

# INSTALLATION INSTRUCTIONS FOR IN-LINE DUCT FAN MODEL # 1950101

Locate the PowerAir Fan in the duct pipe near the problem area. Allow adequate space for the removal of the unit for servicing or annual inspection.

## FOR METAL DUCT PIPE

1. Separate the duct at a joint near the problem area and cut 6-3/4" off the end of the duct pipe. (See Figure 1)
2. An alternative method is to cut a 5-3/4" section out of the duct pipe. (See Figure 2) Then crimp the end of the duct pipe with at least 1" crimp. (See Figure 3)
3. Install the PowerAir Fan unit with the crimped end pointing toward the problem area. (See Figure 3) Secure the unit with sheet metal screws and seal joints with duct tape. Support the unit with an acceptable hanging method.

## FOR FLEXIBLE DUCT

1. Cut and separate the flexible duct. Fold back the outer insulation on the duct to expose the flexible duct material. (See Figure 4)
2. Insert the Power Air unit, with the crimped end pointing toward the problem area, into the flexible duct and secure with duct tape (See Figure 4)
3. Support the unit with acceptable hanging method. Then re-install outer insulation and secure with duct tape. Allow room for installation of an electrical junction box.

**\* WARNING : Never expose your Power Air™ in-line duct fan to temperature over 140°(60°C).**

## UNIT WIRING INSTRUCTIONS

A permanent wiring method must be used for power connection. It is recommended that a minimum size of 14 AWG wire for electrical supply connections and wiring should be suitable for 90°C (194°F) temperature. The PowerAir Fan should be wired with an overcurrent protection device (fuse or circuit breaker) rated 15 amperes or less. Wiring method should be in accordance with the Canadian Electrical (CE) Code and any local code requirements. All wiring connections should be within an electrical junction box. It is advisable that all electrical hook-up should be done by a licensed electrician.

**CAUTION:** Disconnect electrical power before wiring. Do not route electrical wiring along heated duct pipes. Unit should be grounded.

WIRING METHOD No.1 (See Figure 5 for wiring diagram)

Controlling the PowerAir Fan through a standard ON/OFF wall switch. This method allows for manual control of the PowerAir Fan unit in the area desired.

WIRING METHOD No.2 (See Figure 6 for wiring diagram)

Controlling the PowerAir Fan through a central heating/air conditioning forced air system. This method allows for automatic operation of the PowerAir Fan unit. The PowerAir Fan is wired in parallel with the appliance blower motor. This operates the PowerAir Fan whenever the appliance blower operates.

**CAUTION:** Do not wire PowerAir Fan to an appliance motor if:

1. The appliance blower motor is not rated for 120 volts AC single phase and operating at 60 cycles.
2. The blower motor control is a variable speed type, solid state speed control or any of the type of controls not designed for dual motor control. Consult appliance manual for this information.

## WIRING METHOD NO.3

Controlling the PowerAir Fan through a Waterline PA-PS PowerAir Activator (Optional) for automatic control of the Air Booster without wiring directly to the appliance blower motor. (See Part No. 1950105)

**NOTE:** All wire splice connections should be made within an electrical junction box.

## MAINTENANCE

**CAUTION:** Disconnect electrical power supply before performing maintenance.

Periodic removal and cleaning of the PowerAir Fan unit is recommended for forced central heating/air conditioning systems. Annual removal and cleaning of the PowerAir Fan unit is recommended for gravity warm air heating systems not equipped with a return air filter.

## GENERAL INFORMATION

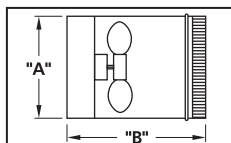
The PowerAir Fan should be installed in branch ducts serving individual rooms, where proper air flows cannot be achieved.

The Power Air Fan is not designed for installation in the main supply ducts. Locating the Power Air Fan near the outlet end of a problem branch will provide the best performance.

The Power Air Fan is designed to operate in round metal or flexible type ducts.

## UNIT DIMENSIONS

MODEL	"A"	"B"
1950101	5"	7-1/2"



## ELECTRICAL DATA

MODEL	VOLTS	AMPS	HZ	WATTS	RPM	THERMAL OR IMPEDANCE PROTECTION	MAXIMUM TEMP RATING*	CFM
1950101	115V	0.24 A	60	14	2400	YES	169°	170

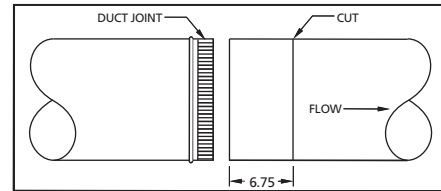


Figure 1

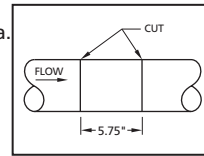


Figure 2

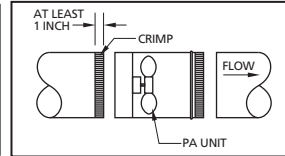


Figure 3

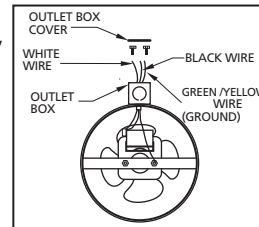


Figure 3B

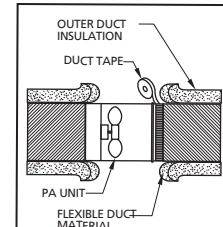


Figure 4

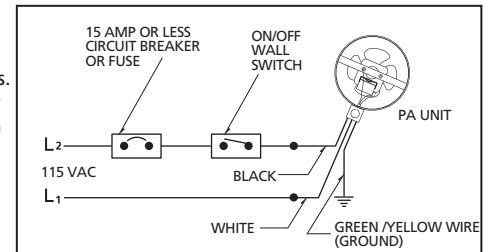


Figure 5

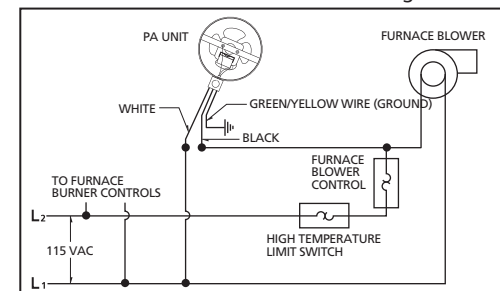


Figure 6

# INSTALLATION INSTRUCTIONS FOR UNDER MOUNT IN-LINE DUCT FAN MODEL# 1950103

## INSTALLATION

Electrical equipment should be installed by a licensed electrician.

1. The unit can be mounted on round ducts 5" in diameter and larger, or on rectangular or square ducts 4" and wider & as shallow as 3".
2. Locate the PowerAir™ Fan in the BRANCH DUCT supplying the problem room – where the duct is warm to the touch while the furnace is operating. Note : Do not install the PowerAir™ Fan where the temperature of the air within the duct is above 200°F. It is rare that this temperature is found in forced warm air systems, however, it could exist on gravity warm air systems if mounted close to the furnace. It is suggested that the PowerAir™ Fan be located near the outlet end of the branch duct for maximum performance. The same location will also apply to air conditioning.
3. On horizontal and inclined installations, the slot for the PowerAir™ Fan can be cut in the bottom or top of a horizontal duct. On vertical installations, the slot can be cut on any side of the duct. In either horizontal or vertical installations, the motor shaft must be in a horizontal position.
4. NOTE: The motor used on the PowerAir™ Fan is an accepted component of the listed fan unit by C.S.A. This motor is designed as a normally HOT running motor and should feel hot to the touch. Tests indicate that a normal 50-Watt household incandescent light bulb is considerably hotter than the maximum motor temperature of your PowerAir™ Fan. This motor temperature will not affect the performance of your PowerAir™ Fan, provided installation & mounting instructions herein are observed.

## MOUNTING INSTRUCTIONS

Once the location for the PowerAir™ Fan is established, you are now ready to mount the unit as follows:

### READ THESE INSTRUCTIONS CAREFULLY:

1. Attach the mounting template to duct in desired location. (See No. 2) Place mounting template in the centre of the selected duct for best performance.
2. Cut out the metal duct work along template lines according to the size duct you have.  
BE CAREFUL NOT TO CUT OPENING TOO LARGE.
3. After the duct work has been properly cut, insert the PowerAir™ Fan lip INSIDE the duct opening, ( See Figure 1 & 2 ) pushing the PowerAir™ Fan housing forward and upward at the same time so that the PowerAir™ Fan housing fits snugly into the opening. The side flanges should be on the OUTSIDE of the duct. ( See Figure 1 & 2 ) NOTE : Be certain that the PowerAir™ Fan 'Deflector Plate' ( See Figure 1 & 2 ) , which curves above the blower wheel , is pointing in the direction of airflow.
4. With the housing pushed tightly against the duct, drill or punch four 3/32" holes into the duct using the PowerAir™ Fan side flange mounting holes as locators.

Fasten PowerAir™ Fan to air duct with 4 sheet metal screws, pulling the PowerAir™ Fan up snugly against duct. If necessary, bend the side flanges ( See Figures 1 & 2 ) to conform to your particular duct size and shape.

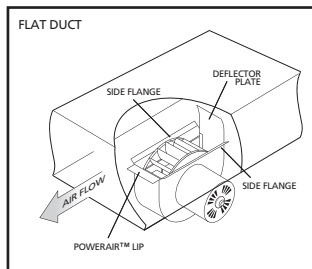


Figure 1

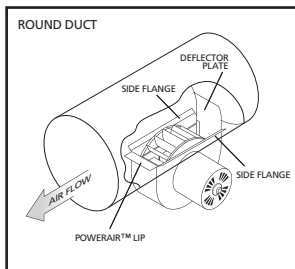


Figure 2

## OPERATION

The PowerAir™ Fan can be operated and controlled in several manners:

### AUTOMATIC OPERATION:

Wire in parallel with furnace blower motor. With central heating/air conditioning systems, it is recommended that the PowerAir™ Fan be wired in parallel with the furnace blower motor for simultaneous operation. ( See Figure 3 )

## UNIT WIRING INSTRUCTIONS

1. For electrical supply connections , use wires suitable for at least 90°C when PowerAir™ Fan is used on heated duct system.
2. Electrical conduit must be routed away from warm air system ducts. Use adequate supports if necessary.
3. The black and white wires are connected to power source. The green wire is used for grounding purposes only.
4. The existing short circuit and ground fault protection for the furnace blower motor should be of a size and type which will adequately protect the PowerAir™ Fan motor.
5. The wiring from the furnace to the PowerAir™ Fan must be 14 AWG and the furnace should be protected by over current protection ( fuses or circuit breakers ) rated 15 Amperes or less ( as applicable for 14 AWG conductors).

## ELECTRICAL DATA

MODEL	VOLTS	AMPS	HZ	WATTS	THERMAL OR IMPEDANCE PROTECTION	C F M
1950103	115 V	.29	60	35	YES	275

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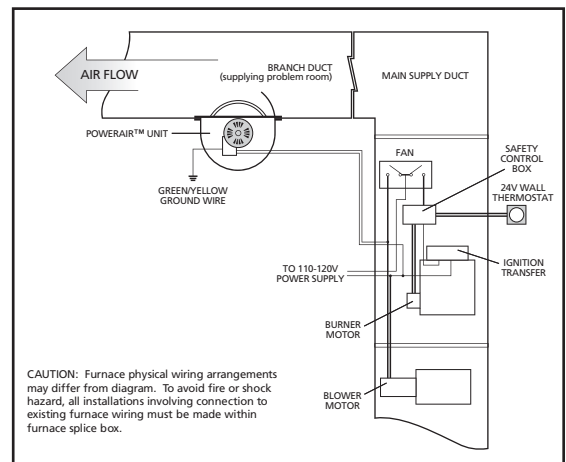


Figure 3

# INSTALLATION INSTRUCTIONS FOR IN-LINE DUCT FAN MODEL # 1950104

## INSTALLATION

The PowerAir Fan is not designed for installation in the main air supply ducts. Locating the Power Air Fan near the outlet end of a problem branch duct will provide the best performance. The Power Air Fan is designed to operate in round ducts 6-inches in diameter or larger and rectangular ducts 6-inches wide by 6-inches deep or larger.

**CAUTION:** Do not install the PowerAir Fan where the air temperature within the duct exceed 180°F. The PowerAir Fan should not be installed into vertical duct pipes.

1. Locate the PowerAir Fan in the duct pipe near the problem area. Allow adequate space for the removal of the unit for servicing or annual inspection.
2. With masking tape, attach template provided to the duct surface. Make sure the arrows on the template point in the direction of the desired air flow. After the template has been secured to the duct pipe, cut a slot in the pipe along the indicated lines on the template. Then remove the remainder of the template from the pipe. (See Figure 1A or 1B)
3. Insert the PowerAir Fan into the slot, making sure the fan blade points in the direction of the air flow. Position the PowerAir Fan so the fan blade does not rub against the inside surface of the duct. Mark on the duct the location of the 6-hole positions in the base plate. Remove the PowerAir Fan and drill 1/8-inch diameter holes through the duct pipe where indicated.

4. Insert the Power Air Fan into the cut slot of the duct pipe. Make sure the fan blade is pointed toward the outlet of the duct. Secure the Power Air Fan onto the duct with the sheet metal screw provided. (See Figure 3A or 3B)

**\* WARNING :** Never expose your Power Air™ in-line duct fan to temperature over 140° (60°C).

## UNIT WIRING INSTRUCTIONS

### ELECTRICAL DATA

VOLTS	AMPS	Hz	WATTS	RPM	THERMAL OR IMPEDANCE PROTECTION	CUBIC FEET PER MINUTE
115 V	.36	60	25	3000	YES	220

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**CAUTION:** Disconnect electrical power before wiring. Do not route electrical wiring along heated duct pipes.

### WIRING METHOD No. 1

Controlling the PowerAir Fan through a standard on/off wall switch. (See Figure 4 for wiring diagram) This method allows for manual control of the PowerAir Fan unit in the area desired.

### WIRING METHOD No. 2

Controlling the PowerAir Fan through a central heating/air conditioning forced air system. (See Figure 5 for wiring diagram) This method allows for automatic operation of the PowerAir Fan unit. The PowerAir Fan is wired in parallel with the appliance blower motor. This operates the PowerAir Fan whenever the appliance blower operates.

**CAUTION:** Do not wire the PowerAir Fan to an appliance blower motor if: The appliance motor is not rated for 115 volts AC single phase & operating at 60 cycles The blower motor control is a variable speed tap type, solid state speed control or any of the type of controls not designed for dual motor control. Consult appliance manual for this information.

### WIRING METHOD No.3 (See Figure 6 for wiring diagram)

Controlling the PowerAir Fan through a Waterline PowerAir Activator(optional), for automatic control of the PowerAir Fan without wiring directly to the appliance blower motor.

**NOTE:** All wire splice connections should be made within an electrical junction box.

## MAINTENANCE

**CAUTION:** Disconnect electrical power supply before performing maintenance.

Periodic removal and cleaning of the PowerAir Fan unit is recommended for forced central heating/air conditioning systems. Annual removal and cleaning of the Power Air Fan unit is recommended for gravity warm air heating systems not equipped with a return air filter.

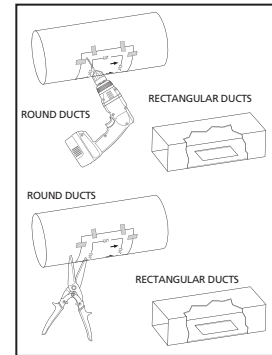


Figure 1A

Figure 1B

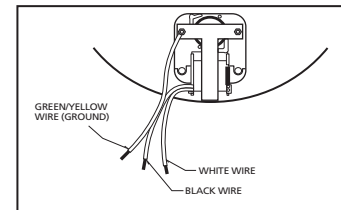


Figure 2B

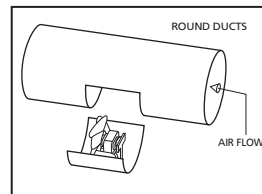


Figure 3A

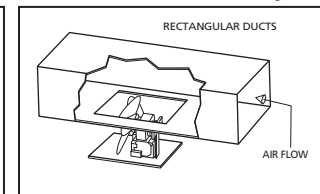


Figure 3B

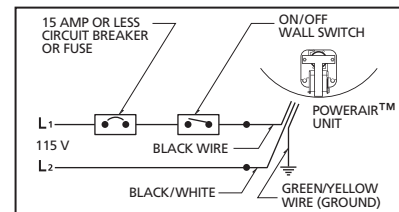


Figure 4

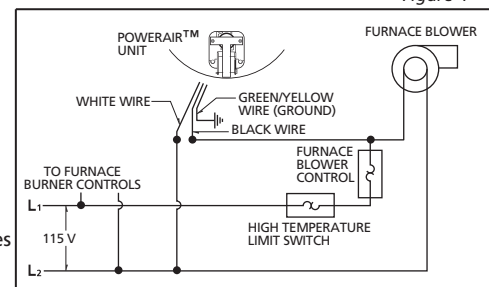


Figure 5

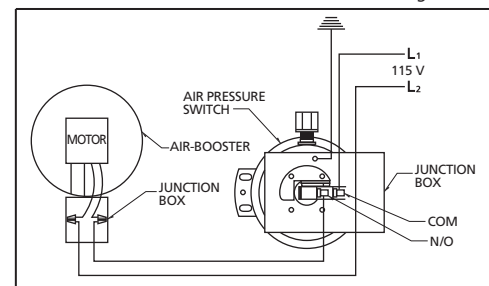


Figure 6