

Part Number: P451-REG100, -REG140, -DLX150

▲ WARNING

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

- A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer before using the unit.
- B. Before servicing or cleaning unit, switch power off at service panel and lock service panel to prevent unit from being switched on accidentally.
- C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- D. The combustion airflow needed for safe operation of fuel burning equipment may be affected by this unit's operation. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local authorities.
- E. When cutting or drilling into wall and ceiling, do not damage electrical wiring or other hidden utilities.
- F. Exhaust fans must always be vented to the outdoors.
- G. Install fan at least five feet above the floor.
- H. NEVER place a switch where it can be reached from a tub or shower.

▲ WARNING

Unit has rotating parts — wear hand protection and stay clear of sharp edges to avoid personal injury.

GENERAL

The P451 Series fans are compact and may be mounted either vertically or horizontally. Horizontal mounting may increase condensation buildup, refer to the installation instructions for additional information.

These units are for general ventilation use only, do NOT use them to exhaust hazardous or explosive material or vapors. Because the unit has rotating parts, be sure to observe the warnings above during installation, operation and maintenance of this equipment.

The P451- REG100 and P451- REG140 fan kits include:

- 1 fan
- 1 mounting bracket with hardware
- 1 grille with mounting collar/backdraft damper combination
- Duct mounting clamps.

The P451-DLX150 kit includes these same components, plus an extra grille with a mounting collar/backdraft damper combination (total of 2), and a "Y" transition.

Inspect the Unit — Within 15 days of receipt, remove the unit from packaging and inspect it for any visible damage. If the unit is damaged, report the damage to Totaline.

INSTALLATION

For technical assistance, call 1-800-747-1762.

General Installation Notes — Flexible, insulated duct is strongly recommended where allowed by local codes where ducting passes through unconditioned space, or where noise is a factor.

Failure to use insulation may result in excessive condensation buildup within the duct, and undesirable sound levels within the room. For the quietest possible installations, Carrier recommends a minimum of 8 ft of insulated flex duct between any exhaust grille and the fan.

When using flexible ductwork, the duct should be stretched as tight and straight as possible. Failure to do so may result in loss of system performance. Flexible duct should be connected to the fan with clamps or duct tape.

All connections should be as tight and airtight as possible to maximize system performance.

Select Mounting Location — When selecting a mounting location considering the following: Mounting to minimize noise generated by fan operation, type of application, and service accessibility.

Mounting the fan as far as possible from the intake point will minimize the fan operating noise transmitted back through the ductwork. If the fan will be used as a booster for moving air between two rooms, mounting it at a central point along the duct may be optimal.

Insulated, flexible type ductwork will result in the quietest operation. A minimum of 8 ft of insulated flexible duct between any exhaust grille and the fan is recommended for low noise level.

The best location for the fan is as close as possible to the termination of the duct work. Fan location should allow sufficient service access.

Install the Fan

1. Using the wood screws provided, attach the mounting bracket to a support beam at the selected location.
2. Attach the fan to the mounting bracket with the sheet metal screws provided. The bracket has rubber vibration isolation grommets to prevent sound transmission, do NOT overtighten screws.
3. Connect duct work to the fan inlet and outlet using CB clamps or duct tape. When using insulated duct, clamp

or tape the inner vinyl core to the inlet and outlet, and also duct tape the vapor barrier (surrounding the insulation) to the fan housing.

NOTE: If the fan will be mounted horizontally, either wrap insulation around the fan or drill a 1/4 in. hole in the bottom of the housing and use an NPT insert and drain tubing to allow condensation to drain.

Install the Supply/Exhaust Grille (P451-REG100 and REG140 kits) — To install the grille, follow the steps below.

1. Select the grille mounting point within the ventilation area, taking into consideration the location of framing beams or joists; the collar has a perforated hanging strap for attachment directly to a beam or joist. Allow sufficient space between the collar and the beam to attach the ductwork.
2. Place the mounting collar in the selected location and trace a circle onto the mounting surface. From the interior of the room, cut through the surface using the circle as a guide.

NOTE: If cutting through sheetrock or tile ceiling, use a razor knife to make the cut.

3. From within the attic or crawl space, place the mounting collar into the hole until the edge of the collar is flush with the interior wall or ceiling surface.
4. Attach the collar to the support beam with the 1 in. wood screws provided.
5. Attach the ductwork and secure it using clamps or duct tape.

NOTE: When attaching flex duct to the collar/damper, an immediate elbow is necessary. Be certain that the elbow is installed with a soft bend to allow the damper to operate properly.

6. Snap the grille into the mounting collar. Push the grille tightly in place for an airtight fit. Caulk any gap between the collar and the ceiling to prevent air leakage. Refer to Fig. 1.

Additional Damper (P451-DLX150 Kit Only) —

The deluxe kit comes with a balancing damper to allow system adjustment. Use the damper when connecting branches of unequal length or when balancing flow for any reason.

1. Install the damper on the branch with the least restriction, which is usually the shortest duct or the one with the fewest bends.
2. Drill a 5/16 in. hole approximately 1 1/2 in. from the edge on the flat side of the “Y” transition.
3. Place the washer over the threaded damper shaft.
4. Insert the damper, shaft first, into the hole drilled in Step 2.
5. Attach the handle using the wing nut provided. Leave the wing nut loose enough to allow damper adjustment.
6. Adjust the damper to balance the airflow and tighten the wing nut when finished. Refer to Fig. 2.

Make Electrical Connections

⚠ WARNING

Check voltage at the fan to see if it corresponds to the motor nameplate. Electric shock can cause personal injury or death.

1. Remove the screws securing the terminal box cover plate located on the side of the fan. All fan motor

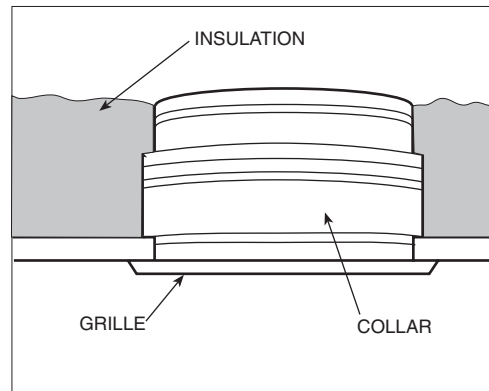


Fig. 1 — Grille and Collar (Side View)

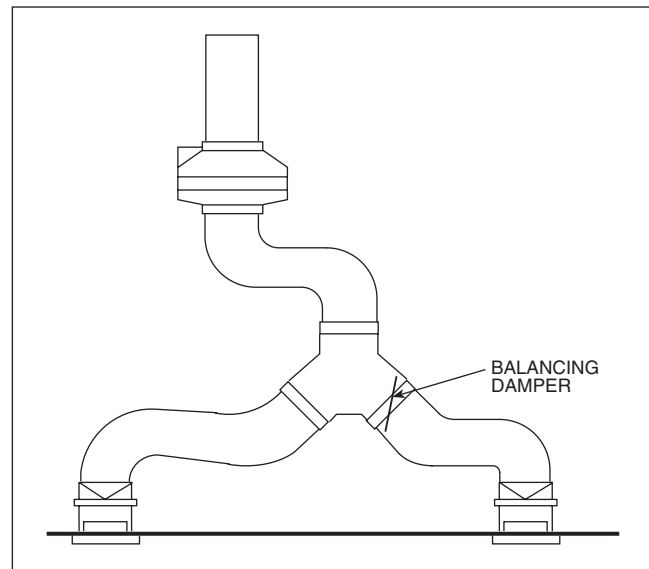


Fig. 2 — Deluxe Kit Balancing Damper — Installed

connections are pre-wired to an electrical terminal strip. A 3/8 in. cable restraint connector is required to secure the wiring through the knockout provided on the side of the terminal box.

2. Bring the incoming electrical service through the connector and the fan knockout. Be sure to place the connector nut over the wiring coming into the terminal box.
3. There are two open ports on the terminal strip. Using a small regular screwdriver, tighten the neutral (white) wire of the incoming supply under the open terminal strip port labelled “N.” Tighten the line (black) wire of the incoming supply under the open terminal strip port labelled “L.” Since the fan motor is isolated within a plastic housing, grounding is not necessary.
4. Secure the incoming supply with the connector.
5. Replace the fan terminal box cover.
6. All fan motor and capacitor connections have been pre-wired from the factory. No additional fan wiring is necessary.

TROUBLESHOOTING

If the fan fails to operate, please check the following:

1. Consult wiring diagrams shown in Fig. 3 to ensure proper connections.
2. Check motor lead wiring, capacitor leads and incoming supply leads to ensure definite contact.
3. If possible, use a meter to test for continuity between fan leads. Please note that the capacitor will show no reading if tested with meter — disconnect it before

testing. If motor leads show continuity, consult the factory for a replacement capacitor.

MAINTENANCE

Fan Bearings — Fan bearings are sealed and have been provided with an internal lubricating material, no lubrication is necessary.

Impeller — At least once a year, remove any particles that have collected on the impeller.

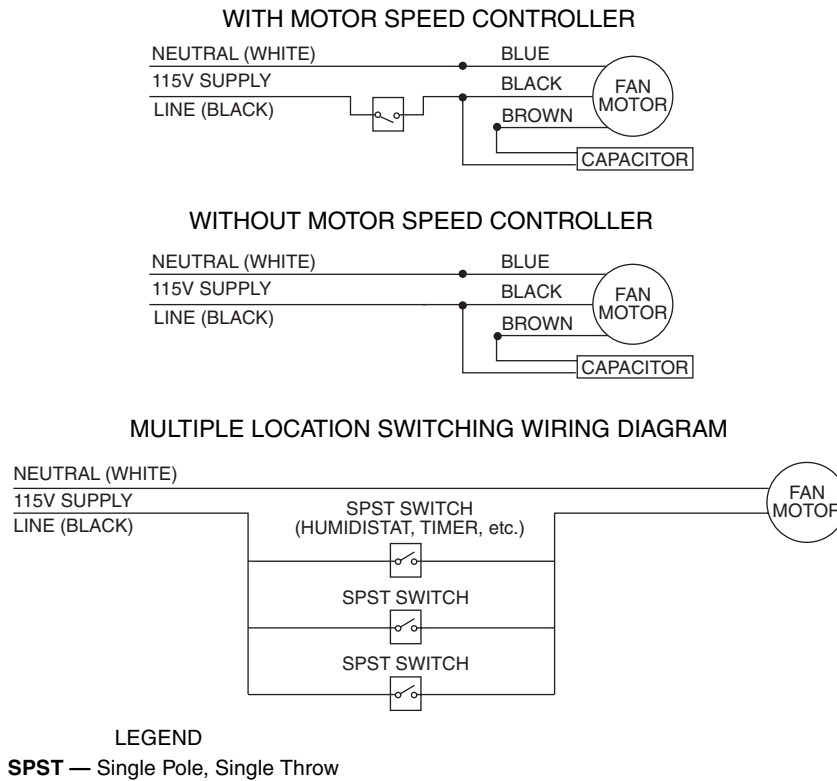


Fig. 3 — Wiring Diagrams (All Units)

**P451 SERIES BATHROOM FAN KITS
LIMITED FIVE-YEAR WARRANTY**

FIVE-YEAR WARRANTY — This CARRIER CORPORATION product is warranted to be free from defects in material and workmanship under normal use and maintenance for a period of five years from the date of original installation. A new or remanufactured part to replace the defective part will be provided without charge for the part itself, through a qualified servicing CARRIER CORPORATION dealer or service, PROVIDED the defective part is returned to our distributor. The replacement part assumes the unused portion of the warranty.

THIS WARRANTY DOES NOT INCLUDE ANY ADDITIONAL LABOR ALLOWANCE OR OTHER COSTS, incurred for diagnosis, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts. SUCH COSTS MAY BE COVERED BY a separate warranty provided by the installer.

LIMITATIONS OF WARRANTIES — ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

CARRIER WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owners manual.
2. Damage or repairs required as a consequence of faulty installation or application by others.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage or repairs needed as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration, or improper operations.
5. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of CARRIER CORPORATION.
6. Parts not supplied or designated by CARRIER CORPORATION.
7. CARRIER CORPORATION products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
8. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

Model No.	Unit Serial No.
Date of Installation	Installed by
Name of Owner	Address of Installation