électriques et autres conduites masquées.
- Les caissons d'extraction à gaine doivent toujours être évacués vers l'extérieur.
- Ne pas utiliser ce ventilateur avec un quelconque dispositif de régulation de vitesse à semi-conducteurs.
- Si cet appareil doit être posé au-dessus d'une baignoire ou d'une douche, il doit être marqué comme il se doit pour l'application considérée et raccordé à un circuit de dérivation à protection GFCI (disjoncteur différentiel).
- Ces modèles sont répertoriés par UL pour des enceintes de baignoire et des cabines de douche.
- Ces ventilateurs ne devront pas être installés dans un plafond ayant une isolation thermique d'une valeur supérieure à R40.

Installation for Joist Mounting

IMPORTANT

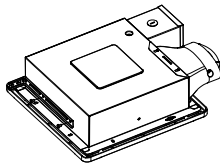
Remove the tape from damper and duct adapter before installation. As shown below:



1. Position fan housing between the joists with the duct adapter aligned to the designed duct run. Fasten housing to joist through the housing flange using two of the provided (ST4X30) screws. Fasten the mounting bracket to the joist using two additional (ST4X30) screws. See Fig. 3.

ATTENTION

Do not remove or replace the screws securing the mounting bracket to the housing, otherwise the cord in PCB box may be damaged and cause fire.



IMPORTANT

Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the National Fire Protection Agency (NFPA), where applicable. Follow the Canadian Electric Code (CEC) in Canada.

2. Remove the knockout plate and secure conduit or strain relief to knockout hole.

Refer to wiring diagrams on page 3.

Use UL approved connectors to connect the incoming power wires to the ventilation fan wires. Then attach knockout plate to the fan body. See Fig. 4.

3. Utilize 4-inch circular duct to connect to duct adapter on the fan housing. Squeeze the circular duct to fit the adapter and seal it with mastic or approved foil tape, then secure it with clamps or ties. See Fig. 5.

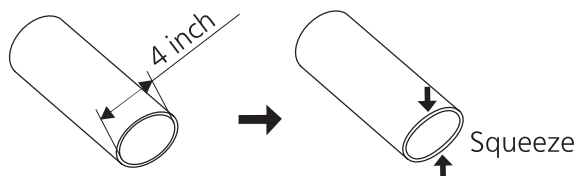
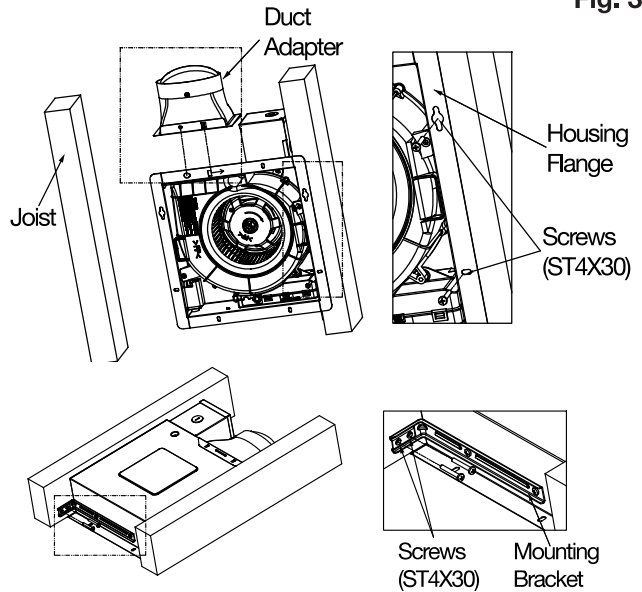
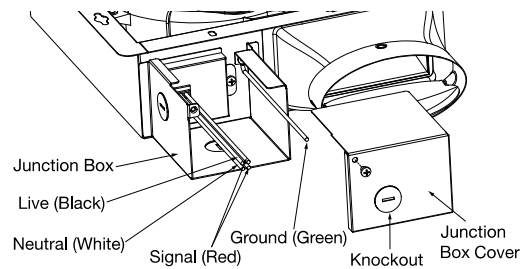


Fig. 3



SP-LP0810W

Fig. 4



SP-LP0810WL

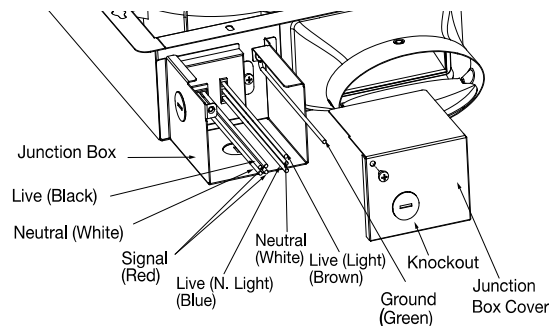
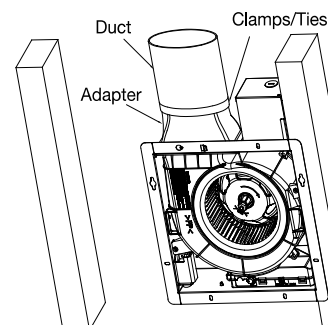
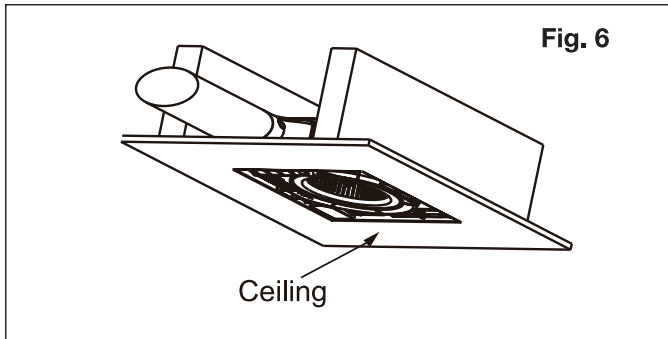


Fig. 5



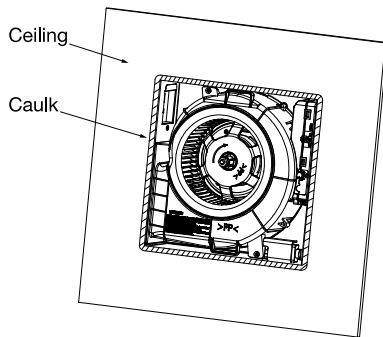
Installation for Joist Mounting Continued

4. Finish ceiling work. Ceiling hole should be aligned with the inside edge of the flange. See Fig. 6.

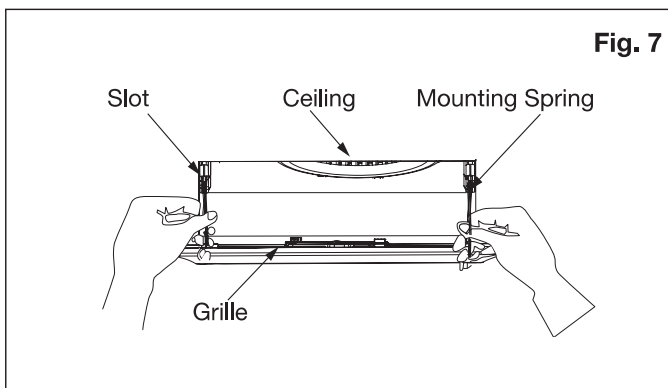


IMPORTANT

After finishing installation, fill gap between flange and ceiling with caulk or other sealant to prevent air leakage.

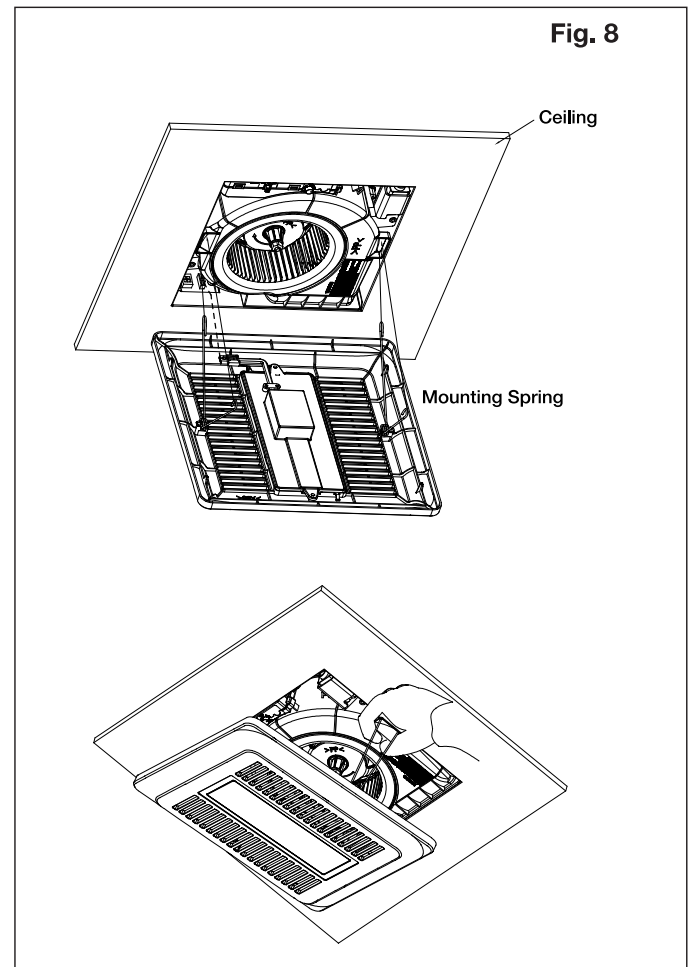


5. Insert the grille mounting springs into slots on the fan body and raise the grille toward the fan body. See Fig. 7.



6. For model SP-LP0810WL, with light.

- Insert the grille mounted spring closest to the light cord into the slot on the fan body closest to the junction box.
- Plug the light cord into the receptacle in the fan housing.
- Insert the remaining grille mounting spring into the remaining slot on the fan body and raise grill toward the fan body. See Fig. 8.



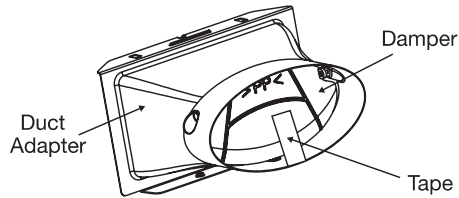
ATTENTION

- Before turning on the light, make sure the plug is fully engaged.
- Mount carefully so that light wiring is not pinched.

Installation for Wall Mounting

IMPORTANT

Remove the tape from damper and duct adapter before installation. As shown below:



1. Position fan housing between the studs with discharge pointing up. Fasten housing to joist through the housing flange using two of the provided (ST4X30) screws. Fasten mounting bracket to stud using two additional screws (ST4X30). See Fig. 9.

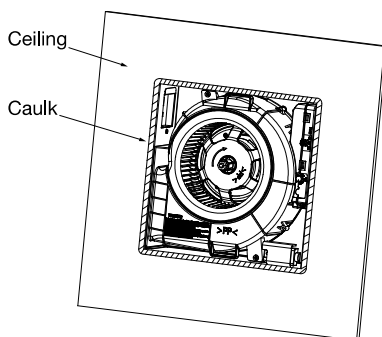
ATTENTION

The duct adapter of product must be installed upward.

2. Complete the wiring and duct work, please refer to steps 2 and 3 of Installation for Joist Mounting (page 4).
3. Finish the wall work. Wall hole should be aligned with the inside edge of the flange. See Fig. 10.

IMPORTANT

After finishing installation, fill gap between flange and wall with caulk or other sealant to prevent air leakage.



4. Install the grille, please refer to step 5 of Installation for Joist Mounting (page 5).

Fig. 9

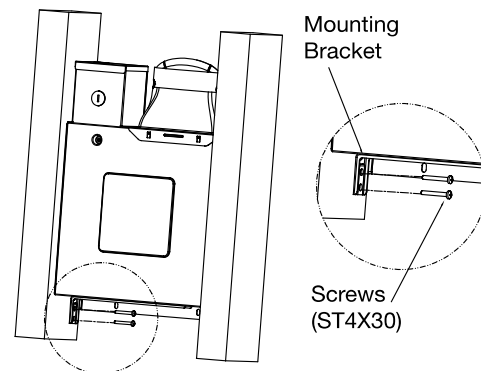
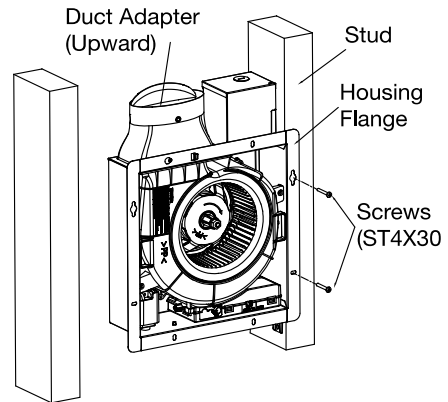
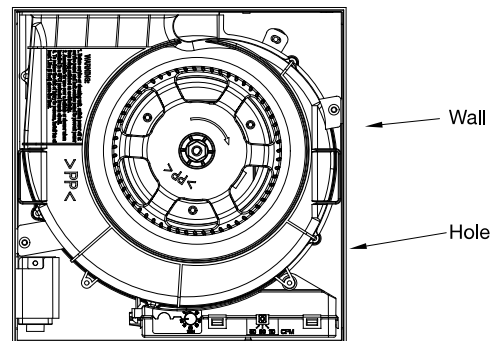


Fig.10



Maintenance

ATTENTION

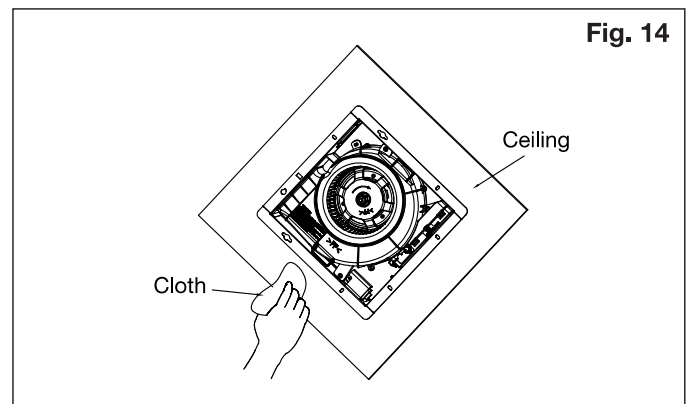
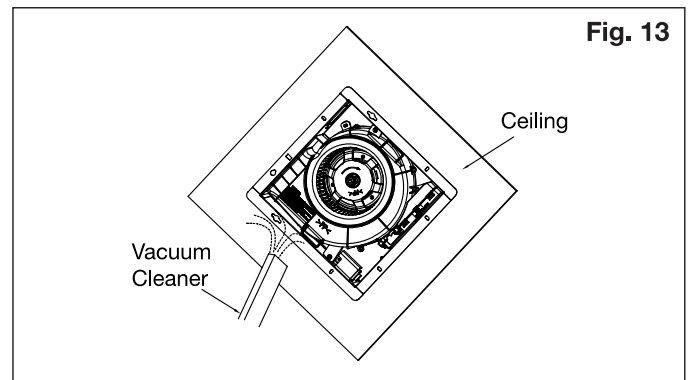
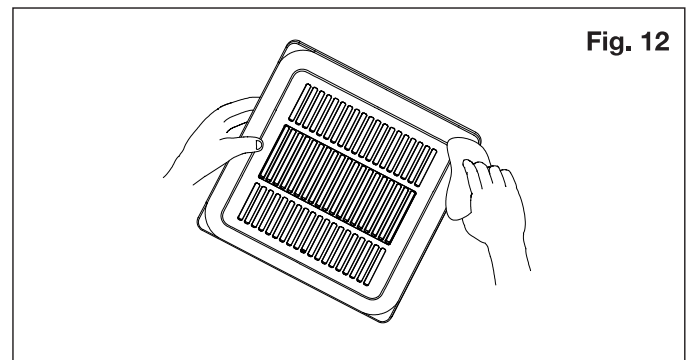
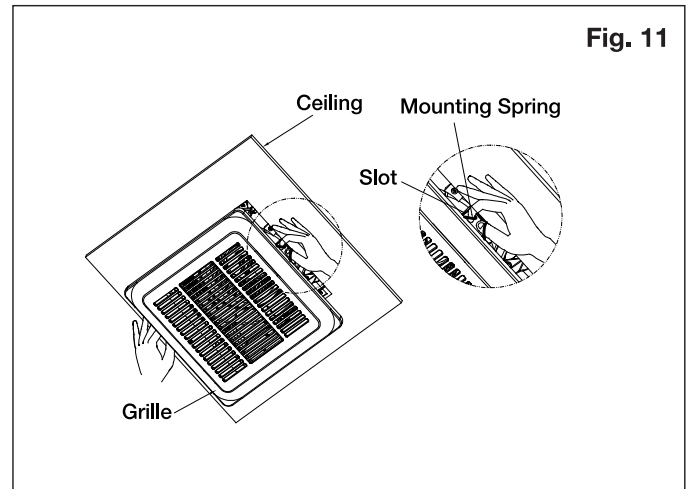
Disconnect power source before working on unit.
Routine maintenance must be performed annually.

IMPORTANT

1. Never use gasoline, benzene, thinner or any other such chemicals for cleaning the ventilating fan.
2. Do not immerse motor in water when cleaning.
3. Do not soak parts in water over 140°F (60°C).

Cleaning

1. Remove grille. Squeeze mounting spring and pull down carefully. See Fig. 11.
2. Clean grille. Do not put into hot water. Use non-abrasive kitchen detergent, wipe dry with clean cloth. See Fig. 12.
3. Remove dust and dirt from fan body using a vacuum cleaner. See Fig. 13.
4. Use a cloth dampened with kitchen detergent to remove any dirt from fan body. Wipe dry with clean cloth. See Fig. 14.
5. Ensure grille is dry and reinstall onto the fan.



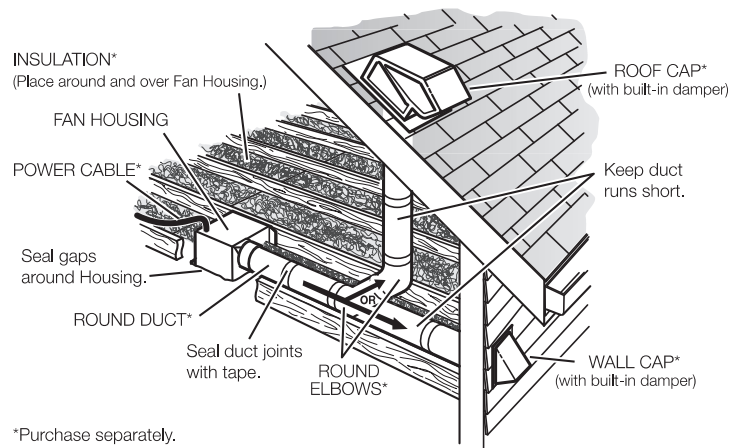
Typical Installation

The ducting from this fan to the outside of the building has a strong effect on the airflow, 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.


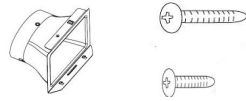

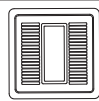
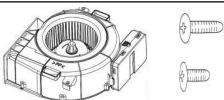
Rigid metal duct is recommended for optimal fan performance.

Ensure duct joints and exterior penetrations are sealed with caulk or other similar material to create an air-tight path and to minimize building heat loss and gain and reduce the potential for condensation.

Place/wrap insulation around duct and/or fan to in order to minimize possible condensation buildup within the duct, as well as minimize building heat loss and gain.



Replacement Parts List

Part	Part Number	Description
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	485153	Duct Adapter with six (6) screws S4X30 5pcs • S4X12 1pc
	485152	Grille with spring clips
	486300	Lighted Grille with spring clips
	486345	Power Pack Assembly – includes motor, control board, blower, wheel, and three (3) screws. S4X8 2pcs • S4X6 1pc

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