

SYSTEM CONTROL KIT

Model: CK-43CC for use with SWGII-4CC Venter Kit



Designed for use with the SWGII-4CC Power Venter for controlling Natural or Propane Gas induced-draft furnaces.

Items included in Kit:

- 1- Junction box with mounted pressure switch and post purge timer
- 1- 2 ft. length of $\frac{1}{4}$ " diameter aluminum tubing
- 2- Flexible conduit connector
- 1- 4" MG1 Barometric Draft Control, Part No. 46198902
- 1- $\frac{1}{4}$ " diameter tubing connector
- 1- CK-43CC Installation Instruction, Part No. 46296200

READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY BEFORE PROCEEDING WITH THE INSTALLATION.

This device **MUST** be installed by a qualified agency in accordance with the manufacturer's installation instructions. The definition of a qualified agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of HVAC appliances, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction.

Please retain these instructions after installation.

Installed By: _____ Phone: _____ Installation Date: _____



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MOUNTING JUNCTION BOX

The junction box can be mounted at the venter or remotely mounted away from the venter.

(See Fig. 1 & Fig. 2)

1. Remove one of the knockouts from the side of the junction box where the pressure switch is mounted. Install the flexible conduit connector onto the CK-43CC junction box and secure with fastening nut. If remote mounting the CK-43CC junction box, mount the flexible conduit connector onto a 2"x4" installer-supplied junction box.
2. Fasten the flexible conduit from the SWGII-4CC Venter into the conduit connector. Mount the CK-43CC junction box or installer-supplied junction box onto the wall or floor joist without straining the flexible conduit. Fasten the CK-43CC junction box through the four dimpled locations on the base of the box. (See Fig. 3)

PRESSURE SWITCH SENSING TUBE INSTALLATION

1. Attach the 1/4" diameter tubing connector to the pressure tube on the SWGII-4CC Venter. (See Fig. 3)
2. Connect the supplied 1/4" diameter aluminum tubing to the tubing connector. Route the tubing to the CK-43CC junction box. Connect the tubing to the pressure switch. When routing the tubing, avoid kinking tubing by not bending the tubing sharply. Avoid forming condensate trap.

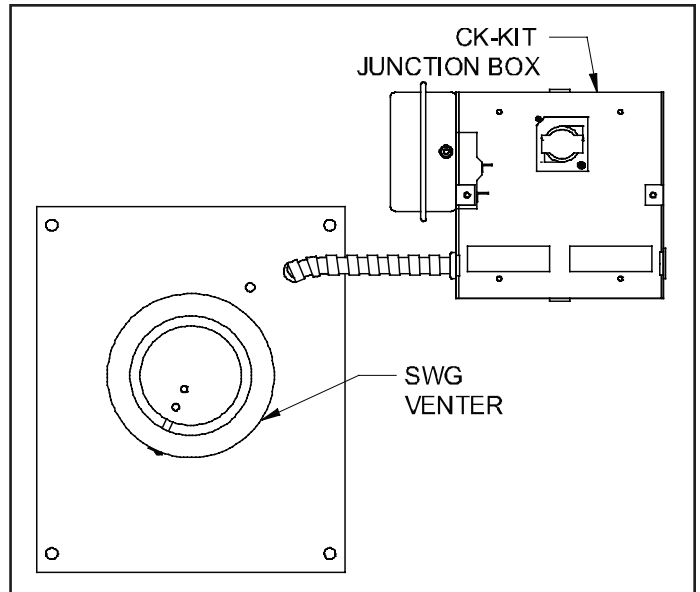


Figure 1

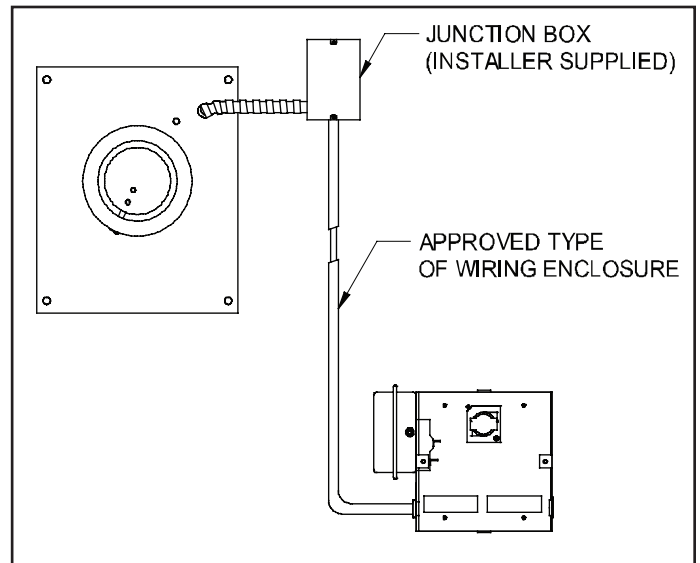


Figure 2

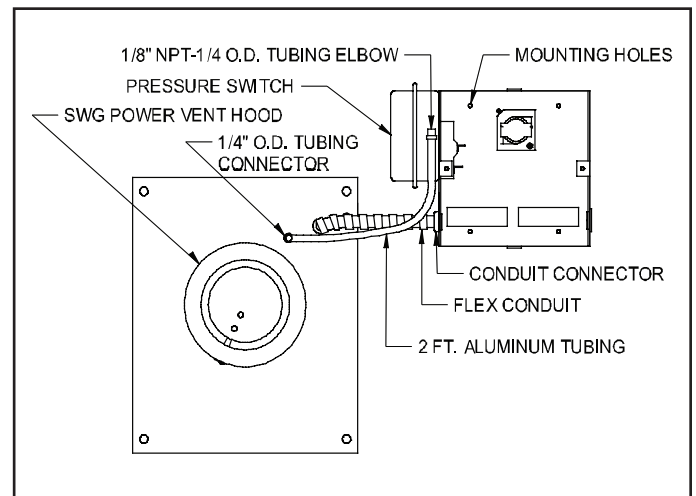


Figure 3

For remote mounted CK-43CC Junction Box, use a 1/4" OD copper or aluminum tubing, and route the tubing to avoid contact with any heat source.

DRAFT CONTROL INSTALLATION

CAUTION: This draft control is shipped as a single acting draft control. Do NOT remove the gate stop on the draft control ring.

Draft Control Installation in Type B-1 Vent Pipe-

CAUTION: DO NOT use a single-wall tee when mounting draft control to Type B-1 Vent Pipe.

Install by using a Type B-1 Vent Pipe Tee.

1. Install a single-wall vent pipe reducer or increaser into the Type B-1 inner pipe and fasten using sheet metal screws. (See Fig. 5)
2. The opening of the Type-B-1 Vent Tee, at the draft control mounting location, should be sealed with a high temperature sealant equivalent.
3. Refer to Draft Control Installation Section.

Draft Control Installation and Adjustment- Insert the draft control into the collar or tee. The front face of the control MUST be plumb and the bearing surfaces MUST be level whether the control is on a horizontal, vertical or sloping vent pipe. Use a spirit level and level accurately. (See Fig. 6) Secure the control in the collar. The control shall be held in place by two sheet metal screws.

Adjusting the 4" MG1 Draft Control- The control MUST be adjusted to the desired draft setting by adding or removing the washer-type weights supported by the two chains on the side of the draft control. (See Fig. 6) DO NOT move the weight attached directly to the gate, this is used only for balancing at the factory.

What Draft Setting to Use- When adjusting the control, two things are essential:

1. The burner must be operating for at least 10 minutes to obtain maximum chimney draft.
2. An analysis of the vent gases is necessary to determine the percentage of CO₂ and check for concentration of CO.

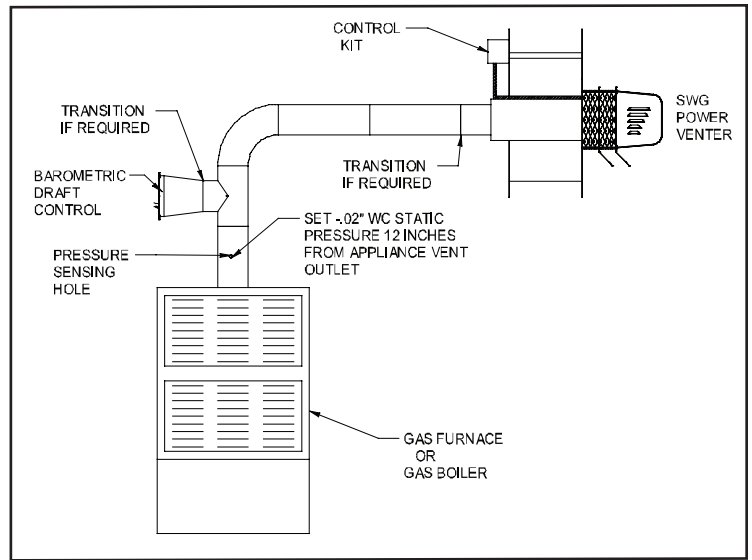


Figure 4

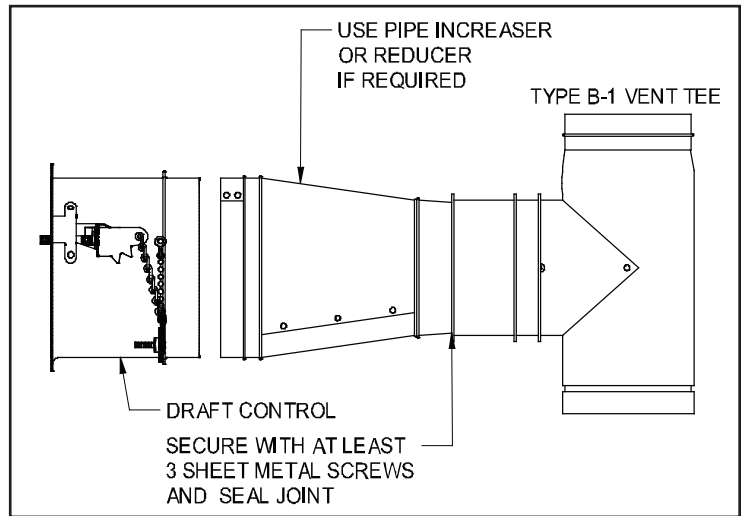


Figure 5

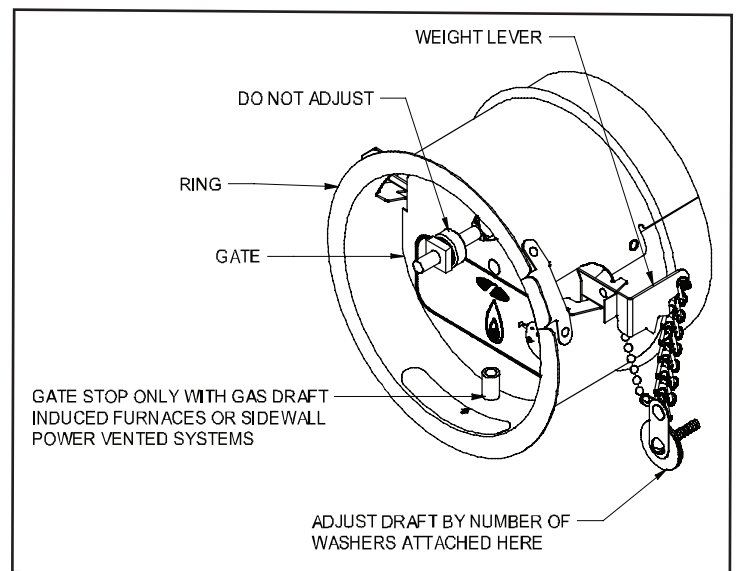


Figure 6

The maximum permitted CO concentration in the vent is 50 parts per million. A rule of thumb for draft setting is between .01" to .03" of water column draft at the furnace outlet.

Changes in the adjustment of the 4" MG1 control should be made by adding or removing the washer-like weights (supplied with the control) to or from the weight holder chain assembly. After the control is adjusted, its action will be entirely automatic, the gate will open or close by itself to correct for changes in the draft that occur in the chimney.

PROVING SWITCH ADJUSTMENTS

After proper air flow is established, the pressure switch adjustment is made by turning the pressure switch adjustment screw clockwise (See Fig. 7) until burner operation stops. Turn the adjustment screw counterclockwise until burner ignites. Turn the adjustment screw an additional ¼ to ¾ turn counterclockwise to ensure adequate switch adjustment.



WARNING: Failure to properly adjust the pressure switch as specified above could lead to improper operation of the pressure switch which will result in a hazardous condition and bodily harm!

THERMOSTAT HEAT ANTICIPATOR ADJUSTMENT

After venting kit installation and checkout, check the amperage current draw through the thermostat circuit and adjust the thermostat anticipator accordingly.

WIRING INSTRUCTIONS

CAUTION: DISCONNECT ELECTRICAL POWER WHEN WIRING POWER VENTER.

Wire the venter motor and controls in accordance with the National Electrical Code (NEC) ANSI/NFPA 70, Canadian Electrical Code CSA C22.1, applicable local codes. UNITS MUST BE GROUNDED. Check ground circuit to make certain that the unit has been properly grounded. The wiring should be protected by an over-current circuit device rated at 15 amperes. CAUTION must be taken to ensure that the wiring does not come into contact with any heat source. All line voltage and safety control circuits, between the power venter and the appliance, MUST be wired in accordance with the National Electrical Code or Canadian Electrical Code for Class 1 wiring or equivalent methods. Route the venter motor and control wiring with an appropriate wiring method. Refer to Wiring Diagram A or B.

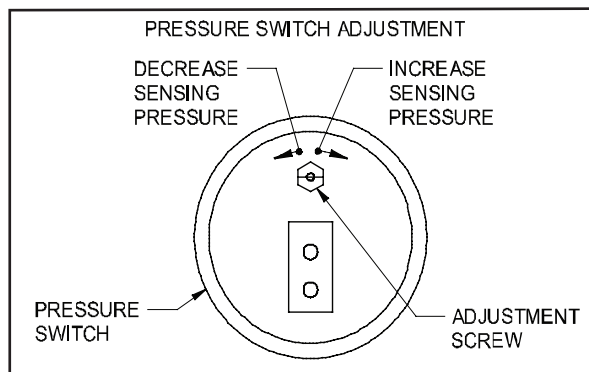


Figure 7

LOW VOLTAGE WIRING INSTRUCTIONS

1. Locate terminal W or W/W1 on furnace control in furnace blower compartment.
2. Disconnect all wire(s) (if any) from furnace control terminal W or W/W1.
3. Connect the thermostat W or W/W1 terminal to T1 on CK-43CC.
4. Connect T3 on CK-43CC to furnace control terminal W or W/W1.
5. Connect T2 on CK-43CC to furnace control terminal COM 24V.
6. Connect the thermostat R terminal to furnace control terminal R.
7. If the furnace has two gas heating stages, connect the thermostat W2 terminal directly to the furnace control W2 terminal.

No other 24 VAC connections shall be made to the furnace for heating operation.

LINE VOLTAGE WIRING INSTRUCTIONS

1. Connect 115-volt AC hot power source, black wire, to terminal L1 on CK-43CC.
2. Connect 115-volt AC neutral power source, white wire, and white wire from venter motor to terminal N on the CK-43CC.
3. Connect black wire from venter motor to terminal M on the CK-43CC.

Refer to the SWGII-4CC Venter installation instructions for setting system air flow.

SYSTEM CONTROL CHECK OUT PROCEDURES

1. Adjust the thermostat to call for heat and observe the power venting system for proper operation sequence. (Repeat if necessary)
 - a. Thermostat calls for heat.
 - b. CK- 43CC relay is energized and venter motor starts.
 - c. CK- 43CC pressure switch closes and provides 24 VAC to furnace control terminal W or W/W1.
 - d. Furnace completes its ignition sequence and supplies heated air.
 - e. Thermostat is satisfied. The burner stops. The furnace inducer continues running for 5 seconds. The furnace blower continues running for the selected blower-off delay period (90, 135, 180, or 225 seconds), if Continuous-Fan is not selected. Then the furnace is off in standby mode.
 - f. The CK-43CC control starts the post purge cycle at the same time the burner stops. Purge time is 1 to 2 min.
2. While system is operating, disconnect power to the venter motor. This should open the pressure switch contacts and stop burner operation.

TROUBLE SHOOTING HINTS

1. Venter does not activate when thermostat calls for heat. Check wiring from thermostat to venter to furnace.
2. Furnace does not start ignition sequence after SWGII-4HD venter is operating.
 - a. Check CK-43CC pressure switch for continuity across terminals.
 - b. Check pressure switch tubing.
3. Vent gas odor:
 - a. Check system draft.
 - b. Check for negative pressure in building.
4. Check furnace trouble-shooting procedure.

INTERNAL WIRING FOR CK-43CC CONTROL KIT: DIAGRAMS A & B

L1 TO 1 ON POST PURGE TIMER	T2 TO TIMER RELAY BASE
M TO 3 ON POST PURGE TIMER	T3 TO N/O ON PRESSURE SWITCH
T1 TO COMMON ON PRESSURE SWITCH	TIMER BASE TO COMMON ON PRESSURE SWITCH

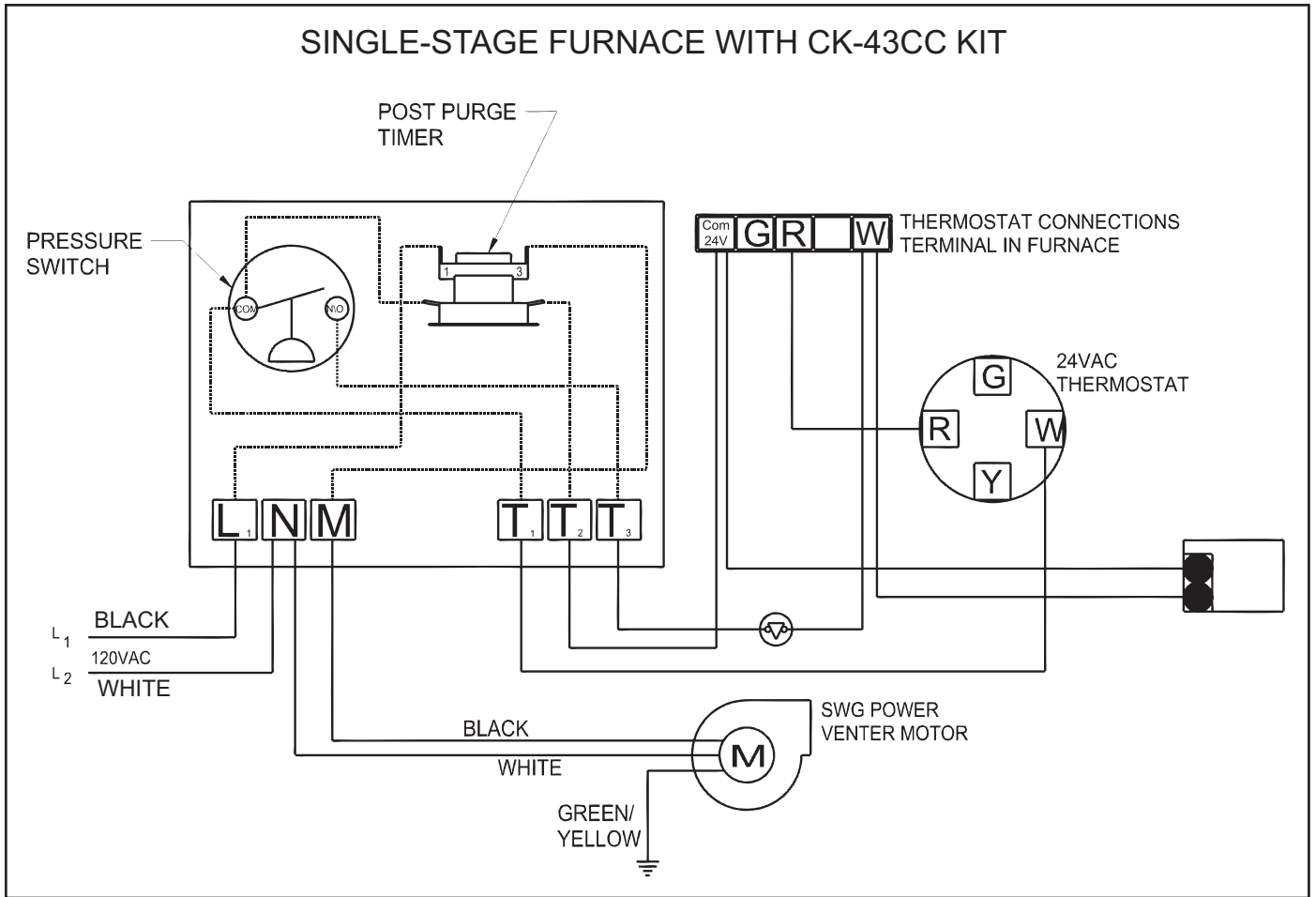


Diagram A

TWO-STAGE FURNACE WITH CK-43CC KIT

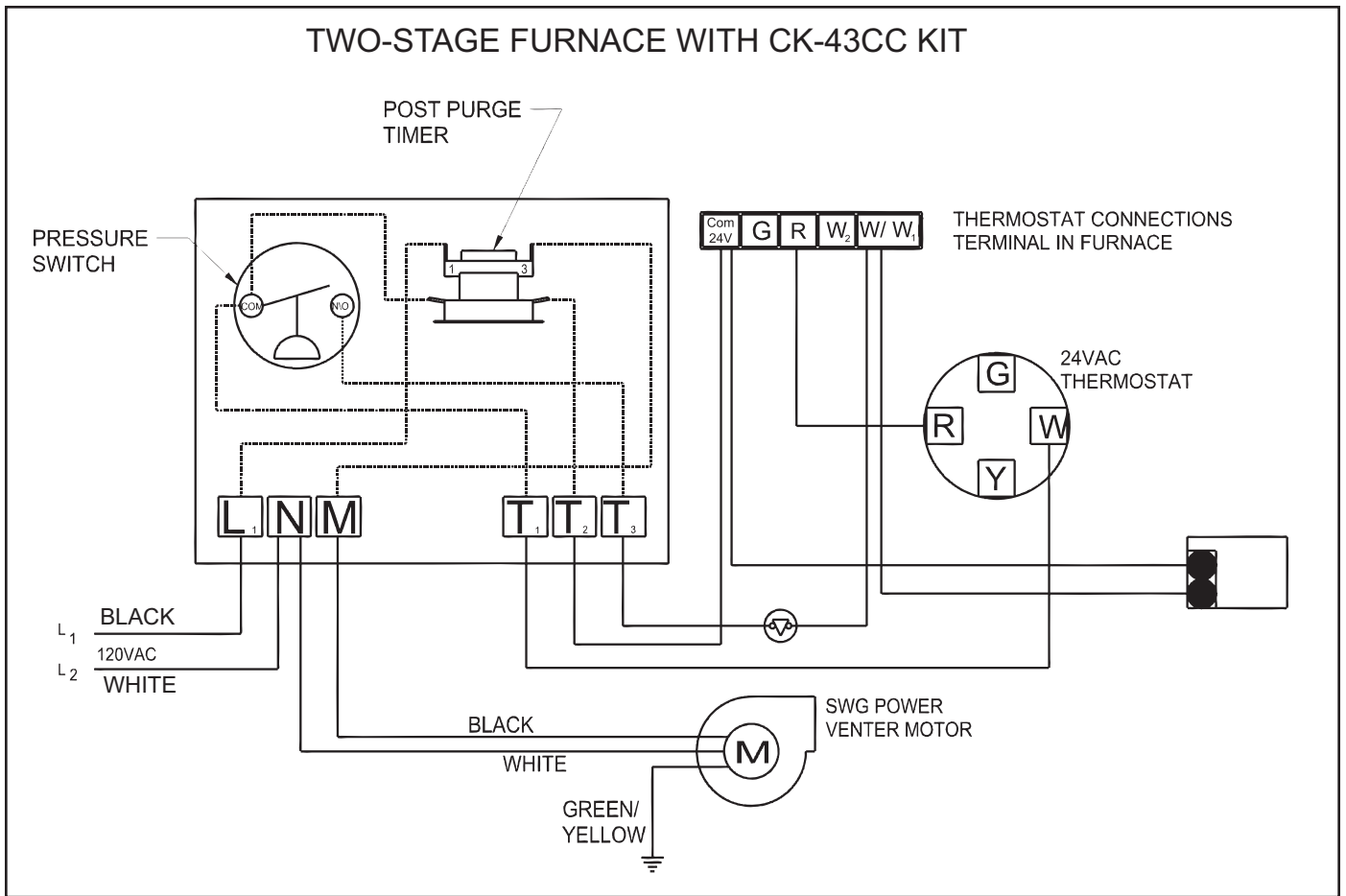


Diagram B

REPAIR AND REPLACEMENT PARTS LIST FOR CK-43CC CONTROL KIT

PRESSURE SWITCH	P/N 46083000
POST PURGE TIMER	P/N 46282800

WARRANTY

For warranty about this or any Field Controls product, visit:
www.fieldcontrols.com/warranty



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