Installation and Maintenance Instructions

magic-pak™

Low Ambient Kit

Kit #ALOAMB505-1

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

This kit consists of the following items:

1 - Fan Relay
1 - Thermostat
1 - Yellow Wire
1 - Black Wire
1 - Mounting Screws

Check to ensure all components are included, and that no damage occurred during shipment.

If some components are damaged, contact last freight carrier to make a claim.

⚠ CAUTION

Only qualified technicians may install this service item.

⚠ WARNING

ELECTRICAL SHOCK HAZARD!

Failure to disconnect power to the unit may result in electrical shock. More than one disconnect may be required to turn off all power.

FAILURE TO DO SO COULD RESULT IN BODILY INJURY OR DEATH.

⚠ WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. For assistance or additional information consult a qualified installer or service agency.

This kit is designed to allow the air conditioning system to operate in outdoor temperatures below 65° F and above 35° F. This kit contains a relay and temperature switch to control the outdoor fan to maintain high side refrigerant pressure to allow the refrigerant system to operate at low outdoor ambient temperatures. This system is not recommended for use in applications where cooling is needed below 35° F.

SPECIAL NOTE: The refrigerant line thermostat switch will open when the temperature at the switch falls below 65° F and will close when the temperature rises above 95° F. In order to test the operation of the fan control system it is recommended that the switch be cooled below 65° F to open the switch before installing the switch. This will allow the switch to operate once on a system that is being installed at a temperature above 65° F and below 95° F. Once the switch is open it will not close until the temperature at the switch goes above 95° F, which will happen once the air conditioner is turned on and the liquid temperature rises.

INSTALLATION

Procedure:

1. Disconnect the electrical power.

2. Remove the cooling chassis from the lower portion of the HWC or EWC unit. Refer to unit installation instructions for chassis removal instructions.

3. With chassis removed attach the fan relay to the control panel at the location shown in Figure 1.

4. Attach the refrigerant line thermostat switch to the liquid line. (See Figure 2.)

5. Route the wires from the refrigerant line thermostat switch back to the control panel by following the outdoor fan motor leads. Route wire to avoid fan blade, sharp sheet metal edges, and the discharge tube.

6. Wire the outdoor fan motor as follows: Install the black wire in the kit from the fan relay terminal 3 to the contactor terminal that the black common fan wire is connected to (T1), and remove the black fan wire from this contactor terminal. Reinstall the black common fan wire from contactor terminal to the fan relay terminal 1. Refer to the attached wiring diagram.

7. Wire the low voltage control wire for the fan relay as follows: Install the yellow wire in the kit from one coil terminal on the fan relay to the yellow wire coil terminal on the contactor. Wire one of the wires from the refrigerant line thermostat to the blue wire coil terminal on the contactor. Wire the second wire from the refrigerant line thermostat to the fan relay coil terminal opposite the yellow control wire installed above. Refer to the attached wiring diagram.

8. Reinstall the cooling chassis.

OPERATION -

9. The refrigerant line thermostat switch installed on the liquid line will open when the liquid temperature falls below 65° F which will turn off the outdoor fan. This will allow the discharge pressure and liquid temperature to rise. Once the liquid temperature rises to 95° F the refrigerant line thermostat switch will close and the outdoor fan will run. At low outdoor temperatures the outdoor fan will continue to cycle maintaining the high side and low side pressures for proper air conditioner operation.

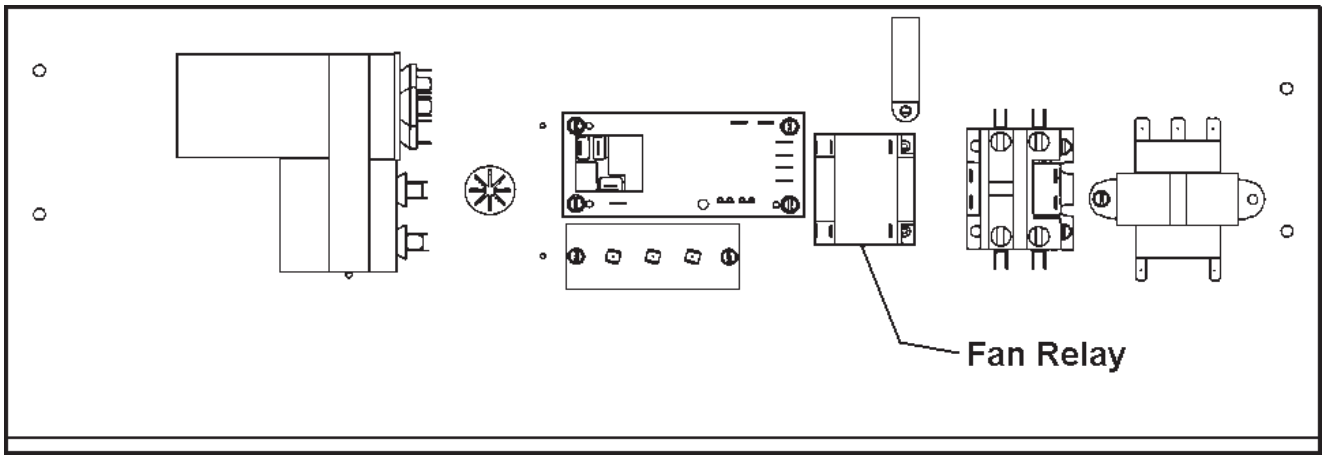


Figure 1

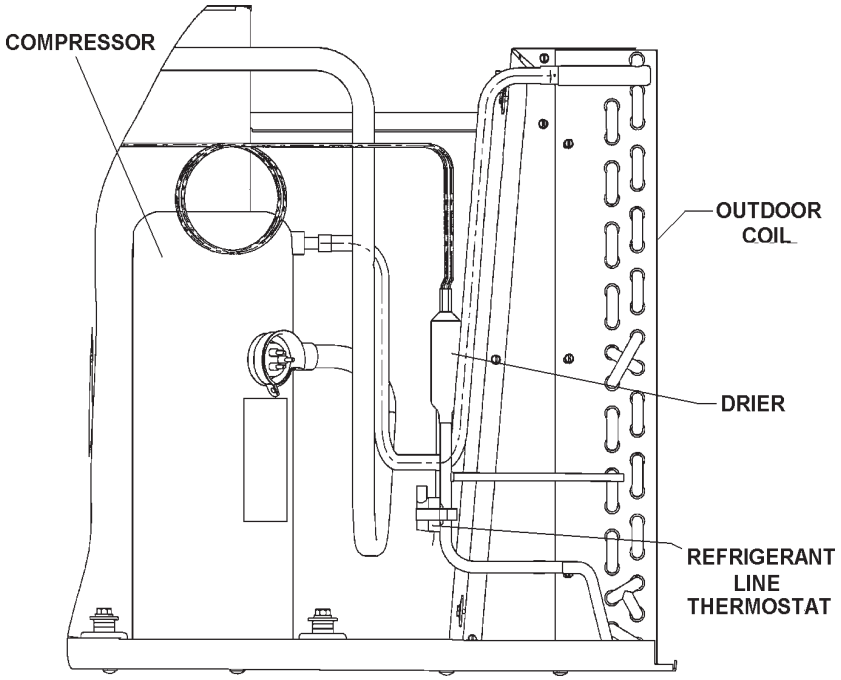
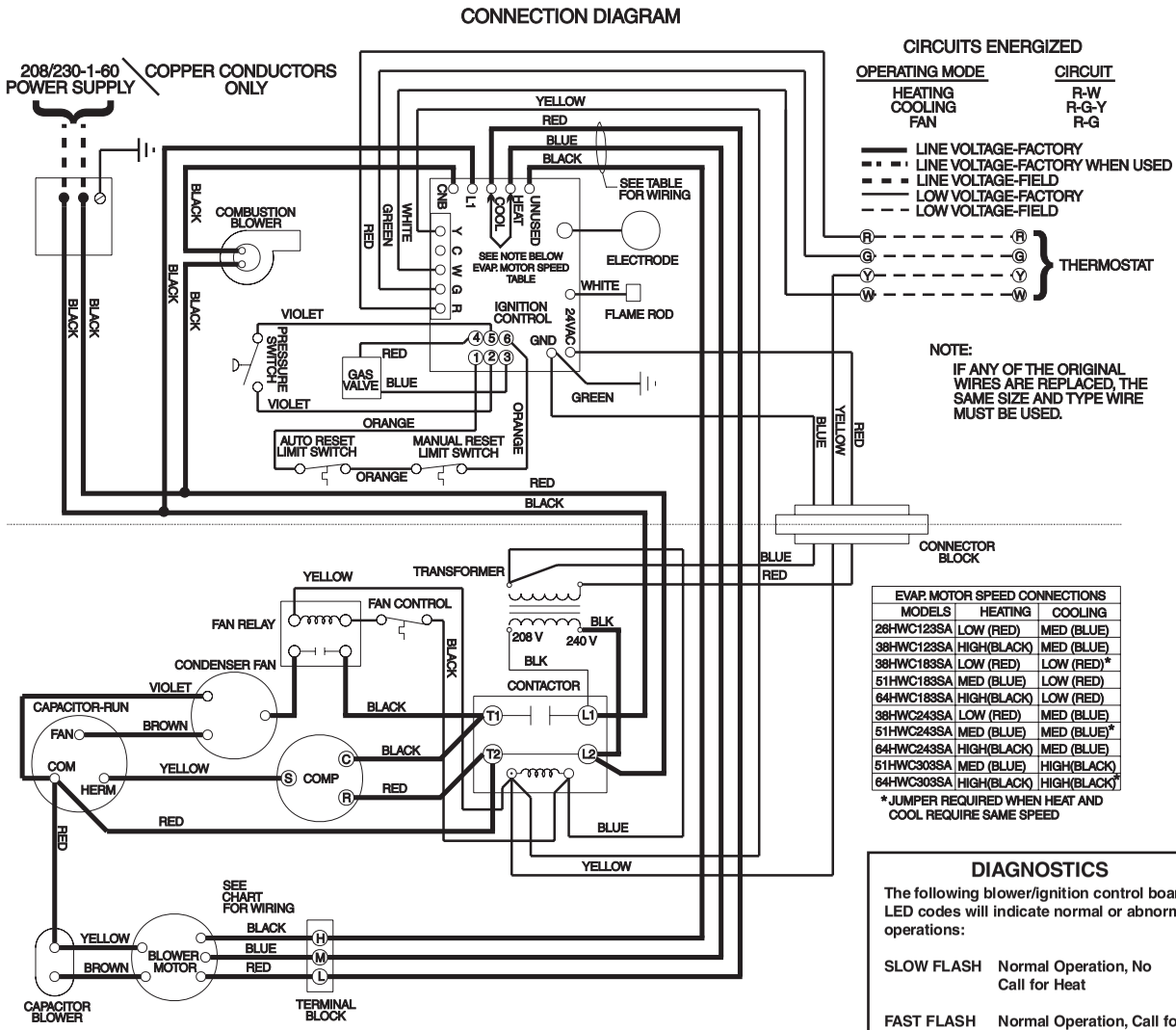


Figure 2



NOTE:
IF ANY OF THE ORIGINAL WIRES ARE REPLACED, THE SAME SIZE AND TYPE WIRE MUST BE USED.

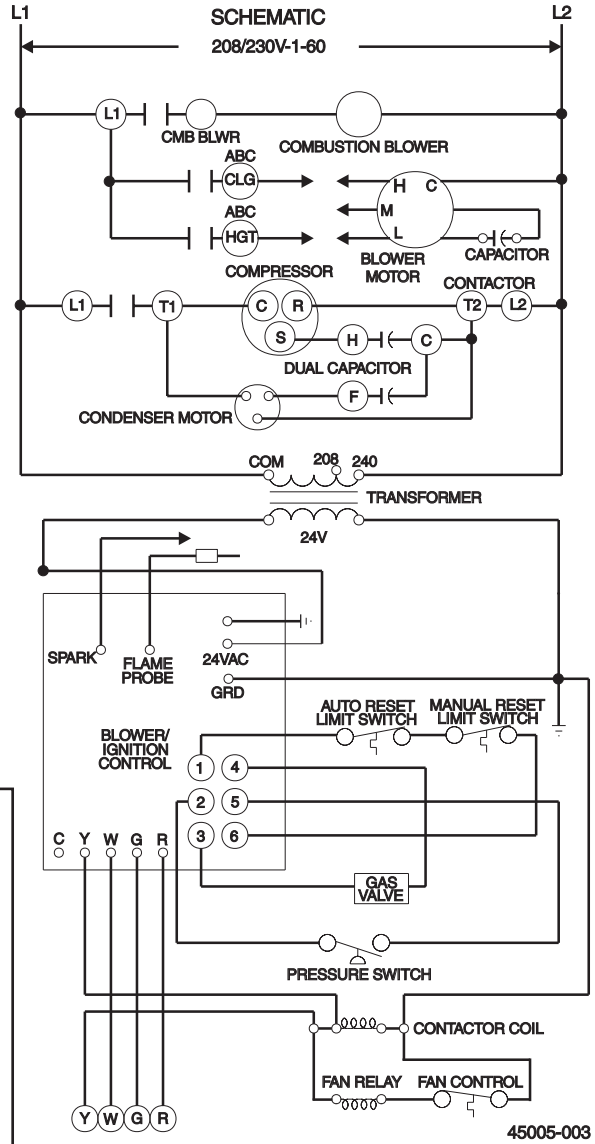
EVAP. MOTOR SPEED CONNECTIONS		
MODELS	HEATING	COOLING
26HWC123SA	LOW (RED)	MED (BLUE)
38HWC123SA	HIGH(BLACK)	MED (BLUE)
38HWC183SA	LOW (RED)	LOW (RED)*
51HWC183SA	MED (BLUE)	LOW (RED)
64HWC183SA	HIGH(BLACK)	LOW (RED)
38HWC243SA	LOW (RED)	MED (BLUE)
51HWC243SA	MED (BLUE)	MED (BLUE)*
64HWC243SA	HIGH(BLACK)	MED (BLUE)
51HWC303SA	MED (BLUE)	HIGH(BLACK)
64HWC303SA	HIGH(BLACK)	HIGH(BLACK)*

*JUMPER REQUIRED WHEN HEAT AND COOL REQUIRE SAME SPEED

DIAGNOSTICS

The following blower/ignition control board LED codes will indicate normal or abnormal operations:

SLOW FLASH	Normal Operation, No Call for Heat
FAST FLASH	Normal Operation, Call for Heat
2 FLASH	System Lockout - Failed to Detect or Sustain Flame
3 FLASH	Pressure Switch Open or Closed
4 FLASH	High Limit or Rollout Switch Open
5 FLASH	Flame Sensed and Gas Valve Not Energized
STEADY	Internal Failure (Micro-controller Failure; Self-check)



Wiring Diagram
208/230 Volt - Single Phase
w/Low Ambient Control

Part #45005-003

NOTES