

## Gas Furnaces - Blower & Relay

# Installation Instructions

For MGHA and MMHA Series, Models -05 only, and M1 Series Furnaces

The p/n 903092A 2-wire and p/n 902898A A/C Heat Pump (4 to 7 wire) Relay Boxes install with current M1, MGHA and MMHA models of NORDYNE gas furnaces with the new standardized blower assembly. The 2-wire Relay Box has control switches which are operable through an opening in the furnace door on MGHA and MMHA furnaces.

### IMPORTANT INFORMATION

Read all instructions carefully before starting the installation. Specifications or designs are subject to change or to discontinuance without notice and without incurring obligations.

#### **! WARNING:**

Improper installation may damage equipment, can create a hazard, and will void the warranty.

#### **! DANGER:**

Shut off electrical supply to the furnace at the household breaker box to prevent electrical shock which could cause personal injury.

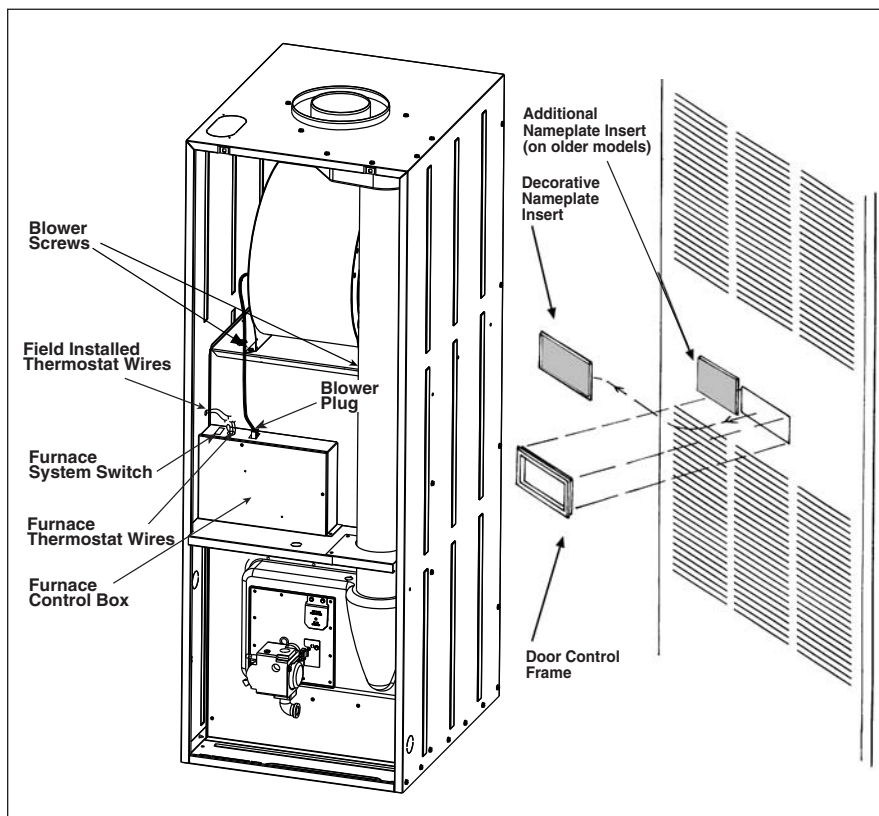


Figure 1. MGHA and MMHA Series Gas Furnace

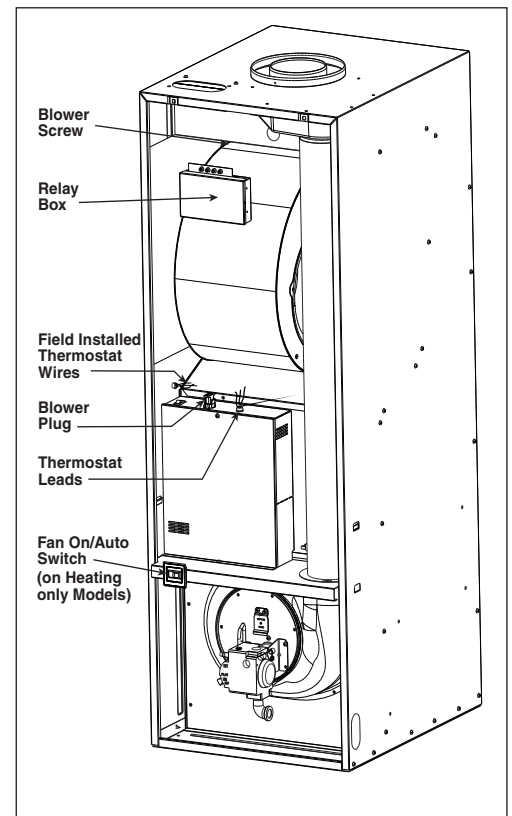


Fig 2. M1\* Furnace

These instructions are primarily intended to assist qualified individuals experienced in the proper installation of heating and/or air conditioning appliances. Some local codes require licensed installation/service personnel for this type of equipment. Read all instructions carefully before starting the installation.

## INSTALLATION SEQUENCE

1. Remove the furnace door. Shut off power to the furnace.

*For MGHA and MMHA Furnaces:*

For a 2-wire relay box application, remove the door insert from the furnace door and replace it with the door control frame provided with the relay box (see Figure 1).

2. See Table 1 to determine whether the factory installed blower is acceptable for use with the selected cooling application.

*For MGHA and MMHA Furnaces:*

To change out the furnace blower, unplug the motor plug from the furnace. Remove the two screws on the top of the blower deck, one on each side of the blower (see Figure 1), and slide the blower out of the furnace. Slide the new blower into the blower mounting guides. Do not yet secure with the screws previously removed.

*For M1 Furnaces Only:*

To change out furnace blower, unplug the motor plug from the furnace. Remove the screws on the left side of the blower (see Figure 2) and lift the blower out of the furnace. Place the new blower into the mounting guides.

3. Remove the cover from the relay box by removing the screw from each side.

### Blower Speed Selection:

- HEATING - Move the orange wire on the circuit board to one of the four quick-connects labeled with heating blower speeds.
- COOLING - Move the violet wire on the circuit board to one of the three quick-connects labeled with cooling blower speeds.
- ONE SPEED BLOWER - Both the orange wire (heating) and the violet wire (cooling) must be connected to the H(high) quick-connect.
- TWO SPEED BLOWER - See Table 2 for the appropriate speed connections.
- THREE SPEED BLOWER - See Table 2 for the appropriate speed connections.
- FOUR SPEED BLOWER - See Table 2 for the appropriate speed connections

*For M1 Furnaces Only:*

Discard the brackets and remove the relay box cover. Mount the relay box on the top side of the blower using the two self-tapping screws provided. The thermostat terminations should be towards the top of the furnace. The furnace door should not interfere with the relay box. Reattach the relay box cover.

**IMPORTANT:** For the **2-Wire Relay Box** (only after the cover has been reattached), now attach two red caps (provided in plastic bag) to the switches that stick through the bezel on the sheet metal cover (see Figure 5, Items 6 and 7).

4. *For MGHA and MMHA Furnaces Only:*  
If not already completed, remove the two screws on the top of the blower deck, one on each side of the blower. (See Figure 1) Slide the blower partially out of the furnace. Attach the relay box bracket(s) to the blower as shown in Figure 3 using the screws provided. Next, attach the relay box to the brackets as shown in Figure 3 using the remaining screws provided. Slide the blower back into the furnace and secure with the two screws previously removed.
5. Unplug the blower plug from the furnace control box and disconnect the field installed thermostat wires from the furnace. Remove the label from the yellow furnace thermostat wire and strip it about 3/8". (For M1, this is the grey wire.)

Find the 6-wire harness supplied with the relay box. Connect its 8 circuit in-line connector into the side of the relay box. Connect the 6 circuit matrix connector on the other end of the harness into the furnace where the blower was plugged. Wire nut the remaining harness wires to the furnace thermostat wires (see Figure 4).

For Furnace Models MGHA & MMHA	
Cool Capacity (Tons)	Blower Kit No.
1.5-2.0	Standard
2.0-3.5	902809
2.0-4.0	902810

\*The blower shipped with the furnace can be used for this cooling capacity.

**Table 1. Blower Selection - MGHA & MMHA**

For Furnace Models M1	
Cool Capacity (Tons)	Blower Kit No.
2.0 or 2.5	Standard*
2.0-3.0	903412
2.0-4.0	903413
2.0-5.0	903414

\*The blower shipped with the 056 furnace can be used for 2.0 tons, the blower shipped with the 070 furnace can be used for 2.5 tons.

**Table 1A. Blower Selection - M1**

Blower Speed Selection Chart				
For use with Blower Kit No. 902809				
Furnace Input	Heating Speed Setting	Cooling Speed/ Evap Coil		
		024, 030	036	042, 046 & 048
086	M*	M*	H	H
070, 075, 077	L**	M*	H	H
056, 066, 070	L**	M*	H	H

\*MH on Relay Box circuit board.  
\*\*ML on Relay Box circuit board.

Blower Speed Selection Chart				
For use with Blower Kit No. 902809				
Furnace Input	Heating Speed Setting	Cooling Speed/ Evap Coil		
		024, 030	036	042, 046 & 048
086	M*	M*	H	H
070, 075, 077	L**	M*	H	H
056, 066, 070	L**	M*	H	H

Table 2. Three and Four Speed Blower Speed Selection for MG & MM - 05 Models

Blower Speed Selection Chart			
For use with Blower Kit No. 903412 1/3 HP 2 Speed			
Furnace Input	Heating Speed Setting	Cooling Speed/ Evap Coil	
		024	036 & 030
077, 086, 090	H	ML*	H
056, 066, 070	ML*	ML*	H

\*ML on Relay Box circuit board is low speed.

Blower Speed Selection Chart				
For use with 3 Ton 3 Speed Blowers				
Furnace Input	Heating Speed Setting	Cooling Speed/ Evap Coil		
		024	030	036
056	L**	L**	M*	H
066, 070, 077	M*	L**	M*	H
086, 090	H	L**	M*	H

\*\*L is ML on circuit board.  
\*M is MH on circuit board.

Blower Speed Selection Chart					
For use with Blower Kit No. 903413 1/2 HP 4 Speed					
Furnace Input	Heating Speed Setting	Cooling Speed/ Evap Coil			
		024	030 & 036	042	048
077, 086, 090	ML	ML	ML	MH	H
056, 066, 070	L	ML	ML	MH	H

Blower Speed Selection Chart					
For use with Blower Kit No. 903414 3/4 HP 4 Speed					
Furnace Input	Heating Speed Setting	Cooling Speed/ Evap Coil			
		024	030 & 036	042	048
077, 086, 090	ML	ML	ML	MH	H
056, 066, 070	L	ML	ML	MH	H

Table 2A. Blower Speed Selection M1 Models

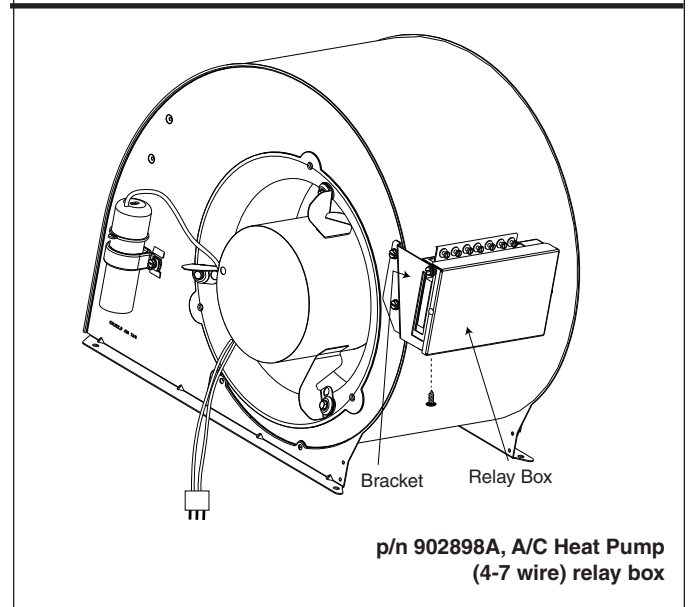
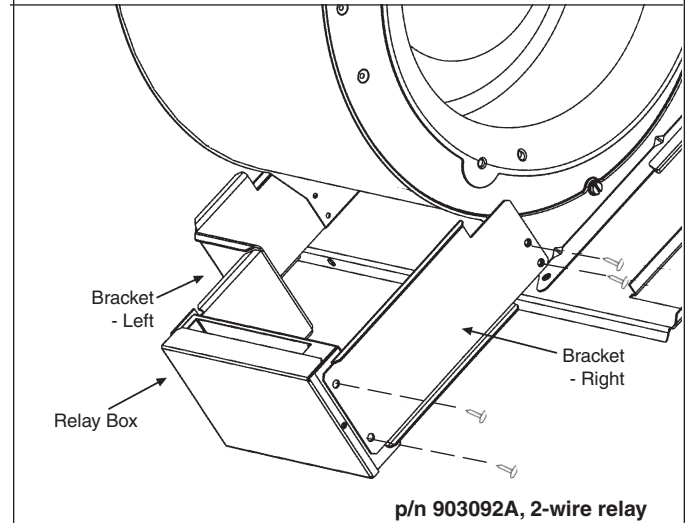
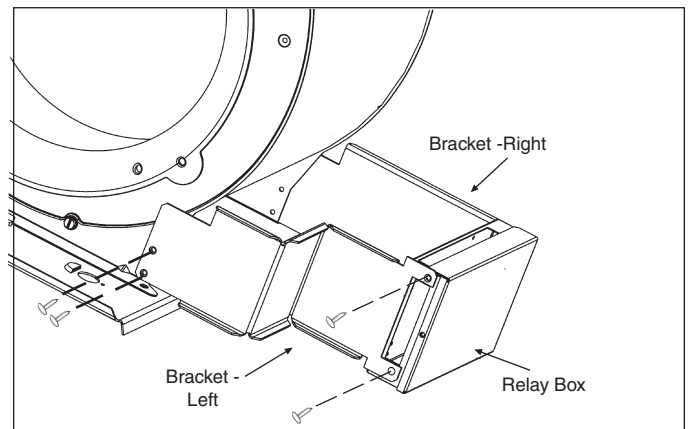


Figure 3. Relay Box Installation  
MGHA & MMHA Only

Find the 4-wire harness supplied with the relay box. Connect its 6 circuit matrix connector to the blower plug and connect its 6 circuit in-line connector to the bottom of the relay box (see Figure 4).

6. Bring in the low voltage field wires from the thermostat and air-conditioning or heat pump unit and attach them to the low voltage screw terminals protruding from the top of the relay box (see Figure 4). **See Figure 7 for System Wiring.**
7. Turn on the power to the furnace. Replace the furnace door. The unit is now ready for operation.

## SYSTEM OPERATION —

### For the AC/Heat Pump Relay Box

**HEATING:** Set the furnace fan switch to AUTO, the thermostat system switch to HEAT, and the thermostat fan switch to AUTO.

**COOLING:** Set the furnace fan switch to AUTO, the thermostat system switch to COOL, and the thermostat fan switch to AUTO.

**EMERGENCY HEAT:** (Used with a heat pump only.) Set the furnace fan switch to AUTO, the thermostat system switch to EMERGENCY HEAT, and the thermostat fan switch to AUTO.

**CONTINUOUS AIR CIRCULATION:** Set the thermostat fan switch to ON.

**SHUT OFF SYSTEM:** Set the thermostat system switch to OFF and set it to the lowest temperature setting. Set the furnace system switch to OFF and shut off all power to the air conditioner.

### For the 2-Wire Relay Box

**HEATING:** Set the furnace fan switch to AUTO, the temperature switch (on the relay box) to HEAT, and the fan switch (on the relay box) to AUTO.

**COOLING:** Set the furnace fan switch to AUTO, the temperature switch (on the relay box) to COOL, and the fan switch (on the relay box) to AUTO.

**CONTINUOUS AIR CIRCULATION:** Set the fan switch (on the relay box) to ON.

**SHUT OFF SYSTEM:** Set the system switch (on the relay box) to OFF and set the thermostat to the lowest temperature setting. Set the furnace system switch to OFF and shut off all power to the air conditioner.

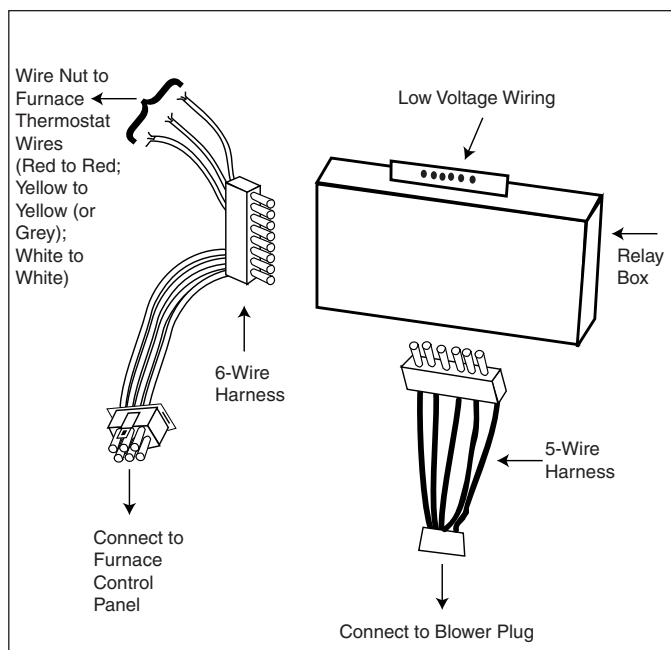
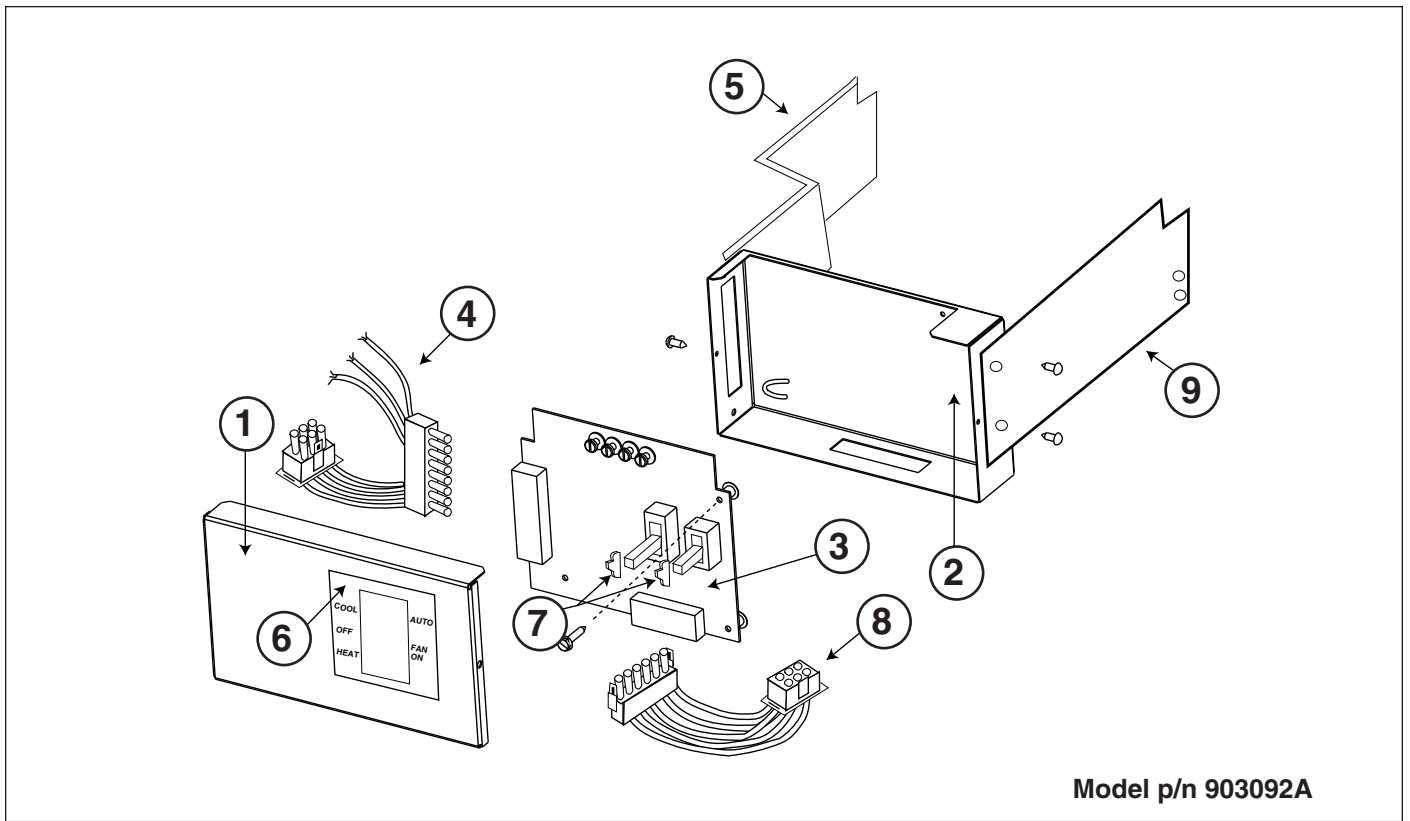


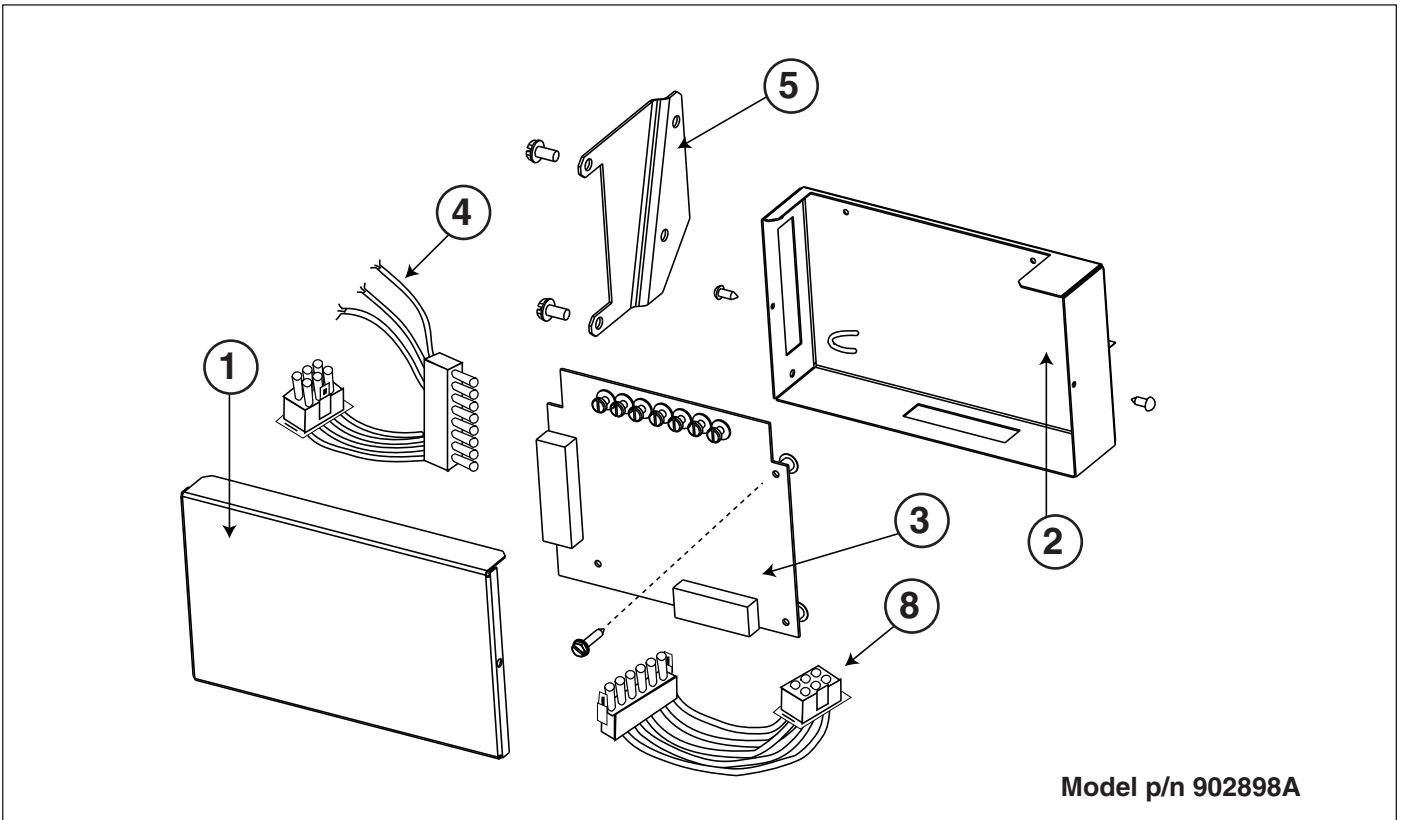
Figure 4. Relay Box Connection

## Blower & Relay Replacement Parts List

ITEM #	PART #	DESCRIPTION	903092A	902898A
1	375952	Cover (2 Wire)	1	
	376430	Cover (AC/HP)		1
2	378700	Box, Relay	1	1
3	624567	2 Wire Relay Circuit Board	1	
	624568	AC/HP Relay Circuit Board		1
4	260300	Wire Harness	1	1
5	378690	Mounting Bracket- Left	1	
	376050	Mounting Bracket		1
6	669084	Bezel	1	
7	632278	Switch Cap	2	
8	266660	Wiring Harness Blower	1	1
9	378680	Mounting Bracket- Right	1	



**Figure 5. 2-Wire Relay Box Exploded View**



**Figure 6. A/C Heat Pump Relay Box Exploded View**

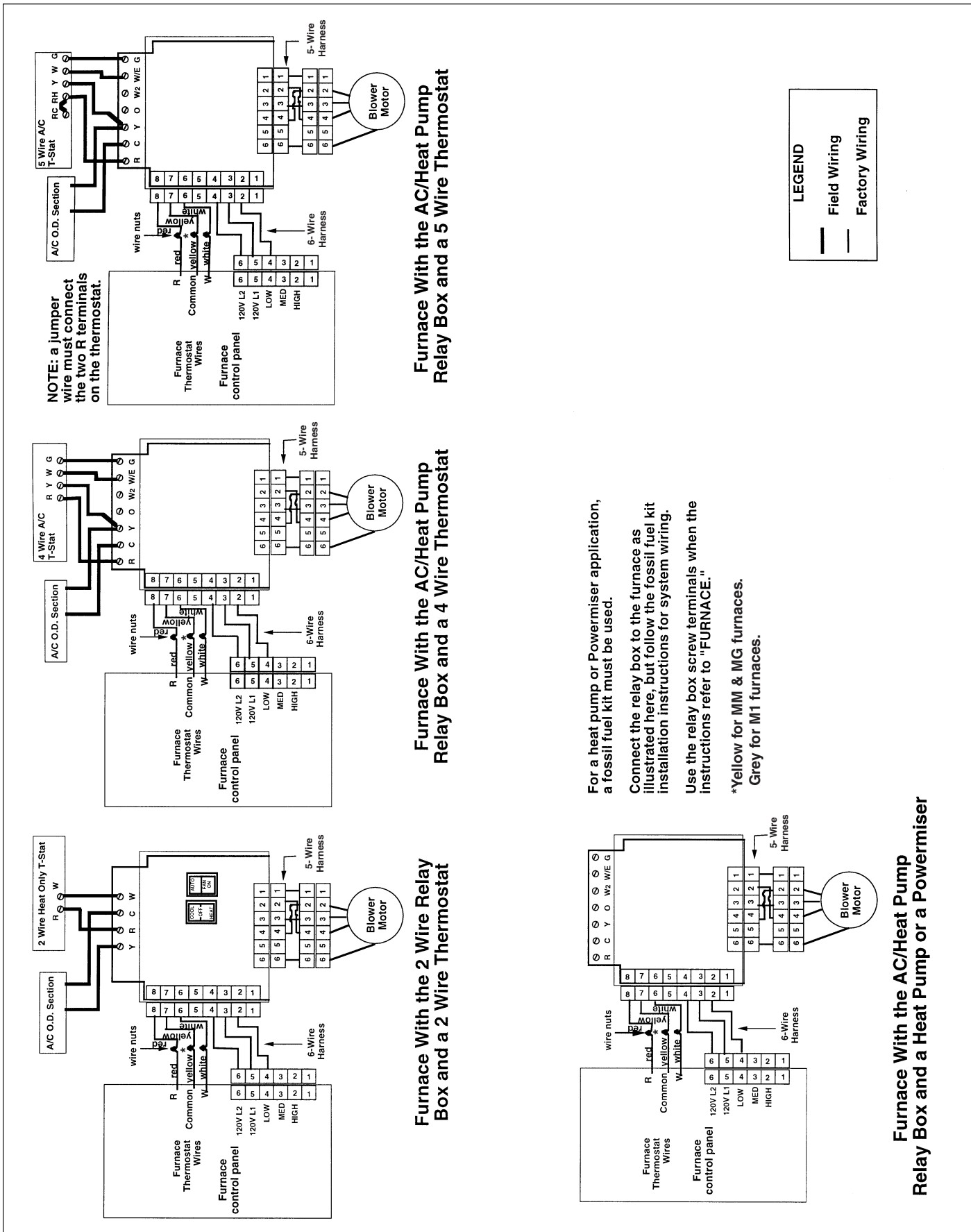


Figure 7. System Wiring

For a heat pump or Powermiser application, a fossil fuel kit must be used.

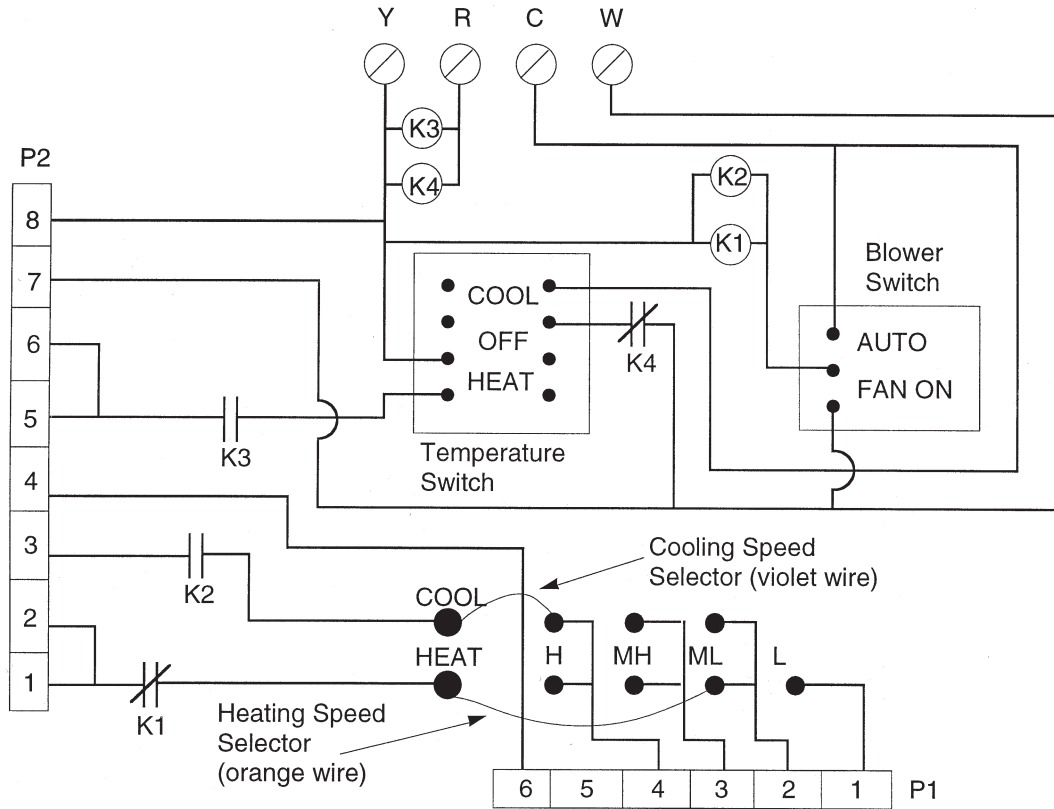
Connect the relay box to the furnace as illustrated here, but follow the fossil fuel kit installation instructions for system wiring.

Use the relay box screw terminals when the instructions refer to "FURNACE."

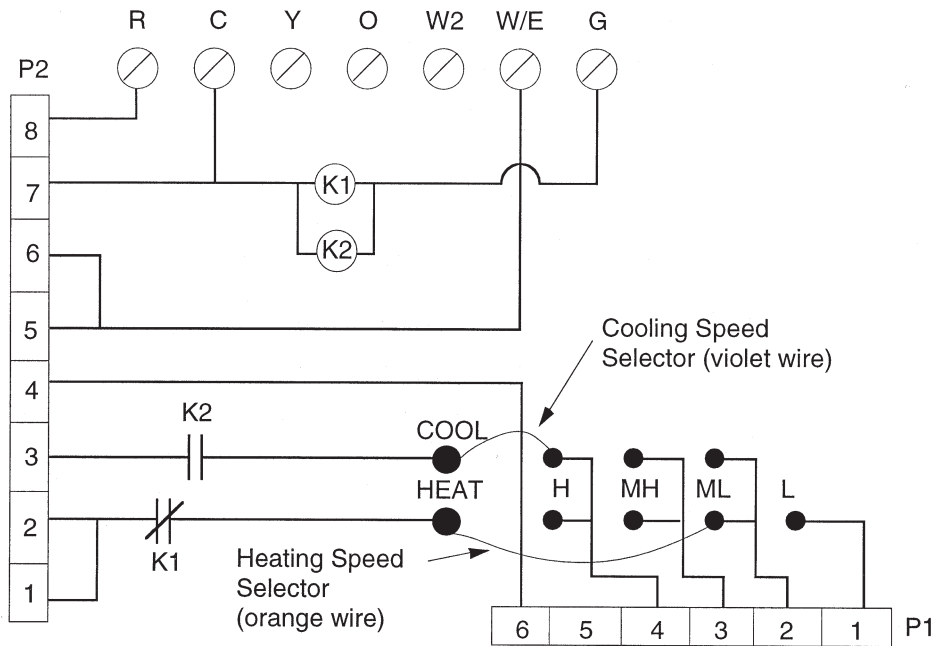
\*Yellow for MM & MG furnaces.  
 Grey for M1 furnaces.

**Furnace With the AC/Heat Pump Relay Box and a Heat Pump or a Powermiser**

**2 Wire Circuit Board (used in relay box 903092A)**



**2 Wire Circuit Board (used in relay box 902898A)**



**Figure 8. Wiring Schematics**



O'Fallon, MO

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