



S&P VENTILATION SYSTEMS

PCD1000 INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

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INTRODUCTION

DO NOT INSTALL, USE OR OPERATE THIS EQUIPMENT UNTIL THIS MANUAL HAS BEEN READ AND UNDERSTOOD. READ AND SAVE THESE INSTRUCTIONS FOR FUTURE USE.

These instructions are intended to supplement sound installation practices and are not intended to cover detailed instruction procedures because of the wide variety of fan types and field conditions that exist.

It is the responsibility of the purchaser to assure that the installation and maintenance of this equipment is handled by qualified personnel experienced in such work and equipment.

Contact your local representative should you need further information.

SAFETY INFORMATION

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

- a. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- b. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switching on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- c. 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.
- d. 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.
- e. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
- f. Ducted fans must always be vented to the outdoors.
- g. Acceptable for use over a tub or shower when connected to a GFCI (ground fault circuit interrupter)—protected branch circuit (ceiling installation only).
- h. This unit must be grounded.
- i. Not for use in kitchens.
- j. To reduce risk of fire and to properly exhaust air, be sure to duct air outside—do not vent exhaust air into spaces within walls/ceilings or into attics, crawl spaces, or garages.
- k. **WARNING!** To reduce the risk of fire or electric shock, do not use this fan with any solid-state speed control device.
- l. The fan must not be installed in a ceiling thermally insulated to a value greater than R40.

CAUTION

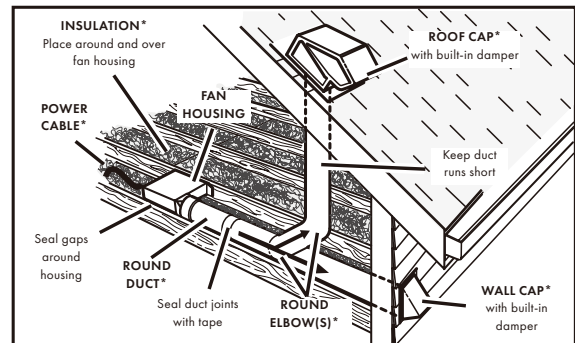
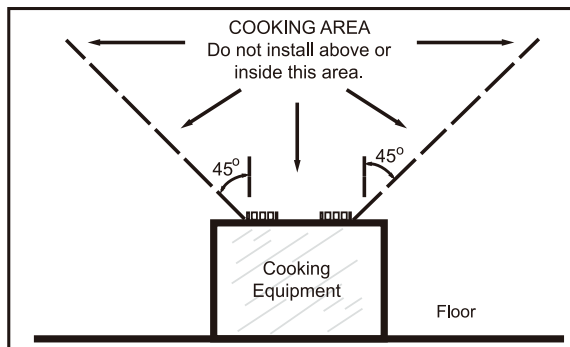
1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. This product is designed for installation in ceilings up to a 12/12 pitch (45° angle). Duct connector must point up.
3. If the ventilator is installed in an unconditioned space (such as an attic): surround the ventilator with thermal insulation—to minimize possible condensation.
4. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
5. Please read specification label on product for further information and requirements.

CLEANING & MAINTENANCE

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

PLAN THE INSTALLATION

Do not install fan above or inside a 45° angle projected outwards from the cooking equipment element closest to the fan.



*Indicates products sold separately.

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.

NOTE: To ensure the best performance, 12 1/4" x 8 1/4" Rectangle duct is recommended.

Operating Temperature Range:

This fan is designed to operate within a temperature range between -10°C (14°F) and 40°C (104°F). Operating the fan outside this range may affect performance, durability, and safety,

ASSEMBLY INSTRUCTIONS

1. Before installation, you need to know:



RUBBER 1



RUBBER 2



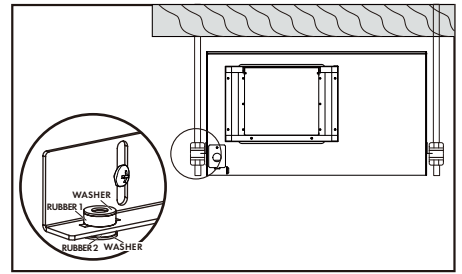
SCREW



WASHER

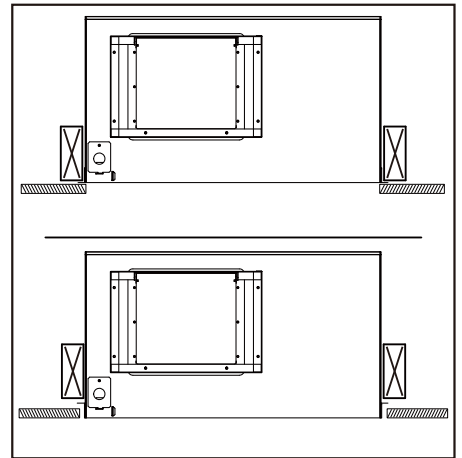
2a. Suspended installation

Before installation, install the rubber 1, rubber 2 and washer to hanger bracket.
Use anchor bolts (not included) to secure housing.

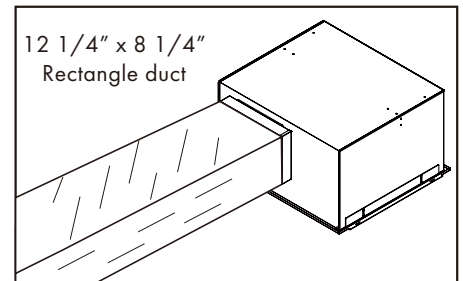


2b. Joists installation

Screw secure mounting brackets to housing. Loosen and re-tighten or remove and replace screw as necessary for desired mounting bracket position.
Screw the mounting brackets onto the joist through the hole

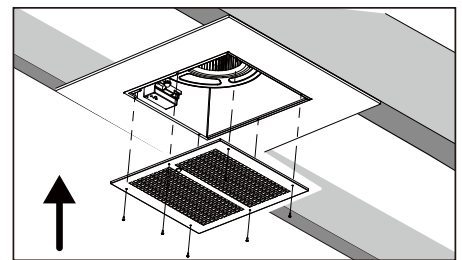


3. Install Ductwork: Using connectors (not included), connect house power wires to ventilating fan wires (refer to wiring diagram). Connect the ductwork (not included) to the damper/duct connector, and run the ductwork to a roof or wall cap (not included). Using tape (not included), secure all the ductwork connections so that they are air tight.



4. Install Ceiling Grille

Install ceiling materials and complete ceiling construction.
Then, cut around the fan housing and opening should be $23 \frac{1}{4} \times 20 \frac{1}{4}$.
To attach the grille assembly to the fan housing, Insert the sensor plug from the grille assembly into the wire panel.
Screws the Grille to the fan housing through the holes of Grille.



ELECTRICAL WIRING

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

NOTE: If only black wire is connected, fan will not work.

⚠ CAUTION! Risk of Unintended Operation:

Improper wiring may result in unintended fan behavior, loss of speed control functionality, or electrical interference .

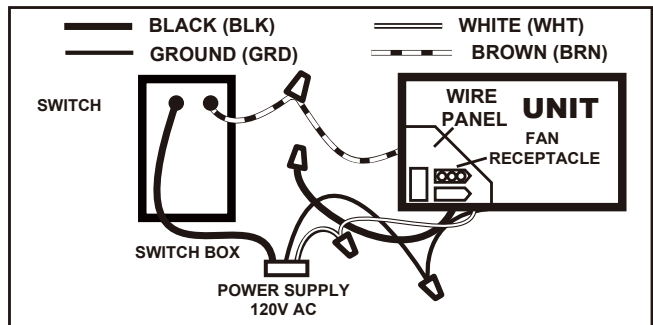
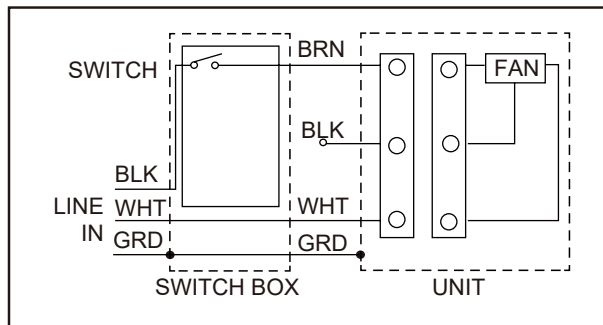
1. Wire Function Overview

- **Brown Wire:** Intended for direct connection to the main hot line. Use for single-speed operation or continuous low-speed operation.
- **Black Wire:** Designed for use in two-speed applications. Connect to a wall switch to activate high speed operation on demand.

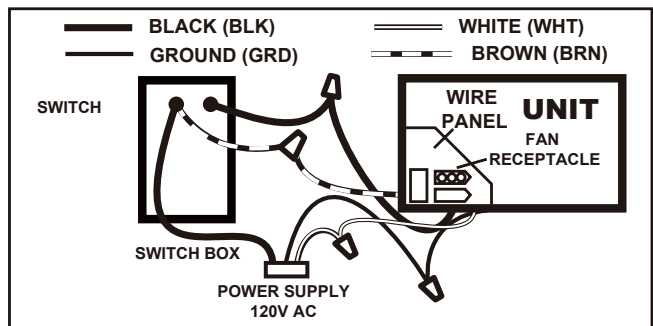
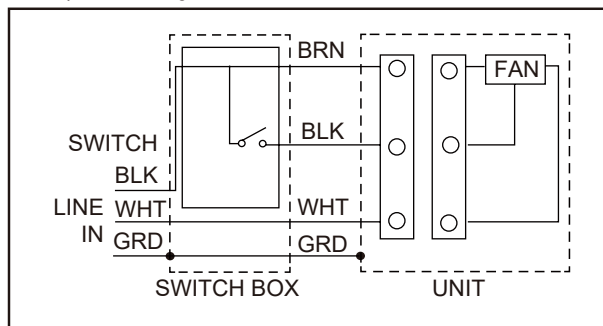
2. Critical Wiring Instructions

- Do not connect the black and brown wires together. Doing so will cause the fan to operate only at high speed and disable the speed control functionality via the internal adjustment knob.
- When not using the Black wire, it must be properly capped and isolated. The Black wire is a signal wire. If left exposed or in contact with metal components, it may cause the fan to activate high speed unintentionally due to stray signals or grounding paths.

Single Speed Wiring



Two Speed Wiring



OPERATION

The PCD1000 model is designed to operate at single-speed or two-speed, to meet ventilation code requirements efficiently. For instructions on wiring for single-speed or two-speed operation, please refer to the "Electrical Wiring" section of this manual.

Adjustable High-Speed Settings

- Model PCD1000: Toggle switches offer three selectable high-speed settings. These represent approximate airflow values. For detailed airflow vs static pressure performance, please refer to the product submittal.

500 CFM | 700 CFM | 1000 CFM (factory default: 700 CFM)

Single Speed Operation:

1. Ensure that the "Time Delay Knob" is set to "OFF." These features will not function when the wall switch is turned off.
2. Adjust the "Low Airflow Knob" to set the fan's single speed between 30% and the maximum airflow. Users can set/adjust the maximum airflow using the toggle switches in the control box.
3. If the "Low Airflow Knob" is adjusted between "OFF" and 30%, the fan is deactivated (factory default: Max).

Two Speed Operation:

1. Low-Speed for Continuous Operation: The fan operates continuously at a lower speed ($\geq 30\%$). Adjust the low-speed continuous airflow using the "Low Airflow Knob" (Range: 30% to high-speed setting).
2. High-Speed for On-Demand Operation: Set the desired high-speed airflow using the toggle switches in the control box. High speed can be activated by wall switch.
3. Humidity Sensor

The humidity-sensing fan uses a sophisticated humidity sensor that responds to:

(a) rapid increases in humidity or (b) humidity above a user-adjustable set-point

(30%-80% relative humidity). Fan run continuously at a pre-set lower level (set by Low airflow knob) and automatically boost up to certified airflow rate when environmental conditions change. After delay timer (user setted) returns fan to the default low speed. If the fan continuously responds to changing environmental conditions, "H" (means "humidity") adjustment may- be required.

4. Sensitivity Adjustment

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

To adjust the "H":

- 4-1. Disconnect power at service entrance.
- 4-2. Remove the grille, locate the slot marked "H".
- 4-3. Carefully rotate the "H" adjustment toward maximum or minimum.
- 4-4. Turn on power and check operation by turning on the shower or other humidity source until the fan turns on.
- 4-5. Repeat above steps if necessary, then reinstall the grille.

When the temperature changes, humidity sensor values will have deviation.

5. Time Delay Feature:

- The time delay knob sets the amount of time that the fan will continue to run at high speed after switch is turned "OFF" (if enabled). Disconnect power at service entrance.
- It is adjustable from 5 to 60 minutes (factory default: "OFF"). Remove the cover plate, locate the slot marked "T", then reinstall the cover plate.
- Once the set time has elapsed, the fan will run at the low airflow knob setting (low speed). The time delay setting is deactivated.

6. Motion sensor

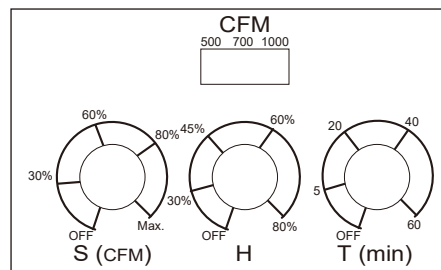
(if enabled) Plug the motion sensing grille into the fan control module and when powered on, the fan will automatically start sensing motion. When motion is detected, the fan speed increases to high speed.

When the person exits the area, the fan remains working at high speed until the delay time has passed (user setted).

After the time delay, the fan speed is reduced to the continuous ventilation rate.

Installation distance: 7 to 9 feet.

Sensing range is within the cone angle of 90° .



SERVICE PARTS

PART	PART NAME	QUANTITY
1	Grille Assembly	1
2	Blower Wheel	1
3	Plate	1
4	Hanger Bracket	2
5	Motor	1
6	Blower	1
7	Housing	1
8	Duct Connector	1
9	Wire Panel / Harness Assembly	1
10	Wiring Plate	1
11	Power Box	1

a	Screw	6
b	Nut	1
c	Screw	2

