

INSTALLATION INSTRUCTIONS

R40403-003 Blower Control

Replaces R40403-001, R40403-002 & 20054502

These instructions must be read and understood completely before attempting installation.

WARNING

Improper installation, adjustment, service, or maintenance can cause property damage, personal injury, or death. Consult a qualified installer, service agency, or the gas supplier for information or assistance.

TABLE OF CONTENTS

Specifications	1
Application	1
Control Board Layout	2
Heat Blower Delay Settings	2
Wiring Diagram with S8660K, S8600C Controls	3
Wiring Diagram with SmartValve 1R Control	4
Twinned Application	5
Application for Units Requiring 20054502 Control	6

Specifications

Operating Line Voltage:	85 to 135VAC, 50/60Hz
Secondary Control Voltage:	18.0 to 30.0VAC, 50/60Hz
Maximum Blower Loading:	15FLA, 30LRA @ 120 VAC 7.5FLA, 15LRA @ 240 VAC
Maximum Inducer Loading:	3FLA, 10LRA @ 120VAC 1.5FLA, 5LRA @ 240VAC
Humidifier Terminal:	.8A @ 115VAC
Electronic Air Cleaner:	.8A @ 115VAC

APPLICATION

The 40403-003 blower control replaces all 40403-001, 40403-002 and ST9120A, B or C blower controls. The R40403-003 blower control provides outputs for a 2 speed indoor blower motor and single speed inducer motor. The control receives inputs from the thermostat (W, Y, and G), pressure switch, and high temperature limit switches. The control also provides user selectable blower delays through dip switch settings. The 24 volt circuit of this control is protected by a 5 amp replaceable automotive type fuse.

⚠ WARNING

Risk of electrical shock. Disconnect all remote power supplies before installing or servicing any portion of the system. Failure to disconnect power supplies can result in property damage, personal injury, or death.

⚠ CAUTION

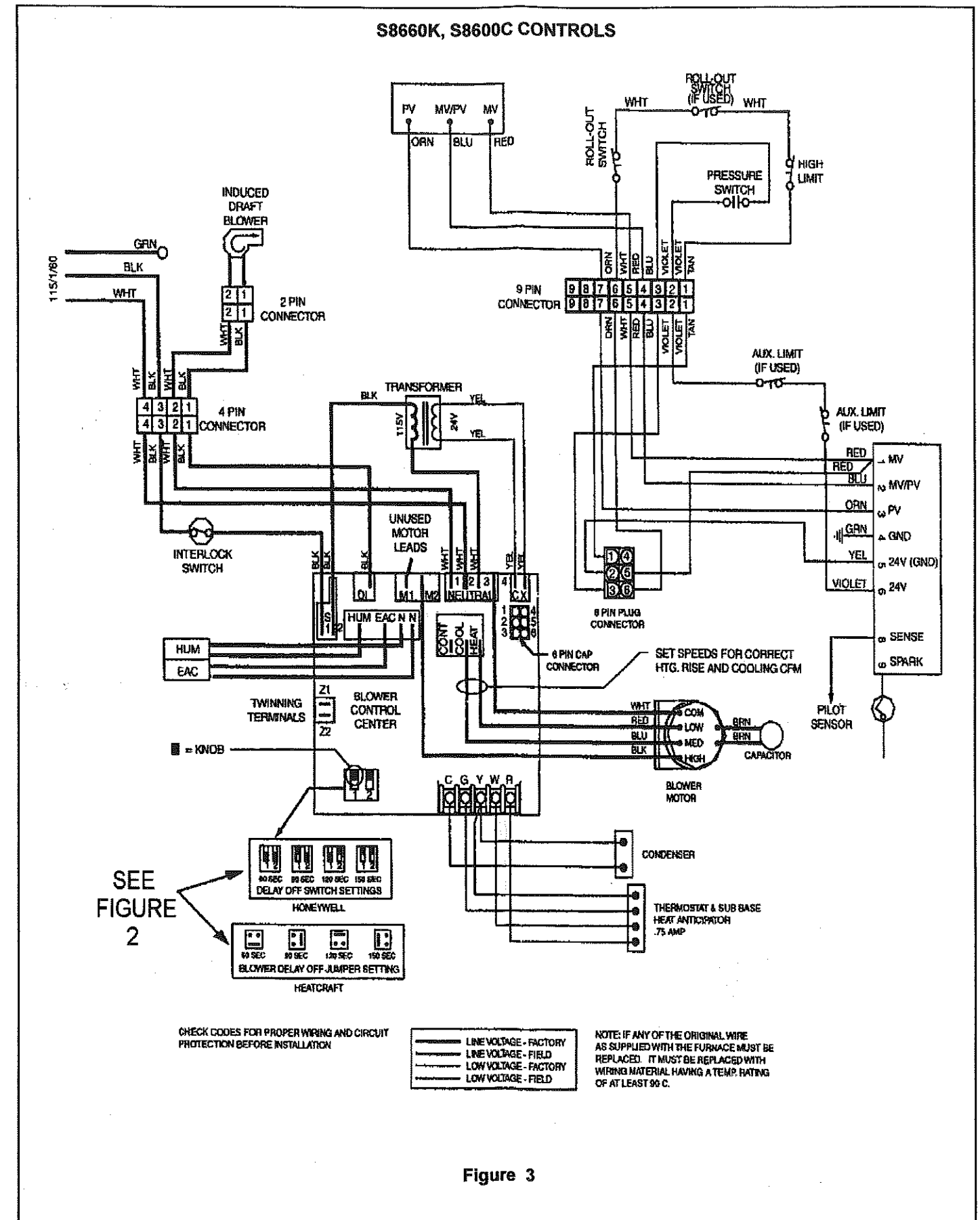
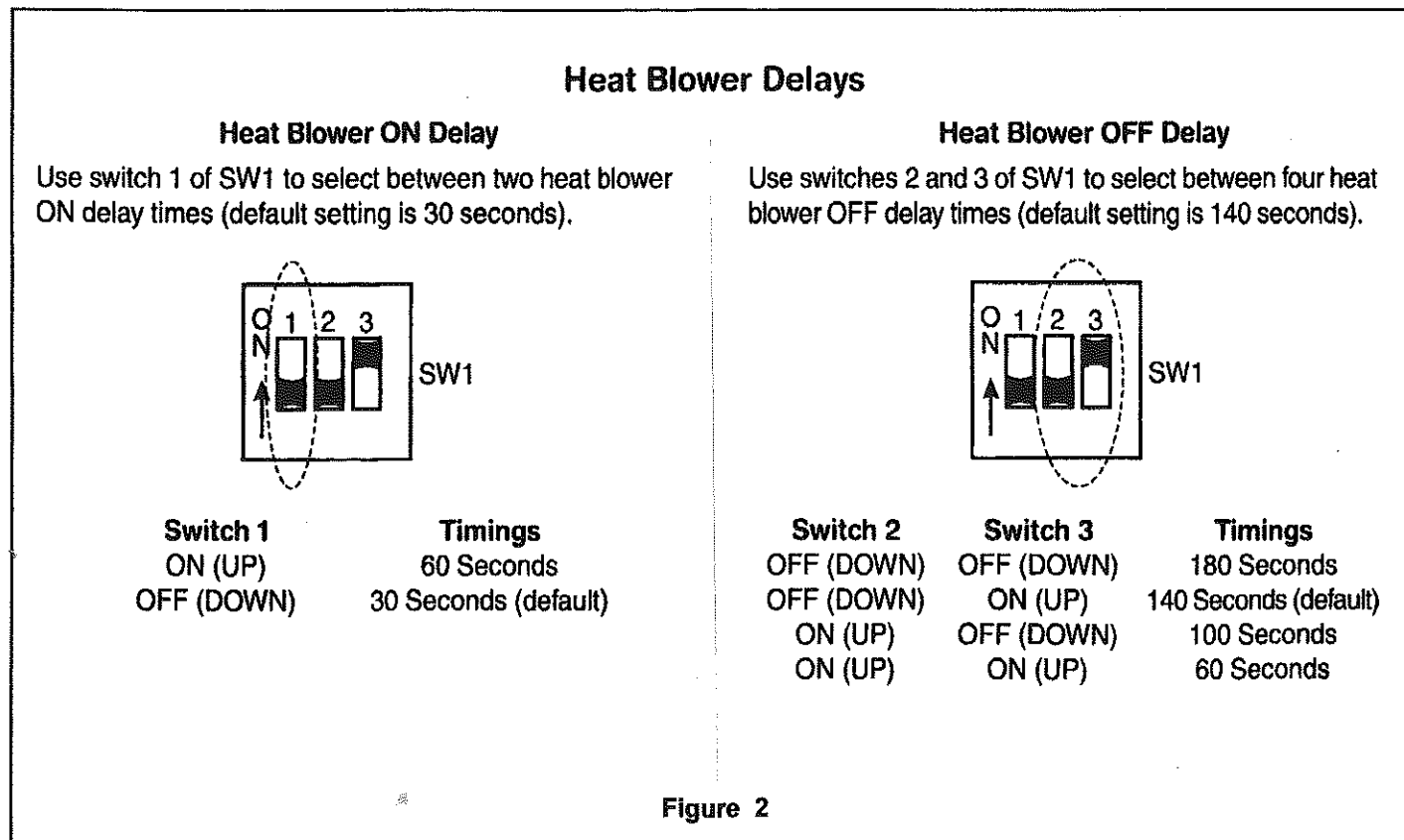
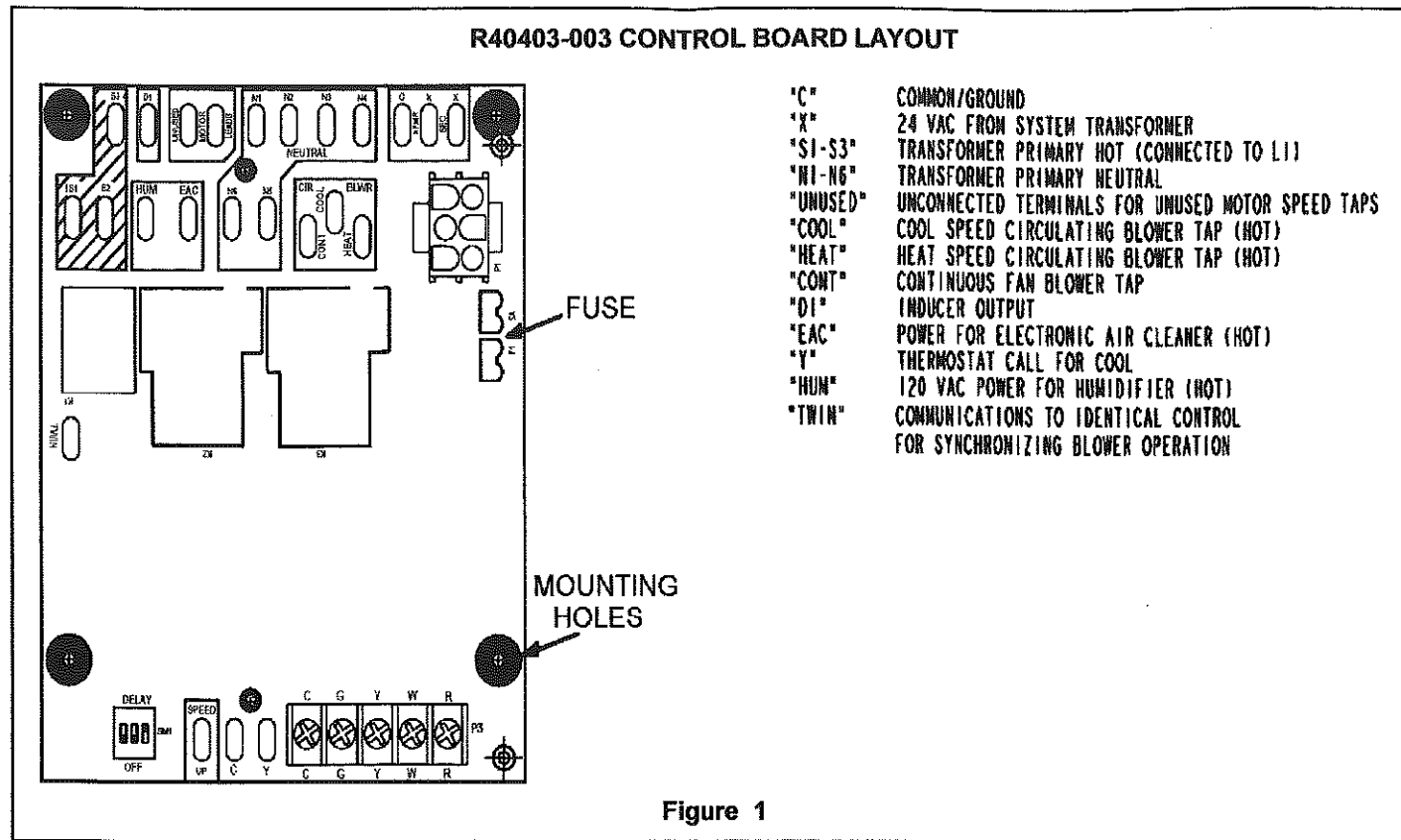
If replacing the blower control board in a furnace that is twinned with another furnace, the blower controls in both furnaces must be replaced with R40403-003 controls (See page 5 Twinned Application). Failure to replace both controls could cause improper operation.

Installation

The R40403-003 control board may look different than the control it is replacing but it will mount in the same mounting holes and the wiring connections are in the same relative locations on the board. See Figure 1 for board layout.

Important: Identify and label all wires before disconnecting and removing old board.

Timings of existing control should be determined by reviewing the settings with the appliance diagram or the diagrams figures 3 or 4 of this instruction. Set heat delays by following the directions in Figure 2



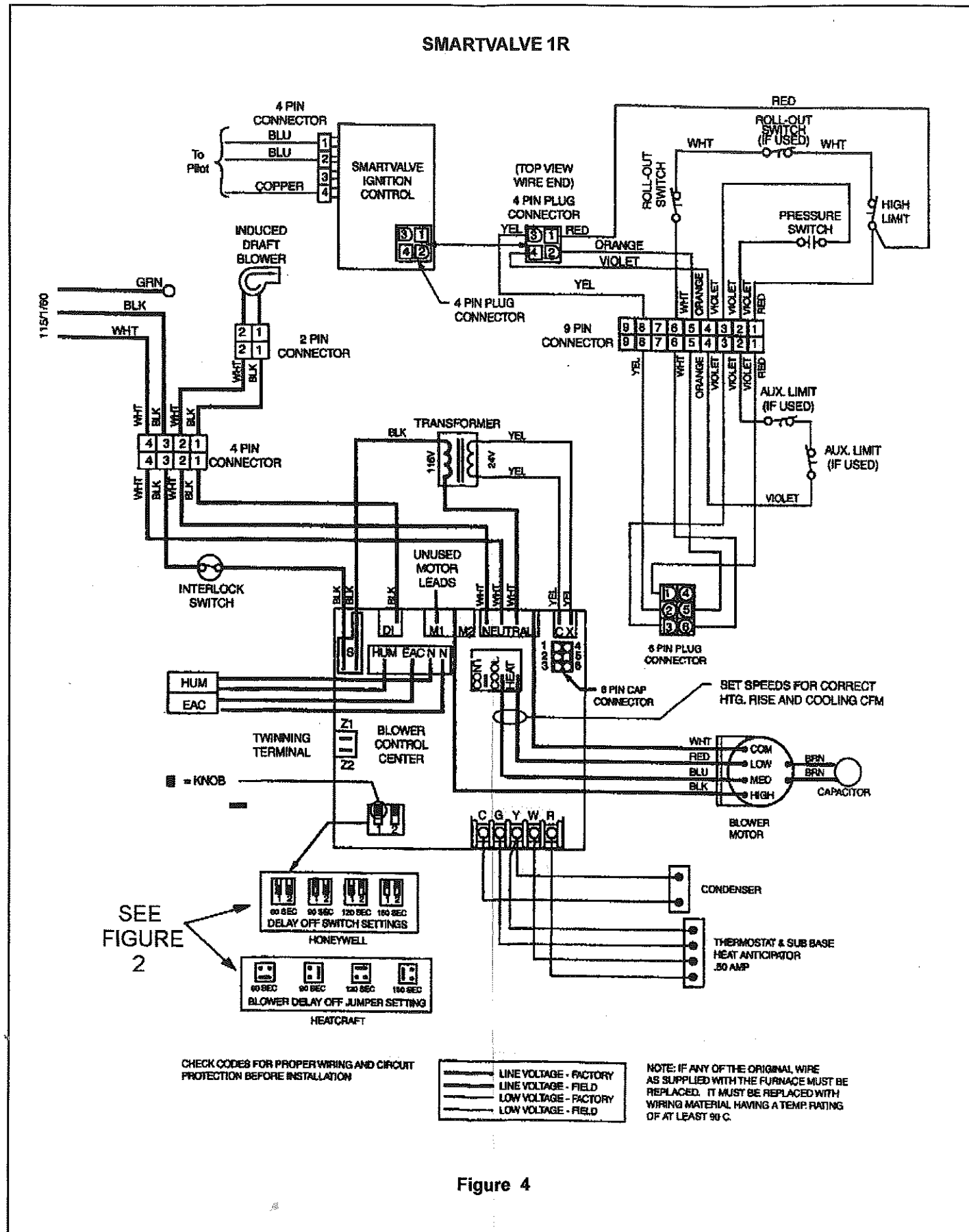


Figure 4

TWINNED APPLICATION

When twinned, the circulating blower speeds are synchronized between the furnaces. If either furnace has a need to run the blower, both furnaces will run the blower on the same speed. The cooling speed has highest priority, followed by heating speed and fan speed.

Field installation of twinning consists of connecting wires between the "C" and "Twin" terminals of the two controls. The 24 VAC secondary of the two systems must be in phase. All thermostat connections are made to one control only.

The twin without thermostat connections is to have the call for heat supplied by an external isolation relay to prevent its rollout switch from being bypassed by the other twin. The coil of the isolation relay connects from the thermostat "W" to 24 VAC common. The contacts of the relay connect "R" to "W" on the non-thermostat twin.

Failure to establish flame, an open limit switch, or undesired flame on one furnace shall not affect the other furnace except for the possibility of causing its fan to run.

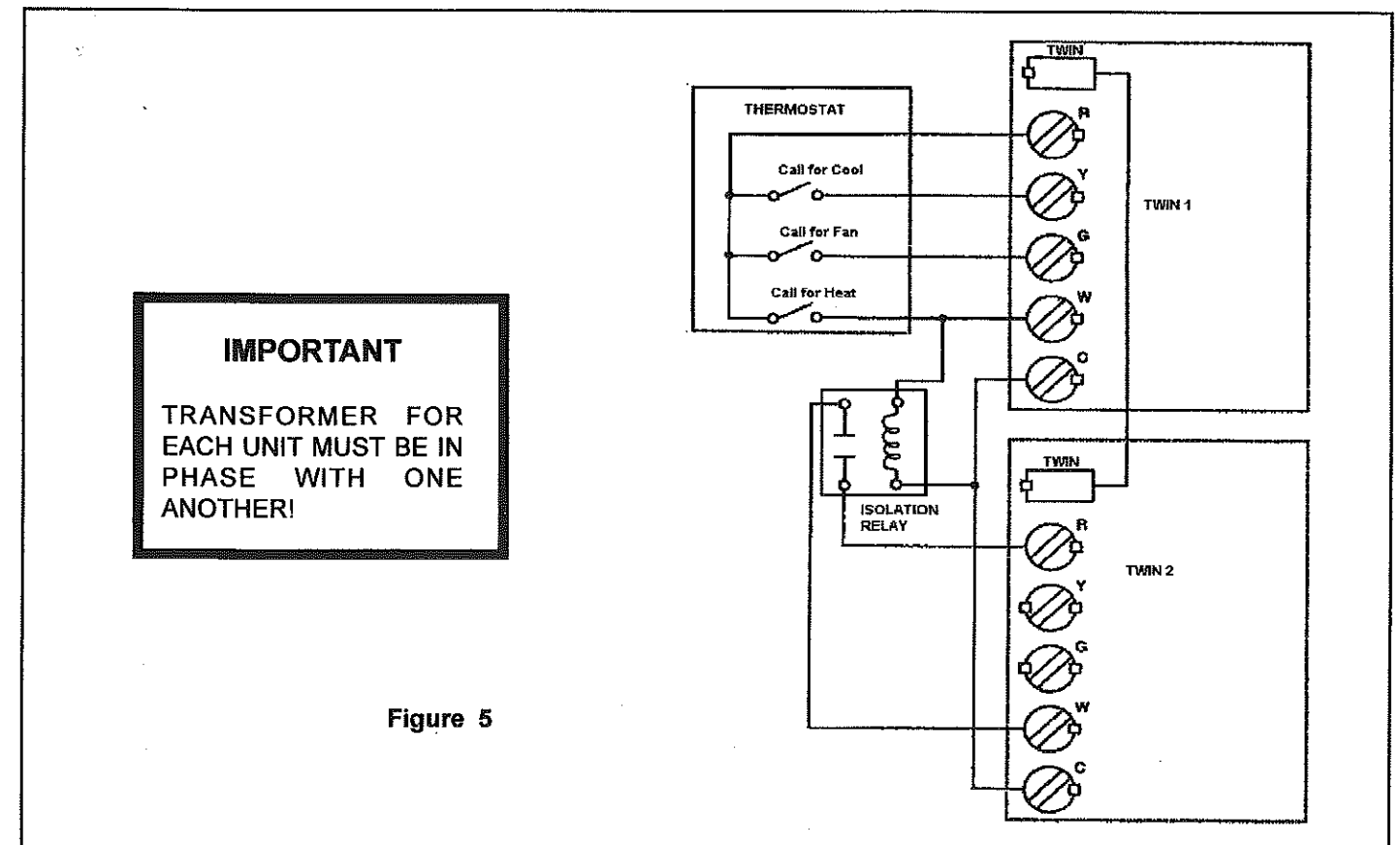
A Twin Communications Fault can occur from the following conditions:

1. The power is removed from one furnace and not the other
2. The 24 VAC supply to the twins are not in phase.

While a Twin Fault exists, the control does not respond to thermostat commands and flashes the status LED with the polarity fault code. Open limit and undesired flame response are still operational. The control continually tries to establish communication and automatically resumes normal operation when communication is (re-)established.

If a twin fault occurs during a heat cycle, both furnaces terminate the call for heat immediately. The only chance for blower mis-synchronization is if the blower off delays are set differently on the twins.

If a twin fault occurs during cooling or continuous fan, both controls shut blowers off immediately.



IMPORTANT
 TRANSFORMER FOR EACH UNIT MUST BE IN PHASE WITH ONE ANOTHER!

Figure 5

If a replacement blower control was ordered by number 20054502 it is important to read and follow this section of the instructions!

IMPORTANT

If this board is replacing a Honeywell ST9120A or ST9120B board on a dedicated horizontal furnace equipped with a spark ignition system, the following procedures **MUST** be performed to avoid potential nuisance lockouts.

Cut all wire ties holding the red ignition cable in the bundle with low voltage wires. Free the ignition cable from the bundle and tie cable up and away from other wires (on certain models the BX cable from the inducer motor is suggested). As the ignition cable and rollout switch wires go into the burner box, be sure these wires go in on opposite sides (3 & 9 o'clock) of the manifold pipe. Add a ground wire from the 24V ground terminal on the S8600 control to the closest mounting screw holding the S8600 control to the control box.

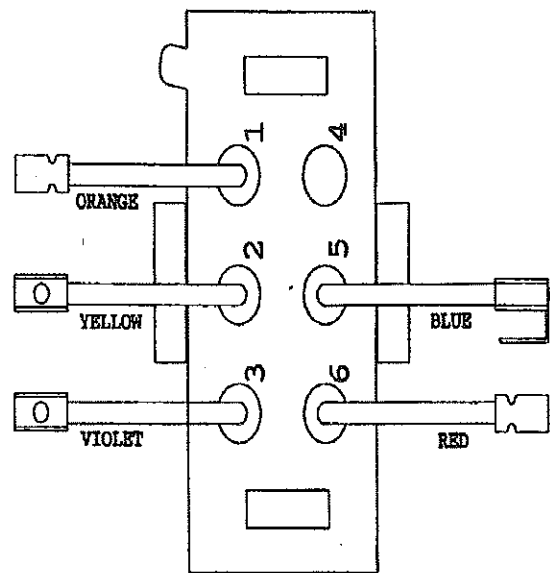
All other wires previously bundled with the ignition cable should be re-bundled and wire tied.

Failure to perform this re-routing procedure may result in an intermittent nuisance lockout and a no heat call. This lockout can only be reset by turning off all power to the appliance.

CAUTION

It is also necessary to check the wiring into the six pin wire plug. Due to differences in the internal circuitry of the boards, an incorrect harness can create operational problems with this board.

SIX PIN WIRE HARNESS



HEAT BLOWER DELAYS

The Honeywell ST9120A, B or C boards had a fixed **Heat Blower ON Delay**. This board has a 2-selection DIP switch for the on delay (30 or 60 seconds). It is recommended that the 30-second selection be used.

The Honeywell ST9120A or B boards used two set screws for the **Heat Blower OFF Delay** while the ST9120C has two 2-position DIP switches. The timings are 60, 90, 120 or 150 seconds. The timings on this board are 60, 100, 140 and 180 seconds. (See Figure 1 to adjust heat blower delays.)

If replacing the blower control board in a furnace that is twinned with another furnace follow the information provided on the previous pages of these installation instructions.