

# Gas and Oil Furnace - Blower and Relay

## Installation Instructions

For NORDYNE Models MG(H,B)A, MM(H,B)A, MS(H,B)A, and MB(H,B)A Series and Evcon/Coleman Models 7900, 4100 DLRS, and DGRT Series

### IMPORTANT INFORMATION

These instructions are primarily intended to assist qualified individuals experienced in the proper installation of heating appliances. Some local codes require licensed installation/service personnel for this type of equipment. Read all instructions carefully before starting the installation. Specifications or designs are subject to change or discontinuance without notice and without incurring obligations. Instructions for NORDYNE furnaces are given below. Instructions for Coleman furnaces are on page 5.

### ▲ 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.

### INSTALLATION SEQUENCE

For NORDYNE Models MG--, MM--, MS--, and MB--

1. Locate the section of Table 1 corresponding to:
  - a) the first four characters in the furnace model number;
  - b) the type of thermostat (2 or 5 wire) for the installation.
2. Locate the cooling capacity of the air conditioning unit in the leftmost column of the appropriate section of Table 1. Read across the row to determine the correct Blower Kit number, Relay Kit number, and Configuration Code.

3. Follow the steps below corresponding to the Configuration Code.

### Blower and Relay Kit Installation Configuration Code "A"

Note: Steps 1 through 5 below apply to model MGHA, MGBA, MMHA, MMBA, MSHA, MSBA, MBHA, and MBBA furnaces using a 2 wire thermostat.

1. Remove the upper door of the furnace.
2. Remove the decorative door insert in the door to provide access to the switches. Insert the door control frame, found with the relay box kit, in place of the decorative insert (see Figure 1).

OPTIONAL HEATING/COOLING CONFIGURATIONS			
For Furnace Models MGHA, MMHA, MSHA, MBHA using 2 Wire Heating Only Thermostat			
Cooling Capacity(Tons)	Blower Kit No.	Relay Kit No.	Configuration Code
1.5-2	Standard*	901994	A
2-3.5	901998	901994	B
2.0-4.0	901999	901994	C
For Furnace Models MGHA, MMHA, MSHA, MBHA using 5 Wire Heating/Cooling Thermostat			
Cooling Capacity(Tons)	Blower Kit No.	Relay Kit No.	Configuration Code
1.5-2	Standard*	901995	D
2-3.5	901998	901995	E
2.0-4.0	901999	901995	F
For Furnace Models MGBA, MMBA, MSBA, MBBA using 2 Wire Heating Only Thermostat			
Cooling Capacity(Tons)	Blower Kit No.	Relay Kit No.	Configuration Code
2-3.5	Standard*	901994	A
2.0-4.0	901999	901994	C
For Furnace Models MGBA, MMBA, MSBA, MBBA using 5 Wire Heating/Cooling Thermostat			
Cooling Capacity(Tons)	Blower Kit No.	Relay Kit No.	Configuration Code
2-3.5	Standard*	901995	D
2.0-4.0	901999	901995	F

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

Table 1

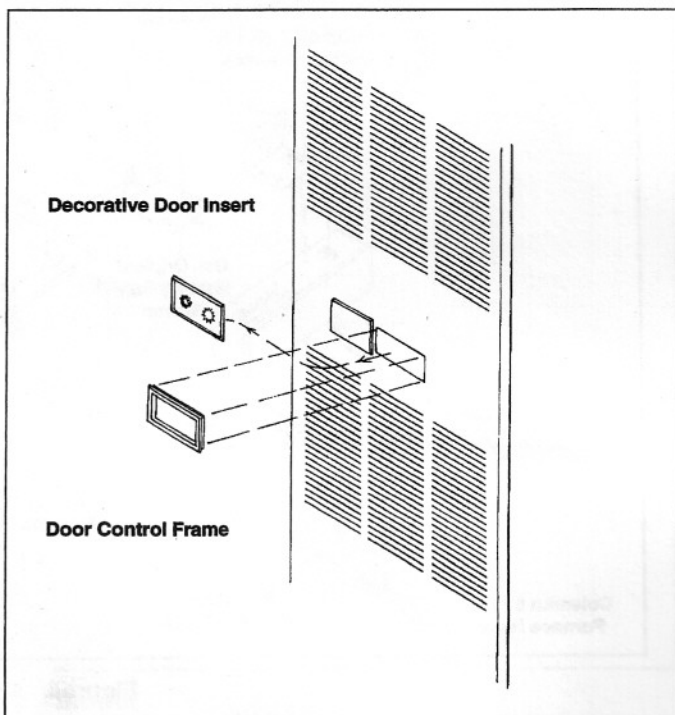


Figure 1. Furnace Door

3. Install the upper relay mounting bracket to the blower and the lower relay mounting bracket to the furnace casing (see Figure 2). Do not completely tighten the screws at this time. The relay mounting brackets and screws are found with the relay box.
4. Mount the relay box to align with the center of the opening of the door; then tighten all screws completely. The 2 wire relay box has two (2) switches that must be accessible with the furnace door closed.
5. Proceed to "Wiring Instructions" on page 5.

### Blower and Relay Kit Installation Configuration Code "B"

Note: Steps 1 through 9 below apply to model MGHA, MMHA, MSHA, and MBHA furnaces using a 2 wire thermostat.

1. Remove the upper door of the furnace.
2. Remove the decorative door insert in the door to provide access to the switches. Insert the door control frame, found with the relay box kit, in place of the decorative insert (see Figure 1).

3. Disconnect the blower motor plug from the furnace control box by pinching the clasp tabs on the sides of the plug (this will unlock the plug from the receptacle) while pulling the plug straight out from the receptacle (see Figure 4).
4. Remove the two (2) screws from the front of the blower support and slide the heating blower out of the furnace.
5. Install the proper blower mounting brackets on the heat/cool blower, (see Figure 2). The blower mounting brackets are found in the blower kit.
6. Install the upper relay mounting bracket to the blower and the lower relay mounting bracket to the furnace casing (see Figure 2). Do not completely tighten the screws at this time. The relay mounting brackets and screws are found with the relay box.
7. Slide the assembled blower into the blower mounting guides on the top air casing and secure with the two (2) screws previously removed.
8. Mount the relay box to align with the center of the opening of the door; then tighten all screws completely. The 2 wire relay box has two (2) switches that must be accessible with the furnace door closed.
9. Proceed to "Wiring Instructions" on page 4.

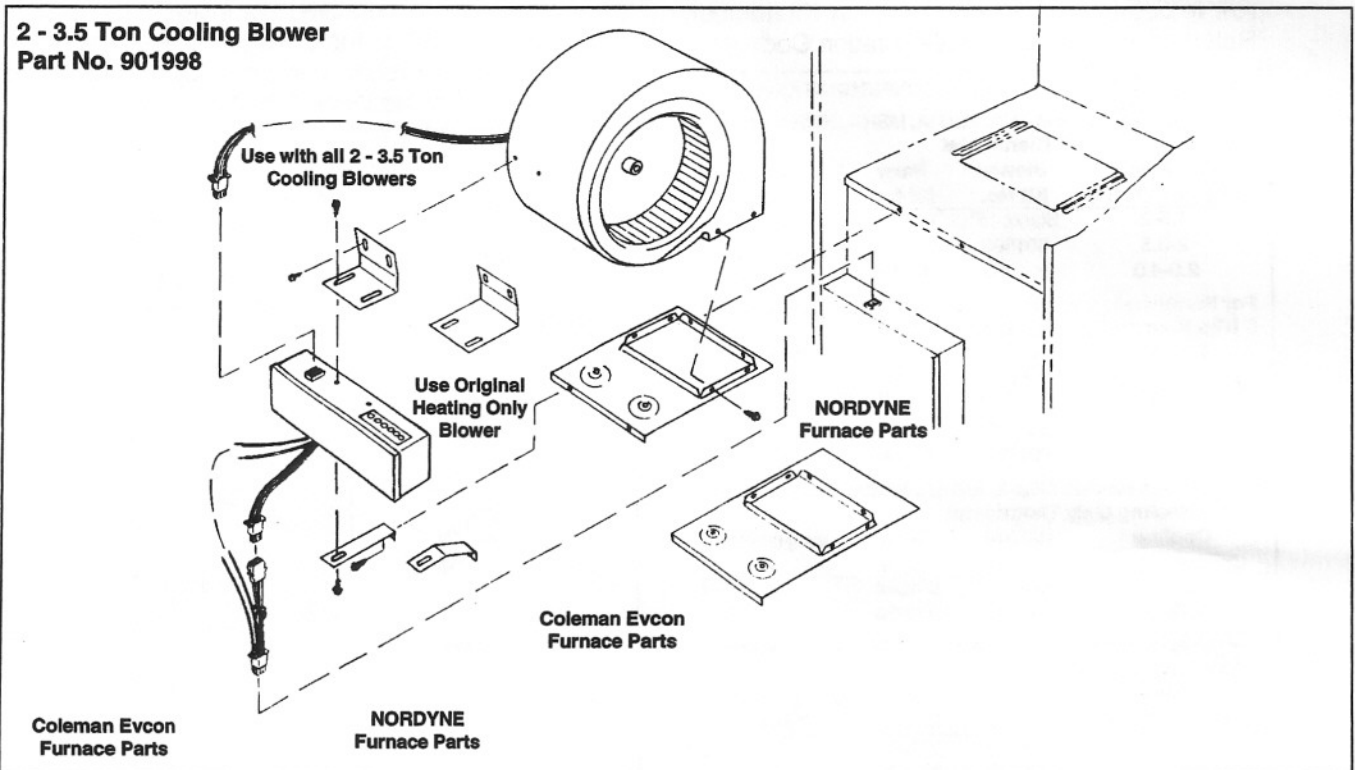


Figure 2. Cooling Blower

## Blower and Relay Kit Installation Configuration Code "C"

Note: Steps 1 through 9 below apply to model MGHA, MGBA, MMHA, MMBA, MSHA, MSBA, MBHA, and MBBA furnaces using a 2 wire thermostat.

1. Remove the upper door of the furnace.
2. Remove the decorative door insert in the door to provide access to the switches. Insert the door control frame, found with the relay box kit, in place of the decorative insert (see Figure 1).
3. Disconnect the blower motor plug from the furnace control panel by pinching the clasp tabs on the sides of the plug (this will unlock the plug from the receptacle) while pulling the plug straight out from the receptacle (see Figure 4).
4. Remove the two (2) screws from the front of the blower support and slide the heating blower out of the furnace.
5. Install the proper blower mounting brackets on the heat/cool blower, (see Figure 3). The blower mounting brackets are found in the blower kit.

6. Install the upper relay mounting bracket to the blower and the lower relay mounting bracket to the furnace casing (see Figure 3). Do not completely tighten the screws at this time. The relay mounting brackets and screws are found with the relay box.
7. Slide the assembled blower into the blower mounting guides on the top air casing and secure with the two (2) screws previously removed.
8. Mount the relay box to align with the center of the opening of the door; then tighten all screws completely. The 2 wire relay box has two (2) switches that must be accessible with the furnace door closed.
9. Proceed to "Wiring Instructions" on page 4.

## Blower and Relay Kit Installation Configuration Code "D"

Note: Steps 1 through 3 below apply to model MGHA, MGBA, MMHA, MMBA, MSHA, MSBA, MBHA, and MBBA furnaces using a 5 wire thermostat.

1. Remove the upper door of the furnace.

### 2 - 4.0 Ton Cooling Blower Part No. 901999

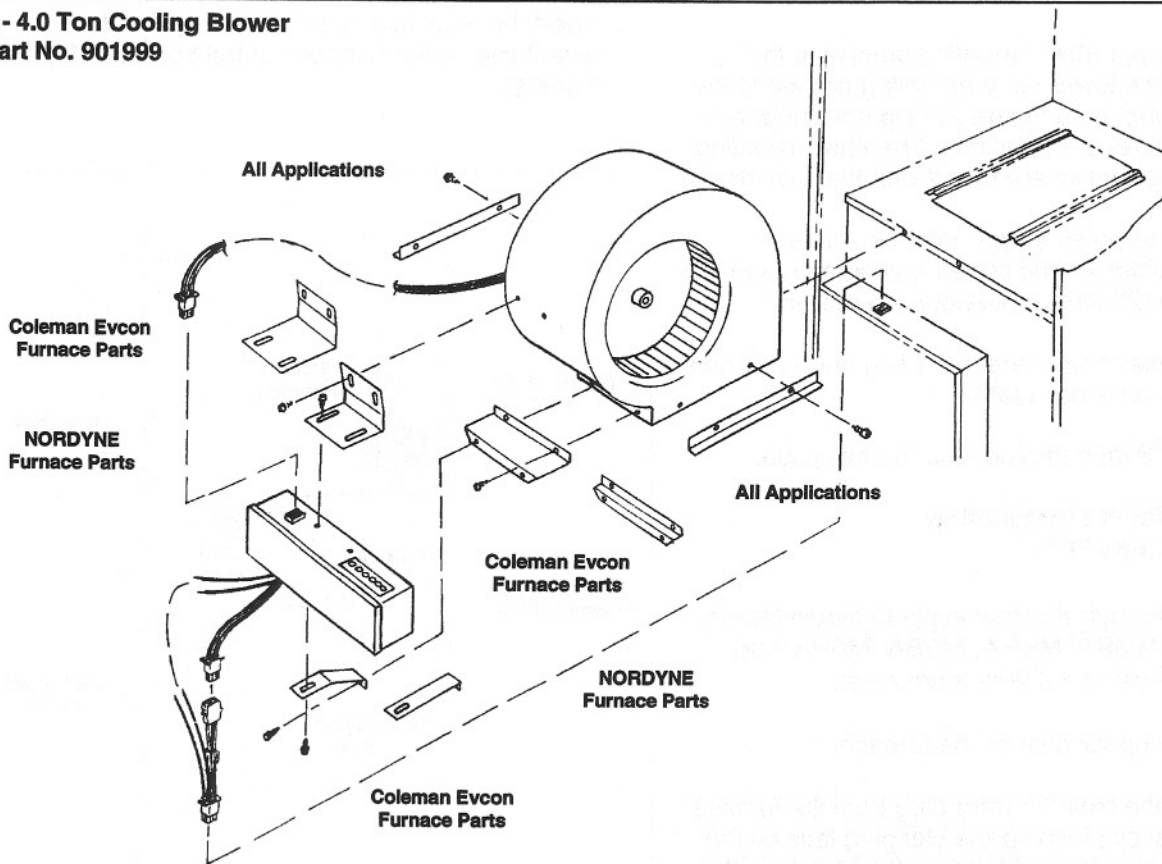


Figure 3. Cooling Blower

2. Install the upper relay mounting bracket to the blower and the lower relay mounting bracket to the furnace casing (see Figure 3).

3. Proceed to "Wiring Instructions" on page 5.

### Blower and Relay Kit Installation Configuration Code "E"

Note: Steps 1 through 8 below apply to model MGHA, MMHA, MSHA, and MBHA furnaces using a 5 wire thermostat.

1. Remove the upper door of the furnace.
2. Disconnect the blower motor plug from the furnace control panel by pinching the clasp tabs on the sides of the plug (this will unlock the plug from the receptacle) while pulling the plug straight out from the receptacle (see Figure 4).
3. Remove the two (2) screws from the front of the blower support and slide the heating blower out of the furnace.
4. Install the proper blower mounting brackets on the heat/cool blower, (see Figure 2). The blower mounting brackets are found in the blower kit.
5. Install the upper relay mounting bracket to the blower and the lower relay mounting bracket to the furnace casing (see Figure 2). Do not completely tighten the screws at this time. The relay mounting brackets and screws are found with the relay box.
6. Slide the assembled blower into the blower mounting guides on the top air casing and secure with the two (2) screws previously removed.
7. Mount the relay box to the mounting brackets; then tighten all screws completely.
8. Proceed to "Wiring Instructions" on this page.

### Blower and Relay Kit Installation Configuration Code "F"

Note: Steps 1 through 8 below apply to model MGHA, MGBA, MMHA, MMBA, MSHA, MSBA, MBHA, and MBBA furnaces using a 5 wire thermostat.

1. Remove the upper door of the furnace.
2. Disconnect the blower motor plug from the furnace control panel by pinching the clasp tabs on the sides of the plug (this will unlock the plug from the receptacle) while pulling the plug straight out from the receptacle (see Figure 4).

3. Remove the two (2) screws from the front of the blower support and slide the heating blower out of the furnace.

4. Install the proper blower mounting brackets on the heat/cool blower, (see Figure 3). The blower mounting brackets are found in the blower kit.

5. Install the upper relay mounting bracket to the blower and the lower relay mounting bracket to the furnace casing (see Figure 3). Do not completely tighten the screws at this time. The relay mounting brackets and screws are found with the relay box.

6. Slide the assembled blower into the blower mounting guides on the top air casing and secure with the two (2) screws previously removed.

7. Mount the relay box to the mounting brackets; then tighten all screws completely.

8. Proceed to "Wiring Instructions" on this page.

### WIRING INSTRUCTIONS

1. Insert the blower motor plug into the receptacle on the relay box assembly, (see Figures 7 and 8).
2. Insert the relay box assembly plug into the receptacle on the furnace control box, (see Figures 7 and 8).

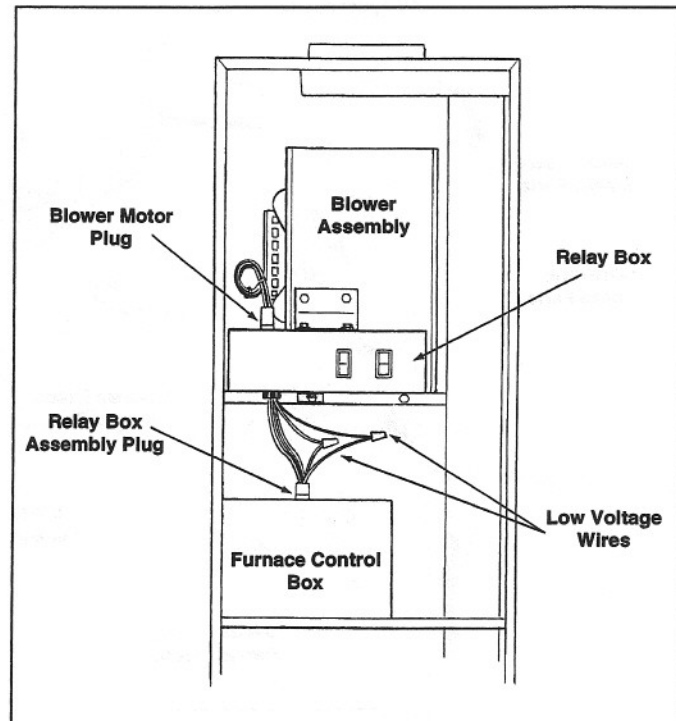


Figure 4

- Open the relay box cover and locate the blower speed terminal board on the far left side.
- See the Blower Speed Selection Chart (Table 2) for the proper heating and cooling speeds.

### Heating speed selection:

Connect the blue lead, marked "B", to the correct speed setting on the terminal board (1-4), (see Table 2, Blower Speed Selection).

### Cooling speed selection:

Connect the yellow lead, marked "Y" to the correct speed setting on the terminal board (1-4), (see Table 2, Blower Speed Selection). Check the

#### Blower Speed Selection

For use with Blower Kit No. 901998

FURNACE MODEL NO.	Heating Speed Setting ("B")	Cooling Speed/Evap Coll ("Y")		
		-024,-030	-036	-042
GAS 090 GAS GUN 086 OIL GUN 086	3	3	2	2
GAS 070, 075, 077 GAS GUN 066 OIL GUN 086	4	3	2	2
GAS 056, 066	1	3	2	2

#### Blower Speed Selection

For use with Blower Kit No. 901999

FURNACE MODEL NO.	Heating Speed Setting ("B")	Cooling Speed/Evap Coll ("Y")		
		-024,-030	-036	-042, -046, -048
GAS 090 GAS GUN 086 OIL GUN 086	3	4	3	2
GAS 070, 075, 077 GAS GUN 066 OIL GUN 066	4	4	3	2
GAS 056, 066	1	4	3	2

#### Cooling Capacity with Standard Heating Blower

FURNACE MODEL NO.	Evap Coll ("Y")
	-024
GAS 090 GAS GUN 086 OIL GUN 086	4
GAS 070, 075, 077 GAS GUN 066 OIL GUN 086	4
GAS 056, 066	4

Table 2

furnace operating instruction plate for furnace model and check the Blower Speed Selection for correct speed settings. Close the cover and replace the screw.

## INSTALLATION SEQUENCE

### For Coleman Presidential Gas and Oil Furnace Models 7900, 4000, DLRS, and DGRT Series

- Locate the section of Table 3 corresponding to the type of thermostat (2 or 5 wire) for the installation.
- Locate the cooling capacity of the air conditioning unit in the leftmost column of the appropriate section of Table 3. Read across the row to determine the correct Blower Kit number and Relay Kit number.
- Remove the upper door to the furnace.
- If using the 2 wire relay box, P/N 910994, the logo plate in the door must be removed as shown in Figure 5, in order to provide access to the relay box switches.

### Optional Heating/Cooling Configurations

For Coleman Furnace Models

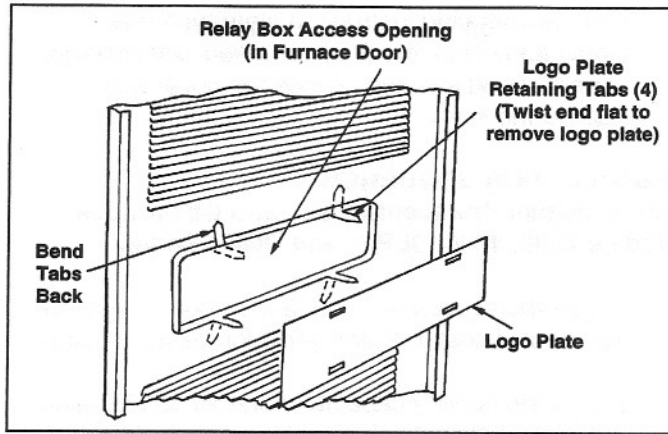
GAS AND OIL

2 Wire Heating Only Thermostat		
Cooling Capacity (Tons)	Blower Kit	Relay Kit
1.5-2.0	Coleman Std Htg Blower*	901994
2.0-3.5	901998	901994
2.0-4.0	901999	901994
5 Wire Heating/Cooling		
Cooling Capacity (Tons)	Blower Kit	Relay Kit
1.5-2.0	Coleman Std Htg Blower*	901995
2.0-3.5	901998	901995
2.0-4.0	901999	901995

\* Coleman standard heating blower not useable on model 7956. Instead, use either the 901998 or 901999 blower kit.

Table 3

- Disconnect the blower motor plug from the furnace control box by pinching the clasp tabs on the sides of the plug (this will unlock the plug from the receptacle) while pulling the plug straight out from the receptacle (see Figure 6).
- Disconnect the thermostat leads and pull the two low-voltage wires up through the partition panel (see Figure 6).

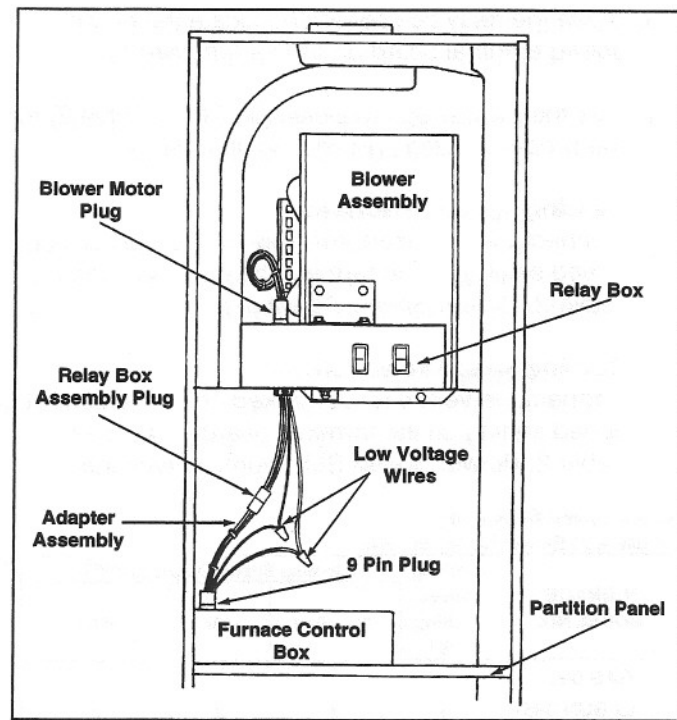


**Figure 5. Coleman Furnace Door**

7. Remove three (3) bottom mounting screws from the front of the blower support and remove the side retainer screws from the left and right blower railing. Slide the blower out of the furnace. Retain the front support screws for later use in these installation instructions.
8. Install the proper blower mounting brackets on the heat/cool blower, (see Figure 2 and 3). The blower mounting brackets are found in the blower kit.
9. Install the upper relay mounting bracket to the blower and the lower relay mounting bracket to the furnace casing. ( See Figure 2 for 2 wire configurations and see Figure 3 for five wire configurations). Do not completely tighten the screws at this time. The relay mounting brackets and screws are found with the relay box.
10. Slide the assembled blower into the blower mounting guides on the top air casing and secure with the two (2) of the screws previously removed.
11. Mount the relay box to the mounting bracket. Adjust the relay box to the proper height and position; then tighten all screws completely. The 2 wire relay box has two (2) switches that must be accessible with with the furnace door closed.

## WIRING INSTRUCTIONS

1. Insert the blower motor plug into the receptacle on the relay box, (see Figure 6).
2. Insert the relay box assembly plug into the 6 pin receptacle on the adapter assembly, (see Figure 6).



**Figure 6.**

3. Insert the 9 pin plug on the adapter assembly into the furnace control box receptacle, (see Figure 6).
4. Open the relay box cover and find the blower speed terminal board on the far left side.
5. See the Blower Speed Selection Chart (Table 4 Blower Speed Selection) for the proper heating and cooling speeds.

### Heating speed selection:

Connect the blue lead, marked "B", to the correct speed setting on the terminal board (1-4), (see Table 4, Blower Speed Selection).

### Cooling speed selection:

Connect the yellow lead, marked "Y" to the correct speed setting on the terminal board (1-4), (see Table 4, Blower Speed Selection). Check the furnace operating instruction plate for furnace model and check the Blower Speed Selection for correct speed settings. Close the cover and replace the screw.

6. Connect the red wire from the relay box to the red wire from the control box and the white wire from the relay box to the white wire from the control box. Secure the wires with wire nuts, (see Figure 6).

**LOW-VOLTAGE CIRCUIT (24 Volt Thermostat):** Refer to the wiring diagram Figures 7 and 8 for the low-voltage circuit for heating and cooling.

**BLOWER SPEED SELECTION CHART**

For use with Blower Kit No. 901998

FURNACE MODEL NO.	Heating Speed Setting ("B")	Cooling Speed/Evap Coll ("Y")		
		-024	-036	-036,-042
7956, DLR056, DGRT056	1	3	3	2
7966, 4066	4	3	3	2
7970, DLRS070, DGRT070	4	3	3	2
7975, DLRS075 DGRT075	3	3	3	2
7995, 4084	3	3	3	2

**BLOWER SPEED SELECTION CHART**

For use with Blower Kit No. 901999

FURNACE MODEL NO.	Heating Speed Setting ("B")	Cooling Speed/Evap Coll ("Y")		
		-024,-030	-036	-042, -046, -048
7956, DLR056, DGRT056	1	4	3	2
7966, 4066	4	4	3	2
7970, DLRS070, DGRT070	4	4	3	2
7975, DLRS075 DGRT075	3	4	3	2
7995, 4084	3	4	3	2

Table 4

**POWER SUPPLY CIRCUIT (Furnace):** Follow the wiring requirements and installation procedures supplied with the furnace. (Refer to the wiring diagram on the furnace control panel cover and/or the Installation Instructions or Owner's Manual.)

**POWER SUPPLY CIRCUIT (Air Conditioner):** Follow the wiring requirements and installation procedures supplied with the condensing unit. (Refer to the wiring diagram on the control panel cover.)

**OPERATION****1. For 5 Wire Heating / Cooling Thermostats:**

**For Heating** - Set the furnace system switch to "ON", the thermostat system switch to "HEAT", and the fan switch to "AUTO". Switch the power "OFF" at the A/C unit when the furnace is in use.

**For Cooling** - Set the furnace system switch to "OFF", the thermostat system switch to "COOL" and the fan switch to "AUTO". Switch power "ON" at the A/C unit when the furnace is not in use.

**For Continuous Air Circulation** - Set the thermostat fan switch to "ON".

**To Shut System Off** - Set the thermostat to "OFF" and set it at its lowest temperature setting. Set the furnace system switch to "OFF" and shut off power to the air conditioner.

**2. For 2 Wire Heating / Cooling Thermostats:**

**For Heating** - Set the furnace system switch to "ON", the relay box switch to "HEAT" and the fan switch to "AUTO". Switch power "OFF" at the A/C unit when the furnace is in use.

**For Cooling** - Set the furnace system switch to "OFF", the relay box switch to "COOL" and the fan switch to "AUTO". Switch power "ON" at the A/C unit when the furnace is not in use.

**For Continuous Air Circulation** - Set the relay box fan switch to "ON".

**To Shut System Off** - Set the relay box switch to "OFF" and set the thermostat at its lowest setting. Set the furnace system switch to "OFF" and shut off power to the air conditioner.

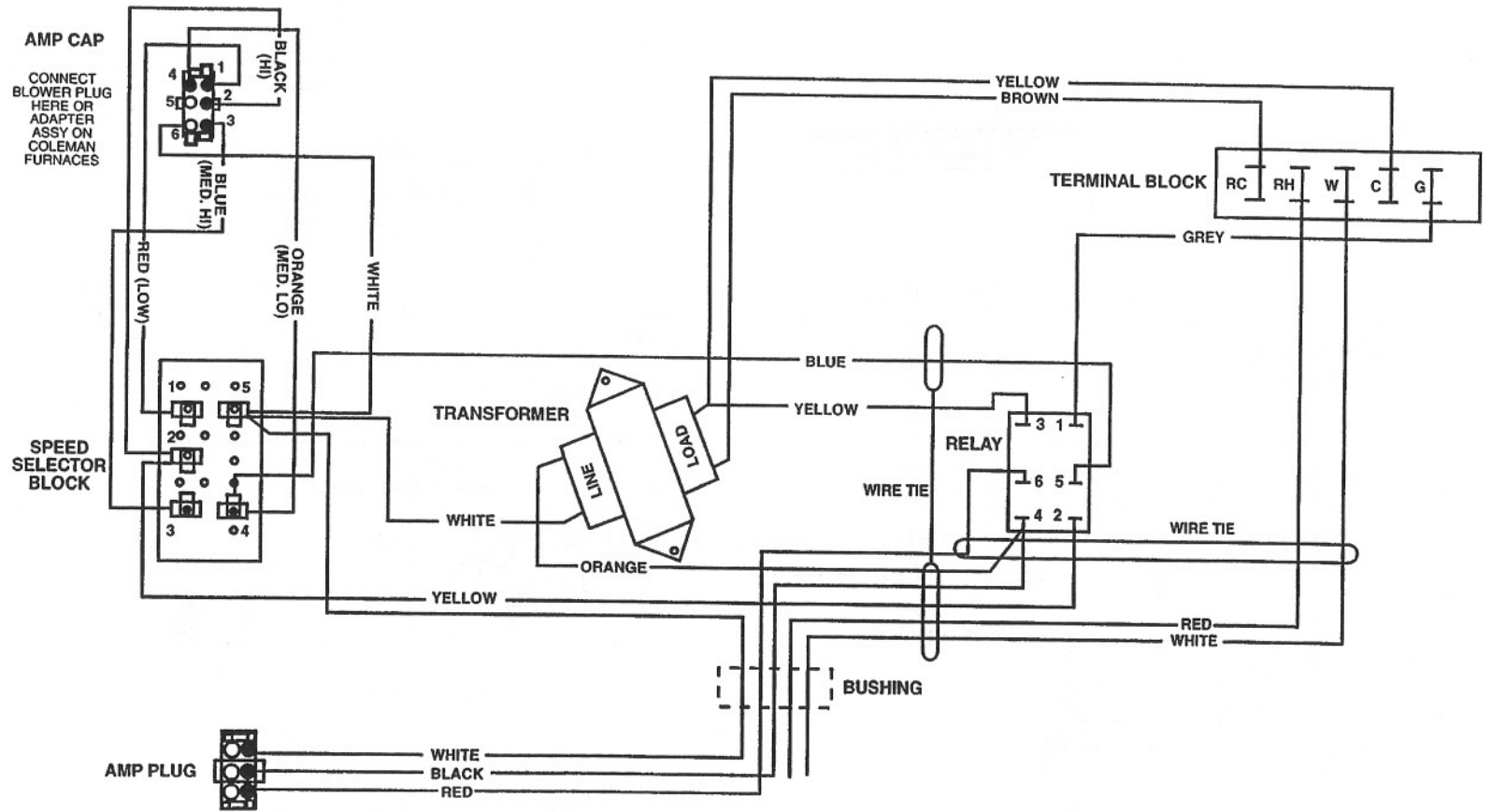
**MAINTENANCE**

1. Shut off the furnace (see 'To Shut System Off').
2. Check the furnace air filter every month. See Owner's Manual for cleaning instructions.
3. Have a serviceman remove the blower assembly from the furnace (once every six months) and clean the blower wheel and motor blower housing.
4. Oil the blower motor bearings annually, if oiling ports are provided, using 10 drops of SAE No. 20 motor oil. **DO NOT OVER OIL.** If oiling ports are not provided, no lubrication is necessary.



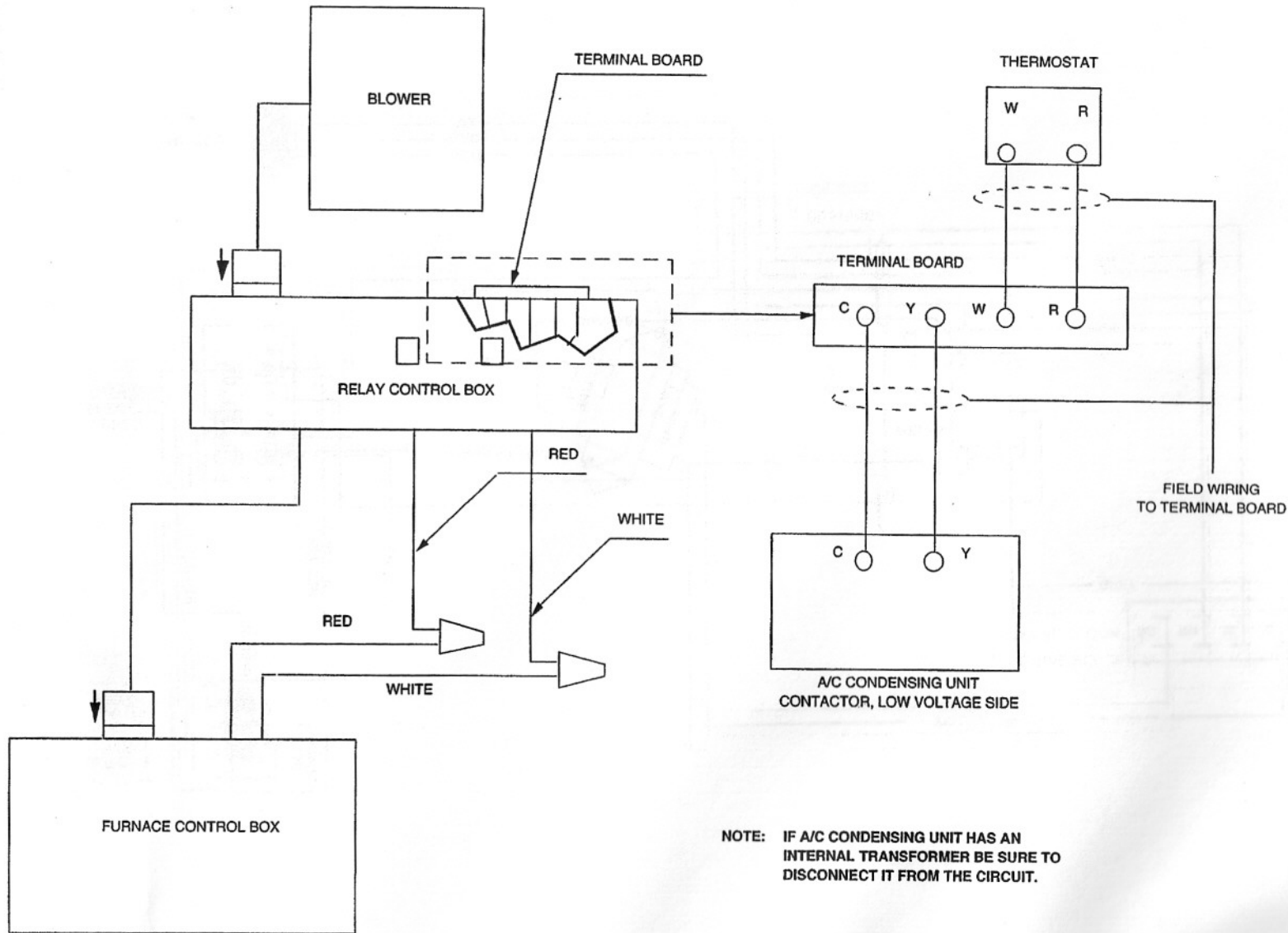


Figure 8. Wiring Diagram - 5 Wire Heating/Cooling Thermostat



WD# 7028542

Figure 9. System Wiring Schematic Using 2 Wire Thermostats



NOTE: IF A/C CONDENSING UNIT HAS AN INTERNAL TRANSFORMER BE SURE TO DISCONNECT IT FROM THE CIRCUIT.

Figure 10. System Wiring Schematic Using 5 Wire Thermostats

