RESIDENTIAL
SPLIT HEAT PUMP SYSTEMS

Service Manual

CH95	**CH75**	**CH55**	**HPS**
YG	**YK**	**YJ**	**FBY**
H8S5			

This Manual Supports Split Heat Pump Units of The Above Series Manufactured after 1990

Manufactured by:

ICP International Comfort Products

Part Number
428 081001 01

TABLE OF CONTENTS

INTRODUCTION

This service manual is designed to be used in conjunction with the installation manuals and/or technical support manuals provided with each Split Heat Pump System component. A Split Heat Pump ***System*** consists of BOTH an Indoor section and an Outdoor section and a room thermostat. When so equipped, accessories such as Electric Strip Heaters, Fossil Fuel Controls and/or Outdoor Thermostats also considered part of the system.

This Split Heat Pump System represents the very latest in high efficiency Electric Heat Pump equipment technology. Consequently, certain controls within the unit consist of highly sophisticated electronic components which are **not user serviceable**. Therefore, it is essential that only competent, qualified, service personnel attempt to install, service, or maintain this product.

This Service manual was written to assist the professional HVAC service technician to quickly and accurately diagnose and repair any malfunctions of this product.

This service manual covers a variety of different model Outdoor sections which may be matched to a similar variety of different (ARI Listed) Indoor sections. The greater majority of the information provided in this manual, however, pertains to the Outdoor section, since it is the major component of the ***System***. The overall operation of all of these models is essentially the same, with the exception of the differences of certain controls and/or components which may be unique to particular model and/or family.

This manual, therefore, will deal with all subjects in a general nature (I.E. all text will pertain to all models) unless that subject is unique to a particular model or family, in which case it will be so indicated.

Throughout the manual references may be made to "EARLIER MODELS" as well as "MORE RECENT MODELS". GENERALLY, the distinction between these two groups is based on a difference in Defrost controls and/or the type of Compressor used. These may not be the only differences, however, and the differences may vary from model to model within a particular family or series.

It will be necessary then for you to accurately identify the unit you are servicing, so you may be certain of a proper diagnosis and repair. (See Unit Identification Pg. 2)

WARNING

The information contained in this manual is intended for use by a qualified service technician who is familiar with the safety procedures required in installation and repair and who is equipped with the proper tools and test instruments.

Installation or repairs made by unqualified persons can result in hazards subjecting the unqualified person making such repairs to the risk of injury or electrical shock which can be serious, or even fatal not only to them, but also to persons being served by the equipment.

If you install or perform service on equipment, you must assume responsibility for any bodily injury or property damage which may result to you or others. We will not be responsible for any injury or property damage arising from improper installation, service, and/or service procedures.

UNIT IDENTIFICATION

The unit's rating plate (one each for both the Indoor and the Outdoor sections) contains important information for the service technician. It also lists the complete Model, Manufacturing, and Serial numbers. These complete numbers are required to obtain correct replacement parts as well as accurate service information.

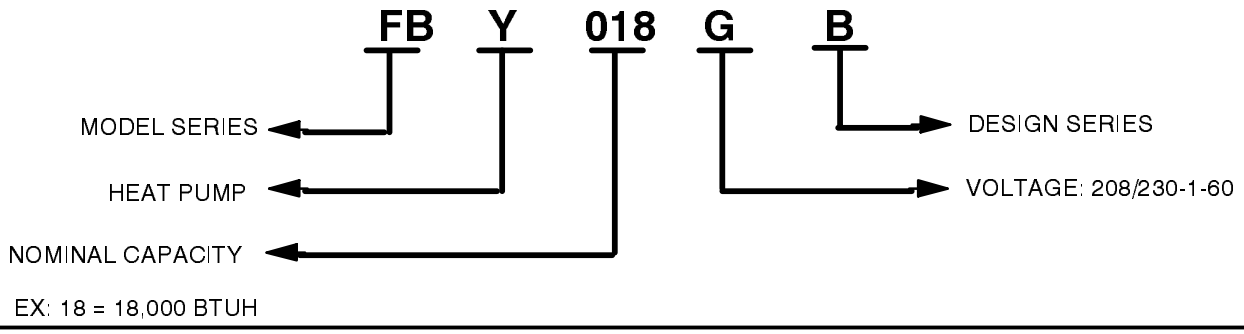
Before attempting to verify performance, make any adjustments, or replace any components, be certain to check the units' rating plates (located on the side panel) to obtain these complete numbers. The illustrations below will help you know more about the system you are servicing.

Outdoor Section Model Numbers Beginning with "CH"

MODEL NUMBER	C	H	75	24	V	K	A
PRODUCT FAMILY							
C = Condenser							
B = Blower							
PRODUCT TYPE							SALES CODE
A = Air Conditioning							ELECTRICAL
H = Heat Pump							K = 208/230-1-60
C = Cabinet							CONNECTIONS
SERIES							V = Sweat/Valve
5 = 5000 Series	55 = 5500 Series	M = Multi use					Q = Quick Connect
7 = 7000 Series	75 = 7500 Series						CAPACITY MBTUH
9 = 9000 Series	95 = 9500 Series						24 = 24,000

Outdoor Section Model Numbers Beginning with "FB"

MODEL IDENTIFICATION GUIDE



Outdoor Section Model Numbers Beginning With "H8S5"

MODEL NUMBER	H	8	S	524	A	3	V
PRODUCT TYPE							REFRIGERANT CONNECTIONS
A = A/C							V = Sweat/Valve X = No Coil
H = HP							S = Sweat
M = Heating/Cooling							EVAPORATORS
SERIES							A = "A" Coil C = Cased Coil
2 = 9 SEER							H = Horizontal L = Slope
4 = 10 SEER							ELECTRICAL
6 = 11 SEER							CODE VOLTS PHASE CYCLE
8 = 12 SEER							3 208/230 1 60
M = MULTI-LEVEL							SALES CODE
UNIT IDENTIFIER							RESIDENTIAL COOLING CAPACITY
S = Split Condenser							518 = 1.5 Ton 542 = 3.5 Ton
B = Blower Coil D = Blower							524 = 2 Ton 548 = 4 Ton
C = Blower Cabinet E = Evaporator							530 = 2.5 Ton 560 = 5 Ton
							536 = 3 Ton

Outdoor Section Model Numbers Beginning With "HP"

MODEL NUMBER	HP	S	024	A	2	A
						SALES CODE
AC - A/C Only, HP = Heat Pump						2 = 208/230 - 1 Phase
						3 = 208/230 - 3 Phase
S = Split System						
CAPACITY MBTUH						Series
24 = 24,000						

Outdoor Section Model Numbers Beginning With "YG", "YJ", or "YK"

MODEL NUMBER	Y	G	024	G	A
PRODUCT TYPE					REVISION LEVEL
Y = Heat Pump					
A = Air Conditioning					ELECTRICAL
SERIES					208 / 230 - 1 - 60
J = 10 SEER					CAPACITY MBTUH
K = 11 SEER					0 24 = 24,000
G = 12 SEER					
H = 14 SEER					

HEAT PUMP THEORY OF OPERATION

The Split Heat Pump System combines High Efficiency (HSPF & COP) Heating with High Efficiency (SEER) COOLING in one system. The Split Heat Pump ***SYSTEM*** consists of "MATCHED" components supplied and/or specified by the Equipment Manufacturer. Typically these are an Outdoor section, an Indoor section, Refrigerant line set, and a Room thermostat. Proper system operation, capacity, and efficiency can be expected **ONLY** when "MATCHED" components are being used.

An Air Conditioner COOLS (using a refrigeration system) by removing heat from indoors where it is not wanted (via the evaporator coil), and discharges that heat outdoors where it does not matter (via the condenser coil). This is evidenced by the warm discharge air that can be felt leaving a condensing unit.

A Heat Pump by contrast HEATS (using a refrigeration system) by removing heat from outdoors where it does not matter and discharges that heat indoors where it is needed. Simply stated, a Heat Pump is an Air Conditioner in reverse, which has the condenser located indoors, and the evaporator located outdoors.

In order to have one refrigeration system, (which both Heats and Cools) it would be necessary to change the location of the evaporator and condenser coils depending upon the season. This could be accomplished by physically swapping the location of the coils for each season. To be practical however, some means of handling this automatically is necessary.

The Split Heat Pump System uses a variety of electric, electro-mechanical and/or electronic components to handle the requirement of changing the location of the coils automatically. It also is designed to automatically handle periodic defrost requirements created by operating an evaporator coil in cold ambient temperatures (Heating Cycle)

The sequence of operation section(s) which follow explain in more detail how this is accomplished and/or how the system operates in the different modes.

SEQUENCE OF OPERATION

COOLING

1. Positioning the room thermostat's "SYSTEM" (Heat/Cool/Off selector) switch to the COOL position completes a circuit between "R" & "O" in the the thermostat sub-base.

2. The completed circuit between "R" & "O" energizes the coil of the Heat/Cool relay (On some models this relay is an integral part of the Defrost Control Board) causing its "Normally Open" contacts to close.

3. The closed contacts of the Heat/Cool relay provide a path for 230 Volts (or 24 Volts, depending upon the particular model) to energize the Reversing Valve solenoid. (the thermostat does not have to be "calling" for operation for this solenoid to energize)

4. A "CALL" for COOLING is initiated by positioning the room thermostat's temperature lever to a point BELOW the present room temperature.

5. The "CALL" for COOLING from the room thermostat completes circuits between "R" & "Y" and "R" & "G".

6. The completed circuit between "R" & "Y" energizes the contactor coil in the OUTDOOR section, (Most Scroll Compressors models are equipped with a time delay) causing its "Normally Open" contact(s) to close. This completes the circuits to power the Compressor and Outdoor Fan motor.

7. The completed circuit between "R" & "G" energizes the coil of the Blower Relay (or Fan Timer/Control) of the INDOOR section causing its "Normally Open" contacts to close. (Some indoor sections are also equipped with "ON" delays for the Blower) This provides a path for 230 Volts (or 115 Volts depending upon the model) to power the Blower Motor.

8. A circuit between "R" & "G" is also completed (independent of COOLING and/or HEATING operation) by positioning the room thermostat's FAN selector switch to "ON".

9. Once the system is in operation, both the INDOOR unit and the OUTDOOR unit will continue to operate in the same mode until the thermostat is satisfied.

10. Satisfying the thermostat opens the circuits between "R" & "Y" and "R" & "G" (when FAN selector switch is positioned to "AUTO") causing the OUTDOOR and INDOOR units to shut down. (Some INDOOR sections may be equipped with Blower "OFF" delays)

HEATING (1st Stage)

NOTE: System operation in 1st stage heating is essentially the same as cooling. The only difference is that the reversing valve is energized (via the Heat/Cool relay) in cooling, whereas in 1st stage heating it is not.

On applications using a Fossil Fuel Control Kit, the Fossil Fuel (I.E. Gas or Oil) Furnace is controlled through an OUTDOOR thermostat. Consequently, 1st Stage Heat may be as described above, **or** may consist of Fossil Fuel Furnace ONLY. The determining factor is relative to the OUTDOOR temperature and the Balance Point setting of the OUTDOOR thermostat.(see Page 11 for further information on Fossil Fuel Control Kits)

1. Positioning the room thermostat's "SYSTEM" (Heat/Cool/Off selector) switch to the HEAT position completes a circuit to"R" in the the thermostat, readying the thermostat for a "CALL" for HEAT.

2. A "CALL" for 1st Stage Heating is initiated by positioning the room thermostat's temperature lever to a point (no greater than) 1 to 2 degrees ABOVE the present room temperature.

3. The "CALL" for 1st Stage HEATING from the room thermostat completes circuits between "R" & "Y" and "R" & "G".

4. The completed circuit between "R" & "Y" energizes the contactor coil in the OUTDOOR section, (Most Scroll Compressors models are equipped with a time delay) causing its "Normally Open" contact(s) to close. This completes the circuits to power the Compressor and Outdoor Fan motor.

5. The completed circuit between "R" & "G" energizes the coil of the Blower Relay (or Fan Timer/Control) of the INDOOR section causing its "Normally Open" contacts to close. (Some indoor sections are also equipped with "ON" delays for the Blower) This provides a path for 230 Volts (or 115 Volts depending upon the model) to power the Blower Motor.

6. A circuit between "R" & "G" is also completed (independent of HEATING and/or COOLING operation) by positioning the room thermostat's FAN selector switch to "ON".

7. Once the system is in operation, both the INDOOR unit and the OUTDOOR unit will continue to operate in the same mode until the thermostat is satisfied.

8. Satisfying the thermostat opens the circuits between "R" & "Y" and "R" & "G" (when FAN selector switch is positioned to "AUTO") causing the OUTDOOR and INDOOR units to shut down. (Some INDOOR sections may be equipped with Blower "OFF" delays)

HEATING (2nd Stage)

NOTE: With Electric Heat indoor sections 2nd Stage heating consists of 1st stage heating PLUS any back-up (supplemental) Electric Strip Heaters installed in the indoor section. Some or all of the strip heaters may be controlled, however, through an OUTDOOR thermostat.

On Fossil Fuel (I.E. Gas or Oil furnace) indoor sections properly equipped with a Fossil Fuel Control Kit; 2nd Stage Heat consists of Fossil Fuel Furnace ONLY.

1. A "CALL" for 2nd Stage heat is initiated by positioning the room thermostat's temperature lever to a point at least 3 degrees ABOVE the present room temperature. The circuits that were completed by initiating a call for 1st Stage Heating (I.E. "R" to "Y" and "G") will also be made by this action.

2. The "CALL" for 2nd Stage heat from the room thermostat completes a circuit between "R" & "W".

3. The completed circuit between "R" & "W" energizes either (depending upon the type of indoor section) the Electric Heat Sequencer(s), or the Furnace Control. The "AUX" Heat light (if so equipped) on the room thermostat will also be energized during a "CALL" for 2nd Stage Heat.

EMERGENCY HEAT

NOTE: The term Emergency Heat means exactly what it says! It is Heat to be used in an Emergency (I.E. failure) of the OUTDOOR section. Switching to Emergency Heat DOES NOT heat the conditioned space faster.

Emergency heat uses the normal 2nd stage source of Heat, (I.E. Strip Heaters, or Fossil Fuel Furnace) but transfers their control to the 1st Stage bulb of the room thermostat.

1. Positioning the room thermostat's "SYSTEM" (Heat/Cool/Off) selector switch to EMERGENCY HEAT completes a circuit transferring control of the "W" circuit to the 1st Stage bulb while simultaneously removing control of the "Y" circuit. a circuit is also completed between "R" & "X" to light the Emergency Heat Light (if so equipped) on the room thermostat.

2. A "CALL" for Emergency Heat is then initiated by positioning the room thermostat's temperature lever to a point ABOVE present room temperature.

3. The "CALL" for Emergency Heat from the room thermostat completes a circuit between "R" & "W" and "R" & "G". Certain Thermostats (not specified for use by us) MAY NOT complete the "G" circuit on a call for Emergency Heat.

DEFROST

NOTE: System operation in DEFROST is essentially the same as its operation in COOLING with two (2) exceptions. First, the OUTDOOR fan motor is turned "OFF" during Defrost, and Second, the "W" circuit is energized to bring on supplemental heat to "TEMPER" the cool discharge air that results from operating in "COOLING".

1. In order to initiate a DEFROST cycle automatically, the system has to meet certain criteria.

   a. First, the Defrost Sensor must CLOSE (indicating coil temperature is cold enough to form frost) in order to begin ACCUMULATING Compressor run time on the internal clock.

   b. Next, the control (Low) voltage FIELD wiring must be properly connected to the outdoor section. (a 24 VAC "HOT" wire MUST be connected to the "R" or 24 VAC terminal of the defrost control to MAINTAIN accumulated Compressor run time on its internal clock)

   c. Then, the selected interval (I.E. 30, 60 or 90 minutes) of ACCUMULATED compressor run time in the 1st Stage Heating mode (with a closed Defrost Sensor) must be reached.

2. When the above criteria has been met, the Defrost Control will (Simultaneously) complete the required circuit(s) to energize the Reversing Valve and the 2nd Stage heat. It will also (at the same time) complete the required circuit(s) to De-energize the outdoor fan motor.

3. The specific circuits required to energize the Reversing Valve, and 2nd Stage Heat and to De-energize the outdoor fan vary between different defrost controls. They are, however, controlling the Defrost Relay, Auxiliary Heat relay, and/or Heat/Cool Relay.

4. These relays may be separate relays, or they may (in the case of integrated controls) be part of the defrost control itself. See the section on defrost controls beginning on page14 for further information.

5. Once the system has begun its defrost cycle, it will continue until the Defrost Sensor OPENS (indicating that the coil temperature is warm enough to be free of frost) or until the TIMED OVERRIDE (10 min. or 14 min. depending upon control) period is reached.

6. The system will then return to a normal (1st Stage) Heating mode of operation.

ELECTRICAL SUPPLY

WARNING

Electrical shock hazard.

Turn OFF electric power at fuse box or service panel before making any electrical connections and ensure a proper ground connection is made before connecting line voltage.

Failure to do so can result in property damage, personal injury and/or death.

SUPPLY CIRCUIT (Indoor Section)

The system cannot be expected to operate correctly unless the Indoor Section is properly connected (wired) to an adequately sized single branch circuit. Check the Installation Manual and/or Technical Data for your particular indoor section and/or Strip Heaters (if so equipped) to determine if the circuit is adequately sized. This is essential, since the blower, control transformer and (if so equipped) strip heaters are located in the indoor section.

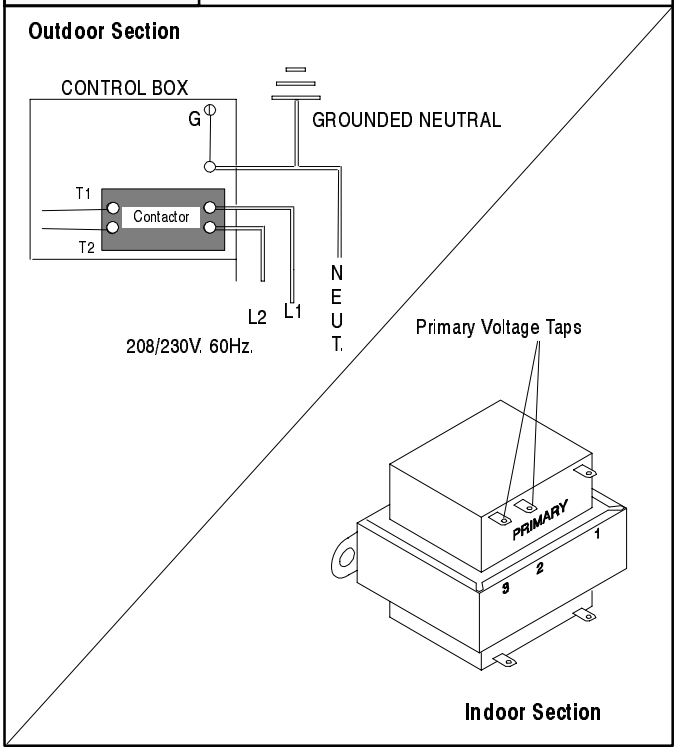
SUPPLY VOLTAGE (Indoor Section)

To insure proper operation, supply voltage to the Strip heaters and/or indoor section should be within ten (10) percent (Plus or Minus) of listed rating plate voltage.

CONTROL (LOW) VOLTAGE

To insure proper System operation the transformer secondary output must be maintained at a nominal 24 Volts. The Control (Low) Voltage transformer on some Indoor Sections is equipped with multiple Primary Voltage taps. Connecting the primary (supply) wire to the tap (I.E. 120, 208 or 240 Volts) that most closely matches the MEASURED supply voltage will insure proper transformer secondary output is maintained.

Figure 1 Typical Electrical Connections



SUPPLY CIRCUIT (Outdoor Section)

The system cannot be expected to operate correctly unless the Outdoor Section is properly connected (wired) to an adequately sized single branch circuit. Check the Technical Data Section of this manual to determine if the circuit is adequately sized for your Outdoor Section.

SUPPLY VOLTAGE (Outdoor Section)

Supply voltage to the unit should be a nominal 230 volts. It MUST be between 197 volts and 253 volts. Supply voltage to the unit should be checked WITH THE UNIT IN OPERATION. Voltage readings outside the specified range can be expected to cause operating problems. Their cause MUST be investigated and corrected.

ELECTRICAL GROUND

Grounding of the electrical supply to ALL UNITS IS REQUIRED for safety reasons.

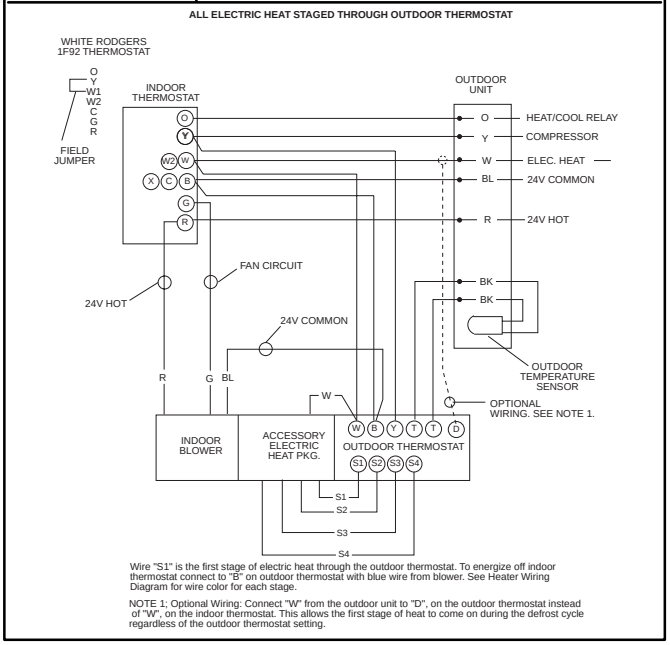
CONTROL WIRING

Control wiring is an important part of the total equipment installation, since it provides the vital communications link between the thermostat, and the equipment. It is often overlooked as the source of equipment malfunctions. Control wiring that is either too long, undersized, or improperly connected (be it simply loose, or on the wrong terminal) can in fact be the source of many equipment problems.

ALWAYS check to make sure that the control wiring is connected to the proper terminal(s) of the equipment and thermostat you are using. Remember, also, that thermostat terminals are not always identified alike by different thermostat manufacturers. Connections MUST be clean and tight to insure trouble-free operation.

ELECTRONIC CONTROLS used on certain models of split heat pump systems MAY RESPOND DIFFERENTLY to mis-wiring than what one may expect.

Figure 2 Typical System Control Wiring



ROOM THERMOSTATS

Room thermostats are available from several different manufacturers in a wide variety of styles. They range from the very simple and inexpensive Bi-metallic type to the complex and costly electronic set-back type. In all cases, no matter how simple or complex, they are simply a switch (or series of switches) designed to turn equipment (or components) "ON" or "OFF" at the desired conditions.

An improperly operating, or poorly located room thermostat can be the source of perceived equipment problems. A careful check of the thermostat and wiring must be made then to insure that it is not the source of problems.

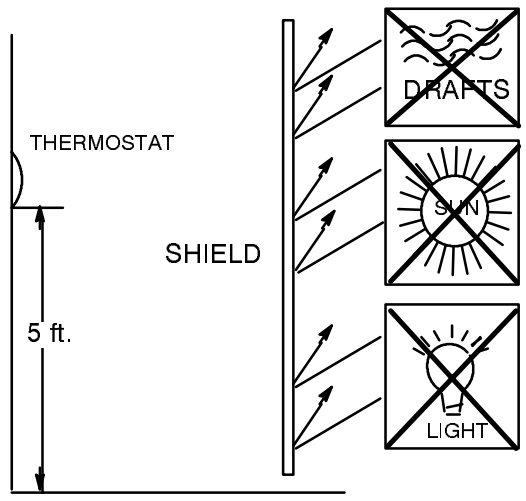
LOCATION

The thermostat should not be mounted where it may be affected by drafts, discharge air from registers (hot or cold), or heat radiated from the sun or appliances.

The thermostat should be located about 5 Ft. above the floor in an area of average temperature, with good air circulation. Normally, an area in close proximity to the return air grille is the best choice.

Mercury bulb type thermostats **MUST** be level to control temperature accurately to the desired set-point. Electronic digital type thermostats SHOULD be level for aesthetics.

Figure 3 **Thermostat Location**



HEAT ANTICIPATORS

Heat anticipators are small resistance heaters (wired in SERIES with the "W" circuit) and built into most electro-mechanical thermostats. Their purpose is to prevent wide swings in room temperature during system operation in the HEATING (second stage) mode. Since they are wired in series, the "W" circuit will open if one burns out preventing second stage heat operation. On heat pump systems this will normally be electric heat strips, however, it can be a gas or oil furnace if equipped with a fossil fuel kit.

The heat anticipator provides a small amount of heat to the thermostat causing it to cycle (turn off) the heat source just prior to reaching the set point of the thermostat. This prevents exceeding the set point by allowing for the additional heat harvested during the blower off delay.

In order to accomplish this, the heat output from the anticipator must be the same regardless of the current flowing through it. Consequently, most thermostats have an adjustment to compensate for varying current draw in the thermostat circuits of different types of equipment.

The proper setting of heat anticipators then is important to insure proper temperature control and customer satisfaction. A Heat anticipator that is set too low will cause the heat source to cycle prematurely possibly never reaching set point. A heat anticipator that is set too high will cause the heat source to cycle too late over shooting the set point.

The best method to obtain the required setting for the heat anticipator, is to measure the actual current draw in the control circuit ("W")using a low range (0-2.0 Amps) Ammeter. (See Figure 4) After measuring the current draw, simply set the heat anticipator to match that value.

If a low range ammeter is not available, a "Clamp-on" type ammeter may be used as follows:

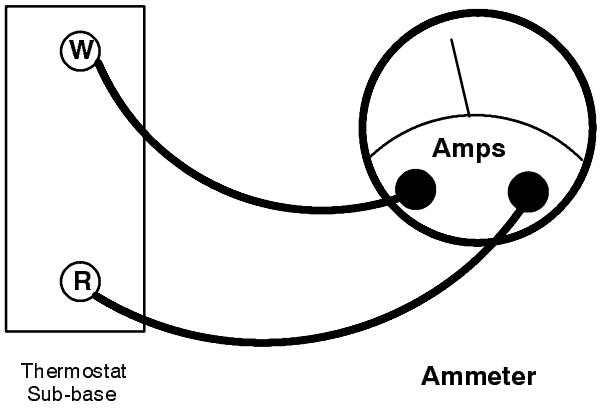
1. Wrap EXACTLY ten (10) turns of wire around the jaws of a clamp-on type ammeter.

2. Connect one end of the wire to the "W" terminal of the thermostat sub-base, and the other to the "R" terminal.

3. Turn power on, and wait approximately 1 minute, then read meter.

4. Divide meter reading by 10 to obtain correct anticipator setting.

Figure 4 Measuring Current Draw



If an ammeter is not available, consult the Installation Instructions or Technical Data for your particular Indoor Section and/or Strip Heaters to see if approximate Heat Anticipator settings are listed.

Electronic thermostats do not use a resistance type anticipator. These thermostats use a microprocessor (computer) that determines a cycle rate based on a program loaded into it at the factory.

These cycle rates are normally field adjustable for different types of equipment. The method of adjustment, however, varies from one thermostat manufacturer to another. Check with the thermostat manufacturer to find out the proper way of adjusting the cycle rate.

COOLING ANTICIPATORS

Cooling anticipators are small fixed (non-adjustable) resistance heaters (wired in PARALLEL with the "Y" circuit) and built into most electro-mechanical thermostats. Their purpose is to prevent wide swings in room temperature during system operation in the COOLING mode. This is accomplished by applying a small amount of heat to the thermostat during the "OFF" cycle. This causes the unit to cycle back on before the room temperature rises excessively. Since they are wired in PARALLEL, the unit will still operate if one burns out. There may, however, be a noticeable swing (difference) in temperature between compressor "OFF" and "ON" cycles.

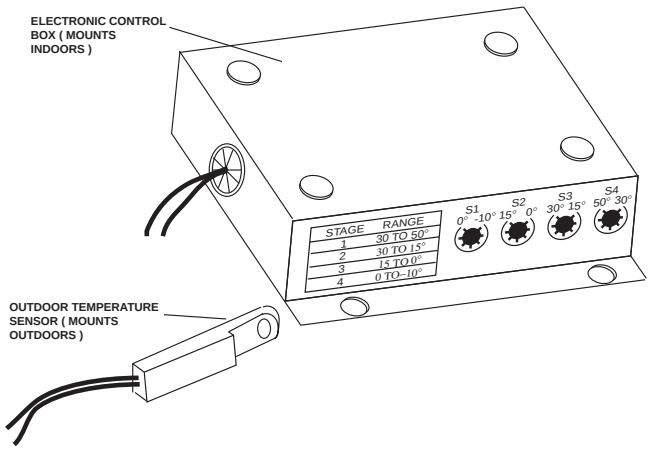
ELECTRONIC OUTDOOR THERMOSTATS

Since the capacity of a Heat Pump DECREASES as outdoor temperature decreases, supplemental Electric Resistance Heat is required in most installations. (Exceptions to this could be in the Very Deep South, where milder temperatures are common)

Supplemental Electric Resistance Heat is controlled by the second stage bulb of the indoor (Room) thermostat. Calling for second stage operation (either by simply moving the temperature lever to higher setting, or due to loss of system capacity) will energize the Heater(s). It is desirable however, to keep the use of resistance heaters to a MINIMUM, because they are more costly to operate than the Heat Pump.

When used, NORMALLY at least part (if not ALL) of the supplemental electric resistance heat (in this series) will be controlled through an ELECTRONIC Outdoor Thermostat. If the Balance Point has been properly set, the ELECTRONIC Outdoor thermostat will prevent the heat stage(s) it is controlling from being energized until Outdoor temperature is low enough to require their use, thereby reducing system energy consumption.

Figure 5 Electronic Outdoor Thermostat



Electric Heat Staging Connections

1. The COMMON wire from the First Stage Electric Heater Sequencer can be connected to either terminal "B" or to one of the staging terminals, (S1, S2, etc.) When connected to terminal "B" the First Stage Electric heater will be energized (Regardless of outdoor temperature) anytime the Indoor (Room) Thermostat calls for second stage heat.

2. When The COMMON wire from ANY Electric Heater Sequencer is connected to one of the staging terminals, (S1, S2, etc.) it can ONLY be energized when the actual outdoor temperature is below the temperature setting of the stage.

	STAGE	DEGREE RANGE ^{O}F	FACTORY SETTING	TIMING DELAY* BETWEEN STAGES
	1	15 to 50	50	5-30 Secs.
2 Stage	2	-10 to 15	15	5-10 Secs.
	1	30 to 50	50	5-30 Secs.
	2	15 to 30	30	5-10 Secs.
4 Stage	3	0 to 15	15	5-10 Secs.
	4	-10 to 0	0	5-10 Secs.

*Actual time for electric heat to come on will be longer since heater sequencers require different times to actuate.

Balance Point Adjustment

The Balance Point(s) for ANY Heat Pump System MUST be calculated (Plotted) on a Balance Point Chart to determine the PROPER settings for the stages of the outdoor thermostat. Balance Point charts are normally provided in the installation manual and/or specification sheet for each individual model. The CALCULATED Heat Loss for the structure MUST be known in order to properly use the balance point chart.

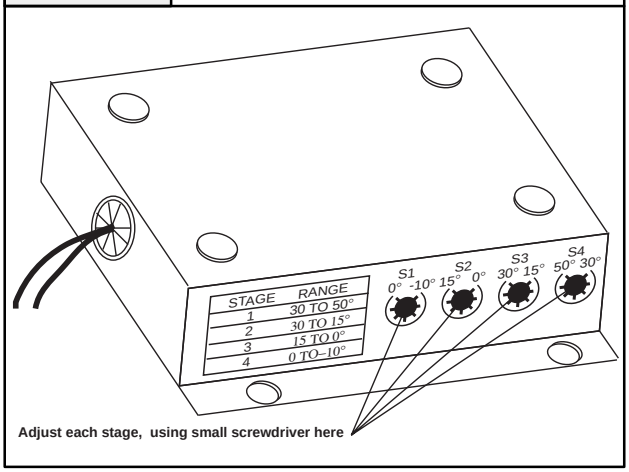
Once the Balance Point(s) of the system have been calculated, the electronic outdoor thermostat stages may be adjusted as follows:

1. Determine which stages (S1, S2, etc.) to connect heater stages to based on the REQUIRED Balance Point (temperature) setting of the stage.

2. To adjust insert a screwdriver though the hole to engage the adjustment screw. Mark the screwdriver blade at a reference point to the scale marking around the hole. To adjust, turn to desired temperature setting. Each scale marking equals 2º.

3. Set the desired "ON" temperature for EACH stage as required. Turn adjustment screw CW (clockwise) to set for a higher temperature or CCW (counter clockwise) for a lower temperature.

Figure 6 Adjusting Balance Point(s)



Checking Electronic ODT Operation

1. Switch Indoor Thermostat to "HEAT" and position temperature lever (at least 3 degrees) above room temperature so the thermostat is calling for second stage heat.

2. There should be 24V across terminals "W" and "B" of the outdoor thermostat board. ALL LED indicator lights on the board should be "OFF" unless the outdoor temperature is below the setting of the stages.

3. Disconnect one of the leads for the Outdoor Temperature Sensor at Terminal "T" on the board. ALL LED LIGHTS should come "ON" WITHIN ONE MINUTE. Reconnect sensor lead to "T". ALL LED LIGHTS should go "OFF".

4. Switch Thermostat to "EMERGENCY HEAT" position. ALL LED LIGHTS should come "ON" WITHIN ONE MINUTE.

TROUBLE SHOOTING

All Electric Heat "ON" at the same time	Failed Outdoor Sensor (Open - Infinite Ohms) Broken wire or poor connections to sensor.
No Electric Heat	Failed Outdoor Sensor (Shorted - Zero Ohms) Disconnect one sensor lead at "T" & ALL LED lights should come "ON"
Insufficient Heat "ON" to maintain Comfort level of structure	"ON" temperature of Stage set TOO LOW. Adjust to a higher setting. Failed stage on the control board. Disconnect out-door sensor lead at "T" ALL LED LIGHTS should come "ON".

Note: The "Typical System" control wiring diagram (using an Electronic Outdoor Thermostat) found on Page 97 should provide further assistance in Troubleshooting

Checking Stage Operation

There will be a 5-10 second or longer delay after power is applied to the board before the first LED light will come on and between each stage.

The timing between stages and switching can be observed (LED LIGHTS) by chilling the Outdoor Temperature Sensor in a brine solution of ice, water and salt.

Actuating points for each stage can be checked using a variable resistor with a range of 20 to 125K ohms.

a. Use an ohmmeter to set resistance to correspond to temperature listed on chart

b. Connect resistor across "T" and "T" terminals.

c. Adjust stage until LED indicator light is on.

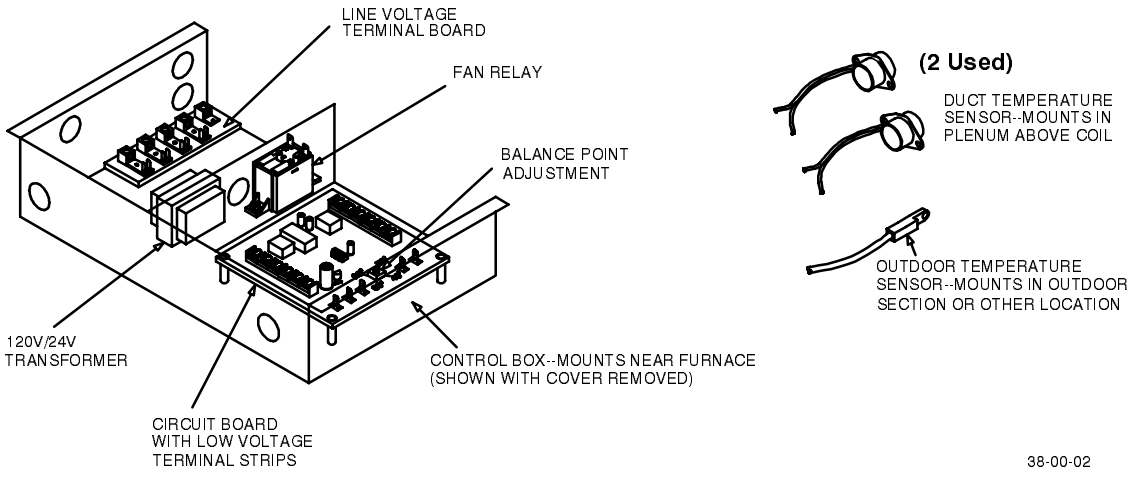
Checking Outdoor Temperature Sensor

Correct resistance through the Temperature Sensor can be checked using an Ohmmeter. However, the sensor must be disconnected and must be at a given temperature. Use the following chart, (Figure 6) and check against at least two different temperatures. Temperature of the sensor can be controlled by chilling the Outdoor Temperature Sensor in a brine solution of ice, water and salt or warming in warm water.

Figure 6	Resistance Values/Versus Approximate Temperature.		
Resistance in Ohms	Approx. Temp. ºF	Resistance in Ohms	Approx. Temp. ºF
20K	50	46K	20
23K	45	54K	15
26K	40	63K	10
30K	35	74K	5
35K	30	87K	0
40K	25	100K	-5
		119K	-10

FOSSIL FUEL KITS (CONTROLS)

Figure 7 — **Fossil Fuel Control Kit Components**



The purpose of the fossil fuel kit is to perform the switching functions necessary to control BOTH the Heat Pump, and the Fossil Fuel (Gas or Oil) furnace from the same room thermostat. ONLY one (either the heat pump or the furnace) will be in operation at any given time.

WHICH one is in operation will depend upon the following factors:

1. Indoor AND outdoor temperatures.

2. Balance point setting (adjustment).
3. Condition of duct and outdoor temperature sensors.
4. Mode of operation selected.

Important System Match Information

The Fossil Fuel Kit is intended to only be used with the manufacturer's specified room thermostats, listed heat pump outdoor sections and the listed indoor coil matches; at the rated airflow or above. Application of a Fossil Fuel Kit to other than listed equipment matches may result in operational problems, and/or premature equipment failure. Outdoor sections used with a Fossil Fuel kit MUST be equipped with a High Pressure Switch.

Fossil Fuel Kit Components

Outdoor Temperature Sensor: Triggers control circuit, (based on temperature setting) to a built in relay that commands either the gas (or Oil) furnace or the heat pump to operate on first stage indoor thermostat keyed to outdoor ambient temperature.

Duct Temperature Sensors: Prevent heat pump operation until the furnace cools down after a run cycle.

Fan Relay: Is used as an isolated interlock to insure heat pump blower operation.

Circuit Board: Acts as a switching control and provides terminal connections.

Transformer: Used to power the control circuit of the indoor thermostat, fossil fuel kit and the outdoor heat pump section. The transformer is isolated from the furnace circuit by the use of a built in "R" to "W" isolation relay. The furnace is powered by its OWN control transformer.

Sequence of Operation - Fossil Fuel Kit

First Stage Heat

1. The indoor thermostat calls for first stage heat by energizing the "Y" (and "G") circuit(s).
2. If the outdoor ambient temperature is ABOVE the set point of the outdoor thermostat, the "Y" circuit is directed to the heat pump outdoor section for "Heat Pump" operation (Furnace WILL NOT operate except for blower).
3. If the outdoor ambient temperature is BELOW the set point of the outdoor thermostat, the "Y" circuit is directed to a built in relay which completes the "standard" "R" and "W" circuit required for the fossil fuel furnace to operate (Heat Pump WILL NOT operate).
4. The end result is that the heat pump AND furnace are BOTH being controlled (which depends upon outdoor temperature) by the "first stage" of the indoor (room) thermostat circuit. Therefore, no pronounced "controlled" temperature differences should be experienced between "set point" and indicated room temperature.
5. If the Heat Pump goes into defrost, (during operation in 1st Stage Heat) the furnace will be energized through the "D" terminal on the control board, and will operate during the defrost cycle to "Temper" the cool discharge air which results from operation in defrost.

Second Stage Heat

1. The indoor thermostat calls for "second stage heat by energizing the "W" (and "G") circuit(s).
2. This "W" circuit is directed to a built in relay that OPENS the "Y" circuit to the heat pump, shutting it down. At the same time it CLOSES the "standard ""R" to "W" circuit required for the fossil fuel furnace to operate.
3. A call for second stage heat ALWAYS shuts down the Heat Pump and brings on the Furnace, REGARDLESS of the outdoor temperature. Also, the furnace blower motor will start IMMEDIATELY on a call for second stage heat because of the "G" circuit being energized.
4. Once the second stage of the room thermostat is satisfied, the furnace will shut down, and (after the Duct Sensor(s) have cooled) the Heat Pump will resume operation until first stage is satisfied.

Emergency Heat

1. Switching the room thermostat to Emergency Heat prevents the OUTDOOR section from operating and TRANSFERS CONTROL of the FURNACE to the first stage bulb of the thermostat, REGARDLESS of outdoor ambient temperature.
2. When the room thermostat then calls for first stage operation the system will perform the same operational functions as a "NORMAL" call for second stage heat. The exception being that the indoor thermostat's "W" circuit is now being controlled by the first stage thermostat bulb.

CHECKING OUTDOOR TEMPERATURE SENSOR AND BALANCE POINT CIRCUIT OF BOARD

The switching from the heat pump cycle to the furnace at the proper balance point temperature is controlled by resistance values between the sensor and board.

TEMPERATURE SENSOR CHECK

Correct resistance through the Temperature Sensor can be checked using an Ohmmeter. However, the sensor must be disconnected and must be at a given temperature.

Use the following chart, (Figure 8) and check against at least two different temperatures. Temperature of sensor can be controlled by chilling the Outdoor Temperature Sensor in a brine solution of ice, water and salt or warming in warm water.

Figure 8 Resistance Values/Versus Approximate Temperature

Resistance In Ohms	Approx. Temp. °F	Resistance In Ohms	Approx. Temp. °F
20K	50	35K	30
23K	45	40K	25
26K	40	46K	20
30K	35		

CIRCUIT BOARD CHECK

The switching functions at a specific temperature can only be checked by placing a known resistance across terminals "T" and "T" on the board. Resistance can be a variable resistor (range of 20 to 50K ohms) or the Outdoor Temperature Sensor at a specific temperature. Make sure sensor has been checked against values in chart.

CAUTION

Connecting 24 volts to either of the "T" terminals on the circuit board will result in instant failure of the "IC" chip on the control board and require replacement of the the entire board.

1 . Make sure furnace circuit is on so power is supplied to board.

2. Immerse Outdoor Temperature Sensor in water between 20° and 50° F, at a known temperature.

3. Adjust the potentiometer on the board, (see Figure 9) to the same temperature as the water the sensor is in.

4. A click should be heard from the relays on the board and the heating mode should change from heat pump to furnace or furnace to heat pump.

NOTE: When switching from furnace to heat pump allow several minutes for heat pump to come on as limit(s) (Duct Sensors) will be open. Board should be checked at several different temperatures to confirm proper operations. If a variable resistor is used, set resistor to correspond to values shown in Figure 8. Disconnect Outdoor Temperature Sensor and connect resistor across "T" and "T".

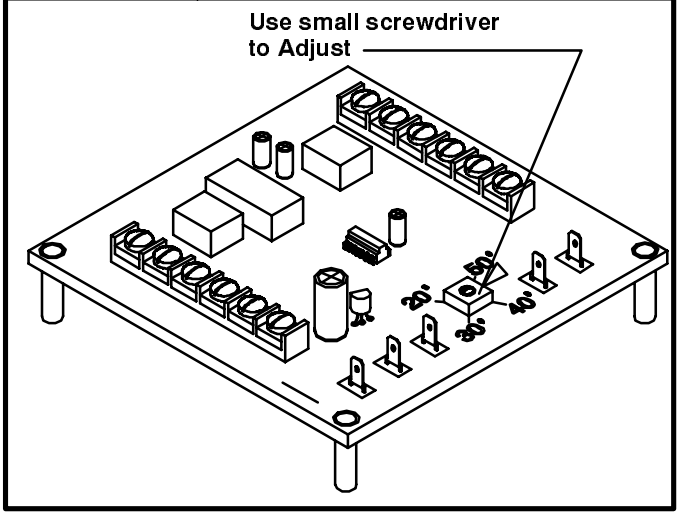
BALANCE POINT ADJUSTMENT

The balance point can be adjusted from 0°F to 50°F at the potentiometer on the electronic board inside the control box, (see Figure 9).

1. To adjust use a small screwdriver to turn the center adjustment to align with temperature of balance point of the structure.

a. If balance point is unknown, but you are reasonably certain that the equipment is properly sized, set balance point on 35° F.

Figure 9 Balance Point Adjustment



TROUBLE SHOOTING

A wiring diagram for the Fossil Fuel Kit can be found on page 79 of this manual. The diagnostic flow charts beginning on Page 98 cover complete trouble shooting of all the fossil fuel control components plus the indoor thermostat circuit and part of the furnace blower circuit.

WARNING

Many of the checks must be done while either the furnace or heat pump is running and there is both line voltage (115V) and low voltage (24V) present in the control box. Checks or repairs not done properly may result in in jury from electrical shock which can be serious or even fatal!

These particular charts do not cover the furnace or heat pump, but they will indicate if the problem is in that area. For problems indicated in the Heat Pump, you may then refer to the appropriate sections of this manual. For problems indicated in the furnace, it will be necessary to obtain the proper service manual for the model or series you are servicing.

FAILED CIRCUIT BOARD

In the case of a failure of the Fossil Fuel Control Kit's circuit board, it is possible that NOTHING will operate on a call for operation from the room thermostat. Should you experience this type of failure, the following procedure may be used to obtain *TEMPORARY* Heat for the consumer while a new circuit board is ordered:

1 Disconnect thermostat wires at terminal board connections "R", "W" and "B". Tape end of wire that connects to "B". Route "R" and "W" wires back outside of control box.

2. Disconnect the two wires from furnace ("R" and "W) which are connected (with wire nuts) to the two black wires from the control box ("R" and "W").

3. Connect the two wires from the furnace ("R and "W") directly to the "R" and "W" wires from the thermostat.

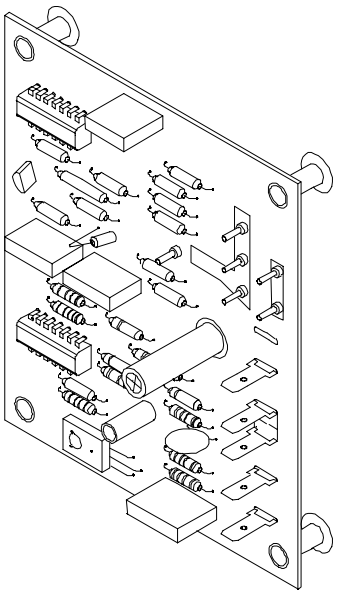
4. Switch thermostat to "Emergency Heat" position and set temperature lever above room temperature.

The furnace will then operate (controlled by the first stage bulb of the room thermostat) to maintain temperature.

Explain to homeowner and that heat pump will not operate for either heating or cooling until a new circuit board is installed.

ELECTRONIC DEFROST CONTROLS

Figure 10 **Typical Defrost Control**



When operating the heat pump in 1st Stage Heating refrigerant flow (discharge gas) is being directed (by the reversing valve) to the INDOOR coil, making IT the CONDENSER. Consequently, the OUTDOOR coil is then acting as the EVAPORATOR.

Operating an evaporator coil in low outdoor ambient temperatures (such as would be present when heating is required) will cause the EVAPORATOR (outdoor coil) to develop frost. Left un-checked, the frost would continue to build to the point of totally blocking the coil, severely reducing heat transfer, and consequently; the heating capacity of the unit.

To insure that this does not happen, some means of "Defrosting" the unit is required. A Defrost control accomplishes this (as conditions warrant) automatically.

ALL Outdoor Sections (models) use an Electronic (Time and Temperature) Defrost Control (board). Several different styles and variations thereof have been used in these models. The particular control used in your unit depends on the unit model, and its vintage.

Even though these controls have certain differences, (such as control manufacturer, method of wiring into the circuit, and terminal designations) they also have certain similarities (such as operation, and check-out procedures).

Simply stated, the purpose (or function) of the defrost control is to "switch" the unit into "Cooling" during operation in 1st Stage Heating. It does this (when conditions require it) by selecting the necessary circuits to energize the reversing valve, de-energize the outdoor fan, and energize the 2nd stage heat.

Basically, there have been Two (2) types of Time and Temperature Defrost Controls used in this series.

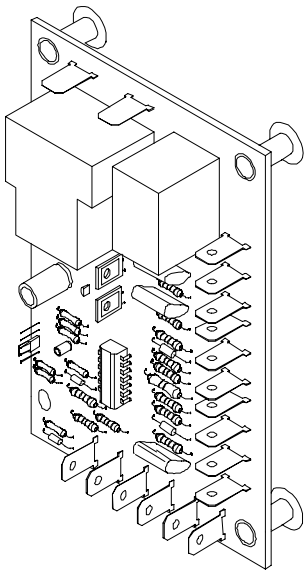
1. The first type (Figure 10) may be found on units using either a 240 Volt **or** a 24 Volt Reversing Valve Solenoid coil. It is an Electronic control (board), used in conjunction with separate (external) electo-mechanical relays (I.E. defrost relay, Heat/Cool relay, and/or Auxiliary heat relay). Scroll compressor models using earlier versions of this type of control will also normally be equipped with a separate Anti-Cycle timer.

   a. Certain later versions of this type of control may be equipped with a Built-in Anti-Cycle feature, eliminating the need for an external (separate) Anti-cycle timer.

2. The second type of Time and Temperature control (Figure 11) may be found on units using a 24 Volt Reversing Valve solenoid coil ONLY. It is known as an "integrated" defrost control. This control IS NOT used in conjunction with SEPARATE (external) relays, but rather with relays "INTEGRATED" or built-in to the control (board) itself. Scroll compressor models using earlier versions of this type of control will also normally be equipped with a separate (external) Anti-Cycle timer.

a. Certain later versions of this type of control included a Built-in Anti-Cycle feature, eliminating the need for an external (separate) Anti-cycle timer.

Figure 11 **Typical "Integrated" Defrost Control**



Defrost Control Operation

An Electro-Mechanical Defrost (Coil Temperature) Sensor (Figure 12) is used with all of the various defrost controls. This sensor is a "Normally Open" switch wired in series with either the "R" terminal or the "C" terminal (depending upon the particular model/series).

The sensor closes when (coil) temperature conditions have been met. When closed, the sensor completes a circuit to components within the control (board) itself which then begins "Accumulating" (keeping track of) compressor run time. Consequently, if the sensor NEVER closes, the unit will NEVER Defrost.

Defrost intervals (frequency) are field selectable (30, 60, or 90 Minutes) on ALL Electronic Defrost Controls. The frequency may be changed by moving (positioning) the jumper (or shunt) to a different terminal. Terminal T1 = 30 minutes, T2 = 60 minutes, and T3 = 90 minutes. Defrost intervals should be set to the LONGEST interval that will still allow the coil to completely defrost during one defrost cycle.

With the desired defrost interval selected, the control will initiate a defrost cycle whenever it "ACCUMULATES" this amount of compressor run time. The defrost (coil temp.) sensor MUST remain closed during this accumulation period. If the defrost sensor opens at any time during the accumulation period (such as may happen during an "OFF" cycle in mild weather), the "ACCUMULATED" time will be lost (i.e. counter is reset to zero). The control will then begin accumulating time when (if) the sensor closes during the next run ("ON") cycle.

Once initiated, a defrost cycle may be terminated one of two (2) different ways.

1. The first, or "Normal" termination is based on coil temperature. When the defrost sensor reaches its opening temperature (indicating a fully defrosted coil) it will open, De-selecting the circuits that caused the unit to change over into the defrost mode of operation.

   This causes the Second stage heat to be de-energized, the outdoor fan to be re-energized, and the Reversing Valve to shift back into the HEATING position. On more recent versions of the "INTEGRATED" defrost control (ONLY), there will be a brief (approximately 12 seconds) delay between the time the outdoor fan is re-energized, and the time the reversing valve is shifted back to the HEATING position. This reduces the "Head" pressure prior to shifting, and consequently reduces some of the noise associated with changeover. This feature is known as "Soft Changeover".

2. The second type of termination for a defrost is a "TIMED" (forced) termination. In the event that the defrost sensor DOES NOT open within 10 minutes (14 minutes for more recent versions of the "INTEGRATED" defrost control) the control will terminate the defrost cycle and return to normal 1st Stage Heating operation.

   Some of the reasons which might cause the sensor NOT to open during a normal defrost cycle are, defrost interval set TOO LONG, refrigerant circuit problems (I.E. under charge, restriction, etc.) or a sensor which is mechanically stuck closed.

Troubleshooting

Since all of the Electronic Defrost Controls (Boards) operate essentially the same, Troubleshooting the various different controls is also essentially the same.

Anti-Cycle Feature (Built-in)

The Anti-Cycle feature built-in to some of the defrost control boards is initiated whenever there is an interruption of 24 Volt power to the board. The interruption of power can be on either the "Y" terminal (as would occur normally when the thermostat is satisfied), on the "R" terminal (identified as 24V or 18-30V on some controls), or the opening of the High (or Low) pressure switch(es) on some models.

Upon reapplication of power (such as when the thermostat calls for operation, the pressure switch closes, etc.) the delay period begins. This delay period can be either 30 seconds **or** 3 minutes, depending upon the particular control.

During the delay period, the control (24V) circuit to the compressor contactor is OPEN via circuitry in the board itself. A check across the two (2) coil terminals of the compressor contactor during the delay period will indicate ZERO Volts.

Once the delay period has expired, 24 Volts (Nominal) should be indicated across the contactor coil terminals. If not, problems are indicated within the Defrost Control Board itself, **or** the wiring between the board and the contactor.

Note: Information on the EXTERNAL (separate) Anti-Cycle timer used on some models can be found on page 26 of this manual.

Testing Defrost Mode Of Operation

The basic PROCEDURE for testing ALL of the defrost controls used in this series is nearly identical, with relatively few variations/exceptions (as noted).

As previously stated, the Defrost (Coil Temperature) Sensor MUST be closed BEFORE ANY UNIT can initiate a defrost cycle. A closed defrost sensor can be simulated by "jumpering" across the defrost sensor.

The exact terminal identification(s) and/or locations the defrost (coil temp.) sensor is wired across will vary from unit to unit. Check the wiring diagram for your particular unit to determine WHERE to place the jumper.

Caution: Some "Integrated" defrost controls use a DC circuit for the defrost sensor. DO NOT apply 24 VAC to either one of the "DF" terminals of this type control, as damage to control may result.

Once the defrost sensor is closed the "Timing" function of the board will begin, (Temperature first, THEN time) and a defrost cycle will be initiated when the selected interval time (I.E. 30, 60, or 90 minutes) has been reached.

Since it is undesirable to wait this amount of time to check control operation an "ACCELERATOR" has been designed into these controls to significantly reduce the defrost interval time FOR TESTING PURPOSES ONLY.

ALL controls are equipped with a pair of terminals identified as "TEST" (or TST) which when "Jumpered" will accelerate the selected defrost interval time by a factor of 256. This reduces the 30 minute interval to ONLY 7 SECONDS. Consequently, (if selected) the 60 minute interval is reduced to 14 seconds and the 90 minute interval is reduced to 21 seconds.

The method of jumpering the test pins varies slightly, however, based on the particular control.

On controls equipped with a shunt, remove the shunt from its current position (I.E. 30, 60, or 90) and reinstall in the TEST position. This will automatically select the default (30 minute) timing interval, and accelerate the interval by the factor of 256 as described above.

On controls equipped with an interval time "Jumper" connected to either terminal T1, T2, or T3, it will be necessary to connect a small "jumper" wire across the "TST" (test) terminals. With the "TST" terminals jumpered, the SELECTED interval time will be accelerated by the factor of 256.

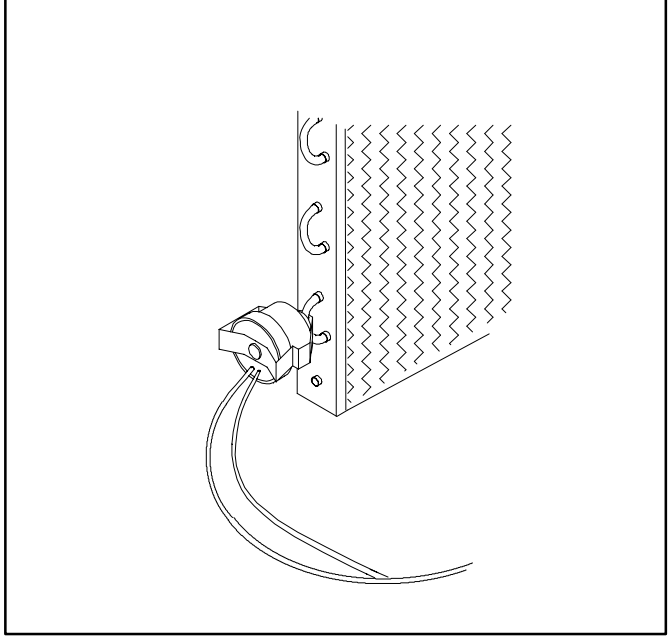
With the TEST ("TST") pins jumpered, (and if the defrost sensor remains closed) the unit will go into the Defrost mode of operation every 7, 14, or 21 seconds (depending upon interval selected and/or type of control). The unit will then remain in defrost until the accelerated "TIMED" (forced) termination period (2-3 seconds depending upon control) is reached as long as the "jumper" remains in place, and the defrost sensor remains closed (or jumped out). EXTENDED OPERATION IN THIS MODE IS NOT RECOMMENDED.

During defrost the reversing valve solenoid will be energized, the outdoor fan motor will be de energized, and indoor supplemental (second stage) heat will normally be energized. The identification of the terminals (on the control board) used to accomplish these functions varies, however, with the particular control.

By referring to the wiring diagram for your particular unit, you should be able to determine where (what terminals) to check to verify if the control is performing the necessary switching functions. If the control performs the necessary switching functions, the problem is NOT in the defrost control, it is EXTERNAL to the control.

DEFROST SENSORS

Figure 12	Typical Defrost Sensor



An Electro-mechanical defrost (coil temperature) sensor is used on ALL units. This sensor is a "NORMALLY OPEN" electrical switch wired in series with the defrost control board. Depending upon the particular model and/or control used, it may be wired in series with either the "R" circuit **or** the "C" circuit to the board.

The sensor CLOSES when its temperature drops below a predetermined level, (see Figure 13) completing the circuit to the defrost board to begin "ACCUMULATING" compressor run time. The sensor OPENS during defrost at another predetermined level (see Figure 13) to TERMINATE the defrost cycle. The sensor can also OPEN during an "OFF" cycle in warmer outdoor ambient conditions, which will RESET (zero out) any time that has been accumulated on the defrost control board.

If the defrost sensor does NOT open and close within the range listed, it must be replaced. When replacing the defrost sensor BE ABSOLUTELY CERTAIN to reinstall the replacement sensor in the EXACT LOCATION of the removed sensor. Failure to do so may create problems with improper defrosting of the unit.

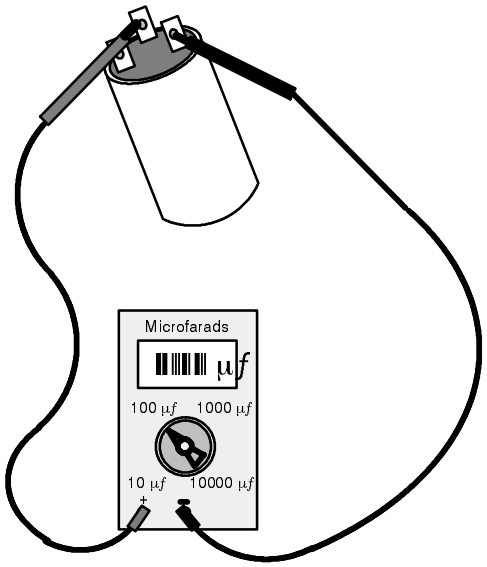
Figure 13 lists the characteristics of some various different defrost sensors. Generally speaking, defrost sensors can be substituted with another (different part number) sensor which has the same (or similar) characteristics. Defrost sensors having GOLD contacts, however, should ONLY be replaced with another (same part number) sensor also having GOLD contacts.

Figure 13	Defrost Sensor Substitution Chart			
Part Number	Clamp (Tube) Size	Lead Length (mm)	Closes	Opens
1082065*	3/8"	2000	31°F ± 5°F	51°F ± 5°F
1069289	3/8"	660	31°F ± 5°F	51°F ± 5°F
1067867	3/8"	660	31°F ± 5°F	51°F ± 5°F
1068077	3/8"	864	31°F ± 5°F	51°F ± 5°F
1066934	3/8"	1450	31°F ± 5°F	51°F ± 5°F
1066430	3/8"	1092	31°F ± 5°F	51°F ± 5°F
24358600	3/8"	1118	28°F ± 3°F	60°F ± 5°F
1080977*	1/4"	1040	31°F ± 3°F	51°F ± 5°F
1053015	1/4"	1040	31°F ± 3°F	71°F ± 5°F
1092372	1/4"	1040	31°F ± 3°F	51°F ± 5°F
1063270	1/4"	1040	31°F ± 3°F	61°F ± 5°F
1064310	1/4"	1040	36°F ± 3°F	61°F ± 5°F

*** These sensors have GOLD contacts and SHOULD NOT be replaced with another type of sensor. They CAN, however, be used to REPLACE other types of sensors.**

CAPACITORS

Figure 14 **Checking Capacitor**



Capacitors are used on the condenser fan motor, and the compressor of the outdoor section. They may also be used for the circulating (conditioned air) blower of the indoor section air handler. Before replacing one of these components (assumed to be bad) the condition of its capacitor should be verified, since **it**, and not the motor may be the source of the problem.

Before checking ***any*** capacitor, the supply power to the unit should be turned "OFF".

The capacitor should then be discharged (through a resistor) before testing. A 20,000 Ohm 2 Watt resistor can be used for this purpose.

The condition of the capacitor should be verified with a capacitor analyzer (one that indicates the capacitor's value in microfarads) rather than with an Ohmmeter. The reason for this, is that an Ohmmeter test can only indicate if a capacitor is "OPEN, or "SHORTED", it cannot verify if its value (microfarads) is within an acceptable range.

Capacitor should test to within 10% of its rated value. Capacitors testing outside this range should be replaced. A Weak capacitor can be the cause of a PSC (Permanent Split Capacitor) motor failing to start, or failing to run at proper speed.

SOLENOID COILS

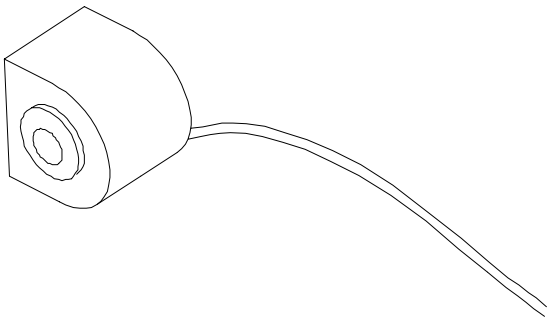
The reversing valve of all units is equipped with a solenoid coil. The solenoid coil DOES NOT shift the reversing valve. The purpose of the solenoid coil is to energize (or shift) the Pilot Valve (which is mounted on and part of the reversing valve). The SYSTEM PRESSURE will then shift the reversing valve based on position of the pilot valve.

Generally speaking, all solenoid coils are similar in APPEARANCE. There are however differences in the manufacturers of reversing valves, (I.E. Alco & Ranco) requiring different coils to properly fit the different valves.

More importantly, there are differences in the VOLTAGE required to operate the coil. Some coils are 240 Volt, whereas some coils are 24 Volts. NEVER energize the coil unless it is mounted on the pilot valve stem. Doing so may cause the coil to fail.

Solenoid coils can be checked using a resistance (Ohms) check. Readings will vary depending upon coil Voltage, and/or Manufacturer, but will be greater than Zero Ohms (Shorted Coil) and less than Infinity (Open Coil).

Figure 15 **Typical Solenoid Coil**



INDOOR BLOWER ASSEMBLY

Most INDOOR Section Air Handlers use a multi-speed, permanent split capacitor motor, direct-drive blower assembly. Different size (HP) motors and/or different diameter blower wheels are used in different models to obtain the required air flow. The methods for accessing the blower motor/assembly for servicing will vary depending upon the type of equipment. The method you use will depend on which type of equipment you have, and whether or not you need to remove the wheel and/or housing from the unit. For removal procedures (of the entire blower assembly) from the unit, check the installation instructions and/or parts manual for your particular INDOOR section.

Blower wheel inspection

Visually inspect the blower wheel for accumulations of dirt or lint since they can cause reduced airflow. Clean the blower wheel of these accumulations. If accumulation cannot removed, it will be necessary to remove the blower assembly from the unit for proper wheel cleaning.

SELECTING BLOWER SPEEDS

The wide variety of applications and installations of split heat pump systems throughout the country makes it impossible to "Factory Select" blower speeds that will provide proper operation for all installations. This means then, that the blower speeds must be "Field Selected" for each particular installation to insure proper operation.

The criteria for selecting the proper blower speeds of ANY Heating and/or Cooling system ***IS NOT*** "High for Cooling, Low for Heating". Although that may be how it works out SOMETIMES, It can (in many cases) be exactly the opposite. (I.E. a Lower speed for Cooling, and a Higher speed for Heating) It can also be the SAME speed required for both.

Normally, on a Heat Pump System, the SAME speed will be used for both heating and cooling. This is true for MOST Electric Heat applications as well as when using a Fossil Fuel Kit where the (Gas or Oil) furnace blower runs at the COOLING speed during 2nd Stage (Furnace) operation.

There are exceptions, however, such as when using a relatively large (KW) heater (properly applied) with a relatively small (again, properly applied) air handler. The use of certain Room Thermostats, MAY also result in a DIFFERENT speed being energized when operating in EMERGENCY HEAT.

The PROPER CRITERIA FOR SELECTING BLOWER SPEEDS is as follows:

COOLING

A Nominal 400 (350-450 allowable range) CFM per ton of AIRFLOW is required to insure proper system operation, capacity, and efficiency. A blower speed must be selected that will provide proper air flow for the air conditioning size (capacity) of the unit at the external static pressure of the Duct system (installation). This requires CHECKING THE EXTERNAL STATIC PRESSURE, and then consulting the AIRFLOW DATA to determine the required speed tap.

Figure 16		Typical Blower Chart					
AIRFLOW DATA *							
UNIT MODEL	MOTOR SPEED	STANDARD CFM EXTERNAL STATIC PRESSURE					
		0.10	0.20	**0.30**	**0.40**	0.50	0.60
BH5518SKA	HIGH	875	830	785	740	675	600
	MED	825	785	740	690	620	545
	LOW	765	725	685	630	565	495
BH5524SKA	HIGH	1000	955	900	860	815	765
	MED	875	835	795	755	710	640
	LOW	685	655	625	590	535	480
BH5530SKA	HIGH	1280	1225	1165	1100	1040	960
	MED	1190	1135	**1080**	**1020**	960	875
	LOW	1075	1025	**985**	**940**	875	790
BH5536SKA	HIGH	1370	1315	1245	1190	1107	1035
	MED	1200	1150	1110	1050	985	930
	LOW	995	960	920	875	825	775
BH5542SKA	HIGH	1700	1670	1640	1560	1480	1300
	MED	1670	1635	1600	1525	1450	1265
	LOW	1625	1552	1480	1410	1345	1180
BH5060SKC	HIGH	1870	1800	1725	1645	1545	1450
	MED	1840	1765	1690	1610	1505	1405
	LOW	1645	1590	1530	1460	1385	1315

* Based on 230V with wet coil, clean filter, no electrical heat. Deducted heater static shown in heater static table. Deduct .05" static for 208V operation.

HEATING

With a Heat Pump, the Same requirements as for air conditioning (I.E. Nominal 400 CFM per Ton) are necessary. Consideration must be given, however, to any Auxiliary Electric Resistance Heaters installed, since they may affect airflow requirements. This will be especially important on change-outs using an existing duct system (high E.S.P.) that may not have been properly sized to begin with.

EXAMPLE: Using a *SYSTEM* with an indoor air handler (model BH5530SKA) having a Nominal 30,000 BTU ($2^1/_2$ ton) air conditioning capacity. Based on this, airflow requirements are calculated as follows:

2 1/2 Ton System

400 CFM (nominal) per ton required

400 X 2 1/2 (Tons) = 1000 CFM required

The external static pressure is measured (**without** an auxiliary heater installed) and found to be 0.30" W.C. with a wet coil.

Checking the blower performance data (see Figure 16) for this model indicates that @ 0.3" W.C. ESP MEDIUM speed will deliver 1025 CFM, and LOW speed will deliver 985 CFM. Accordingly, medium speed **or** low speed could be used in this example for the COOLING (HEATING) speed.

Figure 17

HEATER STATIC TABLE

	HEATER KW / STATIC DROP						
CFM	5	7.5	10	15	**20**	25	30
600	.01	.02	.02	.06			
800	.02	.04	.04				
1000	.03	.06	.06	.07	**.08**		
1200	.04	.07	.07	.08	.09		
1400	.05	.05	.05	.05	.05	.05	
1600	.05	.05	.05	.06	.06	.07	
1800	.06	.06	.06	.07	.07	.07	
2000	.07	.07	.07	.08	.08	.08	.13

DO NOT OPERATE IN THIS AREA
CFM / KW LIMIT EXCEEDED

As shown in Figure 17, Installing an accessory Electric Strip Heater in the INDOOR section creates additional resistance to airflow. This additional resistance varies based on the size (number of elements) of the heater, as well as with how much air is being moved across the heater.

EXAMPLE: In the same *SYSTEM* used in the previous example (**with** a 20 KW auxiliary heater installed) The external static pressure would now be 0.38" W.C. with a wet coil.

If we once again check blower performance data (see Figure 16) for this model it indicates that @ 0.4" W.C. ESP MEDIUM speed will deliver 1020 CFM. LOW speed, however, will ONLY deliver 940 CFM at this static pressure.

Although 940 CFM is within the acceptable range for the refrigeration system, it does not meet the MINIMUM airflow requirements for the 20 KW heater (see Figure 18) Accordingly, medium speed should be used in this example for the COOLING (HEATING) speed.

Incorrectly selecting the LOW speed in this example could cause cycling of the heat strip on its limit switch If so equipped), failure of its fusible link (sometimes called a "One Shot" limit), and/or premature failure of the heating element itself.

Figure 18

ELECTRICAL HEATER MATCH DATA

Heater Model Number	Rated KW	Delayed Stages	Optional Controlled Stages*		Application		
					Cooling / Heating (CFM) (Min.)		Heat Pump
			Number of Stages	KW Per Stage	240V	208V	Tons (Min.)
AMA001AHA AMB001AHA	5	1	1	5	300	230	1.0
AMA002AHA AMB002AHA	7.5	1	1	7.5	300	230	1.0
AMA003AHA AMA003AHB AMB003AHA	10	1	1	10	480	370	1.5 3.5 1.5
AMA004AHA AMA004AHB	15	2	2	10 / 5	700	530	2.0 3.5
AMA005AHA AMA005AHB	**20**	2	2	10 / 10	**1000**	750	2.5 3.5
AMA006AHA	25	3	3	10 / 5 / 10	1200	1020	3.5
AMA007AHA	30	4	4	10 / 5 / 5 / 10	1450	1090	5.0
AMA013AHA**	15	2	2	5 / 10	700	530	2.0
AMA015AHA**	20	2	2	10 / 10	950	730	2.5
AMA017AHA**	30	4	2	15 / 15	1450	1090	5.0

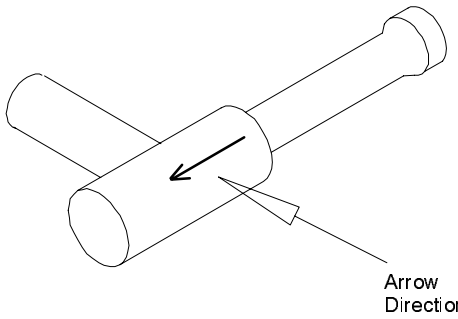
CHECK VALVES

The indoor and outdoor coils of a heat pump must act BOTH as an evaporator and a condenser (depending upon the mode of operation). It is virtually impossible to size a coil (and/or its metering device) to provide optimum performance in both modes, Consequently, different metering devices (and/or flow rates) are used for the indoor and outdoor coils for each mode of operation.

Depending upon the type of metering device used, (I.E. cap tubes, fixed orifice, or expansion valve), it may be necessary (based on the mode of operation) to SELECT (or change) which metering device will be used. Check valves are used in **some** units to direct the refrigerant flow either THROUGH a metering device or to BYPASS a metering device.

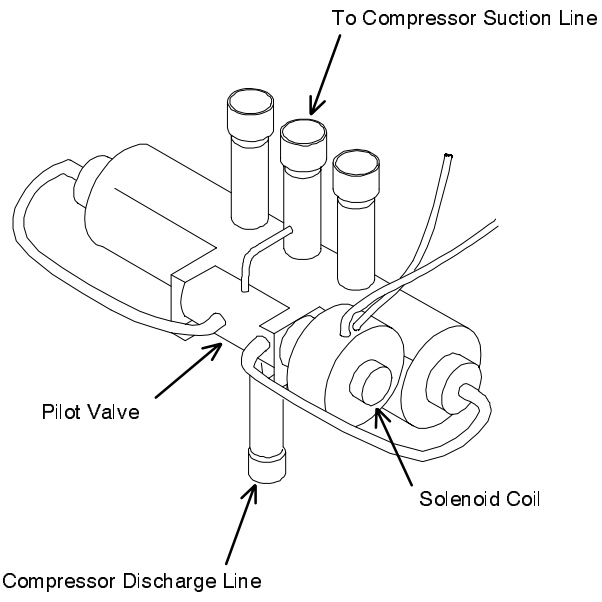
The check valve is a ONE WAY VALVE, allowing flow in one direction ONLY. The check valve found on Outdoor sections OPENS to direct refrigerant flow through the outdoor metering device in the Heating mode, and CLOSES (bypassing that metering device) directing refrigerant flow to the Indoor metering device during the Cooling mode. Because of this, Proper orientation of check valves is essential when they are replaced.

Figure 19 **Typical Check Valve**



REVERSING VALVES

Figure 20 **Typical Reversing Valve**



A Three (3) way or Four (4) way Reversing Valve is used on ALL models to facilitate the shifting (changing of direction) of the Refrigerant Flow required for the different modes (I.E. Cooling & 1st Stage Heating) of operation. The valve is Electrically activated and Pressure operated using a Solenoid coil and Pilot Valve.

As shown in Figure 20, One Port (Tube) is connected to the compressor Suction line. Since this tube ALWAYS carries suction gas, it should always be COOL to the Touch during normal operation. Another port is connected to the compressor Discharge line. Since this tube carries discharge gas, it should ALWAYS be WARM (hot) to the touch during normal operation.

The remaining two (2) tubes are connected to the INDOOR coil and the OUTDOOR coil respectively. One of these will be the same temperature as the suction port, whereas the other will be the same temperature as the discharge port. This depends on the mode of operation, (I.E. Cooling or 1st Stage Heating).

The valve NORMALLY (with the solenoid coil de-energized) is in the HEATING position, directing the compressor discharge gas to the INDOOR coil which is (in heating) acting as a condenser coil. The solenoid coil on the valve is energized by the "O" circuit of Room Thermostat in Cooling, or by the Defrost Relay (control) during Defrost.

Energizing the solenoid coil changes the position of the Pilot Valve which in turn will direct the discharge gas (via the Pilot tube to the opposite end of the valve. The pressure difference between this discharge gas and the suction side causes the piston inside the valve to shift.

EXPANSION VALVES

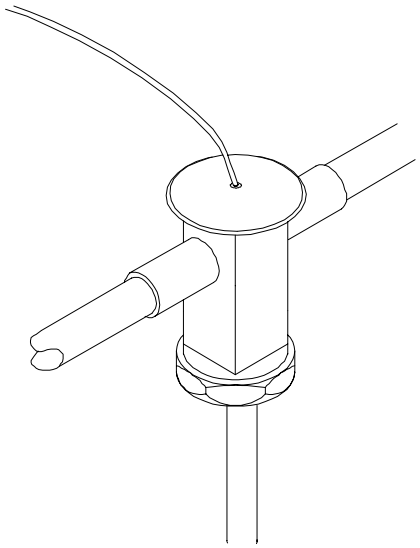
Some units use thermostatic expansion valves for the Heating and/or Cooling metering device(s). The expansion valve is designed to maintain a constant Superheat in the coil it is controlling regardless of loading conditions.

It accomplishes this by OPENING (allowing more refrigerant flow to the coil) or CLOSING (allowing less refrigerant to flow to the coil). The extent to which the valve opens or closes is based on the temperature sensed by the temperature sensing bulb. This means that the sensing bulb MUST be in good contact with the suction line to insure proper operation.

Expansion valves used in this series are NON-ADJUSTABLE (fixed) expansion valves. Their Superheat setting CANNOT be changed. If the unit is properly charged and the valve will not maintain the required amount of superheat, it must be replaced.

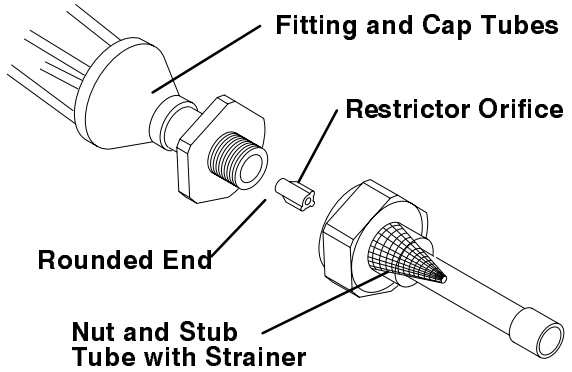
When replacing expansion valves, be certain that a proper replacement valve has been obtained. Some expansion valves contain built-in check valves, eliminating the need for a separate check valve. These MUST be replaced with another valve equipped with a built-in check valve to obtain proper system operation.

Figure 21 Typical Expansion Valve (With Built-In Check Valve)



RESTRICTOR ORIFICES

Figure 22 Typical Indoor Restrictor Orifice



Some models use a fixed (restrictor) orifice as a metering device for the indoor coil. The restrictor orifice is located in a fitting in the liquid line at the indoor coil. The fitting is actually the distributor end of the feeder tube assembly.

The restrictor orifice is designed to meter refrigerant flow (through the center of the orifice) in one direction (towards rounded end) during operation in COOLING. It also allows refrigerant to flow around the outside of (bypass) the restrictor in the other direction during operation in HEATING (1st Stage). This eliminates the need for a separate check valve in the indoor section.

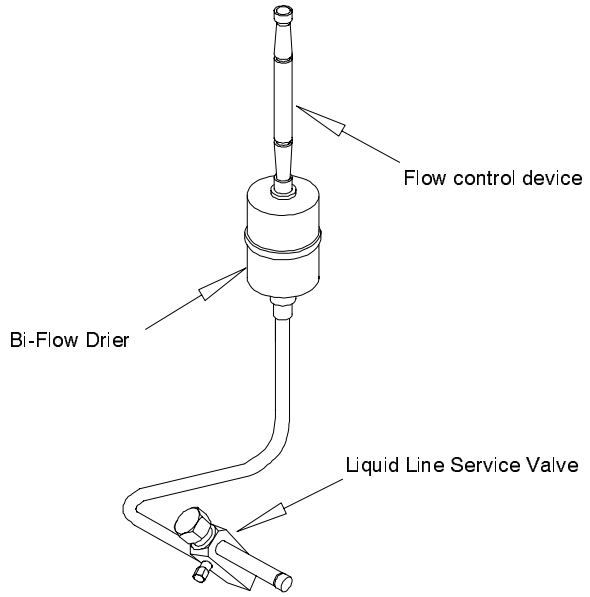
Should servicing of this restrictor orifice be required, take note that the fitting is a **LEFT HAND THREAD.** To remove (loosen) the fitting, it must be turned CLOCKWISE.

While the system is open, double check and make sure that the system is equipped with the proper size orifice, since some system matches required a DIFFERENT restrictor be installed, and this may not have been done by the original installer.

When reinstalling the restrictor orifice in the fitting, MAKE SURE it is installed WITH THE ROUNDED END TOWARDS THE CAP (FEEDER) TUBES.

OUTDOOR FLOW CONTROL DEVICES

Figure 23 **Typical Outdoor Flow Control**



Some Outdoor sections use a flow control device which incorporates a restrictor orifice pin similar to those used in some Indoor sections. The principle of operation is the same as for the indoor restrictors, but reversed. (I.E. it will meter refrigerant flow (through the center of the orifice) in one direction (towards outdoor coil) in (1st Stage) HEATING and allow refrigerant to flow around the outside of (bypass) the restrictor in the other direction during operation during operation in COOLING. This eliminates the need for a separate check valve in the Outdoor section.

Outdoor flow control devices, however, contain the orifice within a sealed copper assembly (see Figure 23). Consequently, they cannot be opened for servicing, and/or replacement of the orifice pin ONLY as is the case with the Indoor restrictors. Problems with this type of outdoor flow control device must be resolved by replacing the entire device.

When replacing one of these components, care must be taken to insure that BOTH the SIZE (which should be stamped on the body) and ORIENTATION of the device are correct to insure proper operation.

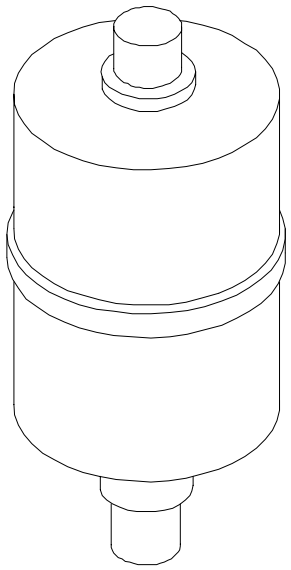
DISCHARGE MUFFLERS

Some units (mainly Scroll compressor models) may be equipped with a DISCHARGE MUFFLER installed in the DISCHARGE line between the compressor and the Reversing Valve. The purpose of a discharge muffler is to reduce compressor noise level caused by discharge pulsation.

The discharge muffler works basically like the muffler on an automobile. The "Can" normally contains baffles which cause the discharge gas to change direction (go through them) reducing the pulsations, and consequently, the noise associated with them.

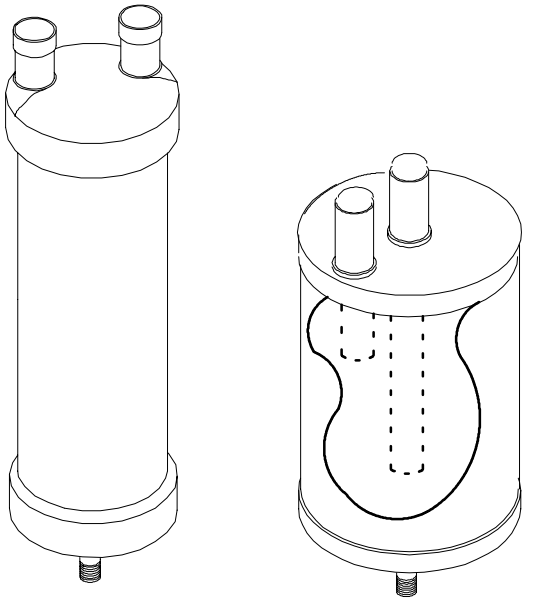
Although a discharge muffler may LOOK like a standard refrigeration drier, THEY ARE NOT THE SAME. NEVER UNDER ANY CIRCUMSTANCES replace a discharge muffler with ANY type of refrigerant drier. Doing so may cause irreparable damage to the system or certain of its components.

Figure 24 **Typical Discharge Muffler**



ACCUMULATORS

Figure 25 **Typical Accumulators**



Suction Line (refrigerant) accumulators are used in some models to prevent the return of liquid refrigerant back to the compressor. Accumulators will be located in the Suction line between the compressor and the reversing valve. Though their style and/or size may vary (depending upon the model and/or vintage of the unit) they all serve the same purpose.

Since a heat pump compressor must operate in low outdoor ambient temperatures (1st Stage Heating), the return of liquid refrigerant to it is more likely. The accumulator combats this by "ACCUMULATING" liquid refrigerant in its lower portion, and returning vapor from its upper portion back to the compressor. This applies, however, to a properly charged system. A system that is overcharged will still return liquid to the compressor once the accumulator's storage capacity has been exceeded.

Some models (mainly Recips) were originally equipped with refrigerant accumulators. Other models, (mainly Scrolls) although not originally equipped with an accumulator, may have had one installed at some later date due to problems with liquid slugging and/or noise.

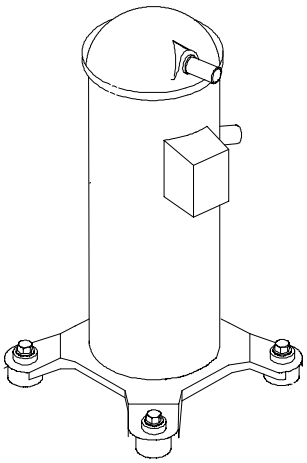
COMPRESSORS

Two (2) different types of compressors have been used in these series' of Split Heat Pump system outdoor sections. The first type is the "Standard" reciprocating type compressor, which has been in use in the industry for many years. The second type of compressor that is used in this series is the SCROLL compressor. The Scroll compressor may easily be distinguished from a reciprocating compressor by its relatively tall, and relatively small diameter round case.

Although the methods of testing and/or check-out of both types of compressors is essentially the same, the Scroll compressor differs from the reciprocating type compressor in several ways.

First, the Scroll compressor uses a pair of Scrolls (one stationary, one "orbiting") to compress and pump refrigerant through the system, instead of the piston and valve arrangement found in a reciprocating compressor. This design makes the Scroll compressor able to tolerate a certain amount of liquid refrigerant better than a reciprocating compressor. Consequently, crankcase heaters are not normally required on most scroll equipped models.

Figure 26 **Typical Scroll Compressor**



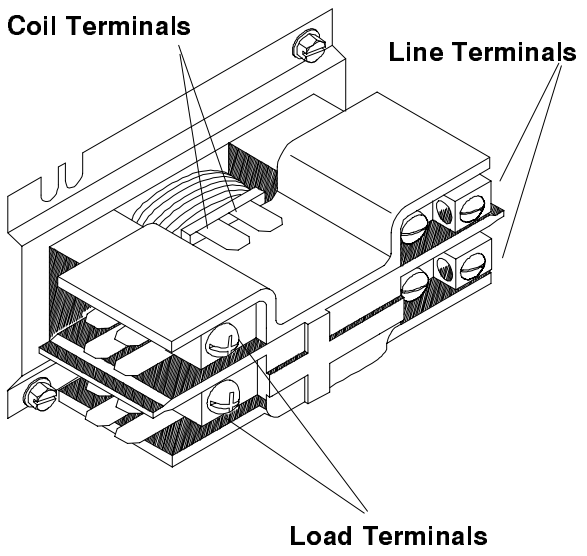
Operating Noise Level

The operating noise characteristics of a scroll compressor also differ considerably from that of a reciprocating compressor. In some cases, because of objectionable noise levels a "Sound Jacket" may be found (installed) on a Scroll compressor.

If you are unfamiliar with the operating noise characteristics of a scroll compressor, you should be absolutely certain that there is a problem with the compressor prior to replacing it. For example, a scroll compressor which is running in reverse rotation (see anti-cycle timer section on page 26) will apparently make an excessive amount of noise.

If not presently so equipped, a DISCHARGE MUFFLER installed in the discharge line between the compressor and Reversing Valve can be added to resolve noise due to discharge pulsation.

Figure 27 **Typical Single Pole Contactor**



COMPRESSOR CONTACTOR

The compressor contactor is a "Normally Open" single throw switch (Relay) which when energized closes to complete the line voltage circuit to the compressor. Depending upon the model, either a SINGLE POLE contactor or a DOUBLE POLE contactor may be used.

The contactor coil is energized on a call for COOLING or 1st Stage HEATING from the room thermostat. If the contactor is not being energized (Pulled-In) it may be checked as follows:

WARNING

Electrical shock hazard.

Single Pole Contactors break ONLY one (1) side of the line voltage circuit within the unit.

Disconnect power at fuse box or service panel before performing any service on the unit.

Failure to follow this warning can result in property damage, personal injury, and/or death.

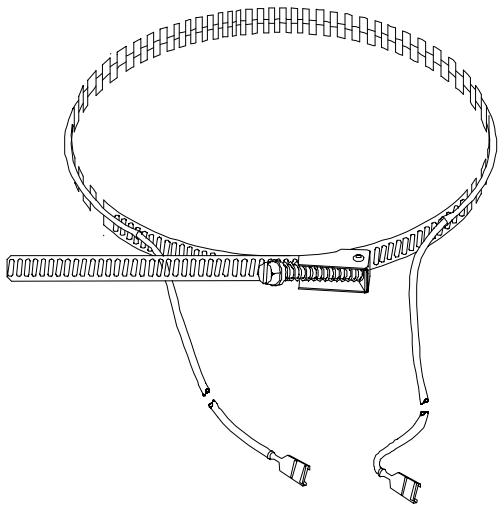
A check across the two (2) coil terminals of the contactor should indicate 24 Volts during a call for COOLING or 1st Stage HEATING.. If 24 volts IS indicated, and the contactor does not Pull-In, the contactor is faulty (either a bad coil or mechanically stuck).

If 24 volts is NOT indicated in the above test, check any optional controls (I.E. High Pressure or Low Pressure Switches) which may be wired in series with the compressor contactor. Next check across "Y" and "C" of the INDOOR unit's low voltage (Control) circuit during a call for COOLING or 1st Stage HEATING. This should also indicate 24 Volts. If not, there may be problems with the thermostat, control wiring, or the low (control) voltage transformer.

Problems with the transformer can quickly be ruled out by Jumpering between "R" & "G" of the INDOOR unit's low (control) voltage circuit (or switching the FAN switch on the thermostat sub-base from AUTO to "ON"). If the Blower starts and runs, the transformer is O.K.

Once the transformer has been determined to be good, a jumper placed between "R" & "Y" of the INDOOR unit's low (control) voltage circuit should cause the contactor coil to be energized. If so, The problem is in the Thermostat OR Thermostat wiring. If not, the problem is in the wiring between the INDOOR unit and the contactor.

Figure 28 Typical Crankcase Heater



CRANKCASE HEATER

Some models are equipped with a crankcase heater. The purpose of a crankcase heater is to keep liquid refrigerant from settling in the compressor crankcase during "OFF" cycles in mild weather.

On models equipped with a reciprocating compressor this heater is normally a wrap around ("Belly-Band") type resistance heater. A resistance (Ohms) check across the two leads of this heater will indicate its condition.

Scroll compressor models normally will not be equipped with a crankcase heater. If, however a crankcase heater is in fact used it may be either a wrap around or a stick-on type. The latter of which is a solid state (PTCR) type heater. The PTCR (Positive Temperature Coefficient Resistor) type heater may also be checked using a resistance check, however the indications will have a different meaning. A PTCR type heater is essentially a Thermistor (a Resistor whose value changes relative to temperature). This type of heater will indicate a LOW resistance reading (approx. 10-100 Ohms) when cool, and a HIGH resistance reading (Near Infinity) when warm. Consequently, this type of heater MUST be checked when cool (de-energized 10-15 minutes).

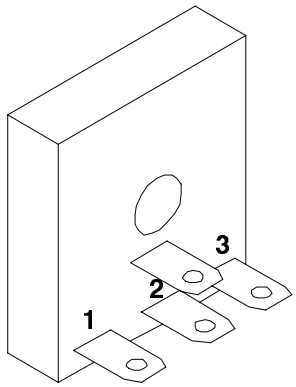
COMPRESSOR CONTROL CIRCUIT

The compressor control circuit of most models will contain at least one of the controls listed in the sections that follow below. Whenever servicing a unit whose contactor will not Pull-in (energize), these controls should be suspect since they are wired in series with the compressor contactor coil.

ANTI-CYCLE TIMER
(SCROLL COMPRESSOR MODELS)

Scroll compressor models are normally equipped with an electronic Anti-Cycle timer. This timer is required to prevent the possibility of the compressor running in reverse rotation due to a momentary power interruption. The anti-cycle timer is essentially a "delay on break" timer which prevents the compressor contactor from re-energizing for a period of 30 seconds (or 3 minutes depending upon type) if the power to it is interrupted for as little as 16 milliseconds. This delay provides sufficient time for the compressor to come to a complete stop before being re-energized, preventing the compressor from starting in reverse rotation. If defective, however, it will not complete the circuit to the contactor.

Figure 29 Typical Anti-Cycle Timer

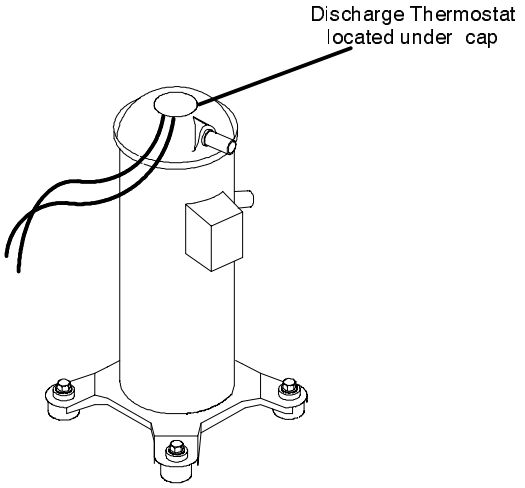


On earlier models, the Anti-Cycle timer was a separate (EXTERNAL) component. More recent models,

however, MAY be equipped with with a Defrost control which contains a built-in Anti-Cycle timer. (See the section on defrost controls on page 15 for further information on built-in Anti-Cycle timers)

The separate Anti-Cycle (Figure 29) timer may be checked by using a Voltmeter. With the power "ON" and Thermostat calling for Cooling or 1st Stage Heating (for at least 30 seconds). 24 Volts should be indicated across terminals #1 & #2 and #3 & #2. Zero (0) volts should be indicated across terminals #1 & #3 (indicating a closed circuit) Any other readings obtained are indicative of problems within the timer.

Figure 30 **Scroll Dome Thermostat Location**



DISCHARGE THERMOSTAT
(SCROLL COMPRESSOR MODELS)

Scroll compressor models may also be equipped with a discharge thermostat (also referred to as a Dome Thermostat, Top Cap Thermostat or a Compressor Protector). Its purpose is to protect the compressor from damage caused by high discharge temperature. High discharge temperature may be caused by items such as insufficient refrigerant charge, restriction in the refrigerant circuit, etc.

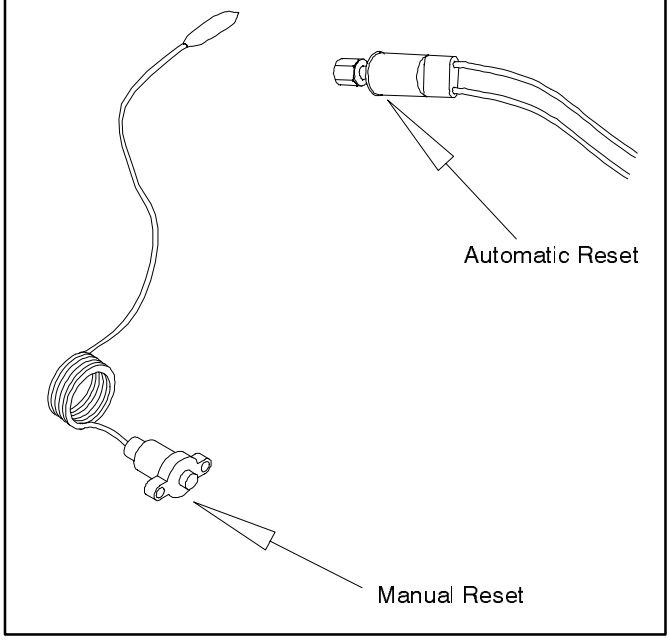
The discharge thermostat is a "Normally Closed" temperature operated switch (Automatic Reset) wired in series with the compressor contactor. The switch will remain closed until the discharge temperature (as sensed in the top of the dome of the compressor) rises above 280°F ±40°F. At this point the switch will open breaking the circuit to the contactor. Once open, the switch will remain open until the dome temperature drops to 100°F ±15°F, at which time it will close and once again complete the circuit to the contactor.

LOW PRESSURE SWITCH

Some units may be equipped with an optional low pressure switch (similar in appearance to the Automatic Reset High Pressure switch shown in Figure 31) connected to a fitting on the unit's Hi/Lo test port assembly. The purpose of this switch is to prevent damage to the compressor caused by operating with insufficient suction pressure. Low suction pressure may be caused by insufficient refrigerant charge, refrigerant restriction, low airflow, etc. Operating the unit with insufficient suction pressure can cause a variety of problems within the unit. Among these are Overheating of compressor windings, and freezing of the evaporator coil.

The low pressure switch is a "Normally Open" pressure operated switch (Automatic Reset) wired in series with the compressor contactor. The switch closes at (a Nominal) 20 ±5 psig of pressure in the refrigeration system completing the circuit to the compressor contactor. The switch will remain closed until the system pressure drops below (a nominal) 5 ±3 psig, at which time it will open, breaking the circuit to the compressor contactor.

Figure 31 **Typical High Pressure Switches**



HIGH PRESSURE SWITCH

Some units may be equipped with an optional high pressure switch. The purpose of the high pressure switch is to prevent damage to the compressor which may occur as a result of operating under high discharge

pressure conditions. Some possible causes of high discharge include condenser fan motor failure, excessive refrigerant charge, air and non-condensibles in refrigerant circuit, etc.

The high pressure switch is a "Normally Closed" pressure operated switch (May be either Manual Reset, or Automatic Reset) wired in series with the compressor contactor. The switch will remain closed, completing the circuit to the compressor contactor until the discharge pressure rises above (a Nominal) 430 ±10 psig. At this point the switch will open, breaking the circuit to the compressor contactor. The switch then will remain open until the pressure drops to (a Nominal) 295 ±25 psig, at which time it will close again, (if switch is an automatic reset type) completing the circuit to the compressor contactor. If switch is a Manual Reset type, pressing the RED reset button will be required to reset the switch.

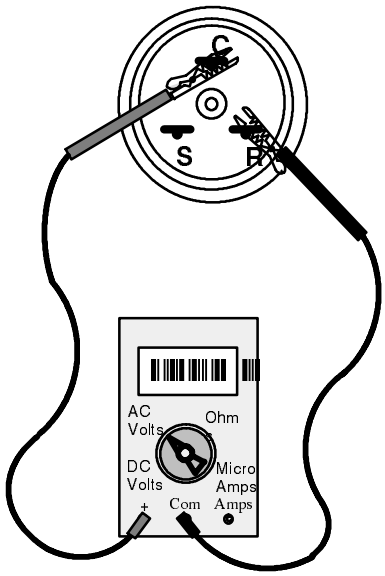
COMPRESSOR CHECKS

LOCKED ROTOR VOLTAGE CHECK

One of the most important, often overlooked, and/or misunderstood compressor checks is a locked rotor VOLTAGE check. Locked rotor voltage can be defined as the voltage available to start the compressor under Locked Rotor (initial start or stalled) Conditions . Or, in other words, the voltage available to the compressor while it is (for example) humming and ATTEMPTING to start but failing to do so.

Locked rotor voltage is checked using a standard Voltmeter with the power to the unit ON, while the compressor is attempting to start. If your voltmeter is equipped with alligator clips, this may be checked at the compressor by connecting your voltmeter (making sure power is OFF while connecting) as shown in Figure 32. If your voltmeter IS NOT equipped with alligator clips, this check should be made at the "T1" & "T2" terminals of the compressor contactor.

Figure 32 Checking Locked Rotor Voltage



When checking a unit whose compressor will not start at all, turn power back on and stand back (away) from the compressor terminals during the test. Call for cooling, and while compressor is humming and attempting to start check voltage reading.

When checking a unit whose compressor starts, the procedure differs slightly. Turn power back on and stand back (away) from the compressor terminals during the test. Call for cooling, and once the compressor starts, turn the power OFF and IMMEDIATELY back ON. This should cause the compressor to stall (locked rotor) and begin humming. During this time, check voltage reading.

Note: On models equipped with Scroll compressors it may not be possible to stall the compressor using the above procedure.

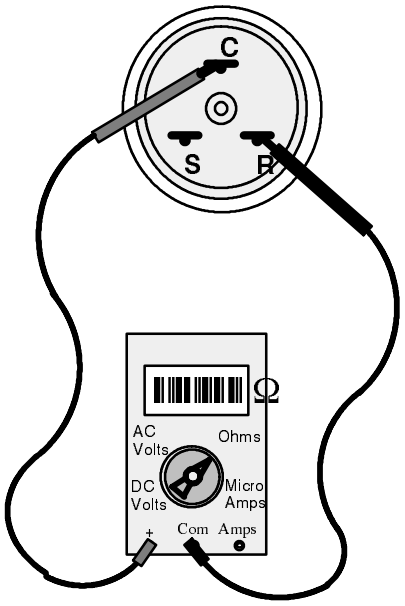
Under locked rotor conditions, the voltage available across the "C" (common) and "R" (run) terminals of the compressor (or "T1" & "T2" terminals of the contactor) must be at least 197 Volts.

Locked Rotor Voltage readings of less than 197 volts will not allow the compressor to start. If your reading is less than 197 volts, problems may be indicated in the unit's electrical supply circuit. Some examples of these problems are undersized supply wiring, excessive length of supply run, and loose and/or dirty (high resistance) connections in the supply circuit. These conditions MUST be corrected before the compressor can be expected to start reliably.

The compressor contactor itself can also be a cause of low locked rotor voltage readings. To check and rule out

this possibility, check the locked rotor voltage across the "L1" & "L2" terminals of the compressor contactor. If the voltage reading is the same as that obtained across the "T1 & "T2" terminals, then supply circuit problems are indicated. If, however, the locked rotor voltage across "L1" & "L2" is Higher than it is across "T1" & "T2", there is high resistance through the points of the compressor contactor causing the voltage drop, and the contactor should be replaced.

Figure 33 **Checking Compressor Windings**



COMPRESSOR WINDING CHECKS

If the compressor fails to start, the compressor windings should be checked for open circuits and/or short circuits in order to determine their condition. Winding checks are made using a standard Ohmmeter (See Figure 33), with the power to the unit OFF.

Checking for open windings

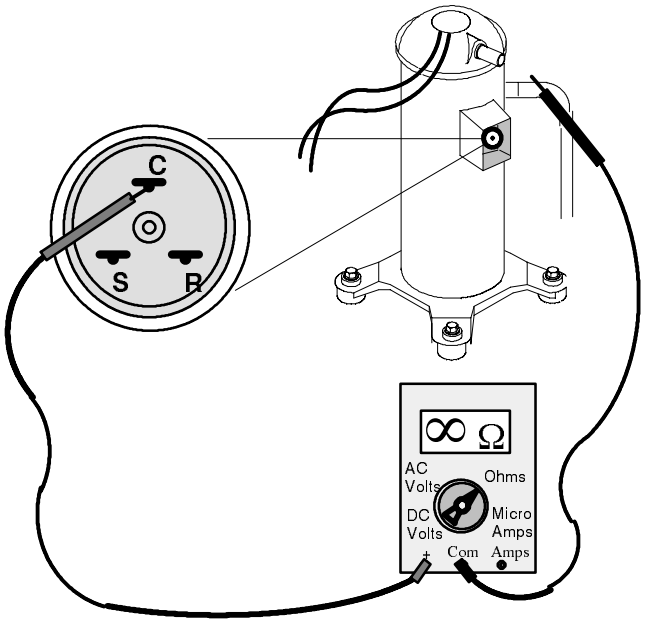
With power to the unit OFF, disconnect wiring to the compressor. Resistance should be checked between terminals C & R, C & S, and S & R. The reading between C & R should indicate the LEAST resistance. The reading between C & S should indicate a HIGHER resistance (than between C & R). The Reading between S & R should indicate the TOTAL of the readings obtained between C & R and C & S. This check will indicate if any of the windings are open. A reading of infinity (∞) between any two terminals MAY indicate an open winding. If, however, a reading of infinity (∞) is obtained between C & R and C & S, accompanied by a resistance reading between S & R, an open internal overload is indicated. Should you obtain this indication, allow the compressor to cool (may take up to 24 hours) then re-check before condemning the compressor. If an open internal overload is indicated, the source of its opening must be determined and corrected. Failure to do so will cause repeat problems with an open overload and/or premature compressor failure. Some possible causes of an open internal overload include insufficient refrigerant charge, restriction in the refrigerant circuit, and excessive current draw.

Checking for shorted (grounded) windings

The Compressor should also be checked for shorted (grounded to case) windings anytime the fuse or circuit breaker to the unit is tripping. You should also check the compressor for shorted windings whenever there is a starting problem, since their may be enough resistance in the shorted winding to prevent the fuse or circuit breaker from tripping.

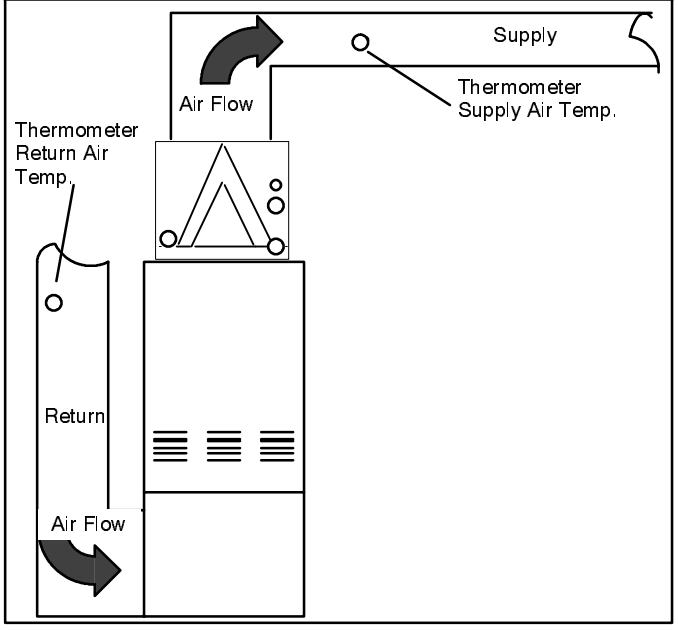
With power to the unit OFF, disconnect wiring to the compressor. Resistance should be checked (one terminal at a time) between terminals C, S, R, and the compressor case (the suction line may be used for this purpose). Be certain to insure that (when using the compressor case) the point of contact of the Ohmmeter probe is clean and free from paint. The reading between each terminal (C, S, & R) and the compressor case should indicate infinity (∞). Any reading obtained less than infinity (∞) is indicative of a shorted (grounded) winding, and the compressor should be replaced.

Figure 34 **Checking For Shorted Windings**



CHECKING TEMPERATURE RISE (1st STAGE HEATING MODE)

Figure 35 **Checking Temperature Rise**



Checking Temperature Rise is ONE of the procedures which will assist the Technician in verifying Heat Pump system performance. It CANNOT, however stand alone as THE determining factor since rise is affected by refrigerant charge, airflow, and cleanliness of the coil(s).

When operating properly, the Split Heat Pump System is designed to provide a certain specified temperature rise for a given set of Indoor and Outdoor conditions. This temperature rise is listed on the Tech. Service Data sheet for each model together with expected operating pressures under these same conditions.

A system operating outside the specified rise is indicative of discrepancies in the system. Continued operation under these conditions may result in lower efficiency and/or comfort levels, as well as premature component failures.

Simply stated, the temperature rise through the unit is the difference in temperature between the return air, and the supply air.

NOTE: Checking temperature rise to verify performance requires that the indoor temperature be ***EXACTLY*** 70°F (dry bulb) if temperature is lower or higher, operate back-up heat (i.e. electric heat strips, or fossil fuel furnace) or cooling as necessary to attain 70°F Indoor Temperature.

Temperature Rise can be checked by placing a thermometer in the return air duct as close to the unit as possible. Place a second thermometer in the supply duct at least two (2) feet away from the unit. (This will prevent any false readings) Make sure that the FILTER IS CLEAN and that ALL REGISTERS AND/OR DAMPERS ARE OPEN.

Operate the unit for SEVERAL minutes before taking temperature readings to allow system pressures to stabilize. Subtract the return air temperature from the supply air temperature. The result is the temperature rise. Compare with the rise listed on the Technical Service Data Sheet for the model you are checking at the current outdoor conditions.

NOTE: BEFORE CHECKING TEMPERATURE RISE BE CERTAIN THAT SYSTEM AIRFLOW HAS BEEN VERIFIED, AND ANY BACK-UP HEAT (I.E. ELECTRIC HEAT STRIPS, OR FOSSIL FUEL FURNACE) IS TURNED ***OFF***, OR HAS BEEN DISABLED

If the rise is not as specified, it will be necessary to check also the system operating pressures. You should find that these pressures are also not as specified. The cause of incorrect operating pressures and/or temperature rise can range from the simple (improper airflow) to the complex (mis-matched equipment) to diagnose. Re-check airflow (See Page 19), then Consult the Refrigerant Circuit Diagnosis charts beginning on page 103 for further information.

REFRIGERANT CHARGING

Proper refrigerant charge is essential to proper unit operation. It is also essential to to obtaining the published efficiency from as well as the expected life span of the compressor contained within the unit. Operating a unit with an improper refrigerant charge will result in reduced performance (capacity) and/or efficiency. Accordingly, the use of proper charging methods during servicing will insure that the unit is functioning as designed and that its compressor will not be damaged.

Too much refrigerant (Overcharge) in the system is just as bad (if not worse) than not enough refrigerant (Undercharge). They both can be the source of certain compressor failures if they remain uncorrected for any period of time. Quite often, other problems (such as low air flow across evaporator, etc.) are mis-diagnosed as refrigerant charge problems. The refrigerant circuit diagnosis charts on pages 103 and 104 will assist you in properly diagnosing these symptoms.

For example an overcharged unit will at times return liquid refrigerant (slugging) back to the suction side of the compressor eventually causing a mechanical failure within the compressor. This mechanical failure can manifest itself as valve failure, bearing failure, and/or connecting rod failure. The specific type of failure will be influenced by the amount of liquid being returned, the length of time the slugging continues, and the type of compressor (scroll or reciprocating) being used in the unit.

Not enough refrigerant (undercharge) on the other hand, will cause the temperature of the suction gas to increase to the point where it does not provide sufficient cooling for the compressor motor. When this occurs, the motor winding temperature will increase, causing the motor to overheat and possibly cycle (open) the internal overload protector. Continued overheating of the motor windings and/or cycling of the internal overload will eventually lead to compressor motor or internal overload failure.

METHODS OF CHARGING

There are three (3) recognized and acceptable methods for charging this series of Residential Split Heat Pump Units. Two (2) of which are applicable to charging in the COOLING mode of operation ONLY. The three (3) methods are :

1. Weighed in Charge Method
2. Superheat Method (Cooling Only)
3. Subcooling Method (Cooling Only)

The weighed in charge method is applicable to ALL units. It is the preferred method to use, as it is the most accurate. The Superheat method is applicable to units with RESTRICTOR (fixed orifice) or CAPILLARY TUBE controlled evaporators ONLY. The Subcooling method is applicable to units equipped with Thermostatic Expansion Valve controlled evaporators. The particular method(s) that you use will depend on current ambient weather conditions, the unit you are servicing, the type of tools and equipment you have, and your personal preference. The sections that follow describe the methods and their required procedures in more detail.

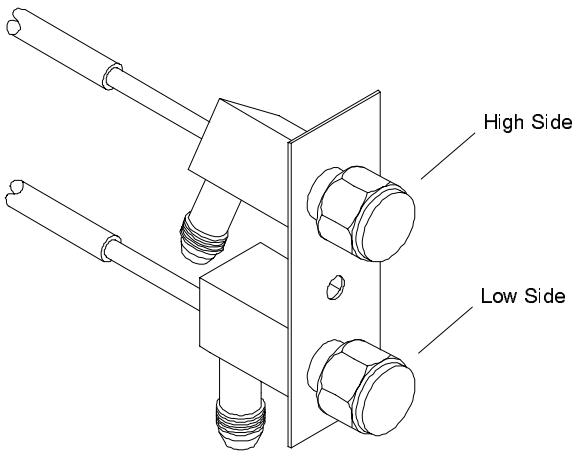
Weighed in Charge Method

The weighed in charge method is applicable to ALL units, during both seasons (I.E. Heating & Cooling) and is the preferred method to use because of its accuracy. Charging by this method is accomplished with the unit OFF and requires the use of a graduated charging cylinder, or electronic scales.

This method should always be used during the HEATING season, and/or (if possible) whenever the charge is to be removed from the unit, such as for a leak repair, compressor replacement, or when there is no refrigerant charge left in the unit. To charge by this method, requires the following steps:

1. Recover refrigerant (remaining) charge from unit in accordance with EPA regulations.
2. Make system (leak, etc.) repairs as necessary.
3. Evacuate system to 500 microns.
4. Charge unit (through high side access port) with quantity of refrigerant listed on unit's rating plate, and/or Tech. Service Data Sheet.
5. Start unit, and verify performance.

Figure 36 **Typical Access Ports**



Superheat Method

The Superheat method is applicable (for charging in the COOLING mode) to units equipped with RESTRICTORS (fixed orifices) **or** CAPILLARY TUBE controlled evaporators ONLY. Charging by the Superheat method is accomplished with the unit RUNNING and requires the use of ACCURATE refrigeration gauges, Wet Bulb and Dry bulb thermometers, and a Pressure/Temperature chart (if your refrigeration gauges do not have temperature conversion scales on their face).

The Superheat method can be used when a partial charge remains in the unit and it is not desirable to remove the entire charge. To charge by the Superheat method the requires the following steps:

1. Connect refrigerant gauges to service access ports, (Figure 36) start unit and allow to run for several minutes until system pressures stabilize.
2. While waiting for pressures to stabilize, measure and record Outdoor Dry Bulb temperature, Indoor Wet Bulb temperature, and Indoor Dry Bulb temperature.
3. Measure (and record) suction line temperature as close to compressor as practical.
4. Using R-22 temperature conversion scale on gauges (if so equipped) or pressure/temperature chart (see Figure 37) convert suction pressure to (saturation) temperature.
5. Subtract converted (saturation) temperature from measured suction temperature; the result is Superheat.
6. Compare calculated Superheat with allowable range of Superheat (for existing conditions) indicated on chart in Figure 37
7. If calculated Superheat is HIGHER than allowable range, gradually ADD refrigerant (vapor) through suction side of system. Recheck Superheat periodically (while adding refrigerant), and discontinue adding refrigerant when allowable range has been reached.
8. If calculated Superheat is LOWER than allowable range, gradually remove (recover) refrigerant from system. Recheck Superheat periodically while removing (recovering) refrigerant, and discontinue removing refrigerant when allowable range has been reached.

Subcooling Method

The Subcooling method is applicable (for charging in the COOLING mode) to units equipped with THERMOSTATIC EXPANSION VALVE controlled evaporators. Charging by the subcooling method is accomplished with the unit RUNNING. It requires the use of ACCURATE refrigeration gauges, Dry bulb thermometer, and a Pressure/Temperature chart (if your refrigeration gauges do not have temperature conversion scales on their face).

The Subcooling method can be used when a partial charge remains in the unit and it is not desirable to remove the entire charge. To charge by the Subcooling method the requires the following steps:

1. Connect refrigerant gauges to service access ports, (Figure 36) start unit and allow to run for several minutes until system pressures stabilize.
2. While waiting for pressures to stabilize, measure Outdoor Dry Bulb temperature, (must be between 65°F and 115°F).
3. Measure (and record) liquid line temperature as close to condenser coil OUTLET as practical.
4. Using R-22 temperature conversion scale on High Side gauge (if so equipped) or pressure/temperature chart, (see Figure 37) convert liquid pressure to (saturation) temperature.
5. Subtract measured liquid temperature from converted (saturation) temperature; the result is Subcooling.
6. Compare calculated Subcooling with allowable range (8°F - 12°F) of subcooling .
7. If calculated Subcooling is HIGHER than allowable range, gradually REMOVE (recover) refrigerant (vapor) from suction side of system. Recheck Subcooling periodically (while removing refrigerant), and discontinue removing refrigerant when allowable range has been reached.
8. If calculated Subcooling is LOWER than allowable range, gradually ADD refrigerant (vapor) to the suction side of system. Recheck Subcooling periodically while adding refrigerant, and discontinue adding refrigerant when allowable range has been reached.

Refrigerant To Add For Field Installed Drier

Liquid Line Drier	
Size	Add Oz.
5 Cu. In.	5
8 Cu. In	8
16 Cu. In.	11
30 Cu. In.	17

Figure 37 System Charging Procedures - COOLING MODE

The **Preferred Method** of charging is to weigh the charge in using the quantity of refrigerant listed on the unit's rating plate and/or Tech. Data Sheet. When this is not practical, the Superheat and Subcooling methods described below (as applicable) are acceptable alternatives.

SUPERHEAT METHOD - Systems with Restrictor (Fixed Orifice) or Capillary Tube controlled Evaporator Coil ONLY

1. Measure and record Indoor wet bulb and dry bulb temperatures and Outdoor dry bulb temperature.
2. Measure suction line temperature within 6 inches of the suction line service valve.
3. Measure suction line pressure at service access port and determine saturated suction temperature from chart.
4. Subtract saturated suction temperature from measured suction line temperature to obtain superheat.
5. Compare with allowable Superheat range (for current conditions) and adjust charge as required.

SATURATED TEMPERATURE - PRESSURE CHART

(°F)	R22-PSIG	(°F)	R22-PSIG	(°F)	R22-PSIG
32	57.5	44	74.5	80	143.6
33	58.8	45	76.0	85	155.7
34	60.1	46	77.6	90	168.4
35	61.5	47	79.2	95	181.8
36	62,8	48	80.8	100	195.8
37	64.2	49	82.4	105	210.8
38	65.6	50	84.0	110	226.4
39	67.1	55	92.6	115	242.7
40	68.5	60	101.6	120	259.9
41	70.0	65	111.2	125	277.9
42	71.4	70	121.4	130	296.8
43	73.0	75	132.2	140	337.3

SUPERHEAT MEASURED AT SUCTION LINE

Outdoor Temp. (°F)	Indoor Conditions DB/WB (50%R.H.)		
	75 / 63	80 / 67	85 / 71
105	2-6	2-6	10-12
100	2-6	5-7	12-14
95	2-6	8-10	14-17
90	4-6	11-13	16-19
85	7-10	14-16	19-22
80	10-13	16-19	22-25
75	13-16	19-22	24-27
70	17-20	22-25	27-30
65	20-23	25-28	29-33
60	23-27	27-31	32-36
55	26-30	29-34	34-38

SUBCOOLING METHOD - Systems with Expansion Valve controlled Evaporator Coil

1. Measure outdoor ambient, must be between 65 °F and 115 °F.
2. Measure liquid line temperature within 6 inches of the liquid line service valve.
3. Measure liquid line pressure at service access port and determine saturated liquid temperature from chart.
4. Subtract measured liquid line temperature from saturated liquid temperature to obtain subcooling.
5. Adjust charge as required to obtain 8 °F - 12 °F subcooling.

NOTE: Optimum performance for units equipped with **restrictors (fixed orifices) or capillary tubes** is obtained with 8°F superheat at compressor inlet under DOE "A" test conditions (95°F Outdoor Dry Bulb temperature, 80°F Indoor Dry Bulb Temperature, and 67°F Indoor Wet Bulb Temperature).

Figure 38 System Charging Procedures - HEATING MODE

The **Preferred Method** of charging is to weigh the charge in using the quantity of refrigerant listed on the unit's rating plate and/or Tech. Data Sheet. When this is not practical, the unit's charge may be TEMPORARILY ADJUSTED to the PRESSURE VALUES listed in the Technical Service Data Sheet for a given set of conditions. Charge should then be VERIFIED in the COOLING mode (as soon as weather conditions permit) using the Superheat or Subcooling methods (as applicable for the unit you are servicing) described above.

TECHNICAL SERVICE DATA INDEX

Technical Service Data Sheets 1060754 & 1060808

Model or Style NO.	30GH–000090ZR	CH7530*KA / EHA5036A / BCM036	
Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208–230 / 60 / 1	Liquid/Charge	8 Cu. In. / 7 Oz. 2 Req.
Branch Circuit Ampacity	18.6	Suction	30 Sq. In.
Wire Size/Max. Ft.	No. 14 / 27'	**Compressor:**	COPELAND
Time Delay Fuse Size	25	FLA/LRA	14.1 / 76
Max. Fuse/HACR Breaker	30	Run Cap. Mfd./Volts	35 / 370
		Acc. Start Kit	– – – –
Fan Motor:		***Ref. Charge (R-22 Oz.**	98
H.P./Type	1 / 6 PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.0 / 2.0	(40 Ft. Vertical Seperation)	
RPM	1110	Liquid	5 / 16 ORIFICE .067
Run		Suction	3 / 4
Cap. Mfd./Volts	5 / 370	***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line
Clearances:			

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V) — **Performance Data** — **Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)**

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	125	11	6.0	9.2	8.5
–5	129	14	6.4	10.9	10.1
0	134	16	6.8	12.6	11.7
5	140	19	7.2	14.3	13.2
10	145	22	7.6	16.0	14.8
15	151	26	7.9	17.7	16.4
20	158	29	8.2	19.4	17.9
25	164	33	8.5	21.1	19.5
30	171	37	8.8	22.8	21.1
35	179	41	9.2	24.5	22.7
40	186	46	9.6	26.2	24.2
45	194	50	10.0	27.9	25.8
50	203	55	10.5	29.6	27.4
55	212	60	11.1	31.3	28.9
60	221	65	11.8	33.0	30.5
65	230	70	12.5	34.7	32.1

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	28.6	0.92	189	69	10.2
	65	29.4	0.83	195	72	10.3
	67	30.3	0.74	200	76	10.5
	69	31.3	0.66	204	79	10.7
95	**63**	27.3	0.96	244	76	11.5
	65	28.1	0.89	252	79	11.7
	67	29.0	0.79	258	83	11.8
	69	29.9	0.69	263	86	12.1
115	**63**	23.8	0.97	303	82	12.8
	65	24.5	0.92	312	86	13.0
	67	25.3	0.83	320	90	13.2
	69	26.1	0.70	327	93	13.5

1060754
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AH–2

Model or Style NO.	42GH–000090ZR	CH7542*KA / EHA5048 wBCM060	
Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208–230 / 60 / 1	Liquid/Charge	16 Cu. In. / 11 Oz. 2 Req.
Branch Circuit Ampacity	27.4	Suction	30 Sq. In.
Wire Size/Max. Ft.	No.10 / 49'	**Compressor:**	COPELAND
Time Delay Fuse Size	35	FLA/LRA	20.7 / 107
Max. Fuse/HACR Breaker	45	Run Cap. Mfd./Volts	35 / 440
		Acc. Start Kit	– – – –
Fan Motor:		***Ref. Charge (R-22 Oz.**	163
H.P./Type	1 / 3 PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.5 / 3.6	(40 Ft. Vertical Seperation)	
RPM	1110	Liquid	3 / 8 ORIFICE .078
Run		Suction	7 / 8
Cap. Mfd./Volts	5 / 370	***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line
Clearances:			

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V) — **Performance Data** — **Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)**

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	137	12	9.4	6.3	4.1
–5	142	14	10.2	9.4	6.2
0	148	17	10.8	12.5	8.3
5	153	20	11.4	15.7	10.3
10	160	23	12.0	18.8	12.4
15	166	26	12.5	21.9	14.5
20	173	30	13.0	25.1	16.5
25	181	34	13.4	28.2	18.6
30	188	38	14.0	31.3	20.7
35	196	42	14.5	34.5	22.8
40	205	47	15.1	37.6	24.8
45	214	52	15.8	40.7	26.9
50	223	56	16.6	43.9	29.0
55	233	61	17.6	47.0	31.0
60	243	66	18.6	50.1	33.1
65	253	71	19.8	53.3	35.2

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	41.4	0.90	183	68	15.0
	65	42.6	0.81	189	71	15.2
	67	43.9	0.72	194	74	15.5
	69	45.3	0.64	198	77	15.8
95	**63**	39.6	0.94	237	74	16.9
	65	40.7	0.87	245	78	17.2
	67	42.0	0.77	251	82	17.5
	69	43.3	0.67	256	85	17.9
115	**63**	34.5	0.95	294	80	18.9
	65	35.5	0.90	303	84	19.1
	67	36.6	0.81	311	88	19.4
	69	37.8	0.68	317	92	19.9

1060808
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AH–2

Technical Service Data Sheets 1060857 & 1060860

Model or Style NO. 18GH–000090ZR CH7518*KA / EHA5024 wBCM024

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208–230 / 60 / 1	Liquid/Charge	5 Cu. / 5 Oz., 2 Req.
Branch Circuit Ampacity	12.5	Suction	17 Sq. In.
Wire Size/Max. Ft.	No. 14 / 41'	**Compressor:**	COPELAND
Time Delay Fuse Size	20	FLA/LRA	9.6 / 50
Max. Fuse/HACR Breaker	20	Run Cap. Mfd./Volts	25 / 370
		Acc. Start Kit	– – –
Fan Motor:		***Ref. Charge (R-22 Oz.**	75
H.P./Type	1 / 6 PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.1 / 2.0	(40 Ft. Vertical Separation)	
RPM	1100	Liquid	5/16
Cap. Mfd./Volts	5 / 370	Suction	3/4
Clearances:		***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	133	12	3.9	4.7	7.2
–5	138	14	4.2	5.9	9.0
0	143	17	4.5	7.0	10.8
5	149	20	4.7	8.2	12.6
10	155	23	5.0	9.4	14.4
15	161	27	5.2	10.5	16.2
20	168	31	5.4	11.7	18.0
25	175	35	5.6	12.9	19.8
30	183	39	5.8	14.0	21.6
35	191	43	6.0	15.2	23.4
40	199	48	6.3	16.4	25.2
45	207	53	6.6	17.5	27.0
50	216	58	6.9	18.7	28.8
55	226	63	7.3	19.9	30.6
60	235	68	7.7	21.0	32.4
65	246	73	8.2	22.2	34.2

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	18.2	0.88	174	70	6.3
	65	18.7	0.79	180	73	6.4
	67	19.3	0.70	184	76	6.5
	69	19.9	0.62	188	79	6.7
95	**63**	17.4	0.92	225	76	7.1
	65	17.9	0.85	232	80	7.2
	67	18.5	0.75	238	84	7.4
	69	19.1	0.65	243	87	7.5
115	**63**	15.2	0.93	279	83	7.9
	65	15.6	0.88	288	86	8.1
	67	16.1	0.79	296	90	8.2
	69	16.6	0.66	302	94	8.4

1060857
6–24–91
AH–2

Model or Style NO. 24GH–000090ZR CH7524*KA / EHA5024 / BH3024+TDI

Electrical:		**Service Driers:**		
Voltage/Cycles/Phase	208–230 / 60 / 1	Liquid/Charge	8 Cu In / 7 Oz, 2 Req.	
Branch Circuit Ampacity	15.9	Suction	30 Sq. In.	
Wire Size/Max. Ft.	14 / 32	**Compressor:**	COPELAND	
Time Delay Fuse Size	20	FLA/LRA	11.5/63	
Max. Fuse/HACR Breaker	25	Run Cap. Mfd./Volts	30/370	
		Acc. Start Kit	–	
Fan Motor:		***Ref. Charge (R-22 Oz.**	73	
H.P./Type	1/6 PSC	**Line Size:** (75 Ft. Max.)		
FLA/LRA	1.0/2.0	(40 Ft. Vertical Seperation)		
RPM	1100	Liquid	5/16	ORIFICE
Cap. Mfd./Volts	5/370	Suction	3/4	.059
Clearances: SEE INSTALLATION INSTRUCTIONS		***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line	

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	140	12	4.9	6.6	7.7
–5	145	14	5.3	8.0	9.3
0	150	17	5.6	9.4	10.9
5	156	20	5.9	10.8	12.5
10	163	23	6.2	12.2	14.1
15	169	26	6.4	13.6	15.8
20	172	28	6.5	14.2	16.4
25	184	34	7.0	16.4	19.0
30	192	38	7.2	17.8	20.6
35	200	32	7.5	19.2	22.2
40	209	47	7.8	20.6	23.8
45	218	52	8.2	22.0	25.5
50	227	57	8.6	23.4	27.1
55	237	61	9.1	24.8	28.7
60	247	66	9.6	26.2	30.3
65	258	72	10.3	27.6	31.9

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	22.9	.90	175	66	7.6
	65	23.5	.81	180	69	7.7
	67	24.2	.72	185	73	7.8
	69	25.0	.64	188	75	8.0
95	**63**	21.9	.94	226	73	8.5
	65	22.5	.87	233	76	8.7
	67	23.2	.77	239	80	8.8
	69	23.9	.67	244	83	9.0
115	**63**	19.1	.95	280	78	9.5
	65	19.6	.90	289	82	9.6
	67	20.2	.81	296	86	9.8
	69	20.9	.68	302	89	10.0

1060860
2–6–91
AH–1

Technical Service Data Sheets 1060861 & 1061343

Model or Style NO. 36GH–000090ZR CH7536*KA / w EHA5036 / BH3036+TDI

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208–230 / 60 / 1	Liquid/Charge	16 CU. IN./ 2 REQ. / 11 OZ.
Branch Circuit Ampacity	24.0	Suction	30 SQ. IN.
Wire Size/Max. Ft.	12 / 36	**Compressor:**	COPELAND
Time Delay Fuse Size	30	FLA/LRA	17.9 / 91
Max. Fuse/HACR Breaker	40	Run Cap. Mfd./Volts	35 / 440
		Acc. Start Kit	–
Fan Motor:		***Ref. Charge (R-22 Oz.**	101
H.P./Type	1/3 PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.5 / 3.6	(40 Ft. Vertical Seperation)	
RPM	1100	Liquid	5/16
Cap. Mfd./Volts	5 / 370	Suction	3/4
			ORIFICE .068
Clearances: See Installation Instructions		***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	134	11	7.1	10.3	8.2
–5	139	14	7.6	12.4	9.9
0	144	16	8.1	14.5	11.6
5	150	19	8.6	16.6	13.3
10	156	22	9.0	18.7	15.0
15	162	26	9.4	20.8	16.7
20	169	29	9.7	22.9	18.4
25	176	33	10.1	25.0	20.1
30	184	37	10.5	27.1	21.7
35	191	41	10.9	29.2	23.4
40	200	46	11.4	31.3	25.1
45	208	50	11.9	33.4	26.8
50	217	55	12.5	35.5	28.5
55	227	60	13.2	37.6	30.2
60	237	64	14.0	39.7	31.9
65	247	69	14.9	41.8	33.5

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Suct.	Unit Amps.
75	**63**	33.5	0.87	195	64	12.0
	65	34.4	0.78	202	67	12.1
	67	35.5	0.69	207	70	12.3
	69	36.6	0.61	211	72	12.6
95	**63**	32.1	0.91	253	70	13.5
	65	33.0	0.84	261	73	13.7
	67	34.0	0.74	267	76	13.9
	69	35.1	0.64	273	80	14.2
115	**63**	27.9	0.92	313	75	15.0
	65	28.7	0.87	323	79	15.3
	67	29.6	0.78	331	83	15.5
	69	30.6	0.65	338	86	15.8

1060861
2–6–91
AH–2

Model or Style NO. 60GH–000090ZR CH7548*KA EHA5048

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208–230 / 60 / 1	Liquid/Charge	30 Cu. In. / 17 Oz. 2 Req.
Branch Circuit Ampacity	31.0	Suction	30 Sq. In.
Wire Size/Max. Ft.	No. 8 / 65	**Compressor:**	COPELAND
Time Delay Fuse Size	40	FLA/LRA	23.7 / 129
Max. Fuse/HACR Breaker	50	Run Cap. Mfd./Volts	40 / 440
		Acc. Start Kit	– – – –
Fan Motor:		***Ref. Charge (R-22 Oz.**	170
H.P./Type	1 / 4 PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.4 / 3.24	(40 Ft. Vertical Seperation)	
RPM	840	Liquid	3 / 8
Run		Suction	7 / 8
Cap. Mfd./Volts	7.5 / 440		
Clearances:		***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	144	11	10.9	12.9	7.4
–5	150	14	11.8	16.1	9.3
0	155	16	12.5	19.2	11.1
5	162	19	13.2	22.4	12.9
10	168	22	13.8	25.6	14.8
15	175	26	14.4	28.7	16.6
20	182	30	15.0	31.9	18.4
25	190	33	15.6	35.1	20.2
30	198	37	16.2	38.2	22.1
35	207	42	16.8	41.4	23.9
40	216	46	17.5	44.6	25.7
45	225	51	18.3	47.7	27.6
50	235	55	19.3	50.9	29.4
55	245	60	20.3	54.1	31.2
60	256	65	21.5	57.2	33.0
65	267	70	22.9	60.4	34.9

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Suct.	Unit Amps.
75	**63**	47.3	0.90	178	65	16.8
	65	48.6	0.81	184	68	17.0
	67	50.1	0.72	188	71	17.3
	69	51.7	0.64	192	74	17.7
95	**63**	45.3	0.94	230	71	19.0
	65	46.6	0.87	238	74	19.3
	67	48.0	0.77	244	78	19.6
	69	49.5	0.67	249	81	20.0
115	**63**	39.4	0.95	286	77	21.1
	65	40.6	0.90	295	80	21.4
	67	41.8	0.81	302	84	21.8
	69	43.2	0.68	308	87	22.3

1061343
10–30–91
AH–1

Technical Service Data Sheets 1061344 & 1062406

Model or Style NO. 60GH–000090ZR CH7560*KA EHA5060

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208–230 / 60 / 1	Liquid/Charge	30Cu. In. / 17Oz. 2 Req.
Branch Circuit Ampacity	37.5	Suction	30 Sq. In.
Wire Size/Max. Ft.	No. 8 / 50	**Compressor:**	COPELAND
Time Delay Fuse Size	45	FLA/LRA	28.8 / 169
Max. Fuse/HACR Breaker	60	Run Cap. Mfd./Volts	55 / 440
		Acc. Start Kit	– – – –
Fan Motor:		***Ref. Charge (R-22 Oz.**	249
H.P./Type	1 / 4 PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.4 / 3.24	(40 Ft. Vertical Seperation)	
RPM	840	Liquid	3 / 8
Run		Suction	7 / 8
Cap. Mfd./Volts	7.5 / 440	***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line
Clearances:			

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	151	13	11.7	17.9	8.7
–5	157	15	12.6	21.3	10.4
0	163	18	13.4	24.7	12.0
5	169	22	14.2	28.1	13.7
10	176	25	14.8	31.5	15.3
15	183	29	15.4	34.8	16.9
20	191	33	16.0	38.2	18.6
25	199	38	16.7	41.6	20.2
30	208	42	17.3	45.0	21.9
35	217	47	18.0	48.4	23.5
40	226	52	18.8	51.8	25.2
45	236	57	19.6	55.1	26.8
50	246	63	20.6	58.5	28.5
55	257	68	21.7	61.9	30.1
60	268	74	23.1	65.3	31.7
65	279	79	24.6	68.7	33.4

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	56.1	0.89	179	64	19.1
	65	57.8	0.80	184	67	19.4
	67	59.5	0.71	189	71	19.7
	69	61.4	0.63	193	73	20.1
95	**63**	53.8	0.93	231	71	21.6
	65	55.3	0.86	238	74	21.9
	67	57.0	0.76	244	78	22.3
	69	58.8	0.66	249	81	22.8
115	**63**	46.8	0.94	286	76	24.0
	65	48.2	0.89	296	80	24.4
	67	49.7	0.80	303	84	24.8
	69	51.3	0.67	309	87	25.3

1061344
10–30–91
AH–1

Model or Style NO. 18DH000092ZR

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208/230–60–1	Liquid/Charge	5 Cu. In./ 5Oz
Branch Circuit Ampacity	12.8	Suction	17 Sq. In.
Wire Size/Max. Ft.	#14/42'	**Compressor:**	
Time Delay Fuse Size	20	FLA/LRA	9.6/50
Max. Fuse/HACR Breaker	20	Run Cap. Mfd./Volts	25/370
		Acc. Start Kit	NONE
Fan Motor:		***Ref. Charge (R-22 Oz.**	68
H.P./Type	1/8/PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	.75/1.55	(40 Ft. Vertical Separation)	
RPM	1030	Liquid	5/16"
Run		Suction	3/4"
Cap. Mfd./Volts	5/370	***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line
Clearances: See Installation Manual			

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	122	13	3.9	5.5	8.4
–5	127	15	4.2	6.6	10.1
0	131	18	4.4	7.7	11.8
5	137	21	4.7	8.8	13.5
10	142	25	4.9	9.9	15.2
15	148	29	5.1	11.0	16.9
20	154	33	5.3	12.1	18.6
25	161	37	5.5	13.2	20.3
30	168	41	5.7	14.3	22.0
35	175	46	5.9	15.4	23.6
40	183	51	6.2	16.5	25.3
45	191	56	6.5	17.6	27.0
50	199	61	6.8	18.7	28.7
55	207	67	7.2	19.8	30.4
60	216	72	7.6	20.9	32.1
65	226	78	8.1	22.0	33.8

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	18.7	0.88	171	72	6.1
	65	19.3	0.79	176	75	6.2
	67	19.8	0.70	181	79	6.3
	69	20.5	0.62	184	82	6.5
95	**63**	17.9	0.92	221	79	6.9
	65	18.4	0.85	228	83	7.0
	67	19.0	0.75	233	87	7.2
	69	19.6	0.65	238	90	7.3
115	**63**	15.6	0.93	274	85	7.7
	65	16.1	0.88	282	89	7.8
	67	16.6	0.79	290	94	8.0
	69	17.1	0.66	295	97	8.1

1062406
DB 1
6–15–92

Technical Service Data Sheets 1062413A & 1062691

Model or Style NO. 24DH000092ZR

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208/230–60–1	Liquid/Charge	8 Cu. In./ 8 Oz.
Branch Circuit Ampacity	15.4	Suction	30 Sq. In.
Wire Size/Max. Ft.	#14/33'	**Compressor:**	
Time Delay Fuse Size	20	FLA/LRA	11.5/63.0
Max. Fuse/HACR Breaker	25	Run Cap. Mfd./Volts	30/370
		Acc. Start Kit	NONE
Fan Motor:		***Ref. Charge (R-22 Oz.**	91
H.P./Type	1/6/PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.0/2.0	(40 Ft. Vertical Separation)	
RPM	1110	Liquid	5/16" O.D.
Run Cap. Mfd./Volts	5/370	Suction	3/4" O.D.
Clearances: SEE INSTALLATION MANUAL		***Lines not included:**	.25 oz./ft – 1/4" liq. line, .45 oz./ft. – 5/16" liq. line, .60 oz./ft. 3/8" liq. line

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	124	13	4.7	6.7	7.7
–5	129	15	5.0	8.2	9.5
0	134	18	5.4	9.7	11.3
5	139	22	5.7	11.3	13.0
10	145	25	5.9	12.8	14.8
15	151	29	6.2	14.3	16.5
20	157	33	6.4	15.8	18.3
25	164	38	6.7	17.3	20.0
30	171	42	6.9	18.8	21.8
35	178	47	7.2	20.4	23.5
40	186	52	7.5	21.9	25.3
45	194	57	7.8	23.4	27.0
50	203	63	8.2	24.9	28.8
55	211	68	8.7	26.4	30.5
60	220	74	9.2	27.9	32.3
65	230	79	9.8	29.5	34.0

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	23.6	0.89	171	69	7.7
	65	24.3	0.80	177	72	7.8
	67	25.1	0.71	181	76	8.0
	69	25.9	0.63	185	79	8.1
95	**63**	22.6	0.93	221	76	8.7
	65	23.3	0.86	228	80	8.9
	67	24.0	0.76	234	83	9.0
	69	24.8	0.66	239	87	9.2
115	**63**	19.7	0.94	274	82	9.7
	65	20.3	0.89	283	86	9.9
	67	20.9	0.80	290	90	10.0
	69	21.6	0.67	296	94	10.2

1062413A
AH 1
1–19–93

Model or Style NO. 30DH000092ZR

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208/230–60–1	Liquid/Charge	8CU. IN./7 OZ.
Branch Circuit Ampacity	17.8	Suction	30 SQ. IN.
Wire Size/Max. Ft.	#14/28'	**Compressor:**	
Time Delay Fuse Size	25	FLA/LRA	13.5/76.0
Max. Fuse/HACR Breaker	30	Run Cap. Mfd./Volts	35/370
		Acc. Start Kit	NONE
Fan Motor:		***Ref. Charge (R-22 Oz.**	104
H.P./Type	1/6/PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.0/2.0	(40 Ft. Vertical Separation)	
RPM	1110	Liquid	5/16"
Run		Suction	3/4"
Cap. Mfd./Volts	5/370		
Clearances: SEE INSTRUCTION MANUAL		***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line

Performance Data

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V)

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	120	12	6.0	8.6	8.0
–5	125	14	6.4	10.4	9.6
0	130	17	6.8	12.1	11.2
5	135	20	7.2	13.8	12.8
10	140	23	7.6	15.6	14.4
15	146	26	7.9	17.3	16.0
20	152	30	8.2	19.0	17.6
25	159	34	8.5	20.8	19.2
30	165	38	8.8	22.5	20.8
35	172	42	9.2	24.2	22.4
40	180	47	9.6	26.0	24.0
45	188	52	10.0	27.7	25.6
50	196	56	10.5	29.4	27.2
55	204	61	11.1	31.2	28.8
60	213	66	11.8	32.9	30.4
65	222	71	12.5	34.6	32.0

Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	29.5	.90	180	69	9.8
	65	30.4	.81	186	72	9.9
	67	31.3	.72	190	75	10.1
	69	32.3	.64	194	78	10.3
95	**63**	28.3	.94	233	76	11.1
	65	29.1	.87	240	79	11.2
	67	30.0	.77	246	83	11.4
	69	31.0	.67	251	86	11.7
115	**63**	24.7	.95	289	82	12.3
	65	25.4	.90	298	85	12.5
	67	26.1	.81	305	90	12.7
	69	27.0	.68	312	93	13.0

1062691
DB. 1
7–15–92

Technical Service Data Sheets 1062692 & 1062693

Model or Style NO. 36DH–000092ZR

Electrical:	
Voltage/Cycles/Phase	208/230–60–1
Branch Circuit Ampacity	23.4
Wire Size/Max. Ft.	#12/37'
Time Delay Fuse Size	30
Max. Fuse/HACR Breaker	40
Fan Motor:	
H.P./Type	1/6/PSC
FLA/LRA	1.0/2.0
RPM	1100
Run	
Cap. Mfd./Volts	5/370
Clearances: SEE INSTRUCTION MANUAL	

Service Driers:	
Liquid/Charge	16 CU. IN./11 OZ.
Suction	30 SQ. IN.
Compressor:	
FLA/LRA	17.9/91.0
Run Cap. Mfd./Volts	35/370
Acc. Start Kit	NONE
***Ref. Charge (R-22 Oz.**	135
Line Size: (75 Ft. Max.) (40 Ft. Vertical Separation)	
Liquid	5/16'
Suction	3/4'
***Lines not included:**	.25 oz./ft – 1/4liq. line, .45 oz./ft. – 5/16 liq. line, .60 oz./ft. – liq. line

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V) — **Performance Data** — **Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)**

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	147	12	7.4	11.2	9.0
–5	153	15	7.9	13.4	10.8
0	159	18	8.5	15.7	12.6
5	165	21	8.9	18.0	14.4
10	172	24	9.3	20.2	16.2
15	179	28	9.7	22.5	18.1
20	186	32	10.1	24.8	19.9
25	194	36	10.5	27.0	21.7
30	202	40	10.9	29.3	23.5
35	211	45	11.3	31.6	25.4
40	220	50	11.8	33.8	27.2
45	230	55	12.4	36.1	29.0
50	240	60	13.0	38.4	30.8
55	250	65	13.7	40.6	32.6
60	261	70	14.5	42.9	34.5
65	272	76	15.5	45.2	36.3

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	34.7	.90	179	66	11.1
	65	35.7	.81	185	69	11.3
	67	36.8	.72	190	73	11.5
	69	37.9	.64	194	76	11.7
95	**63**	33.2	.94	212	73	12.6
	65	34.1	.87	239	76	12.8
	67	35.2	.77	246	80	13.0
	69	36.3	.67	250	83	13.3
115	**63**	28.9	.95	288	79	14.0
	65	29.8	.90	297	82	14.2
	67	30.7	.81	305	86	14.4
	69	31.7	.68	311	90	14.8

1062692
DB–1
7–15–92

Model or Style NO. 42DH–000092ZR

Electrical:	
Voltage/Cycles/Phase	208/230–60–1
Branch Circuit Ampacity	26.2
Wire Size/Max. Ft.	#10/50'
Time Delay Fuse Size	35
Max. Fuse/HACR Breaker	45
Fan Motor:	
H.P./Type	1/4/PSC
FLA/LRA	1.4/3.24
RPM	840
Run Cap. Mfd./Volts	5/370
Clearances: SEE INSTRUCTION MANUAL	

Service Driers:	
Liquid/Charge	16 Cu. In. / 11 Oz.
Suction	30 Sq. In.
Compressor:	
FLA/LRA	19.9 /107
Run Cap. Mfd./Volts	35 / 440
Acc. Start Kit	NONE
***Ref. Charge (R-22 Oz.)**	178
Line Size: (75 Ft. Max.) (40 Ft. Vertical Separation)	
Liquid	7/8" O. D.
Suction	3/8'"O.D.
***Lines not included:**	.25 oz./ft – 1/4" liq. line, .45 oz./ft. – 5/16" liq. line, .60 oz./ft. –3/8" liq. line

Heating Performance (70^{0}F D.B. at Cond. Inlet, 230V) — **Performance Data** — **Cooling Performance (80^{0}F D.B. at Evap. Inlet, 230V)**

Outdoor D.B. ^{0}F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise ^{0}F
–10	141	12	8.2	13.1	8.6
–5	146	16	9.1	16.0	10.6
0	152	18	9.9	18.7	12.4
5	158	21	10.5	21.4	14.2
10	164	25	11.2	24.2	16.0
15	171	29	11.8	27.0	17.8
20	178	33	12.3	30.5	20.1
25	186	37	12.9	34.6	22.9
30	194	42	13.5	38.6	25.5
35	203	46	14.1	35.2	23.3
40	212	52	14.9	38.4	25.4
45	220	57	15.8	41.7	27.6
50	230	62	16.7	45.0	29.8
55	240	68	17.8	48.2	31.9
60	250	72	19.0	51.7	34.2
65	261	78	20.5	54.8	36.2

Outdoor D.B. ^{0}F	Evaporator W.B. ^{0}F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	40.3	.88	169	68	13.6
	65	41.7	.80	175	71	13.8
	67	43.1	.72	178	74	14.0
	69	44.6	.63	182	77	14.3
95	**63**	38.4	.93	219	74	15.8
	65	39.7	.85	225	77	16.1
	67	41.0	.76	231	80	16.3
	69	42.4	.67	236	83	16.6
115	**63**	33.8	.98	272	80	17.8
	65	34.9	.89	280	84	18.1
	67	36.1	.80	287	87	18.4
	69	37.6	.70	294	90	18.8

1062693
LP–1
2–01–93

Technical Service Data Sheets 1063103 & 1063104

Style No:	18MHD-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	13.4	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14		MBh	16.2	16.7	18.0	19.4	15.8	16.3	17.6	18.9	15.4	15.9	17.2	18.4	14.6	15.1	16.3	17.5	13.6	14.0	15.1	16.2
Delay Fuse	15		S/T	0.87	0.77	0.59	0.38	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.96	0.86	0.65	0.42
Max. Fuse	20	75	AMPS	5.6	5.8	6.0	6.2	6.1	6.3	6.5	6.7	6.5	6.7	6.9	7.2	7.0	7.1	7.4	7.6	7.4	7.6	7.8	8.1
Compressor	COPELAND		HI PR	180	194	205	214	205	221	233	243	233	251	265	277	263	283	298	311	290	312	330	344
RLA	9		LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	76	83	89	74	79	86	92
LRA	42		MBh	16.5	16.8	18.0	19.2	16.1	16.4	17.5	18.8	15.7	16.0	17.1	18.3	14.9	15.2	16.3	17.4	13.8	14.1	15.1	16.1
Cap MFD/V	30 / 370		S/T	0.95	0.89	0.72	0.54	0.97	0.91	0.74	0.56	1.00	0.94	0.77	0.57	1.00	0.98	0.80	0.60	1.00	0.99	0.80	0.60
CC Heater	None	80	AMPS	5.7	5.8	6.0	6.2	6.2	6.3	6.5	6.8	6.6	6.8	7.0	7.3	7.0	7.2	7.4	7.7	7.4	7.6	7.9	8.2
Start Kit	None		HI PR	182	196	207	216	207	223	235	245	236	254	268	280	265	286	302	314	293	315	333	347
Fan Motor-HP	1 / 5		LO PR	63	68	74	78	66	70	77	82	69	74	80	86	73	77	84	90	75	80	87	93
Type	PSC		MBh	16.8	17.1	17.9	19.1	16.4	16.7	17.5	18.6	16.0	16.3	17.0	18.2	15.2	15.5	16.2	17.3	14.0	14.3	15.0	16.0
FLA	1.3		S/T	1.00	0.96	0.87	0.70	1.00	0.98	0.89	0.72	1.00	1.00	0.92	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
LRA	2.3	85	AMPS	5.8	5.9	6.1	6.3	6.2	6.4	6.6	6.8	6.7	6.8	7.1	7.3	7.1	7.3	7.5	7.8	7.5	7.7	8.0	8.3
RPM	1120		HI PR	184	198	209	218	209	225	238	248	238	256	271	282	268	288	305	318	296	319	336	351
Cap MFD/V	3/370		LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	21.6	20.5	19.3	18.0	17.2	16.7	15.5	14.3	12.0	11.1	10.2	9.7	9.3	8.3	7.4	6.4	5.5	4.5		
Low Amb	None		T/R	31.8	30.1	28.3	26.5	25.3	24.5	22.8	21.0	17.7	16.3	15.0	14.2	13.7	12.3	10.9	9.5	8.1	6.6		
Defrost	ElecTime-Temp		KW	1.66	1.63	1.60	1.57	1.55	1.54	1.51	1.48	1.61	1.58	1.54	1.52	1.51	1.47	1.44	1.40	1.36	1.33		
Sensor	31-51	70	AMPS	7.5	7.0	6.5	6.1	5.9	5.8	5.5	5.2	5.0	4.8	4.5	4.4	4.4	4.2	3.9	3.7	3.4	3.1		
Operating Chg	(R-22Oz)		COP	3.81	3.67	3.53	3.36	3.25	3.17	3.01	2.83	2.18	2.06	1.94	1.86	1.80	1.66	1.51	1.35	1.18	0.99		
(25 Ft Lines)*	80		EER	13.0	12.5	12.0	11.5	11.1	10.8	10.3	9.7	7.4	7.0	6.6	6.3	6.2	5.7	5.1	4.6	4.0	3.4		
Service Driers			HI PR	254	243	234	224	218	214	206	198	189	181	174	169	166	160	154	148	142	137		
Liquid/Chg	5CuIn/5oz		LO PR	74	69	64	59	56	54	49	44	40	35	31	29	28	24	20	17	15	12		
Suction	17SqIn	Calculated averaged performance data, for service applications for all matches.																			Part No:		
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																			**1063103**		

Style No:	24MHD-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	17	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14		MBh	22.4	23.0	24.9	26.8	21.8	22.5	24.3	26.1	21.3	21.9	23.8	25.5	20.2	20.8	22.6	24.2	18.8	19.3	20.9	22.4
Delay Fuse	20		S/T	0.84	0.75	0.57	0.37	0.86	0.77	0.58	0.38	0.89	0.80	0.60	0.39	0.92	0.83	0.63	0.40	0.93	0.83	0.63	0.41
Max. Fuse	25	75	AMPS	8.3	8.5	8.8	9.1	9.0	9.2	9.5	9.9	9.6	9.9	10.2	10.6	10.3	10.5	10.9	11.3	10.9	11.2	11.5	12.0
Compressor	COPELAND		HI PR	187	202	213	222	213	229	242	252	243	261	276	288	273	294	310	324	302	325	343	357
RLA	11.9		LO PR	62	66	72	77	64	69	75	80	68	72	79	84	71	75	82	88	73	78	85	91
LRA	59		MBh	22.8	23.3	24.9	26.6	22.2	22.7	24.3	25.9	21.7	22.2	23.7	25.3	20.6	21.1	22.5	24.0	19.1	19.5	20.8	22.3
Cap MFD/V	35 / 370		S/T	0.92	0.87	0.70	0.53	0.95	0.89	0.72	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.96	0.78	0.58
CC Heater	None	80	AMPS	8.3	8.5	8.8	9.2	9.1	9.3	9.6	10.0	9.7	10.0	10.3	10.7	10.4	10.6	11.0	11.4	11.0	11.3	11.6	12.1
Start Kit	None		HI PR	189	204	215	224	215	232	245	255	245	264	278	290	276	297	313	327	305	328	346	361
Fan Motor-HP	1 / 5		LO PR	63	67	73	77	65	69	76	80	68	73	79	85	72	76	83	89	74	79	86	92
Type	PSC		MBh	23.2	23.6	24.7	26.4	22.6	23.1	24.2	25.8	22.1	22.5	23.6	25.1	21.0	21.4	22.4	23.9	19.4	19.8	20.7	22.1
FLA	1.3		S/T	0.97	0.93	0.84	0.68	0.99	0.96	0.86	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.93	0.75	1.00	1.00	0.93	0.76
LRA	2.3	85	AMPS	8.4	8.6	8.9	9.3	9.2	9.4	9.7	10.1	9.8	10.1	10.4	10.8	10.5	10.7	11.1	11.5	11.1	11.4	11.8	12.2
RPM	1120		HI PR	191	206	217	226	217	234	247	258	248	266	281	293	278	300	316	330	308	331	350	365
Cap MFD/V	3/370		LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	80	87	93
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	31.1	29.5	27.8	25.9	24.8	24.0	22.3	20.6	18.4	17.0	15.6	14.8	14.2	12.7	11.3	9.9	8.4	6.9		
Low Amb	None		T/R	36.1	34.1	32.2	30.0	28.7	27.8	25.8	23.8	21.3	19.6	18.1	17.1	16.4	14.8	13.1	11.4	9.7	8.0		
Defrost	ElecTime-Temp		KW	2.30	2.25	2.21	2.16	2.14	2.12	2.08	2.03	2.08	2.03	1.99	1.96	1.94	1.89	1.85	1.80	1.75	1.71		
Sensor	31-51	70	AMPS	11.2	10.4	9.7	9.1	8.8	8.6	8.1	7.7	7.3	7.0	6.7	6.5	6.4	6.1	5.7	5.3	4.9	4.4		
Operating Chg	(R-22Oz)		COP	3.97	3.83	3.68	3.51	3.39	3.32	3.14	2.96	2.58	2.44	2.30	2.20	2.14	1.97	1.79	1.60	1.40	1.18		
(25 Ft Lines)*	94		EER	13.6	13.1	12.6	12.0	11.6	11.3	10.7	10.1	8.8	8.3	7.9	7.5	7.3	6.7	6.1	5.5	4.8	4.0		
Service Driers			HI PR	250	240	231	221	215	211	203	195	187	178	171	167	164	158	152	146	140	135		
Liquid/Chg	5CuIn/5oz		LO PR	73	68	63	58	55	53	49	43	39	35	31	29	27	23	20	17	15	12		
Suction	17SqIn	Calculated averaged performance data, for service applications for all matches.																			Part No:		
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																			**1063104**		

Technical Service Data Sheets 1063290 & 1063291

Model or Style NO. 48DH–000092ZR

Electrical:		**Service Driers:**	
Voltage/Cycles/Phase	208/230–60–1	Liquid/Charge	30 Cu. In. / 17 Oz.
Branch Circuit Ampacity	31.1	Suction	30 Sq. In.
Wire Size/Max. Ft.	#8/66'	**Compressor:**	
Time Delay Fuse Size	40	FLA/LRA	23.7 / 129
Max. Fuse/HACR Breaker	50	Run Cap. Mfd./Volts	40 / 440
		Acc. Start Kit	NONE
Fan Motor:		***Ref. Charge (R-22 Oz.)**	282
H.P./Type	1/4/PSC	**Line Size:** (75 Ft. Max.)	
FLA/LRA	1.4/3.24	(40 Ft. Vertical Separation)	
RPM	840	Liquid	3/8" O. D.
Run Cap. Mfd./Volts	5/370	Suction	7/8" O.D.
Clearances: SEE INSTRUCTION MANUAL		***Lines not included:**	.25 oz./ft – 1/4" liq. line, .45 oz./ft. – 5/16" liq. line, .60 oz./ft. –3/8" liq. line

Performance Data

Heating Performance (70°F D.B. at Cond. Inlet, 230V)

Outdoor D.B. °F	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.	BTUH 1000's	Indoor Rise °F
–10	148	12	10.0	14.6	8.4
–5	153	15	11.2	17.8	10.3
0	159	17	12.1	20.8	12.1
5	165	20	12.9	23.9	13.8
10	172	23	13.9	27.0	15.6
15	179	27	14.6	30.0	17.4
20	187	30	15.2	33.9	19.6
25	194	35	16.0	38.5	22.3
30	203	39	16.7	43.0	24.9
35	212	43	17.5	39.7	23.0
40	221	48	18.5	43.3	25.0
45	230	52	19.6	47.0	27.2
50	240	58	20.8	50.8	29.4
55	251	63	22.1	54.4	31.5
60	261	67	23.6	58.3	33.7
65	273	72	25.6	61.8	35.8

Cooling Performance (80°F D.B. at Evap. Inlet, 230V)

Outdoor D.B. °F	Evaporator W.B. °F	BTUH 1000's	Sens/Total Ratio	Pressure PSIG Disch.	Pressure PSIG Suct.	Unit Amps.
75	**63**	46.2	.89	168	67	16.5
	65	47.8	.81	173	70	16.8
	67	49.4	.73	177	73	17.0
	69	51.1	.63	181	75	17.3
95	**63**	44.0	.95	217	73	19.2
	65	45.5	.86	224	77	19.5
	67	47.0	.77	230	80	19.8
	69	48.6	.68	235	83	20.2
115	**63**	38.7	.99	270	79	21.6
	65	40.0	.90	278	83	22.0
	67	41.4	.81	285	86	22.4
	69	42.8	.70	292	89	22.8

1063290
LP–1
2–01–93

Style No:	**60DH-000092ZR**
Voltage	208-230
Phase	1
Ampacity	37.6
Wire Ga/Ft	8--51
Delay Fuse	45
Max. Fuse	60
Compressor	Copeland
RLA	28.8
FLA	169
Cap MFD/V	55/440
CC Heater	Strapon
Start Kit	None
Fan Motor-HP	1/4
Type	PSC
FLA	1.4
RLA	3.24
RPM	840
Cap MFD/V	5/370
PTCR	None
Hi Press	410
Low Press	5
Low Amb	None
Defrost	ElecTime-Temp
Sensor	36/51
Operating Chg	(R-22Oz)
(25 Ft Line)*	295
Service Driers	
Liquid/Chg	30CuIn/17oz
Suction	30SqIn
Unit Weight	NA

Outdoor Ambient Temperature - Degrees F. Dry Bub

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	**63**	**67**	**71**	**59**	**63**	**67**	**71**	**59**	**63**	**67**	**71**	**59**	**63**	**67**	**71**	**59**	**63**	**67**	**71**
75	**MBh**	55.0	56.7	61.3	65.8	53.7	55.3	59.9	64.3	52.4	54.0	58.4	62.7	49.8	51.3	55.5	59.6	46.1	47.5	51.4	55.2
	S/T	0.85	0.76	0.58	0.37	0.87	0.78	0.59	0.38	0.90	0.81	0.61	0.39	0.94	0.84	0.63	0.41	0.94	0.84	0.64	0.41
	AMPS	17.9	18.3	19.0	19.7	19.5	20.0	20.6	21.4	20.8	21.4	22.1	22.9	22.2	22.7	23.5	24.4	23.5	24.1	25.0	25.9
	HI PR	158	170	179	187	179	193	204	213	204	220	232	242	230	247	261	272	254	273	289	301
	LO PR	59	63	69	73	61	65	71	76	65	69	75	80	68	72	79	84	70	74	81	87
80	**MBh**	56.0	57.2	61.2	65.4	54.7	55.9	59.7	63.8	53.4	54.5	58.3	62.3	50.7	51.8	55.3	59.2	47.0	48.0	51.3	54.8
	S/T	0.93	0.88	0.71	0.53	0.96	0.90	0.73	0.55	0.99	0.93	0.76	0.56	1.00	0.96	0.78	0.59	1.00	0.97	0.79	0.59
	AMPS	18.1	18.5	19.1	19.9	19.7	20.1	20.8	21.6	21.0	21.6	22.3	23.1	22.4	23.0	23.7	24.7	23.8	24.4	25.2	26.2
	HI PR	159	171	181	189	181	195	206	215	206	222	235	245	232	250	264	275	257	276	291	304
	LO PR	60	64	69	74	62	66	72	77	65	69	76	81	68	73	79	85	71	75	82	87
85	**MBh**	57.0	58.1	60.9	64.9	55.6	56.7	59.4	63.4	54.3	55.3	58.0	61.8	51.6	52.6	55.1	58.7	47.8	48.7	51.0	54.4
	S/T	0.98	0.95	0.85	0.69	1.00	0.97	0.87	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.94	0.76	1.00	1.00	0.95	0.77
	AMPS	18.2	18.7	19.3	20.0	19.8	20.3	21.0	21.8	21.2	21.8	22.5	23.4	22.6	23.2	24.0	24.9	24.0	24.6	25.4	26.4
	HI PR	161	173	183	191	183	197	208	217	208	224	237	247	234	252	266	278	259	279	294	307
	LO PR	60	64	70	75	63	67	73	78	66	70	77	82	69	73	80	85	71	76	83	88

Heating Outdoor Ambient Temperature - Degrees F. Dry Bub

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	**MBh**	76.0	72.0	67.8	63.3	60.5	58.6	54.5	50.2	48.9	45.1	41.6	39.3	37.8	33.9	30.1	26.2	22.4	18.3
	T/R	39.1	37.0	34.9	32.6	31.1	30.2	28.0	25.8	25.2	23.2	21.4	20.2	19.4	17.4	15.5	13.5	11.5	9.4
	KW	5.54	5.43	5.31	5.20	5.14	5.09	4.99	4.88	5.03	4.91	4.80	4.73	4.68	4.56	4.45	4.33	4.21	4.10
	AMPS	27.8	25.7	24.0	22.5	21.7	21.3	20.0	19.0	18.1	17.3	16.5	16.1	15.8	15.0	14.0	13.1	12.1	10.8
	COP	4.02	3.88	3.73	3.56	3.44	3.37	3.20	3.01	2.84	2.69	2.54	2.43	2.36	2.17	1.98	1.77	1.55	1.31
	EER	13.7	13.3	12.8	12.2	11.8	11.5	10.9	10.3	9.7	9.2	8.7	8.3	8.1	7.4	6.8	6.1	5.3	4.5
	HI PR	264	253	243	233	227	223	214	206	197	188	181	176	173	166	160	154	148	143
	LO PR	73	68	64	58	55	53	49	43	39	35	31	29	28	23	20	17	15	12

*Add or Subtract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq

Part No: **1063291**

Technical Service Data Sheets 1064259 & 1064260

Style No:	36GH-000093ZR
Voltage	208-230
Phase	1
Ampacity	24.0
Wire Ga/Ft	12 -- 36
Delay Fuse	30
Max. Fuse	40
Compressor	Copeland
RLA	17.9
FLA	91
Cap MFD/V	35/440
CC Heater	None
Start Kit	None
Fan Motor-HP	1/3
Type	PSC
FLA	1.5
RLA	3.6
RPM	1100
Cap MFD/V	5/370
PTCR	None
Hi Press	410
Low Press	None
Low Amb	None
Defrost	Elec Time-Temp
Sensor	31-71
Operating Chg	(R-22 Oz)
(No Lines)*	112
Service Driers	
Liquid/Chg	16 Cu In / 11 oz
Suction	30 Sq In
Unit Weight	167

		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	33.1	34.1	36.9	39.6	32.3	33.3	36.0	38.7	31.5	32.5	35.1	37.7	30.0	30.8	33.4	35.8	27.7	28.6	30.9	33.2
	S/T	0.86	0.77	0.58	0.38	0.88	0.79	0.60	0.38	0.91	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.95	0.85	0.65	0.42
	AMPS	11.3	11.6	11.9	12.4	12.3	12.6	13.0	13.5	13.1	13.4	13.9	14.4	14.0	14.3	14.8	15.4	14.8	15.2	15.7	16.3
	HI PR	187	201	212	221	212	228	241	251	242	260	275	286	272	293	309	322	300	323	341	356
	LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	77	84	89	74	79	86	92
80	MBh	33.7	34.4	36.8	39.3	32.9	33.6	35.9	38.4	32.1	32.8	35.0	37.5	30.5	31.2	33.3	35.6	28.2	28.9	30.8	33.0
	S/T	0.94	0.89	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.60
	AMPS	11.4	11.7	12.1	12.5	12.4	12.7	13.1	13.6	13.2	13.6	14.0	14.6	14.1	14.5	15.0	15.5	15.0	15.3	15.9	16.5
	HI PR	188	203	214	223	214	231	244	254	244	263	277	289	275	296	312	325	303	327	345	360
	LO PR	63	68	74	79	66	70	77	82	69	74	81	86	73	77	84	90	75	80	87	93
85	MBh	34.3	34.9	36.6	39.0	33.5	34.1	35.7	38.1	32.7	33.3	34.9	37.2	31.0	31.6	33.1	35.3	28.7	29.3	30.7	32.7
	S/T	0.99	0.96	0.86	0.70	1.00	0.98	0.88	0.72	1.00	1.00	0.91	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
	AMPS	11.5	11.8	12.2	12.6	12.5	12.8	13.2	13.7	13.4	13.7	14.2	14.7	14.2	14.6	15.1	15.7	15.1	15.5	16.0	16.6
	HI PR	190	205	216	226	216	233	246	257	247	265	280	292	277	298	315	329	306	330	348	363
	LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94

Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	43.4	40.9	38.2	35.7	34.1	33.0	30.4	27.9	29.6	26.5	23.4	21.5	20.7	18.6	16.5	14.4	12.3	10.0
	T/R	34.2	32.3	30.1	28.1	26.8	26.0	23.9	22.0	23.4	20.9	18.4	16.9	16.3	14.6	13.0	11.3	9.7	7.9
	KW	3.36	3.30	3.23	3.16	3.13	3.10	3.04	2.97	3.07	3.00	2.93	2.89	2.87	2.79	2.73	2.66	2.59	2.52
	AMPS	15.4	14.3	13.3	12.5	12.1	11.8	11.2	10.6	10.1	9.7	9.2	9.0	8.9	8.4	7.8	7.4	6.8	6.1
	COP	3.78	3.64	3.46	3.30	3.19	3.12	2.93	2.75	2.82	2.59	2.33	2.18	2.11	1.95	1.77	1.58	1.39	1.17
	EER	12.9	12.4	11.8	11.3	10.9	10.7	10.0	9.4	9.6	8.8	8.0	7.4	7.2	6.6	6.0	5.4	4.7	4.0
	HI PR	252	241	232	222	216	212	204	196	188	179	172	168	165	159	153	146	141	136
	LO PR	70	65	61	56	53	51	47	42	37	33	29	27	26	22	19	16	14	11

*Add (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq

Part No: **1064259**

Style No:	42GH-000093ZR
Voltage	208-230
Phase	1
Ampacity	27.4
Wire Ga/Ft	10 -- 49
Delay Fuse	35
Max. Fuse	45
Compressor	Copeland
RLA	20.7
FLA	107
Cap MFD/V	35/440
CC Heater	None
Start Kit	None
Fan Motor-HP	1/3
Type	PSC
FLA	1.5
RLA	3.6
RPM	1110
Cap MFD/V	5/370
PTCR	None
Hi Press	410
Low Press	None
Low Amb	None
Defrost	Elec Time-Temp
Sensor	31-71
Operating Chg	(R-22 Oz)
(No Lines)*	178
Service Driers	
Liquid/Chg	16 Cu In / 11 oz
Suction	30 Sq In
Unit Weight	202

		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	39.7	40.9	44.2	47.5	38.7	39.9	43.2	46.3	37.8	38.9	42.1	45.2	35.9	37.0	40.0	43.0	33.3	34.2	37.1	39.8
	S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
	AMPS	14.0	14.4	14.9	15.4	15.3	15.6	16.2	16.8	16.3	16.7	17.3	18.0	17.4	17.8	18.4	19.1	18.4	18.9	19.5	20.3
	HI PR	175	188	198	207	198	214	226	235	226	243	257	268	254	274	289	301	281	302	319	333
	LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
80	MBh	40.4	41.3	44.1	47.1	39.4	40.3	43.1	46.0	38.5	39.3	42.0	44.9	36.5	37.3	39.9	42.7	33.9	34.6	37.0	39.5
	S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
	AMPS	14.2	14.5	15.0	15.6	15.4	15.8	16.3	16.9	16.5	16.9	17.5	18.1	17.6	18.0	18.6	19.3	18.6	19.1	19.7	20.5
	HI PR	176	190	200	209	200	216	228	238	228	246	259	271	257	276	292	304	284	305	323	336
	LO PR	64	69	75	80	67	71	78	83	70	75	82	87	74	78	86	91	76	81	89	94
85	MBh	41.1	41.9	43.9	46.8	40.1	40.9	42.8	45.7	39.1	39.9	41.8	44.6	37.2	37.9	39.7	42.4	34.4	35.1	36.8	39.2
	S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
	AMPS	14.3	14.6	15.1	15.7	15.6	15.9	16.5	17.1	16.6	17.0	17.6	18.3	17.7	18.2	18.8	19.5	18.8	19.3	19.9	20.7
	HI PR	178	192	202	211	202	218	230	240	231	248	262	273	259	279	295	308	287	309	326	340
	LO PR	65	69	76	81	68	72	79	84	71	76	83	88	74	79	86	92	77	82	89	95

Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	53.5	50.5	47.1	44.0	42.0	40.7	37.5	34.4	32.0	28.6	25.2	23.2	22.3	20.0	17.8	15.5	13.2	10.8
	T/R	35.4	33.4	31.1	29.1	27.8	26.9	24.8	22.7	21.2	18.9	16.7	15.3	14.8	13.3	11.8	10.2	8.7	7.2
	KW	3.88	3.81	3.73	3.66	3.62	3.59	3.51	3.44	3.40	3.32	3.25	3.21	3.18	3.10	3.03	2.95	2.88	2.81
	AMPS	20.6	19.1	17.8	16.8	16.1	15.8	14.9	14.1	13.5	12.9	12.3	12.0	11.8	11.2	10.4	9.8	9.0	8.1
	COP	4.03	3.88	3.69	3.52	3.40	3.32	3.12	2.92	2.75	2.52	2.27	2.12	2.06	1.89	1.72	1.53	1.34	1.13
	EER	13.8	13.3	12.6	12.0	11.6	11.4	10.7	10.0	9.4	8.6	7.8	7.2	7.0	6.5	5.9	5.2	4.6	3.9
	HI PR	253	242	233	223	217	213	205	197	189	180	173	169	166	159	153	147	142	137
	LO PR	71	66	61	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11

*Add (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq

Part No: **1064260**

Technical Service Data Sheets 1064688 & 1064689

Style No:	36GH-000094ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	24.0	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	33.1	34.1	36.9	39.6	32.3	33.3	36.0	38.7	31.5	32.5	35.1	37.7	30.0	30.8	33.4	35.8	27.7	28.6	30.9	33.2
Delay Fuse	30		S/T	0.86	0.77	0.58	0.38	0.88	0.79	0.60	0.38	0.91	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.95	0.85	0.65	0.42
Max. Fuse	40	75	AMPS	11.3	11.6	11.9	12.4	12.3	12.6	13.0	13.5	13.1	13.4	13.9	14.4	14.0	14.3	14.8	15.4	14.8	15.2	15.7	16.3
Compressor	Copeland		HI PR	187	201	212	221	212	228	241	251	242	260	275	286	272	293	309	322	300	323	341	356
RLA	17.9		LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	77	84	89	74	79	86	92
LRA	91		MBh	33.7	34.4	36.8	39.3	32.9	33.6	35.9	38.4	32.1	32.8	35.0	37.5	30.5	31.2	33.3	35.6	28.2	28.9	30.8	33.0
Cap MFD/V	50/370		S/T	0.94	0.89	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.60
CC Heater	None	80	AMPS	11.4	11.7	12.1	12.5	12.4	12.7	13.1	13.6	13.2	13.6	14.0	14.6	14.1	14.5	15.0	15.5	15.0	15.3	15.9	16.5
Start Kit	None		HI PR	188	203	214	223	214	231	244	254	244	263	277	289	275	296	312	325	303	327	345	360
Fan Motor-HP	1/3		LO PR	63	68	74	79	66	70	77	82	69	74	81	86	73	77	84	90	75	80	87	93
Type	PSC		MBh	34.3	34.9	36.6	39.0	33.5	34.1	35.7	38.1	32.7	33.3	34.9	37.2	31.0	31.6	33.1	35.3	28.7	29.3	30.7	32.7
FLA	1.5		S/T	0.99	0.96	0.86	0.70	1.00	0.98	0.88	0.72	1.00	1.00	0.91	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	11.5	11.8	12.2	12.6	12.5	12.8	13.2	13.7	13.4	13.7	14.2	14.7	14.2	14.6	15.1	15.7	15.1	15.5	16.0	16.6
RPM	1100		HI PR	190	205	216	226	216	233	246	257	247	265	280	292	277	298	315	329	306	330	348	363
Cap MFD/V	5/370		LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	410	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	43.4	40.9	38.2	35.7	34.1	33.0	30.4	27.9	29.6	26.5	23.4	21.5	20.7	18.6	16.5	14.4	12.3	10.0		
Low Amb	None		T/R	34.2	32.3	30.1	28.1	26.8	26.0	23.9	22.0	23.4	20.9	18.4	16.9	16.3	14.6	13.0	11.3	9.7	7.9		
Defrost	ElecTime-Temp		KW	3.36	3.30	3.23	3.16	3.13	3.10	3.04	2.97	3.07	3.00	2.93	2.89	2.87	2.79	2.73	2.66	2.59	2.52		
Sensor	31-71	70	AMPS	15.4	14.3	13.3	12.5	12.1	11.8	11.2	10.6	10.1	9.7	9.2	9.0	8.9	8.4	7.8	7.4	6.8	6.1		
Operating Chg	(R-22Oz)		COP	3.78	3.64	3.46	3.30	3.19	3.12	2.93	2.75	2.82	2.59	2.33	2.18	2.11	1.95	1.77	1.58	1.39	1.17		
(25 Ft Lines)*	112		EER	12.9	12.4	11.8	11.3	10.9	10.7	10.0	9.4	9.6	8.8	8.0	7.4	7.2	6.6	6.0	5.4	4.7	4.0		
Service Driers			HI PR	252	241	232	222	216	212	204	196	188	179	172	168	165	159	153	146	141	136		
Liquid/Chg	8 CuIn/7 oz		LO PR	70	65	61	56	53	51	47	42	37	33	29	27	26	22	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																					
Unit Weight	167	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1064688**																					

Style No:	42GH-000094ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	27.4	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	39.7	40.9	44.2	47.5	38.7	39.9	43.2	46.3	37.8	38.9	42.1	45.2	35.9	37.0	40.0	43.0	33.3	34.2	37.1	39.8
Delay Fuse	35		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	45	75	AMPS	14.0	14.4	14.9	15.4	15.3	15.6	16.2	16.8	16.3	16.7	17.3	18.0	17.4	17.8	18.4	19.1	18.4	18.9	19.5	20.3
Compressor	Copeland		HI PR	175	188	198	207	198	214	226	235	226	243	257	268	254	274	289	301	281	302	319	333
RLA	20.7		LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
LRA	107		MBh	40.4	41.3	44.1	47.1	39.4	40.3	43.1	46.0	38.5	39.3	42.0	44.9	36.5	37.3	39.9	42.7	33.9	34.6	37.0	39.5
Cap MFD/V	55/440		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	14.2	14.5	15.0	15.6	15.4	15.8	16.3	16.9	16.5	16.9	17.5	18.1	17.6	18.0	18.6	19.3	18.6	19.1	19.7	20.5
Start Kit	None		HI PR	176	190	200	209	200	216	228	238	228	246	259	271	257	276	292	304	284	305	323	336
Fan Motor-HP	1/3		LO PR	64	69	75	80	67	71	78	83	70	75	82	87	74	78	86	91	76	81	89	94
Type	PSC		MBh	41.1	41.9	43.9	46.8	40.1	40.9	42.8	45.7	39.1	39.9	41.8	44.6	37.2	37.9	39.7	42.4	34.4	35.1	36.8	39.2
FLA	1.5		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	14.3	14.6	15.1	15.7	15.6	15.9	16.5	17.1	16.6	17.0	17.6	18.3	17.7	18.2	18.8	19.5	18.8	19.3	19.9	20.7
RPM	1110		HI PR	178	192	202	211	202	218	230	240	231	248	262	273	259	279	295	308	287	309	326	340
Cap MFD/V	5/370		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	74	79	86	92	77	82	89	95
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	410	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	53.5	50.5	47.1	44.0	42.0	40.7	37.5	34.4	32.0	28.6	25.2	23.2	22.3	20.0	17.8	15.5	13.2	10.8		
Low Amb	None		T/R	35.4	33.4	31.1	29.1	27.8	26.9	24.8	22.7	21.2	18.9	16.7	15.3	14.8	13.3	11.8	10.2	8.7	7.2		
Defrost	ElecTime-Temp		KW	3.88	3.81	3.73	3.66	3.62	3.59	3.51	3.44	3.40	3.32	3.25	3.21	3.18	3.10	3.03	2.95	2.88	2.81		
Sensor	31-71	70	AMPS	20.6	19.1	17.8	16.8	16.1	15.8	14.9	14.1	13.5	12.9	12.3	12.0	11.8	11.2	10.4	9.8	9.0	8.1		
Operating Chg	(R-22Oz)		COP	4.03	3.88	3.69	3.52	3.40	3.32	3.12	2.92	2.75	2.52	2.27	2.12	2.06	1.89	1.72	1.53	1.34	1.13		
(25 Ft Lines)*	178		EER	13.8	13.3	12.6	12.0	11.6	11.4	10.7	10.0	9.4	8.6	7.8	7.2	7.0	6.5	5.9	5.2	4.6	3.9		
Service Driers			HI PR	253	242	233	223	217	213	205	197	189	180	173	169	166	159	153	147	142	137		
Liquid/Chg	16CuIn/11oz		LO PR	71	66	61	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																					
Unit Weight	202	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1064689**																					

Technical Service Data Sheets 1064934 & 1064935

Style No:	36MHC-000094ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	24.9	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire GA	12		MBh	33.1	34.1	36.9	39.6	32.3	33.2	36.0	38.6	31.5	32.4	35.1	37.7	29.9	30.8	33.3	35.8	27.7	28.5	30.9	33.2
Delay Fuse	30		S/T	0.89	0.80	0.60	0.39	0.91	0.82	0.62	0.40	0.94	0.84	0.64	0.41	0.98	0.88	0.66	0.43	0.99	0.88	0.67	0.43
Max. Fuse	40	75	AMPS	12.5	12.8	13.3	13.8	13.6	14.0	14.4	15.0	14.6	14.9	15.5	16.0	15.5	15.9	16.5	17.1	16.5	16.9	17.5	18.1
Compressor	Copeland		HI PR	193	208	220	229	220	236	250	260	250	269	284	297	281	303	320	334	311	335	353	369
RLA	18.7		LO PR	58	62	67	72	60	64	70	75	63	67	74	78	66	71	77	82	69	73	80	85
LRA	95		MBh	33.7	34.4	36.8	39.3	32.9	33.6	35.9	38.4	32.1	32.8	35.0	37.4	30.5	31.1	33.3	35.5	28.2	28.8	30.8	32.9
Cap MFD/V	50/370		S/T	0.98	0.92	0.75	0.56	1.00	0.94	0.77	0.57	1.00	0.97	0.79	0.59	1.00	1.00	0.82	0.61	1.00	1.00	0.83	0.62
CC Heater	-	80	AMPS	12.7	13.0	13.4	13.9	13.8	14.1	14.6	15.1	14.7	15.1	15.6	16.2	15.7	16.1	16.6	17.3	16.6	17.0	17.6	18.3
Start Kit	NAMA001SC01		HI PR	195	210	222	231	222	239	252	263	253	272	287	300	284	306	323	337	314	338	357	372
Fan Motor-HP	1/3		LO PR	59	62	68	72	61	65	71	75	64	68	74	79	67	71	78	83	69	74	81	86
Type	PSC		MBh	34.3	34.9	36.6	39.0	33.4	34.1	35.7	38.1	32.6	33.3	34.8	37.2	31.0	31.6	33.1	35.3	28.7	29.3	30.6	32.7
FLA	1.4		S/T	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.74	1.00	1.00	0.94	0.77	1.00	1.00	0.98	0.80	1.00	1.00	0.99	0.80
LRA	3.6	85	AMPS	12.8	13.1	13.5	14.0	13.9	14.2	14.7	15.3	14.9	15.2	15.7	16.4	15.8	16.2	16.8	17.4	16.8	17.2	17.8	18.5
RPM	1100		HI PR	197	212	224	234	224	241	255	266	255	275	290	303	287	309	326	340	317	341	361	376
Cap MFD/V	5/370		LO PR	59	63	69	73	62	65	71	76	65	69	75	80	68	72	79	84	70	75	81	87
PTCR	50ohm	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5 -- 20		MBh	45.3	42.8	40.4	37.7	36.0	34.9	32.4	29.9	25.9	23.9	22.0	20.8	20.0	18.0	15.9	13.9	11.9	9.7		
Low Amb	None		T/R	34.9	33.1	31.1	29.1	27.8	26.9	25.0	23.1	20.0	18.5	17.0	16.0	15.5	13.9	12.3	10.7	9.1	7.5		
Defrost	ElecTime-Temp		KW	3.59	3.52	3.45	3.38	3.34	3.31	3.24	3.17	3.00	2.93	2.86	2.82	2.79	2.73	2.66	2.59	2.52	2.46		
Sensor	31-51	70	AMPS	17.4	16.1	15.0	14.1	13.6	13.3	12.6	11.9	11.4	10.9	10.3	10.1	10.0	9.4	8.8	8.3	7.6	6.8		
Operating Chg	(R-22Oz)		COP	3.69	3.56	3.42	3.26	3.16	3.09	2.93	2.76	2.53	2.39	2.25	2.16	2.10	1.93	1.75	1.57	1.38	1.16		
(25 Ft Lines)*	101		EER	12.6	12.2	11.7	11.2	10.8	10.5	10.0	9.4	8.6	8.2	7.7	7.4	7.2	6.6	6.0	5.4	4.7	4.0		
Service Driers			HI PR	279	268	257	246	240	236	227	217	208	199	191	186	183	176	169	162	157	151		
Liquid/Chg	16CuIn/11oz		LO PR	67	62	58	53	50	48	44	40	36	32	28	26	25	21	18	15	14	11		
Suction	30SqIn																				Part No:	
Unit Weight	251	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																			**1064934**	

Style No:	42MHB-000093ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	27.3	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire GA	10		MBh	39.2	40.4	43.7	46.9	38.3	39.4	42.7	45.8	37.4	38.5	41.6	44.7	35.5	36.5	39.5	42.4	32.9	33.8	36.6	39.3
Delay Fuse	35		S/T	0.85	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.94	0.84	0.63	0.41
Max. Fuse	45	75	AMPS	15.7	16.1	16.6	17.2	17.1	17.5	18.1	18.7	18.2	18.7	19.3	20.1	19.4	19.9	20.6	21.4	20.6	21.1	21.8	22.7
Compressor	COPELAND		HI PR	195	210	222	231	222	239	252	263	253	272	287	299	284	306	323	337	314	338	357	372
RLA	20.8		LO PR	59	63	69	73	62	66	72	76	65	69	75	80	68	72	79	84	70	75	82	87
LRA	109		MBh	39.9	40.8	43.6	46.6	39.0	39.8	42.5	45.5	38.0	38.8	41.5	44.4	36.1	36.9	39.4	42.1	33.5	34.2	36.5	39.0
Cap MFD/V	60 / 370		S/T	0.93	0.87	0.71	0.53	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.96	0.78	0.58	1.00	0.96	0.78	0.59
CC Heater	None	80	AMPS	15.8	16.2	16.8	17.4	17.2	17.6	18.2	18.9	18.4	18.9	19.5	20.2	19.6	20.1	20.8	21.6	20.8	21.3	22.0	22.9
Start Kit	NAMA001SC01		HI PR	197	212	224	234	224	241	255	266	255	275	290	302	287	309	326	340	317	341	360	376
Fan Motor-HP	1/3		LO PR	60	64	70	74	62	66	72	77	65	70	76	81	69	73	80	85	71	75	82	88
Type	PSC		MBh	40.6	41.4	43.4	46.3	39.6	40.4	42.3	45.2	38.7	39.4	41.3	44.1	36.7	37.5	39.2	41.9	34.0	34.7	36.3	38.8
FLA	1.5		S/T	0.97	0.94	0.85	0.69	1.00	0.96	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.94	0.76
LRA	3.6	85	AMPS	16.0	16.4	16.9	17.5	17.4	17.8	18.4	19.1	18.6	19.0	19.7	20.4	19.8	20.3	21.0	21.8	21.0	21.5	22.2	23.1
RPM	1100		HI PR	199	214	226	236	226	244	257	268	258	277	293	305	290	312	330	344	320	345	364	380
Cap MFD/V	5/370		LO PR	61	64	70	75	63	67	73	78	66	70	77	82	69	74	80	86	72	76	83	89
PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	-	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5 -- 20		MBh	50.3	47.6	44.8	41.9	40.0	38.8	36.0	33.2	31.9	29.4	27.1	25.6	24.7	22.1	19.6	17.1	14.6	12.0		
Low Amb	None		T/R	35.8	33.9	31.9	29.8	28.5	27.6	25.6	23.6	22.7	21.0	19.3	18.2	17.6	15.8	14.0	12.2	10.4	8.5		
Defrost	ElecTime-Temp		KW	3.93	3.85	3.77	3.69	3.64	3.61	3.53	3.44	3.51	3.43	3.34	3.29	3.26	3.17	3.08	3.00	2.91	2.83		
Sensor	31 - 51	70	AMPS	19.0	17.6	16.5	15.5	14.9	14.6	13.8	13.1	12.5	12.0	11.4	11.1	11.0	10.4	9.7	9.2	8.5	7.6		
Operating Chg	(R-22Oz)		COP	3.74	3.62	3.48	3.32	3.22	3.15	2.99	2.82	2.66	2.52	2.37	2.28	2.22	2.04	1.86	1.67	1.47	1.24		
(25 Ft Lines)*	135		EER	12.8	12.4	11.9	11.4	11.0	10.8	10.2	9.6	9.1	8.6	8.1	7.8	7.6	7.0	6.4	5.7	5.0	4.2		
Service Driers			HI PR	253	242	233	223	217	213	205	197	188	180	173	169	166	159	153	147	142	137		
Liquid/Chg	16CuIn/11oz		LO PR	59	54	51	47	44	42	39	35	31	28	25	23	22	19	16	14	12	9		
Suction	30SqIn																				Part No:	
Unit Weight	273	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																			**1064935**	

Technical Service Data Sheets 1067042 & 1067043

Style No:	30MHB-000092CR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	18.1	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14		MBh	27.6	28.4	30.8	33.1	27.0	27.8	30.1	32.3	26.3	27.1	29.3	31.5	25.0	25.7	27.9	29.9	23.2	23.8	25.8	27.7
Delay Fuse	25		S/T	0.87	0.78	0.59	0.38	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.96	0.86	0.65	0.42
Max. Fuse	30	75	AMPS	10.0	10.3	10.6	11.0	10.9	11.2	11.6	12.0	11.7	12.0	12.4	12.8	12.4	12.7	13.2	13.7	13.2	13.5	14.0	14.5
Compressor	Copeland		HI PR	184	198	209	218	210	226	238	248	239	257	271	283	269	289	305	318	297	319	337	352
RLA	13.7		LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	80	87	93
FLA	75		MBh	28.1	28.7	30.7	32.8	27.5	28.1	30.0	32.0	26.8	27.4	29.2	31.3	25.4	26.0	27.8	29.7	23.6	24.1	25.7	27.5
Cap MFD/V	35/370		S/T	0.95	0.89	0.73	0.54	0.97	0.91	0.74	0.56	1.00	0.94	0.77	0.57	1.00	0.98	0.80	0.60	1.00	0.99	0.80	0.60
CC Heater	Internal	80	AMPS	10.1	10.4	10.7	11.1	11.0	11.3	11.7	12.1	11.8	12.1	12.5	13.0	12.5	12.9	13.3	13.8	13.3	13.6	14.1	14.6
Start Kit	NAMA001SC01		HI PR	186	200	211	221	212	228	241	251	241	259	274	286	271	292	308	321	300	322	341	355
Fan Motor-HP	1/6		LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
Type	PSC		MBh	28.6	29.2	30.5	32.6	27.9	28.5	29.8	31.8	27.3	27.8	29.1	31.0	25.9	26.4	27.6	29.5	24.0	24.4	25.6	27.3
FLA	1		S/T	1.00	0.96	0.87	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
RLA	2	85	AMPS	10.2	10.5	10.8	11.2	11.1	11.4	11.8	12.2	11.9	12.2	12.6	13.1	12.7	13.0	13.4	13.9	13.4	13.8	14.2	14.8
RPM	1100		HI PR	188	202	214	223	214	230	243	253	243	262	277	289	274	295	311	325	303	326	344	359
Cap MFD/V	5/370		LO PR	64	69	75	80	67	71	78	83	70	75	82	87	74	78	86	91	76	81	89	94
PTCR	50ohm	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	None		MBh	36.8	34.7	32.4	30.2	28.9	28.0	25.8	23.6	23.2	20.8	18.3	16.9	16.2	14.6	12.9	11.3	9.6	7.9		
Low Amb	None		T/R	34.1	32.1	30.0	28.0	26.7	25.9	23.9	21.9	21.5	19.3	17.0	15.6	15.0	13.5	12.0	10.4	8.9	7.3		
Defrost	Elec Time-Temp		KW	2.83	2.78	2.72	2.67	2.63	2.61	2.56	2.50	2.34	2.29	2.24	2.21	2.19	2.14	2.09	2.04	1.98	1.93		
Sensor	31-51	70	AMPS	13.0	12.0	11.2	10.6	10.2	10.0	9.4	8.9	8.5	8.2	7.8	7.6	7.5	7.1	6.6	6.2	5.7	5.2		
Operating Chg	(R-22 Oz)		COP	3.80	3.66	3.48	3.32	3.21	3.14	2.95	2.76	2.90	2.66	2.40	2.23	2.17	2.00	1.81	1.62	1.42	1.19		
(No Lines)*	101		EER	13.0	12.5	11.9	11.3	11.0	10.7	10.1	9.4	9.9	9.1	8.2	7.6	7.4	6.8	6.2	5.5	4.8	4.1		
Service Driers			HI PR	238	228	219	210	205	201	193	185	178	170	163	159	156	150	144	138	134	129		
Liquid/Chg	8 Cu In / 7 oz		LO PR	70	65	61	56	53	51	47	42	37	33	29	27	26	22	19	16	14	11		
Suction	30 Sq In																						
Unit Weight	246	*Add (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq																Part No:	**1067042**			

Style No:	36MHB-000092CR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	22.6	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	12		MBh	33.6	34.6	37.5	40.2	32.8	33.8	36.6	39.2	32.0	33.0	35.7	38.3	30.4	31.3	33.9	36.4	28.2	29.0	31.4	33.7
Delay Fuse	30		S/T	0.85	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.94	0.84	0.63	0.41
Max. Fuse	35	75	AMPS	12.2	12.5	13.0	13.4	13.3	13.6	14.1	14.6	14.2	14.6	15.1	15.7	15.2	15.5	16.1	16.7	16.1	16.5	17.0	17.7
Compressor	Copeland		HI PR	181	195	206	215	206	222	234	244	235	253	267	278	264	284	300	313	292	314	332	346
RLA	17.0		LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	81	87	73	77	84	90
FLA	96.0		MBh	34.2	34.9	37.3	39.9	33.4	34.1	36.4	39.0	32.6	33.3	35.6	38.0	30.9	31.6	33.8	36.1	28.7	29.3	31.3	33.5
Cap MFD/V	40/370		S/T	0.93	0.87	0.71	0.53	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.96	0.78	0.58	1.00	0.96	0.78	0.59
CC Heater	Internal	80	AMPS	12.4	12.7	13.1	13.6	13.4	13.8	14.2	14.8	14.4	14.7	15.2	15.8	15.3	15.7	16.2	16.8	16.2	16.6	17.2	17.9
Start Kit	NAMA001SC01		HI PR	183	197	208	217	208	224	237	247	237	255	269	281	267	287	303	316	295	317	335	349
Fan Motor-HP	1/3		LO PR	62	66	72	77	64	68	75	80	68	72	79	84	71	75	82	88	73	78	85	91
Type	PSC		MBh	34.8	35.5	37.2	39.6	34.0	34.6	36.3	38.7	33.1	33.8	35.4	37.7	31.5	32.1	33.6	35.9	29.2	29.7	31.1	33.2
FLA	1.4		S/T	0.97	0.94	0.85	0.69	1.00	0.96	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.94	0.76
RLA	3.6	85	AMPS	12.5	12.8	13.2	13.7	13.6	13.9	14.4	14.9	14.5	14.9	15.4	15.9	15.4	15.8	16.4	17.0	16.4	16.8	17.4	18.0
RPM	1110		HI PR	185	199	210	219	210	226	239	249	239	258	272	284	269	290	306	319	298	320	338	353
Cap MFD/V	5/370		LO PR	63	67	73	77	65	69	75	80	68	73	79	84	72	76	83	89	74	79	86	92
PTCR	50ohm	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	None		MBh	45.5	42.9	40.0	37.4	35.7	34.6	31.8	29.2	27.1	24.3	21.4	19.7	19.0	17.0	15.1	13.1	11.2	9.2		
Low Amb	None		T/R	36.6	34.5	32.2	30.1	28.7	27.8	25.6	23.5	21.9	19.6	17.2	15.8	15.3	13.7	12.1	10.6	9.0	7.4		
Defrost	Elec Time-Temp		KW	3.46	3.39	3.33	3.26	3.22	3.19	3.13	3.06	2.89	2.83	2.77	2.73	2.71	2.64	2.58	2.52	2.45	2.39		
Sensor	31-51	70	AMPS	16.5	15.2	14.3	13.4	12.9	12.7	11.9	11.3	10.8	10.4	9.9	9.6	9.5	9.0	8.4	7.9	7.3	6.6		
Operating Chg	(R-22 Oz)		COP	3.84	3.70	3.52	3.35	3.24	3.17	2.98	2.79	2.74	2.51	2.26	2.11	2.05	1.88	1.71	1.53	1.34	1.13		
(No Lines)*	114		EER	13.1	12.6	12.0	11.5	11.1	10.8	10.2	9.5	9.4	8.6	7.7	7.2	7.0	6.4	5.8	5.2	4.6	3.8		
Service Driers			HI PR	249	239	230	220	214	210	202	194	186	178	170	166	163	157	151	145	140	135		
Liquid/Chg	16 Cu In / 11 oz		LO PR	69	64	60	55	52	50	46	41	37	33	29	27	26	22	19	16	14	11		
Suction	30 Sq In																						
Unit Weight	251	*Add (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq																Part No:	**1067043**			

Technical Service Data Sheets 1067044 & 1067076

Style No:	24MHB-000092CR
Voltage	208-230
Phase	1
Ampacity	14.1
Wire Ga/Ft	14
Delay Fuse	20
Max. Fuse	20
Compressor	Copeland
RLA	10.8
FLA	56
Cap MFD/V	30/370
CC Heater	Internal
Start Kit	NAMA001SC01
Fan Motor-HP	1/8
Type	PSC
FLA	0.57
RLA	1.45
RPM	1120
Cap MFD/V	5/370
PTCR	50ohm
Hi Press	None
Low Press	None
Low Amb	None
Defrost	Elec Time-Temp
Sensor	31-51
Operating Chg	(R-22 Oz)
(No Lines)*	82
Service Driers	
Liquid/Chg	8 Cu In / 7 oz
Suction	30 Sq In
Unit Weight	219

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	21.5	22.2	24.0	25.8	21.0	21.7	23.4	25.2	20.5	21.1	22.9	24.5	19.5	20.1	21.7	23.3	18.1	18.6	20.1	21.6
	S/T	0.85	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.41	0.94	0.84	0.64	0.41
	AMPS	7.5	7.7	8.0	8.3	8.2	8.4	8.7	9.0	8.8	9.0	9.3	9.6	9.3	9.6	9.9	10.3	9.9	10.1	10.5	10.9
	HI PR	179	193	204	212	204	219	232	242	232	250	264	275	261	281	297	310	289	311	328	342
	LO PR	62	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87	73	78	85	90
80	MBh	21.9	22.4	23.9	25.6	21.4	21.9	23.4	25.0	20.9	21.3	22.8	24.4	19.8	20.3	21.7	23.2	18.4	18.8	20.1	21.4
	S/T	0.93	0.87	0.71	0.53	0.96	0.90	0.73	0.54	0.99	0.92	0.75	0.56	1.00	0.96	0.78	0.58	1.00	0.97	0.79	0.59
	AMPS	7.6	7.8	8.0	8.4	8.3	8.5	8.8	9.1	8.8	9.1	9.4	9.7	9.4	9.7	10.0	10.4	10.0	10.2	10.6	11.0
	HI PR	181	195	206	215	206	222	234	244	235	252	267	278	264	284	300	313	292	314	331	346
	LO PR	62	66	72	77	65	69	75	80	68	72	79	84	71	76	83	88	74	78	85	91
85	MBh	22.3	22.7	23.8	25.4	21.8	22.2	23.3	24.8	21.2	21.7	22.7	24.2	20.2	20.6	21.6	23.0	18.7	19.1	20.0	21.3
	S/T	0.98	0.94	0.85	0.69	1.00	0.97	0.87	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.94	0.76
	AMPS	7.7	7.9	8.1	8.4	8.3	8.6	8.8	9.2	8.9	9.2	9.5	9.8	9.5	9.8	10.1	10.5	10.1	10.3	10.7	11.1
	HI PR	183	197	208	217	208	224	236	247	237	255	269	281	267	287	303	316	295	317	335	349
	LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	76	83	89	74	79	86	92

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	29.9	28.2	26.3	24.6	23.5	22.7	20.9	19.2	17.8	15.9	14.0	12.9	12.4	11.1	9.9	8.6	7.4	6.0
	T/R	34.6	32.6	30.4	28.4	27.1	26.3	24.2	22.2	20.6	18.4	16.2	14.9	14.4	12.9	11.4	10.0	8.5	7.0
	KW	2.28	2.23	2.19	2.14	2.12	2.10	2.06	2.01	1.86	1.81	1.77	1.75	1.73	1.69	1.65	1.61	1.57	1.53
	AMPS	10.3	9.5	8.9	8.4	8.1	7.9	7.5	7.1	6.8	6.5	6.1	6.0	5.9	5.6	5.2	4.9	4.5	4.1
	COP	3.84	3.70	3.52	3.35	3.24	3.17	2.98	2.79	2.81	2.57	2.32	2.16	2.10	1.93	1.75	1.56	1.37	1.15
	EER	13.1	12.6	12.0	11.5	11.1	10.8	10.2	9.5	9.6	8.8	7.9	7.4	7.2	6.6	6.0	5.3	4.7	3.9
	HI PR	262	251	242	231	226	221	213	204	196	187	179	175	172	165	159	152	147	142
	LO PR	73	68	64	58	55	53	49	43	39	35	31	29	28	23	20	17	15	12

*Add (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq

Part No: **1067044**

Style No:	18DH-000092ZR
Voltage	208-230
Phase	1
Ampacity	12.8
Wire Ga/Ft	14--42
Delay Fuse	20
Max. Fuse	20
Compressor	Copeland
RLA	9.6
FLA	50
Cap MFD/V	25/370
CC Heater	None
Start Kit	None
Fan Motor-HP	1/8
Type	PSC
FLA	0.75
RLA	1.55
RPM	1030
Cap MFD/V	5/370
PTCR	None
Hi Press	410
Low Press	5
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(25 Ft Line)*	79
Service Driers	
Liquid/Chg	5CuIn/5oz
Suction	17SqIn
Unit Weight	143

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	18.0	18.5	20.0	21.5	17.5	18.0	19.5	21.0	17.1	17.6	19.1	20.5	16.2	16.7	18.1	19.4	15.0	15.5	16.8	18.0
	S/T	0.85	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.94	0.84	0.63	0.41
	AMPS	5.8	5.9	6.1	6.3	6.3	6.4	6.6	6.9	6.7	6.9	7.1	7.3	7.1	7.3	7.5	7.8	7.5	7.7	8.0	8.3
	HI PR	158	170	180	187	180	193	204	213	205	220	233	243	230	248	262	273	254	274	289	302
	LO PR	68	72	79	84	70	75	82	87	74	79	86	92	78	82	90	96	80	85	93	99
80	MBh	18.3	18.7	20.0	21.3	17.8	18.2	19.5	20.8	17.4	17.8	19.0	20.3	16.5	16.9	18.1	19.3	15.3	15.6	16.7	17.9
	S/T	0.93	0.87	0.71	0.53	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.96	0.78	0.58	1.00	0.96	0.78	0.59
	AMPS	5.9	6.0	6.2	6.4	6.3	6.5	6.7	6.9	6.8	6.9	7.2	7.4	7.2	7.4	7.6	7.9	7.6	7.8	8.0	8.3
	HI PR	160	172	181	189	182	195	206	215	207	223	235	245	233	250	264	276	257	277	292	305
	LO PR	68	73	80	85	71	76	83	88	75	80	87	92	78	83	91	97	81	86	94	100
85	MBh	18.6	19.0	19.9	21.2	18.2	18.5	19.4	20.7	17.7	18.1	18.9	20.2	16.8	17.1	18.0	19.2	15.6	15.9	16.6	17.7
	S/T	0.97	0.94	0.85	0.69	1.00	0.96	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.94	0.76
	AMPS	5.9	6.0	6.2	6.5	6.4	6.6	6.8	7.0	6.8	7.0	7.2	7.5	7.3	7.4	7.7	8.0	7.7	7.9	8.1	8.4
	HI PR	161	174	183	191	183	197	208	217	209	225	237	248	235	253	267	279	260	279	295	308
	LO PR	69	74	80	86	72	76	83	89	75	80	88	93	79	84	92	98	82	87	95	101

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	22.6	21.4	20.2	18.8	18.0	17.4	16.2	14.9	14.2	13.1	12.1	11.4	11.0	9.8	8.7	7.6	6.5	5.3
	T/R	34.9	33.1	31.1	29.1	27.8	26.9	25.0	23.1	21.9	20.2	18.6	17.6	16.9	15.2	13.5	11.8	10.0	8.2
	KW	1.75	1.72	1.68	1.65	1.63	1.61	1.58	1.55	1.64	1.61	1.57	1.55	1.53	1.49	1.45	1.42	1.38	1.34
	AMPS	8.3	7.7	7.3	6.8	6.6	6.5	6.1	5.8	5.6	5.3	5.1	5.0	4.9	4.7	4.4	4.1	3.8	3.5
	COP	3.78	3.65	3.51	3.35	3.24	3.16	3.00	2.83	2.53	2.39	2.25	2.16	2.10	1.93	1.76	1.57	1.38	1.16
	EER	12.9	12.5	12.0	11.4	11.1	10.8	10.3	9.7	8.6	8.2	7.7	7.4	7.2	6.6	6.0	5.4	4.7	4.0
	HI PR	225	216	208	198	194	190	183	175	168	160	154	150	148	142	137	131	126	122
	LO PR	77	72	67	62	58	56	52	46	41	37	32	30	29	25	21	18	16	12

*Add or Subtract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq

Part No: **1067076**

Technical Service Data Sheets 1067077 & 1067078

Style No:	24DH-000092ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	15.4	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14--33		MBh	22.7	23.4	25.3	27.1	22.1	22.8	24.7	26.5	21.6	22.2	24.1	25.8	20.5	21.1	22.9	24.5	19.0	19.6	21.2	22.7
Delay Fuse	20		S/T	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.91	0.81	0.61	0.40	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41
Max. Fuse	25	75	AMPS	7.3	7.5	7.7	8.0	7.9	8.1	8.3	8.7	8.4	8.6	8.9	9.3	9.0	9.2	9.5	9.8	9.5	9.7	10.0	10.4
Compressor	Copeland		HI PR	158	171	180	188	180	194	205	214	205	221	233	243	231	248	262	274	255	275	290	302
RLA	11.5		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	75	79	87	92	77	82	90	95
FLA	63.0		MBh	23.1	23.6	25.2	26.9	22.5	23.0	24.6	26.3	22.0	22.5	24.0	25.7	20.9	21.3	22.8	24.4	19.3	19.8	21.1	22.6
Cap MFD/V	30/370		S/T	0.94	0.88	0.72	0.54	0.96	0.90	0.74	0.55	1.00	0.93	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.59
CC Heater	None	80	AMPS	7.3	7.5	7.8	8.0	8.0	8.2	8.4	8.7	8.5	8.7	9.0	9.3	9.0	9.3	9.6	9.9	9.6	9.8	10.1	10.5
Start Kit	None		HI PR	160	172	182	190	182	196	207	216	207	223	236	246	233	251	265	276	258	277	293	305
Fan Motor-HP	1/6		LO PR	66	70	76	81	68	73	79	85	72	76	83	89	75	80	87	93	78	83	90	96
Type	PSC		MBh	23.5	23.9	25.1	26.8	22.9	23.4	24.5	26.1	22.4	22.8	23.9	25.5	21.2	21.7	22.7	24.2	19.7	20.1	21.0	22.4
FLA	1		S/T	0.99	0.95	0.86	0.70	1.00	0.98	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.94	0.77	1.00	1.00	0.95	0.77
RLA	2	85	AMPS	7.4	7.6	7.8	8.1	8.0	8.2	8.5	8.8	8.6	8.8	9.1	9.4	9.1	9.4	9.7	10.0	9.7	9.9	10.2	10.6
RPM	1110		HI PR	162	174	184	192	184	198	209	218	209	225	238	248	236	254	268	279	260	280	296	308
Cap MFD/V	5/370		LO PR	66	71	77	82	69	73	80	85	73	77	84	90	76	81	88	94	79	84	91	97
PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5		MBh	30.2	28.6	26.9	25.1	24.0	23.3	21.6	19.9	18.6	17.1	15.8	14.9	14.3	12.9	11.4	10.0	8.5	7.0		
Low Amb	None		T/R	34.9	33.1	31.1	29.1	27.8	26.9	25.0	23.1	21.5	19.8	18.3	17.2	16.6	14.9	13.2	11.5	9.8	8.1		
Defrost	ElecTime-Temp		KW	2.15	2.11	2.07	2.03	2.01	1.99	1.95	1.91	2.00	1.95	1.91	1.88	1.86	1.82	1.78	1.73	1.69	1.65		
Sensor	31-51	70	AMPS	10.2	9.4	8.8	8.3	8.0	7.8	7.4	7.0	6.7	6.4	6.1	6.0	5.9	5.6	5.3	5.0	4.6	4.1		
Operating Chg	(R-22Oz)		COP	4.10	3.95	3.80	3.62	3.50	3.42	3.24	3.05	2.72	2.57	2.42	2.32	2.25	2.07	1.88	1.68	1.47	1.24		
(25 Ft Line)*	104		EER	14.0	13.5	13.0	12.4	11.9	11.7	11.1	10.4	9.3	8.8	8.3	7.9	7.7	7.1	6.4	5.7	5.0	4.2		
Service Driers			HI PR	229	220	212	202	198	194	186	179	171	164	157	153	150	145	139	134	129	124		
Liquid/Chg	8CuIn/7oz		LO PR	79	73	69	63	59	57	53	47	42	38	33	31	30	25	22	18	16	13		
Suction	30SqIn																						
Unit Weight	NA	*Add or Subtract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq																Part No:	**1067077**			

Style No:	30DH-000092ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	17.8	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14--28		MBh	28.4	29.2	31.6	33.9	27.7	28.5	30.8	33.1	27.0	27.8	30.1	32.3	25.7	26.4	28.6	30.7	23.8	24.5	26.5	28.4
Delay Fuse	25		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	30	75	AMPS	9.2	9.4	9.7	10.1	10.0	10.2	10.6	11.0	10.7	10.9	11.3	11.7	11.4	11.6	12.0	12.5	12.0	12.3	12.8	13.2
Compressor	Copeland		HI PR	172	185	195	203	195	210	222	231	222	239	253	263	250	269	284	296	276	297	314	327
RLA	13.5		LO PR	65	69	75	80	67	72	78	83	71	75	82	87	74	79	86	92	77	82	89	95
FLA	76.0		MBh	28.9	29.5	31.5	33.7	28.2	28.8	30.8	32.9	27.5	28.1	30.0	32.1	26.1	26.7	28.5	30.5	24.2	24.7	26.4	28.2
Cap MFD/V	35/370		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	9.3	9.5	9.8	10.2	10.1	10.3	10.7	11.1	10.8	11.0	11.4	11.8	11.5	11.7	12.1	12.6	12.1	12.5	12.9	13.4
Start Kit	None		HI PR	173	186	197	205	197	212	224	234	224	242	255	266	253	272	287	299	279	300	317	331
Fan Motor-HP	1/6		LO PR	65	70	76	81	68	72	79	84	71	76	83	88	75	80	87	93	77	82	90	96
Type	PSC		MBh	29.4	29.9	31.3	33.4	28.7	29.2	30.6	32.6	28.0	28.5	29.9	31.8	26.6	27.1	28.4	30.3	24.6	25.1	26.3	28.0
FLA	1		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
RLA	2	85	AMPS	9.3	9.6	9.9	10.3	10.2	10.4	10.8	11.2	10.9	11.1	11.5	11.9	11.6	11.9	12.3	12.7	12.3	12.6	13.0	13.5
RPM	1110		HI PR	175	188	199	207	199	214	226	236	227	244	258	269	255	274	290	302	282	303	320	334
Cap MFD/V	5/370		LO PR	66	70	77	82	69	73	80	85	72	77	84	89	76	80	88	94	78	83	91	97
PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5		MBh	35.7	33.8	31.8	29.7	28.4	27.5	25.6	23.6	22.4	20.7	19.1	18.0	17.3	15.6	13.8	12.0	10.3	8.4		
Low Amb	None		T/R	33.1	31.3	29.5	27.5	26.3	25.5	23.7	21.8	20.8	19.2	17.7	16.7	16.1	14.4	12.8	11.1	9.5	7.8		
Defrost	ElecTime-Temp		KW	2.57	2.52	2.47	2.42	2.39	2.37	2.32	2.27	2.35	2.30	2.25	2.22	2.20	2.14	2.09	2.04	1.99	1.94		
Sensor	31-51	70	AMPS	13.0	12.0	11.3	10.6	10.2	10.0	9.4	8.9	8.6	8.2	7.8	7.6	7.5	7.1	6.6	6.2	5.7	5.2		
Operating Chg	(R-22Oz)		COP	4.07	3.93	3.77	3.60	3.48	3.40	3.22	3.03	2.79	2.64	2.48	2.38	2.31	2.12	1.93	1.72	1.51	1.27		
(25 Ft Line)*	115		EER	13.9	13.4	12.9	12.3	11.9	11.6	11.0	10.4	9.5	9.0	8.5	8.1	7.9	7.3	6.6	5.9	5.2	4.3		
Service Driers			HI PR	222	213	205	196	191	187	180	173	166	158	152	148	146	140	135	129	125	120		
Liquid/Chg	8CuIn/7oz		LO PR	71	66	62	57	53	51	47	42	38	34	30	28	27	23	19	16	14	11		
Suction	30SqIn																						
Unit Weight	NA	*Add or Subtract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq																Part No:	**1067078**			

Technical Service Data Sheets 1067079 & 1067080

Style No:	36DH-000092ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	23.4	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	12--37		MBh	33.3	34.2	37.1	39.8	32.5	33.4	36.2	38.8	31.7	32.6	35.3	37.9	30.1	31.0	33.5	36.0	27.9	28.7	31.1	33.3
Delay Fuse	30		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	40	75	AMPS	10.4	10.7	11.0	11.4	11.3	11.6	12.0	12.5	12.1	12.4	12.8	13.3	12.9	13.2	13.7	14.2	13.7	14.0	14.5	15.1
Compressor	COPELAND		HI PR	166	179	189	197	189	203	215	224	215	232	245	255	242	261	275	287	268	288	304	317
RLA	17.9		LO PR	62	66	72	77	65	69	75	80	68	72	79	84	71	76	83	88	74	79	86	91
FLA	91.0		MBh	33.9	34.6	37.0	39.5	33.0	33.8	36.1	38.6	32.2	32.9	35.2	37.6	30.6	31.3	33.4	35.7	28.4	29.0	31.0	33.1
Cap MFD/V	35/440		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	NONE	80	AMPS	10.5	10.8	11.1	11.6	11.4	11.7	12.1	12.6	12.2	12.5	13.0	13.5	13.0	13.4	13.8	14.4	13.8	14.2	14.7	15.2
Start Kit	NONE		HI PR	168	181	191	199	191	206	217	226	218	234	247	258	245	263	278	290	270	291	307	320
Fan Motor-HP	1/6		LO PR	63	67	73	78	65	70	76	81	69	73	80	85	72	77	84	89	75	79	87	92
Type	PSC		MBh	34.4	35.1	36.8	39.2	33.6	34.3	35.9	38.3	32.8	33.4	35.0	37.4	31.2	31.8	33.3	35.5	28.9	29.4	30.8	32.9
FLA	1		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
RLA	2	85	AMPS	10.6	10.9	11.2	11.7	11.5	11.8	12.2	12.7	12.4	12.7	13.1	13.6	13.2	13.5	14.0	14.5	14.0	14.3	14.8	15.4
RPM	1100		HI PR	170	183	193	201	193	208	219	229	220	236	250	260	247	266	281	293	273	294	310	324
Cap MFD/V	5/370		LO PR	64	68	74	79	66	70	77	82	69	74	81	86	73	77	85	90	75	80	87	93
PTCR	NONE	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5		MBh	46.5	44.0	41.5	38.7	37.0	35.9	33.3	30.7	29.2	26.9	24.8	23.4	22.5	20.2	17.9	15.6	13.3	10.9		
Low Amb	NONE		T/R	37.4	35.5	33.4	31.2	29.8	28.9	26.8	24.7	23.5	21.7	20.0	18.8	18.1	16.3	14.4	12.6	10.7	8.8		
Defrost	ElecTime-Temp		KW	3.35	3.28	3.22	3.15	3.12	3.09	3.02	2.96	3.03	2.97	2.90	2.86	2.83	2.76	2.69	2.63	2.56	2.49		
Sensor	31-51	70	AMPS	16.1	14.9	13.9	13.1	12.6	12.4	11.6	11.0	10.5	10.1	9.6	9.3	9.2	8.7	8.1	7.6	7.0	6.3		
Operating Chg	(R-22Oz)		COP	4.07	3.92	3.77	3.60	3.48	3.40	3.22	3.04	2.81	2.66	2.50	2.40	2.33	2.14	1.95	1.74	1.53	1.29		
(25 Ft Line)*	150		EER	13.9	13.4	12.9	12.3	11.9	11.6	11.0	10.4	9.6	9.1	8.6	8.2	8.0	7.3	6.7	6.0	5.2	4.4		
Service Driers			HI PR	272	261	251	240	234	229	221	212	203	194	186	182	178	171	165	158	153	147		
Liquid/Chg	16CuIn/11oz		LO PR	75	70	66	60	57	55	50	45	40	36	32	29	28	24	21	17	15	12		
Suction	30SqIn																					
Unit Weight	NA	*Add or Subtract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq																Part No:	**1067079**			

Style No:	42DH-000092ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	26.2	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	10--50		MBh	38.7	39.9	43.2	46.3	37.8	38.9	42.2	45.2	36.9	38.0	41.1	44.1	35.1	36.1	39.1	41.9	32.5	33.4	36.2	38.8
Delay Fuse	35		S/T	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.91	0.81	0.61	0.40	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41
Max. Fuse	45	75	AMPS	13.1	13.5	13.9	14.4	14.3	14.6	15.1	15.7	15.2	15.6	16.1	16.7	16.2	16.6	17.2	17.8	17.2	17.6	18.2	18.9
Compressor	Copeland		HI PR	155	167	177	184	177	190	201	209	201	217	229	239	226	244	257	268	250	269	284	296
RLA	19.9		LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	76	84	89	74	79	86	92
FLA	107		MBh	39.4	40.3	43.1	46.0	38.5	39.3	42.0	44.9	37.6	38.4	41.0	43.8	35.7	36.5	39.0	41.6	33.0	33.8	36.1	38.6
Cap MFD/V	35/440		S/T	0.94	0.88	0.72	0.54	0.96	0.90	0.74	0.55	1.00	0.93	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.59
CC Heater	None	80	AMPS	13.3	13.6	14.0	14.5	14.4	14.7	15.2	15.8	15.4	15.8	16.3	16.9	16.4	16.8	17.3	18.0	17.3	17.8	18.4	19.1
Start Kit	None		HI PR	157	169	178	186	178	192	203	212	203	219	231	241	229	246	260	271	253	272	287	299
Fan Motor-HP	1/4		LO PR	63	68	74	79	66	70	77	82	69	74	80	86	73	77	84	90	75	80	87	93
Type	PSC		MBh	40.1	40.9	42.8	45.7	39.2	39.9	41.8	44.6	38.2	39.0	40.8	43.5	36.3	37.0	38.8	41.3	33.6	34.3	35.9	38.3
FLA	1.4		S/T	0.99	0.95	0.86	0.70	1.00	0.98	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.94	0.77	1.00	1.00	0.95	0.77
RLA	3.24	85	AMPS	13.4	13.7	14.2	14.7	14.5	14.9	15.4	15.9	15.5	15.9	16.4	17.0	16.5	16.9	17.5	18.1	17.5	17.9	18.5	19.2
RPM	840		HI PR	159	171	180	188	180	194	205	214	205	221	233	243	231	249	262	274	255	275	290	302
Cap MFD/V	5/370		LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94
PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5		MBh	54.1	51.2	48.2	45.0	43.0	41.7	38.7	35.7	34.9	32.2	29.7	28.0	27.0	24.2	21.4	18.7	16.0	13.1		
Low Amb	None		T/R	35.7	33.8	31.9	29.8	28.4	27.6	25.6	23.6	23.1	21.3	19.6	18.5	17.8	16.0	14.2	12.4	10.6	8.6		
Defrost	ElecTime-Temp		KW	3.84	3.77	3.69	3.62	3.58	3.55	3.48	3.41	3.59	3.51	3.43	3.38	3.35	3.27	3.19	3.12	3.04	2.96		
Sensor	31-61	70	AMPS	20.5	19.0	17.8	16.7	16.1	15.8	14.9	14.1	13.5	12.9	12.3	12.0	11.8	11.2	10.5	9.9	9.1	8.2		
Operating Chg	(R-22Oz)		COP	4.12	3.98	3.82	3.64	3.52	3.44	3.26	3.07	2.85	2.69	2.53	2.42	2.35	2.16	1.96	1.76	1.54	1.29		
(25 Ft Line)*	193		EER	14.1	13.6	13.1	12.4	12.0	11.7	11.1	10.5	9.7	9.2	8.6	8.3	8.0	7.4	6.7	6.0	5.3	4.4		
Service Driers			HI PR	261	250	240	230	224	220	212	203	194	186	178	174	171	164	158	152	146	141		
Liquid/Chg	16CuIn/11oz		LO PR	78	72	68	62	59	57	52	46	42	37	33	31	29	25	21	18	16	12		
Suction	30SqIn																					
Unit Weight	NA	*Add or Subtract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq																Part No:	**1067080**			

Technical Service Data Sheets 1067081 & 1067304

Style No:	48DH-000092ZR
Voltage	208-230
Phase	1
Ampacity	31.1
Wire Ga/Ft	8--66
Delay Fuse	40
Max. Fuse	50
Compressor	Copeland
RLA	23.7
FLA	129
Cap MFD/V	40/440
CC Heater	Strapon
Start Kit	None
Fan Motor-HP	1/4
Type	PSC
FLA	1.4
RLA	3.24
RPM	840
Cap MFD/V	5/370
PTCR	None
Hi Press	410
Low Press	5
Low Amb	None
Defrost	ElecTime-Temp
Sensor	36/51
Operating Chg (25 Ft Line)*	(R-22Oz) 290
Service Driers	
Liquid/Chg	30CuIn/17oz
Suction	30SqIn
Unit Weight	NA

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	43.9	45.2	49.0	52.6	42.9	44.2	47.8	51.3	41.9	43.1	46.6	50.1	39.8	40.9	44.3	47.6	36.8	37.9	41.0	44.0
	S/T	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.87	0.66	0.42
	AMPS	15.5	15.8	16.4	17.0	16.8	17.2	17.8	18.5	18.0	18.4	19.0	19.7	19.1	19.6	20.2	21.0	20.3	20.8	21.5	22.3
	HI PR	153	165	174	182	174	187	198	206	198	213	225	235	223	240	254	265	247	265	280	292
	LO PR	62	66	72	77	64	68	75	80	68	72	78	84	71	75	82	88	73	78	85	91
80	MBh	44.7	45.7	48.8	52.2	43.7	44.6	47.7	51.0	42.6	43.5	46.5	49.7	40.5	41.3	44.2	47.2	37.5	38.3	40.9	43.7
	S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.78	0.58	1.00	0.99	0.80	0.60	1.00	1.00	0.81	0.61
	AMPS	15.6	16.0	16.5	17.1	17.0	17.4	17.9	18.6	18.1	18.6	19.2	19.9	19.3	19.8	20.4	21.2	20.4	21.0	21.7	22.5
	HI PR	155	166	176	183	176	189	200	209	200	216	228	237	225	243	256	267	249	268	283	295
	LO PR	63	66	73	77	65	69	75	80	68	73	79	84	72	76	83	88	74	79	86	91
85	MBh	45.5	46.4	48.6	51.8	44.4	45.3	47.4	50.6	43.3	44.2	46.3	49.4	41.2	42.0	44.0	46.9	38.1	38.9	40.7	43.4
	S/T	1.00	0.97	0.88	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
	AMPS	15.7	16.1	16.7	17.3	17.1	17.5	18.1	18.8	18.3	18.7	19.4	20.1	19.5	20.0	20.6	21.4	20.6	21.1	21.9	22.7
	HI PR	156	168	178	185	178	191	202	211	202	218	230	240	228	245	259	270	252	271	286	298
	LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	79	87	92

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	61.3	58.0	54.6	51.0	48.8	47.2	43.9	40.5	38.9	35.9	33.0	31.2	30.0	27.0	23.9	20.8	17.8	14.6
	T/R	35.5	33.6	31.6	29.5	28.2	27.3	25.4	23.4	22.5	20.8	19.1	18.1	17.4	15.6	13.8	12.1	10.3	8.4
	KW	4.74	4.65	4.55	4.46	4.41	4.37	4.28	4.19	4.27	4.18	4.08	4.03	3.99	3.89	3.80	3.70	3.61	3.51
	AMPS	25.7	23.8	22.2	20.9	20.1	19.7	18.6	17.6	16.8	16.1	15.3	14.9	14.7	13.9	13.0	12.2	11.2	10.1
	COP	3.79	3.65	3.51	3.35	3.24	3.16	3.00	2.83	2.66	2.51	2.37	2.27	2.20	2.03	1.84	1.65	1.44	1.21
	EER	12.9	12.5	12.0	11.4	11.1	10.8	10.2	9.7	9.1	8.6	8.1	7.7	7.5	6.9	6.3	5.6	4.9	4.1
	HI PR	285	273	263	251	245	241	231	222	213	203	195	190	187	180	173	166	160	154
	LO PR	70	64	60	55	52	50	46	41	37	33	29	27	26	22	19	16	14	11

*Add or Subtract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq

Part No: **1067081**

Style No:	18MHA-000089ZR
Voltage	208-230
Phase	1
Ampacity	13.1
Wire GA	14
Delay Fuse	20
Max. Fuse	20
Compressor	COPELAND
RLA	9.6
LRA	50
Cap MFD/V	25/370
CC Heater	None
Start Kit	None
Fan Motor-HP	1/6
Type	PSC
FLA	1.1
LRA	2
RPM	1110
Cap MFD/V	5/370
PTCR	None
Hi Press	410
Low Press	5 -- 20
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-71
Operating Chg (25 Ft Lines)*	(R-22Oz) 80
Service Driers	
Liquid/Chg	5CuIn/5oz
Suction	17SqIn
Unit Weight	216

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	17.5	18.0	19.5	20.9	17.1	17.6	19.0	20.4	16.7	17.1	18.6	19.9	15.8	16.3	17.6	18.9	14.7	15.1	16.3	17.5
	S/T	0.84	0.75	0.57	0.37	0.86	0.77	0.58	0.38	0.89	0.80	0.60	0.39	0.92	0.83	0.62	0.40	0.93	0.83	0.63	0.41
	AMPS	6.4	6.6	6.8	7.0	6.9	7.1	7.3	7.6	7.4	7.6	7.8	8.1	7.9	8.0	8.3	8.6	8.3	8.5	8.8	9.1
	HI PR	184	198	209	218	209	225	238	248	238	256	271	282	268	288	304	317	296	318	336	351
	LO PR	63	67	73	77	65	69	76	80	68	73	79	85	72	76	83	89	74	79	86	92
80	MBh	17.8	18.2	19.4	20.8	17.4	17.7	19.0	20.3	16.9	17.3	18.5	19.8	16.1	16.5	17.6	18.8	14.9	15.2	16.3	17.4
	S/T	0.92	0.86	0.70	0.53	0.94	0.89	0.72	0.54	0.98	0.91	0.74	0.56	1.00	0.95	0.77	0.58	1.00	0.96	0.78	0.58
	AMPS	6.5	6.6	6.8	7.1	7.0	7.2	7.4	7.7	7.5	7.6	7.9	8.2	7.9	8.1	8.4	8.7	8.4	8.6	8.9	9.2
	HI PR	186	200	211	220	211	227	240	250	241	259	273	285	271	291	307	321	299	322	340	354
	LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	80	87	93
85	MBh	18.1	18.5	19.3	20.6	17.7	18.0	18.9	20.1	17.2	17.6	18.4	19.6	16.4	16.7	17.5	18.7	15.2	15.5	16.2	17.3
	S/T	0.97	0.93	0.84	0.68	0.99	0.96	0.86	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.93	0.76
	AMPS	6.5	6.7	6.9	7.1	7.1	7.2	7.5	7.7	7.5	7.7	8.0	8.3	8.0	8.2	8.5	8.8	8.5	8.7	8.9	9.3
	HI PR	188	202	213	222	213	230	242	253	243	261	276	288	273	294	311	324	302	325	343	358
	LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	21.9	20.7	19.5	18.2	17.4	16.9	15.7	14.4	13.8	12.7	11.7	11.1	10.7	9.6	8.5	7.4	6.3	5.2
	T/R	33.8	32.0	30.1	28.1	26.9	26.0	24.2	22.3	21.3	19.7	18.1	17.1	16.5	14.8	13.1	11.4	9.8	8.0
	KW	1.87	1.83	1.80	1.76	1.74	1.72	1.69	1.65	1.70	1.66	1.62	1.60	1.58	1.54	1.50	1.47	1.43	1.39
	AMPS	8.4	7.8	7.3	6.9	6.7	6.6	6.2	5.9	5.7	5.4	5.2	5.1	5.0	4.8	4.5	4.2	3.9	3.6
	COP	3.42	3.30	3.17	3.03	2.93	2.86	2.71	2.56	2.38	2.25	2.12	2.03	1.97	1.82	1.65	1.48	1.30	1.09
	EER	11.7	11.3	10.8	10.3	10.0	9.8	9.3	8.7	8.1	7.7	7.2	6.9	6.7	6.2	5.6	5.0	4.4	3.7
	HI PR	255	244	235	224	219	215	207	198	190	181	174	170	167	161	154	148	143	138
	LO PR	70	65	60	55	52	50	46	41	37	33	29	27	26	22	19	16	14	11

Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1067304**

Technical Service Data Sheets 1067305 & 1067306

Style No:	24MHB-000092CR
Voltage	208-230
Phase	1
Ampacity	14.1
Wire GA	14
Delay Fuse	20
Max. Fuse	20
Compressor	Copeland
RLA	10.8
LRA	56
Cap MFD/V	30/370
CC Heater	Internal
Start Kit	NAMA001SC01
Fan Motor-HP	1/8
Type	PSC
FLA	0.57
LRA	1.45
RPM	1120
Cap MFD/V	5/370
PTCR	50ohm
Hi Press	None
Low Press	5 -- 20
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(25 Ft Lines)*	93
Service Driers	
Liquid/Chg	8CuIn/7oz
Suction	30SqIn
Unit Weight	219

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	21.5	22.2	24.0	25.8	21.0	21.7	23.4	25.2	20.5	21.1	22.9	24.5	19.5	20.1	21.7	23.3	18.1	18.6	20.1	21.6
	S/T	0.85	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.41	0.94	0.84	0.64	0.41
	AMPS	7.5	7.7	8.0	8.3	8.2	8.4	8.7	9.0	8.8	9.0	9.3	9.6	9.3	9.6	9.9	10.3	9.9	10.1	10.5	10.9
	HI PR	179	193	204	212	204	219	232	242	232	250	264	275	261	281	297	310	289	311	328	342
	LO PR	62	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87	73	78	85	90
80	MBh	21.9	22.4	23.9	25.6	21.4	21.9	23.4	25.0	20.9	21.3	22.8	24.4	19.8	20.3	21.7	23.2	18.4	18.8	20.1	21.4
	S/T	0.93	0.87	0.71	0.53	0.96	0.90	0.73	0.54	0.99	0.92	0.75	0.56	1.00	0.96	0.78	0.58	1.00	0.97	0.79	0.59
	AMPS	7.6	7.8	8.0	8.4	8.3	8.5	8.8	9.1	8.8	9.1	9.4	9.7	9.4	9.7	10.0	10.4	10.0	10.2	10.6	11.0
	HI PR	181	195	206	215	206	222	234	244	235	252	267	278	264	284	300	313	292	314	331	346
	LO PR	62	66	72	77	65	69	75	80	68	72	79	84	71	76	83	88	74	78	85	91
85	MBh	22.3	22.7	23.8	25.4	21.8	22.2	23.3	24.8	21.2	21.7	22.7	24.2	20.2	20.6	21.6	23.0	18.7	19.1	20.0	21.3
	S/T	0.98	0.94	0.85	0.69	1.00	0.97	0.87	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.94	0.76
	AMPS	7.7	7.9	8.1	8.4	8.3	8.6	8.8	9.2	8.9	9.2	9.5	9.8	9.5	9.8	10.1	10.5	10.1	10.3	10.7	11.1
	HI PR	183	197	208	217	208	224	236	247	237	255	269	281	267	287	303	316	295	317	335	349
	LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	76	83	89	74	79	86	92

Heating

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	29.9	28.2	26.3	24.6	23.5	22.7	20.9	19.2	17.8	15.9	14.0	12.9	12.4	11.1	9.9	8.6	7.4	6.0
	T/R	34.6	32.6	30.4	28.4	27.1	26.3	24.2	22.2	20.6	18.4	16.2	14.9	14.4	12.9	11.4	10.0	8.5	7.0
	KW	2.28	2.23	2.19	2.14	2.12	2.10	2.06	2.01	1.86	1.81	1.77	1.75	1.73	1.69	1.65	1.61	1.57	1.53
	AMPS	10.3	9.5	8.9	8.4	8.1	7.9	7.5	7.1	6.8	6.5	6.1	6.0	5.9	5.6	5.2	4.9	4.5	4.1
	COP	3.84	3.70	3.52	3.35	3.24	3.17	2.98	2.79	2.81	2.57	2.32	2.16	2.10	1.93	1.75	1.56	1.37	1.15
	EER	13.1	12.6	12.0	11.5	11.1	10.8	10.2	9.5	9.6	8.8	7.9	7.4	7.2	6.6	6.0	5.3	4.7	3.9
	HI PR	262	251	242	231	226	221	213	204	196	187	179	175	172	165	159	152	147	142
	LO PR	73	68	64	58	55	53	49	43	39	35	31	29	28	23	20	17	15	12

Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1067305**

Style No:	30MHB-000092CR
Voltage	208-230
Phase	1
Ampacity	18.1
Wire GA	14
Delay Fuse	25
Max. Fuse	30
Compressor	Copeland
RLA	13.7
LRA	75
Cap MFD/V	35/370
CC Heater	Internal
Start Kit	NAMA001SC01
Fan Motor-HP	1/6
Type	PSC
FLA	1
LRA	2
RPM	1100
Cap MFD/V	5/370
PTCR	50ohm
Hi Press	None
Low Press	5 -- 20
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(25 Ft Lines)*	112
Service Driers	
Liquid/Chg	8CuIn/7oz
Suction	30SqIn
Unit Weight	246

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	27.6	28.4	30.8	33.1	27.0	27.8	30.1	32.3	26.3	27.1	29.3	31.5	25.0	25.7	27.9	29.9	23.2	23.8	25.8	27.7
	S/T	0.87	0.78	0.59	0.38	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.96	0.86	0.65	0.42
	AMPS	10.0	10.3	10.6	11.0	10.9	11.2	11.6	12.0	11.7	12.0	12.4	12.8	12.4	12.7	13.2	13.7	13.2	13.5	14.0	14.5
	HI PR	184	198	209	218	210	226	238	248	239	257	271	283	269	289	305	318	297	319	337	352
	LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	80	87	93
80	MBh	28.1	28.7	30.7	32.8	27.5	28.1	30.0	32.0	26.8	27.4	29.2	31.3	25.4	26.0	27.8	29.7	23.6	24.1	25.7	27.5
	S/T	0.95	0.89	0.73	0.54	0.97	0.91	0.74	0.56	1.00	0.94	0.77	0.57	1.00	0.98	0.80	0.60	1.00	0.99	0.80	0.60
	AMPS	10.1	10.4	10.7	11.1	11.0	11.3	11.7	12.1	11.8	12.1	12.5	13.0	12.5	12.9	13.3	13.8	13.3	13.6	14.1	14.6
	HI PR	186	200	211	221	212	228	241	251	241	259	274	286	271	292	308	321	300	322	341	355
	LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
85	MBh	28.6	29.2	30.5	32.6	27.9	28.5	29.8	31.8	27.3	27.8	29.1	31.0	25.9	26.4	27.6	29.5	24.0	24.4	25.6	27.3
	S/T	1.00	0.96	0.87	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
	AMPS	10.2	10.5	10.8	11.2	11.1	11.4	11.8	12.2	11.9	12.2	12.6	13.1	12.7	13.0	13.4	13.9	13.4	13.8	14.2	14.8
	HI PR	188	202	214	223	214	230	243	253	243	262	277	289	274	295	311	325	303	326	344	359
	LO PR	64	69	75	80	67	71	78	83	70	75	82	87	74	78	86	91	76	81	89	94

Heating

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	36.8	34.7	32.4	30.2	28.9	28.0	25.8	23.6	23.2	20.8	18.3	16.9	16.2	14.6	12.9	11.3	9.6	7.9
	T/R	34.1	32.1	30.0	28.0	26.7	25.9	23.9	21.9	21.5	19.3	17.0	15.6	15.0	13.5	12.0	10.4	8.9	7.3
	KW	2.83	2.78	2.72	2.67	2.63	2.61	2.56	2.50	2.34	2.29	2.24	2.21	2.19	2.14	2.09	2.04	1.98	1.93
	AMPS	13.0	12.0	11.2	10.6	10.2	10.0	9.4	8.9	8.5	8.2	7.8	7.6	7.5	7.1	6.6	6.2	5.7	5.2
	COP	3.80	3.66	3.48	3.32	3.21	3.14	2.95	2.76	2.90	2.66	2.40	2.23	2.17	2.00	1.81	1.62	1.42	1.19
	EER	13.0	12.5	11.9	11.3	11.0	10.7	10.1	9.4	9.9	9.1	8.2	7.6	7.4	6.8	6.2	5.5	4.8	4.1
	HI PR	238	228	219	210	205	201	193	185	178	170	163	159	156	150	144	138	134	129
	LO PR	70	65	61	56	53	51	47	42	37	33	29	27	26	22	19	16	14	11

Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1067306**

Technical Service Data Sheets 1067307 & 1067309

Style No:	36MHB-000092CR
Voltage	208-230
Phase	1
Ampacity	22.6
Wire GA	12
Delay Fuse	30
Max. Fuse	35
Compressor	Copeland
RLA	17.0
LRA	96.0
Cap MFD/V	40/370
CC Heater	Internal
Start Kit	NAMA001SC01
Fan Motor-HP	1/3
Type	PSC
FLA	1.4
LRA	3.6
RPM	1110
Cap MFD/V	5/370
PTCR	50ohm
Hi Press	None
Low Press	5 -- 20
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(25 Ft Lines)*	125
Service Driers	
Liquid/Chg	16CuIn/11oz
Suction	30SqIn
Unit Weight	251

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	33.8	34.8	37.7	40.4	33.0	34.0	36.8	39.5	32.2	33.2	35.9	38.5	30.6	31.5	34.1	36.6	28.3	29.2	31.6	33.9
	S/T	0.85	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.41	0.94	0.84	0.64	0.41
	AMPS	12.3	12.6	13.0	13.5	13.4	13.7	14.2	14.7	14.3	14.7	15.2	15.8	15.3	15.6	16.2	16.8	16.2	16.6	17.1	17.8
	HI PR	182	196	207	216	207	223	235	246	236	254	268	280	265	286	302	315	293	316	333	348
	LO PR	62	66	72	77	64	69	75	80	68	72	79	84	71	75	82	88	73	78	85	91
80	MBh	34.4	35.2	37.6	40.2	33.6	34.3	36.7	39.2	32.8	33.5	35.8	38.2	31.1	31.8	34.0	36.3	28.8	29.5	31.5	33.7
	S/T	0.93	0.87	0.71	0.53	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.96	0.78	0.58	1.00	0.97	0.79	0.59
	AMPS	12.4	12.7	13.2	13.7	13.5	13.9	14.3	14.9	14.5	14.8	15.3	15.9	15.4	15.8	16.3	16.9	16.3	16.7	17.3	18.0
	HI PR	184	198	209	218	209	225	238	248	238	257	271	283	268	289	305	318	296	319	337	351
	LO PR	63	67	73	77	65	69	76	80	68	73	79	85	72	76	83	89	74	79	86	92
85	MBh	35.0	35.7	37.4	39.9	34.2	34.8	36.5	38.9	33.3	34.0	35.6	38.0	31.7	32.3	33.8	36.1	29.3	29.9	31.3	33.4
	S/T	0.97	0.94	0.85	0.69	1.00	0.96	0.87	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.94	0.76
	AMPS	12.6	12.9	13.3	13.8	13.6	14.0	14.5	15.0	14.6	15.0	15.5	16.1	15.5	15.9	16.5	17.1	16.5	16.9	17.5	18.1
	HI PR	186	200	211	220	211	227	240	251	241	259	274	285	271	291	308	321	299	322	340	355
	LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	80	87	93

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	45.1	42.6	40.2	37.5	35.8	34.7	32.3	29.7	24.7	22.8	21.0	19.8	19.1	17.1	15.2	13.3	11.3	9.3
	T/R	36.3	34.3	32.3	30.2	28.9	28.0	26.0	24.0	19.9	18.4	16.9	16.0	15.4	13.8	12.2	10.7	9.1	7.5
	KW	3.47	3.40	3.34	3.27	3.23	3.20	3.14	3.07	2.91	2.85	2.79	2.75	2.72	2.66	2.59	2.53	2.46	2.40
	AMPS	16.4	15.2	14.2	13.3	12.9	12.6	11.9	11.3	10.8	10.3	9.8	9.6	9.4	9.0	8.4	7.9	7.3	6.5
	COP	3.80	3.67	3.52	3.36	3.25	3.18	3.01	2.84	2.48	2.34	2.21	2.11	2.05	1.89	1.72	1.53	1.34	1.13
	EER	13.0	12.5	12.0	11.5	11.1	10.9	10.3	9.7	8.5	8.0	7.5	7.2	7.0	6.5	5.9	5.2	4.6	3.9
	HI PR	249	239	229	219	214	210	202	194	186	177	170	166	163	157	151	145	140	135
	LO PR	69	64	60	55	52	50	46	41	37	33	29	27	26	22	19	16	14	11

Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1067307**

Style No:	48MH-000087CR
Voltage	208-230
Phase	1
Ampacity	30.9
Wire GA	10
Delay Fuse	40
Max. Fuse	50
Compressor	COPELAND
RLA	23.5
LRA	95.4
Cap MFD/V	40/440
CC Heater	INSERTION
Start Kit	NAMA001SC
Fan Motor-HP	1/4
Type	PSC
FLA	1.5
LRA	3.1
RPM	1110
Cap MFD/V	5/440
PTCR	None
Hi Press	410
Low Press	5 -- 20
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-71
Operating Chg	(R-22Oz)
(25 Ft Lines)*	226
Service Driers	
Liquid/Chg	30CuIn/17oz
Suction	30SqIn
Unit Weight	318

Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	43.3	44.6	48.2	51.8	42.3	43.5	47.1	50.5	41.2	42.5	45.9	49.3	39.2	40.3	43.7	46.9	36.3	37.4	40.4	43.4
	S/T	0.43	0.39	0.29	0.19	0.44	0.40	0.30	0.19	0.46	0.41	0.31	0.20	0.48	0.43	0.32	0.21	0.48	0.43	0.32	0.21
	AMPS	5.8	6.0	6.3	6.6	6.5	6.7	7.0	7.3	7.0	7.2	7.5	7.9	7.6	7.8	8.1	8.5	8.1	8.4	8.7	9.1
	HI PR	107	115	122	127	122	131	138	144	139	149	158	164	156	168	177	185	172	185	196	204
	LO PR	31	33	36	39	32	35	38	40	34	36	40	42	36	38	42	44	37	39	43	46
80	MBh	44.1	45.0	48.1	51.4	43.0	44.0	47.0	50.2	42.0	42.9	45.8	49.0	39.9	40.7	43.5	46.5	36.9	37.7	40.3	43.1
	S/T	0.47	0.45	0.36	0.27	0.49	0.46	0.37	0.28	0.50	0.47	0.38	0.29	0.52	0.49	0.40	0.30	0.53	0.49	0.40	0.30
	AMPS	5.9	6.1	6.3	6.6	6.6	6.8	7.0	7.4	7.1	7.3	7.6	8.0	7.7	7.9	8.2	8.6	8.2	8.5	8.8	9.2
	HI PR	108	116	123	128	123	132	140	146	140	151	159	166	158	170	179	187	174	187	198	206
	LO PR	32	34	37	39	33	35	38	41	34	37	40	43	36	38	42	45	37	40	43	46
85	MBh	44.8	45.7	47.9	51.1	43.8	44.6	46.7	49.8	42.7	43.5	45.6	48.6	40.6	41.3	43.3	46.2	37.6	38.3	40.1	42.8
	S/T	0.50	0.48	0.43	0.35	0.51	0.49	0.44	0.36	0.53	0.51	0.46	0.37	0.55	0.53	0.48	0.39	0.55	0.53	0.48	0.39
	AMPS	6.0	6.2	6.4	6.7	6.6	6.8	7.1	7.4	7.2	7.4	7.7	8.1	7.8	8.0	8.3	8.7	8.3	8.6	8.9	9.3
	HI PR	109	118	124	129	124	134	141	147	141	152	161	168	159	171	181	189	176	189	200	208
	LO PR	32	34	37	39	33	35	39	41	35	37	40	43	36	39	42	45	38	40	44	47

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	60.0	56.8	53.5	50.0	47.8	46.3	43.0	39.6	30.5	28.1	25.9	24.5	23.6	21.1	18.7	16.3	14.0	11.4
	T/R	69.5	65.8	62.0	57.9	55.3	53.6	49.7	45.9	35.3	32.6	30.0	28.3	27.3	24.5	21.7	18.9	16.1	13.2
	KW	2.32	2.28	2.23	2.18	2.16	2.14	2.09	2.05	1.72	1.68	1.65	1.62	1.61	1.57	1.53	1.49	1.46	1.42
	AMPS	10.9	10.0	9.2	8.5	8.2	8.0	7.4	7.0	6.6	6.2	5.8	5.7	5.6	5.2	4.7	4.3	3.9	3.3
	COP	7.56	7.31	7.03	6.70	6.48	6.34	6.01	5.67	5.18	4.89	4.61	4.41	4.29	3.94	3.58	3.20	2.80	2.36
	EER	25.8	25.0	24.0	22.9	22.1	21.7	20.5	19.4	17.7	16.7	15.7	15.1	14.6	13.5	12.2	10.9	9.6	8.1
	HI PR	134	129	124	118	116	113	109	105	100	96	92	90	88	85	82	78	75	73
	LO PR	38	35	33	30	29	28	26	23	20	18	16	15	14	12	11	9	8	6

Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1067309**

Technical Service Data Sheets 1067310 & 1067311

Style No:	60MH-000087B
Voltage	208-230
Phase	1
Ampacity	38.3
Wire GA	10
Delay Fuse	50
Max. Fuse	60
Compressor	BRISTOL
RLA	29.2
LRA	138
Cap MFD/V	45/440
CC Heater	INSERTION
Start Kit	NAMA001SC
Fan Motor-HP	1/4
Type	PSC
FLA	1.5
LRA	3.1
RPM	1110
Cap MFD/V	5/440
PTCR	50 ohm
Hi Press	410
Low Press	5 -- 20
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-71
Operating Chg	(R-22Oz)
(25 Ft Lines)*	260
Service Driers	
Liquid/Chg	30CuIn/17oz
Suction	30SqIn
Unit Weight	318

Outdoor Ambient Temperature - Degrees F. Dry Bub

		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
	MBh	54.3	55.9	60.6	65.0	53.0	54.6	59.1	63.4	51.8	53.3	57.7	61.9	49.2	50.6	54.8	58.8	45.5	46.9	50.8	54.5
	S/T	0.84	0.75	0.57	0.37	0.86	0.77	0.58	0.38	0.89	0.80	0.60	0.39	0.92	0.83	0.63	0.40	0.93	0.83	0.63	0.41
75	AMPS	19.5	20.0	20.7	21.5	21.3	21.8	22.5	23.4	22.8	23.3	24.1	25.1	24.3	24.9	25.7	26.7	25.7	26.4	27.3	28.3
	HI PR	170	183	193	202	194	208	220	229	220	237	250	261	248	267	282	294	274	295	311	325
	LO PR	61	65	71	75	63	67	74	78	66	71	77	82	70	74	81	86	72	77	84	89
	MBh	55.3	56.5	60.4	64.5	54.0	55.2	58.9	63.0	52.7	53.8	57.5	61.5	50.0	51.1	54.6	58.4	46.3	47.4	50.6	54.1
	S/T	0.92	0.86	0.70	0.53	0.95	0.89	0.72	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.96	0.78	0.58
80	AMPS	19.7	20.2	20.9	21.7	21.5	22.0	22.7	23.6	23.0	23.5	24.3	25.3	24.5	25.1	26.0	27.0	26.0	26.6	27.5	28.6
	HI PR	172	185	195	204	195	210	222	232	223	240	253	264	250	270	285	297	277	298	314	328
	LO PR	62	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87	73	77	85	90
	MBh	56.3	57.4	60.1	64.1	54.9	56.0	58.6	62.6	53.6	54.6	57.2	61.0	50.9	51.9	54.4	58.0	47.2	48.1	50.3	53.7
	S/T	0.97	0.93	0.84	0.68	0.99	0.96	0.86	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.93	0.76
85	AMPS	19.9	20.4	21.1	21.9	21.7	22.2	23.0	23.8	23.2	23.8	24.6	25.5	24.7	25.3	26.2	27.2	26.2	26.9	27.8	28.9
	HI PR	174	187	197	206	197	212	224	234	225	242	256	267	253	272	287	300	280	301	318	331
	LO PR	62	66	72	77	65	69	75	80	68	72	79	84	71	76	83	88	74	78	85	91

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bub

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
	MBh	71.3	67.5	63.6	59.4	56.8	55.0	51.1	47.1	38.9	35.9	33.0	31.2	30.0	27.0	23.9	20.8	17.8	14.6
	T/R	35.7	33.8	31.8	29.7	28.4	27.5	25.6	23.6	19.5	18.0	16.5	15.6	15.0	13.5	12.0	10.4	8.9	7.3
	KW	5.84	5.72	5.61	5.49	5.43	5.38	5.27	5.15	4.47	4.37	4.27	4.21	4.18	4.08	3.98	3.89	3.79	3.69
70	AMPS	27.1	25.0	23.4	22.0	21.2	20.7	19.5	18.5	17.7	16.9	16.1	15.7	15.4	14.6	13.6	12.8	11.8	10.6
	COP	3.58	3.45	3.32	3.16	3.06	2.99	2.84	2.67	2.55	2.40	2.26	2.17	2.11	1.94	1.76	1.57	1.37	1.16
	EER	12.2	11.8	11.3	10.8	10.5	10.2	9.7	9.1	8.7	8.2	7.7	7.4	7.2	6.6	6.0	5.4	4.7	3.9
	HI PR	281	269	259	247	242	237	228	219	209	200	192	187	184	177	170	163	157	152
	LO PR	72	67	63	57	54	52	48	43	39	34	30	28	27	23	20	17	15	11

Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1067310**

Style No:	36MH-0000873CR
Voltage	208-230
Phase	3
Ampacity	16
Wire GA	12
Delay Fuse	20
Max. Fuse	25
Compressor	Copeland
RLA	11.5
LRA	65
Cap MFD/V	
CC Heater	Internal
Start Kit	
Fan Motor-HP	1/3
Type	PSC
FLA	1.5
LRA	3.6
RPM	1110
Cap MFD/V	5/370
PTCR	
Hi Press	410
Low Press	5 -- 20
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(25 Ft Lines)*	180
Service Driers	
Liquid/Chg	16CuIn/11oz
Suction	30SqIn
Unit Weight	269

Outdoor Ambient Temperature - Degrees F. Dry Bub

		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
	MBh	30.5	31.4	34.0	36.5	29.8	30.7	33.2	35.6	29.1	29.9	32.4	34.8	27.6	28.4	30.8	33.0	25.6	26.3	28.5	30.6
	S/T	0.82	0.74	0.56	0.36	0.84	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.81	0.61	0.39	0.91	0.82	0.62	0.40
75	AMPS	10.9	11.2	11.5	12.0	11.9	12.2	12.6	13.0	12.7	13.0	13.4	13.9	13.5	13.8	14.3	14.8	14.3	14.7	15.2	15.7
	HI PR	174	187	197	206	198	213	224	234	225	242	256	267	253	272	288	300	280	301	318	331
	LO PR	59	63	69	73	62	66	72	76	65	69	75	80	68	72	79	84	70	75	82	87
	MBh	31.1	31.7	33.9	36.3	30.3	31.0	33.1	35.4	29.6	30.2	32.3	34.5	28.1	28.7	30.7	32.8	26.0	26.6	28.4	30.4
	S/T	0.90	0.85	0.69	0.52	0.93	0.87	0.71	0.53	0.96	0.90	0.73	0.55	0.99	0.93	0.76	0.57	1.00	0.94	0.76	0.57
80	AMPS	11.0	11.3	11.7	12.1	12.0	12.3	12.7	13.2	12.8	13.1	13.6	14.1	13.6	14.0	14.4	15.0	14.4	14.8	15.3	15.9
	HI PR	175	189	199	208	199	215	227	236	227	245	258	269	256	275	290	303	282	304	321	335
	LO PR	60	64	70	74	62	66	72	77	65	70	76	81	69	73	80	85	71	75	82	88
	MBh	31.6	32.2	33.7	36.0	30.9	31.5	32.9	35.1	30.1	30.7	32.1	34.3	28.6	29.2	30.5	32.6	26.5	27.0	28.3	30.2
	S/T	0.95	0.91	0.82	0.67	0.97	0.94	0.85	0.69	1.00	0.97	0.87	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.91	0.74
85	AMPS	11.1	11.4	11.8	12.2	12.1	12.4	12.8	13.3	12.9	13.2	13.7	14.2	13.7	14.1	14.6	15.1	14.6	14.9	15.4	16.0
	HI PR	177	191	201	210	201	217	229	239	229	247	261	272	258	278	293	306	285	307	324	338
	LO PR	61	64	70	75	63	67	73	78	66	70	77	82	69	74	80	86	72	76	83	89

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bub

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
	MBh	42.5	40.2	37.9	35.4	33.8	32.8	30.4	28.1	24.4	22.5	20.7	19.6	18.8	16.9	15.0	13.1	11.1	9.1
	T/R	34.2	32.4	30.5	28.5	27.2	26.4	24.5	22.6	19.6	18.1	16.7	15.7	15.2	13.6	12.1	10.5	9.0	7.4
	KW	3.58	3.51	3.43	3.36	3.32	3.29	3.23	3.16	3.01	2.94	2.88	2.84	2.81	2.74	2.67	2.61	2.54	2.47
70	AMPS	17.0	15.7	14.7	13.8	13.3	13.0	12.3	11.7	11.1	10.6	10.1	9.9	9.7	9.2	8.6	8.1	7.5	6.7
	COP	3.48	3.36	3.23	3.08	2.98	2.91	2.76	2.60	2.37	2.24	2.11	2.02	1.96	1.80	1.64	1.47	1.29	1.08
	EER	11.9	11.5	11.0	10.5	10.2	9.9	9.4	8.9	8.1	7.6	7.2	6.9	6.7	6.2	5.6	5.0	4.4	3.7
	HI PR	288	276	265	253	248	243	233	224	215	205	197	192	189	181	174	167	161	156
	LO PR	76	70	66	60	57	55	51	45	41	36	32	30	29	24	21	18	15	12

Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1067311**

Technical Service Data Sheets 1067314 & 1067315

Style No:	18GH-000090ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	12.5	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	17.5	18.0	19.5	21.0	17.1	17.6	19.1	20.5	16.7	17.2	18.6	20.0	15.9	16.3	17.7	19.0	14.7	15.1	16.4	17.6
Delay Fuse	20		S/T	0.84	0.75	0.57	0.37	0.86	0.77	0.58	0.37	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.93	0.83	0.63	0.40
Max. Fuse	20	75	AMPS	5.9	6.1	6.3	6.5	6.4	6.6	6.8	7.0	6.9	7.0	7.2	7.5	7.3	7.5	7.7	8.0	7.7	7.9	8.1	8.4
Compressor	Copeland		HI PR	164	177	187	195	187	201	212	221	213	229	242	252	239	258	272	284	265	285	301	314
RLA	9.6		LO PR	65	70	76	81	68	72	79	84	71	76	83	88	75	80	87	93	77	82	90	96
LRA	50		MBh	17.8	18.2	19.5	20.8	17.4	17.8	19.0	20.3	17.0	17.4	18.6	19.8	16.1	16.5	17.6	18.8	15.0	15.3	16.3	17.5
Cap MFD/V	25/370		S/T	0.92	0.86	0.70	0.52	0.94	0.88	0.72	0.54	0.97	0.91	0.74	0.56	1.00	0.95	0.77	0.58	1.00	0.96	0.78	0.58
CC Heater	None	80	AMPS	6.0	6.1	6.3	6.6	6.5	6.6	6.9	7.1	6.9	7.1	7.3	7.6	7.3	7.5	7.8	8.0	7.8	8.0	8.2	8.5
Start Kit	None		HI PR	166	179	189	197	189	203	214	224	215	231	244	255	242	260	275	287	267	288	304	317
Fan Motor-HP	1/6		LO PR	66	70	77	82	69	73	80	85	72	77	84	89	76	80	88	93	78	83	91	97
Type	PSC		MBh	18.2	18.5	19.4	20.7	17.7	18.1	18.9	20.2	17.3	17.6	18.5	19.7	16.4	16.7	17.5	18.7	15.2	15.5	16.2	17.3
FLA	1.1		S/T	0.96	0.93	0.84	0.68	0.99	0.95	0.86	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.93	0.75
LRA	2	85	AMPS	6.0	6.2	6.4	6.6	6.5	6.7	6.9	7.2	7.0	7.1	7.4	7.6	7.4	7.6	7.8	8.1	7.8	8.0	8.3	8.6
RPM	1100		HI PR	168	180	190	199	191	205	217	226	217	234	247	257	244	263	278	289	270	290	307	320
Cap MFD/V	5/370		LO PR	67	71	77	82	69	74	81	86	73	77	85	90	76	81	89	94	79	84	92	98

PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20	MBh	22.5	21.3	20.1	18.8	17.9	17.4	16.1	14.9	13.8	12.7	11.7	11.1	10.7	9.6	8.5	7.4	6.3	5.2
Low Amb	None	T/R	34.8	32.9	31.0	28.9	27.6	26.8	24.9	22.9	21.3	19.6	18.1	17.1	16.4	14.8	13.1	11.4	9.7	8.0
Defrost	ElecTime-Temp	KW	1.83	1.79	1.76	1.72	1.70	1.69	1.65	1.62	1.67	1.63	1.59	1.57	1.56	1.52	1.48	1.44	1.41	1.37
Sensor	31-71	AMPS	8.6	8.0	7.5	7.0	6.8	6.7	6.3	6.0	5.7	5.5	5.2	5.1	5.1	4.8	4.5	4.3	3.9	3.6
Operating Chg	(R-22Oz)	COP	3.61	3.48	3.35	3.19	3.08	3.01	2.86	2.69	2.42	2.29	2.15	2.06	2.00	1.84	1.67	1.50	1.31	1.10
(25 Ft Lines)*	86	EER	12.3	11.9	11.4	10.9	10.5	10.3	9.8	9.2	8.3	7.8	7.4	7.0	6.8	6.3	5.7	5.1	4.5	3.8
Service Driers		HI PR	253	242	233	223	217	213	205	197	189	180	173	169	166	159	153	147	142	137
Liquid/Chg	5 CuIn/5 oz	LO PR	77	71	67	61	58	56	51	46	41	37	32	30	29	24	21	18	16	12
Suction	17 SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																	Part No:	
Unit Weight	134	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																	**1067314**	

Style No:	24GH-000090ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	15.4	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	22.6	23.3	25.2	27.1	22.1	22.7	24.6	26.4	21.5	22.2	24.0	25.8	20.5	21.1	22.8	24.5	19.0	19.5	21.1	22.7
Delay Fuse	20		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	25	75	AMPS	7.2	7.3	7.6	7.9	7.8	8.0	8.2	8.5	8.3	8.5	8.8	9.1	8.8	9.1	9.4	9.7	9.4	9.6	9.9	10.3
Compressor	COPELAND		HI PR	168	181	191	199	191	205	217	226	217	234	247	258	244	263	278	290	270	291	307	320
RLA	11.5		LO PR	64	68	75	80	67	71	78	83	70	75	82	87	74	78	85	91	76	81	88	94
LRA	63		MBh	23.0	23.5	25.1	26.9	22.5	23.0	24.5	26.2	21.9	22.4	23.9	25.6	20.8	21.3	22.7	24.3	19.3	19.7	21.1	22.5
Cap MFD/V	30/370		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	7.2	7.4	7.7	7.9	7.9	8.0	8.3	8.6	8.4	8.6	8.9	9.2	8.9	9.1	9.4	9.8	9.4	9.7	10.0	10.4
Start Kit	None		HI PR	169	182	193	201	193	207	219	228	220	236	249	260	247	266	281	293	273	294	310	323
Fan Motor-HP	1/6		LO PR	65	69	75	80	68	72	78	83	71	75	82	88	74	79	86	92	77	82	89	95
Type	PSC		MBh	23.4	23.9	25.0	26.7	22.9	23.3	24.4	26.0	22.3	22.7	23.8	25.4	21.2	21.6	22.6	24.1	19.6	20.0	21.0	22.4
FLA	1		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
LRA	2	85	AMPS	7.3	7.5	7.7	8.0	7.9	8.1	8.4	8.7	8.5	8.7	9.0	9.3	9.0	9.2	9.5	9.9	9.5	9.8	10.1	10.5
RPM	1100		HI PR	171	184	194	203	195	209	221	231	222	239	252	263	249	268	283	296	276	297	313	327
Cap MFD/V	5/370		LO PR	66	70	76	81	68	73	79	84	72	76	83	89	75	80	87	93	78	83	90	96

PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20	MBh	28.7	27.1	25.6	23.9	22.8	22.1	20.5	18.9	17.8	16.4	15.1	14.3	13.8	12.4	11.0	9.6	8.2	6.7
Low Amb	None	T/R	33.2	31.4	29.6	27.6	26.4	25.6	23.8	21.9	20.6	19.0	17.5	16.6	15.9	14.3	12.7	11.1	9.4	7.7
Defrost	ElecTime-Temp	KW	2.28	2.24	2.20	2.15	2.13	2.11	2.07	2.03	2.14	2.09	2.04	2.02	2.00	1.95	1.90	1.86	1.81	1.76
Sensor	31-71	AMPS	10.4	9.7	9.1	8.5	8.2	8.1	7.6	7.2	6.9	6.6	6.3	6.2	6.1	5.8	5.4	5.1	4.7	4.2
Operating Chg	(R-22Oz)	COP	3.67	3.54	3.40	3.24	3.13	3.06	2.90	2.73	2.44	2.30	2.17	2.08	2.02	1.85	1.68	1.51	1.32	1.11
(25 Ft Lines)*	84	EER	12.5	12.1	11.6	11.1	10.7	10.5	9.9	9.3	8.3	7.9	7.4	7.1	6.9	6.3	5.8	5.1	4.5	3.8
Service Driers		HI PR	250	239	230	220	215	211	203	195	186	178	171	167	164	158	152	145	140	135
Liquid/Chg	8 CuIn/7 oz	LO PR	71	66	62	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																	Part No:	
Unit Weight	140	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																	**1067315**	

Technical Service Data Sheets 1067316 & 1067317

Style No:	30GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	18.6	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	27.4	28.2	30.5	32.8	26.8	27.5	29.8	32.0	26.1	26.9	29.1	31.2	24.8	25.5	27.6	29.7	23.0	23.6	25.6	27.5
Delay Fuse	25		S/T	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.87	0.66	0.42
Max. Fuse	30	75	AMPS	9.3	9.6	9.9	10.3	10.2	10.4	10.8	11.2	10.9	11.1	11.5	12.0	11.6	11.9	12.3	12.8	12.3	12.6	13.0	13.5
Compressor	COPELAND		HI PR	180	193	204	213	204	220	232	242	233	250	264	276	262	282	297	310	289	311	329	343
RLA	14.1		LO PR	65	69	75	80	67	71	78	83	70	75	82	87	74	79	86	91	76	81	89	95
LRA	76		MBh	27.9	28.5	30.5	32.6	27.2	27.8	29.7	31.8	26.6	27.1	29.0	31.0	25.2	25.8	27.6	29.5	23.4	23.9	25.5	27.3
Cap MFD/V	35/370		S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.78	0.58	1.00	0.99	0.80	0.60	1.00	1.00	0.81	0.61
CC Heater	None	80	AMPS	9.4	9.7	10.0	10.4	10.3	10.5	10.9	11.3	11.0	11.3	11.6	12.1	11.7	12.0	12.4	12.9	12.4	12.7	13.1	13.7
Start Kit	None		HI PR	181	195	206	215	206	222	235	245	235	253	267	279	264	285	300	313	292	314	332	346
Fan Motor-HP	1/6		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	75	79	87	92	77	82	90	95
Type	PSC		MBh	28.4	28.9	30.3	32.3	27.7	28.2	29.6	31.6	27.0	27.6	28.9	30.8	25.7	26.2	27.4	29.2	23.8	24.2	25.4	27.1
FLA	1		S/T	1.00	0.97	0.88	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
LRA	2	85	AMPS	9.5	9.8	10.1	10.5	10.4	10.6	11.0	11.4	11.1	11.4	11.7	12.2	11.8	12.1	12.5	13.0	12.5	12.8	13.3	13.8
RPM	1110		HI PR	183	197	208	217	208	224	237	247	237	255	270	281	267	287	303	317	295	318	335	350
Cap MFD/V	5/370		LO PR	66	70	77	81	68	73	80	85	72	77	84	89	75	80	88	93	78	83	91	96

PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20		MBh	35.8	33.9	31.9	29.8	28.5	27.6	25.7	23.7	22.8	21.0	19.4	18.3	17.6	15.8	14.0	12.2	10.4	8.5
Low Amb	None		T/R	33.2	31.4	29.6	27.6	26.4	25.6	23.8	21.9	21.1	19.5	17.9	16.9	16.3	14.6	13.0	11.3	9.6	7.9
Defrost	ElecTime-Temp		KW	2.71	2.66	2.60	2.55	2.52	2.50	2.45	2.40	2.49	2.43	2.38	2.34	2.32	2.26	2.21	2.15	2.10	2.04
Sensor	31-71	70	AMPS	12.9	11.9	11.1	10.5	10.1	9.9	9.3	8.8	8.5	8.1	7.7	7.5	7.4	7.0	6.5	6.1	5.7	5.1
Operating Chg	(R-22Oz)		COP	3.87	3.74	3.59	3.42	3.31	3.24	3.07	2.89	2.68	2.53	2.38	2.28	2.22	2.04	1.86	1.66	1.45	1.22
(25 Ft Lines)*	109		EER	13.2	12.8	12.3	11.7	11.3	11.1	10.5	9.9	9.2	8.6	8.1	7.8	7.6	7.0	6.3	5.7	5.0	4.2
Service Driers			HI PR	239	229	220	210	205	201	194	186	178	170	163	159	156	150	145	139	134	129
Liquid/Chg	16CuIn/11oz		LO PR	68	63	59	54	51	49	45	40	36	32	29	27	26	22	19	16	14	11
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																		Part No:	
Unit Weight	160	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																		**1067316**	

Style No:	36GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	24.0	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	33.1	34.1	36.9	39.6	32.3	33.3	36.0	38.7	31.5	32.5	35.1	37.7	30.0	30.8	33.4	35.8	27.7	28.6	30.9	33.2
Delay Fuse	30		S/T	0.86	0.77	0.58	0.38	0.88	0.79	0.60	0.38	0.91	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.95	0.85	0.65	0.42
Max. Fuse	40	75	AMPS	11.3	11.6	11.9	12.4	12.3	12.6	13.0	13.5	13.1	13.4	13.9	14.4	14.0	14.3	14.8	15.4	14.8	15.2	15.7	16.3
Compressor	Copeland		HI PR	187	201	212	221	212	228	241	251	242	260	275	286	272	293	309	322	300	323	341	356
RLA	17.9		LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	77	84	89	74	79	86	92
LRA	91		MBh	33.7	34.4	36.8	39.3	32.9	33.6	35.9	38.4	32.1	32.8	35.0	37.5	30.5	31.2	33.3	35.6	28.2	28.9	30.8	33.0
Cap MFD/V	35/440		S/T	0.94	0.89	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.60
CC Heater	None	80	AMPS	11.4	11.7	12.1	12.5	12.4	12.7	13.1	13.6	13.2	13.6	14.0	14.6	14.1	14.5	15.0	15.5	15.0	15.3	15.9	16.5
Start Kit	None		HI PR	188	203	214	223	214	231	244	254	244	263	277	289	275	296	312	325	303	327	345	360
Fan Motor-HP	1/3		LO PR	63	68	74	79	66	70	77	82	69	74	81	86	73	77	84	90	75	80	87	93
Type	PSC		MBh	34.3	34.9	36.6	39.0	33.5	34.1	35.7	38.1	32.7	33.3	34.9	37.2	31.0	31.6	33.1	35.3	28.7	29.3	30.7	32.7
FLA	1.5		S/T	0.99	0.96	0.86	0.70	1.00	0.98	0.88	0.72	1.00	1.00	0.91	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	11.5	11.8	12.2	12.6	12.5	12.8	13.2	13.7	13.4	13.7	14.2	14.7	14.2	14.6	15.1	15.7	15.1	15.5	16.0	16.6
RPM	1100		HI PR	190	205	216	226	216	233	246	257	247	265	280	292	277	298	315	329	306	330	348	363
Cap MFD/V	5/370		LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94

PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20		MBh	43.4	40.9	38.2	35.7	34.1	33.0	30.4	27.9	29.6	26.5	23.4	21.5	20.7	18.6	16.5	14.4	12.3	10.0
Low Amb	None		T/R	34.2	32.3	30.1	28.1	26.8	26.0	23.9	22.0	23.4	20.9	18.4	16.9	16.3	14.6	13.0	11.3	9.7	7.9
Defrost	ElecTime-Temp		KW	3.36	3.30	3.23	3.16	3.13	3.10	3.04	2.97	3.07	3.00	2.93	2.89	2.87	2.79	2.73	2.66	2.59	2.52
Sensor	31-71	70	AMPS	15.4	14.3	13.3	12.5	12.1	11.8	11.2	10.6	10.1	9.7	9.2	9.0	8.9	8.4	7.8	7.4	6.8	6.1
Operating Chg	(R-22Oz)		COP	3.78	3.64	3.46	3.30	3.19	3.12	2.93	2.75	2.82	2.59	2.33	2.18	2.11	1.95	1.77	1.58	1.39	1.17
(25 Ft Lines)*	112		EER	12.9	12.4	11.8	11.3	10.9	10.7	10.0	9.4	9.6	8.8	8.0	7.4	7.2	6.6	6.0	5.4	4.7	4.0
Service Driers			HI PR	252	241	232	222	216	212	204	196	188	179	172	168	165	159	153	146	141	136
Liquid/Chg	8 CuIn/7 oz		LO PR	70	65	61	56	53	51	47	42	37	33	29	27	26	22	19	16	14	11
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																		Part No:	
Unit Weight	167	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																		**1067317**	

Technical Service Data Sheets 1067318 & 1067319

Style No:	36GH-000093ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	24.0	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	33.1	34.1	36.9	39.6	32.3	33.3	36.0	38.7	31.5	32.5	35.1	37.7	30.0	30.8	33.4	35.8	27.7	28.6	30.9	33.2
Delay Fuse	30		S/T	0.86	0.77	0.58	0.38	0.88	0.79	0.60	0.38	0.91	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.95	0.85	0.65	0.42
Max. Fuse	40	75	AMPS	11.3	11.6	11.9	12.4	12.3	12.6	13.0	13.5	13.1	13.4	13.9	14.4	14.0	14.3	14.8	15.4	14.8	15.2	15.7	16.3
Compressor	Copeland		HI PR	187	201	212	221	212	228	241	251	242	260	275	286	272	293	309	322	300	323	341	356
RLA	17.9		LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	77	84	89	74	79	86	92
LRA	91		MBh	33.7	34.4	36.8	39.3	32.9	33.6	35.9	38.4	32.1	32.8	35.0	37.5	30.5	31.2	33.3	35.6	28.2	28.9	30.8	33.0
Cap MFD/V	35/440		S/T	0.94	0.89	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.60
CC Heater	None	80	AMPS	11.4	11.7	12.1	12.5	12.4	12.7	13.1	13.6	13.2	13.6	14.0	14.6	14.1	14.5	15.0	15.5	15.0	15.3	15.9	16.5
Start Kit	None		HI PR	188	203	214	223	214	231	244	254	244	263	277	289	275	296	312	325	303	327	345	360
Fan Motor-HP	1/3		LO PR	63	68	74	79	66	70	77	82	69	74	81	86	73	77	84	90	75	80	87	93
Type	PSC		MBh	34.3	34.9	36.6	39.0	33.5	34.1	35.7	38.1	32.7	33.3	34.9	37.2	31.0	31.6	33.1	35.3	28.7	29.3	30.7	32.7
FLA	1.5		S/T	0.99	0.96	0.86	0.70	1.00	0.98	0.88	0.72	1.00	1.00	0.91	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	11.5	11.8	12.2	12.6	12.5	12.8	13.2	13.7	13.4	13.7	14.2	14.7	14.2	14.6	15.1	15.7	15.1	15.5	16.0	16.6
RPM	1100		HI PR	190	205	216	226	216	233	246	257	247	265	280	292	277	298	315	329	306	330	348	363
Cap MFD/V	5/370		LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94

PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20		MBh	43.4	40.9	38.2	35.7	34.1	33.0	30.4	27.9	29.6	26.5	23.4	21.5	20.7	18.6	16.5	14.4	12.3	10.0
Low Amb	None		T/R	34.2	32.3	30.1	28.1	26.8	26.0	23.9	22.0	23.4	20.9	18.4	16.9	16.3	14.6	13.0	11.3	9.7	7.9
Defrost	ElecTime-Temp		KW	3.36	3.30	3.23	3.16	3.13	3.10	3.04	2.97	3.07	3.00	2.93	2.89	2.87	2.79	2.73	2.66	2.59	2.52
Sensor	31-71	70	AMPS	15.4	14.3	13.3	12.5	12.1	11.8	11.2	10.6	10.1	9.7	9.2	9.0	8.9	8.4	7.8	7.4	6.8	6.1
Operating Chg	(R-22Oz)		COP	3.78	3.64	3.46	3.30	3.19	3.12	2.93	2.75	2.82	2.59	2.33	2.18	2.11	1.95	1.77	1.58	1.39	1.17
(25 Ft Lines)*	112		EER	12.9	12.4	11.8	11.3	10.9	10.7	10.0	9.4	9.6	8.8	8.0	7.4	7.2	6.6	6.0	5.4	4.7	4.0
Service Driers			HI PR	252	241	232	222	216	212	204	196	188	179	172	168	165	159	153	146	141	136
Liquid/Chg	8 CuIn/7 oz		LO PR	70	65	61	56	53	51	47	42	37	33	29	27	26	22	19	16	14	11
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																	Part No:	
Unit Weight	167	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																	**1067318**	

Style No:	42GH-000090ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	27.4	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	39.7	40.9	44.2	47.5	38.7	39.9	43.2	46.3	37.8	38.9	42.1	45.2	35.9	37.0	40.0	43.0	33.3	34.2	37.1	39.8
Delay Fuse	35		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	45	75	AMPS	14.0	14.4	14.9	15.4	15.3	15.6	16.2	16.8	16.3	16.7	17.3	18.0	17.4	17.8	18.4	19.1	18.4	18.9	19.5	20.3
Compressor	Copeland		HI PR	175	188	198	207	198	214	226	235	226	243	257	268	254	274	289	301	281	302	319	333
RLA	20.7		LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
LRA	107		MBh	40.4	41.3	44.1	47.1	39.4	40.3	43.1	46.0	38.5	39.3	42.0	44.9	36.5	37.3	39.9	42.7	33.9	34.6	37.0	39.5
Cap MFD/V	35/440		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	14.2	14.5	15.0	15.6	15.4	15.8	16.3	16.9	16.5	16.9	17.5	18.1	17.6	18.0	18.6	19.3	18.6	19.1	19.7	20.5
Start Kit	None		HI PR	176	190	200	209	200	216	228	238	228	246	259	271	257	276	292	304	284	305	323	336
Fan Motor-HP	1/3		LO PR	64	69	75	80	67	71	78	83	70	75	82	87	74	78	86	91	76	81	89	94
Type	PSC		MBh	41.1	41.9	43.9	46.8	40.1	40.9	42.8	45.7	39.1	39.9	41.8	44.6	37.2	37.9	39.7	42.4	34.4	35.1	36.8	39.2
FLA	1.5		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	14.3	14.6	15.1	15.7	15.6	15.9	16.5	17.1	16.6	17.0	17.6	18.3	17.7	18.2	18.8	19.5	18.8	19.3	19.9	20.7
RPM	1110		HI PR	178	192	202	211	202	218	230	240	231	248	262	273	259	279	295	308	287	309	326	340
Cap MFD/V	5/370		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	74	79	86	92	77	82	89	95

PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20		MBh	53.5	50.5	47.1	44.0	42.0	40.7	37.5	34.4	32.0	28.6	25.2	23.2	22.3	20.0	17.8	15.5	13.2	10.8
Low Amb	None		T/R	35.4	33.4	31.1	29.1	27.8	26.9	24.8	22.7	21.2	18.9	16.7	15.3	14.8	13.3	11.8	10.2	8.7	7.2
Defrost	ElecTime-Temp		KW	3.88	3.81	3.73	3.66	3.62	3.59	3.51	3.44	3.40	3.32	3.25	3.21	3.18	3.10	3.03	2.95	2.88	2.81
Sensor	31-71	70	AMPS	20.6	19.1	17.8	16.8	16.1	15.8	14.9	14.1	13.5	12.9	12.3	12.0	11.8	11.2	10.4	9.8	9.0	8.1
Operating Chg	(R-22Oz)		COP	4.03	3.88	3.69	3.52	3.40	3.32	3.12	2.92	2.75	2.52	2.27	2.12	2.06	1.89	1.72	1.53	1.34	1.13
(25 Ft Lines)*	178		EER	13.8	13.3	12.6	12.0	11.6	11.4	10.7	10.0	9.4	8.6	7.8	7.2	7.0	6.5	5.9	5.2	4.6	3.9
Service Driers			HI PR	253	242	233	223	217	213	205	197	189	180	173	169	166	159	153	147	142	137
Liquid/Chg	16CuIn/11oz		LO PR	71	66	61	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																	Part No:	
Unit Weight	202	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																	**1067319**	

Technical Service Data Sheets 1067320 & 1067321

Style No:	42GH-000093ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	27.4	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	39.7	40.9	44.2	47.5	38.7	39.9	43.2	46.3	37.8	38.9	42.1	45.2	35.9	37.0	40.0	43.0	33.3	34.2	37.1	39.8
Delay Fuse	35		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	45	75	AMPS	14.0	14.4	14.9	15.4	15.3	15.6	16.2	16.8	16.3	16.7	17.3	18.0	17.4	17.8	18.4	19.1	18.4	18.9	19.5	20.3
Compressor	Copeland		HI PR	175	188	198	207	198	214	226	235	226	243	257	268	254	274	289	301	281	302	319	333
RLA	20.7		LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
LRA	107		MBh	40.4	41.3	44.1	47.1	39.4	40.3	43.1	46.0	38.5	39.3	42.0	44.9	36.5	37.3	39.9	42.7	33.9	34.6	37.0	39.5
Cap MFD/V	35/440		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	14.2	14.5	15.0	15.6	15.4	15.8	16.3	16.9	16.5	16.9	17.5	18.1	17.6	18.0	18.6	19.3	18.6	19.1	19.7	20.5
Start Kit	None		HI PR	176	190	200	209	200	216	228	238	228	246	259	271	257	276	292	304	284	305	323	336
Fan Motor-HP	1/3		LO PR	64	69	75	80	67	71	78	83	70	75	82	87	74	78	86	91	76	81	89	94
Type	PSC		MBh	41.1	41.9	43.9	46.8	40.1	40.9	42.8	45.7	39.1	39.9	41.8	44.6	37.2	37.9	39.7	42.4	34.4	35.1	36.8	39.2
FLA	1.5		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	14.3	14.6	15.1	15.7	15.6	15.9	16.5	17.1	16.6	17.0	17.6	18.3	17.7	18.2	18.8	19.5	18.8	19.3	19.9	20.7
RPM	1110		HI PR	178	192	202	211	202	218	230	240	231	248	262	273	259	279	295	308	287	309	326	340
Cap MFD/V	5/370		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	74	79	86	92	77	82	89	95

PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20	MBh	53.5	50.5	47.1	44.0	42.0	40.7	37.5	34.4	32.0	28.6	25.2	23.2	22.3	20.0	17.8	15.5	13.2	10.8
Low Amb	None	T/R	35.4	33.4	31.1	29.1	27.8	26.9	24.8	22.7	21.2	18.9	16.7	15.3	14.8	13.3	11.8	10.2	8.7	7.2
Defrost	ElecTime-Temp	KW	3.88	3.81	3.73	3.66	3.62	3.59	3.51	3.44	3.40	3.32	3.25	3.21	3.18	3.10	3.03	2.95	2.88	2.81
Sensor	31-71	70 AMPS	20.6	19.1	17.8	16.8	16.1	15.8	14.9	14.1	13.5	12.9	12.3	12.0	11.8	11.2	10.4	9.8	9.0	8.1
Operating Chg	(R-22Oz)	COP	4.03	3.88	3.69	3.52	3.40	3.32	3.12	2.92	2.75	2.52	2.27	2.12	2.06	1.89	1.72	1.53	1.34	1.13
(25 Ft Lines)*	178	EER	13.8	13.3	12.6	12.0	11.6	11.4	10.7	10.0	9.4	8.6	7.8	7.2	7.0	6.5	5.9	5.2	4.6	3.9
Service Driers		HI PR	253	242	233	223	217	213	205	197	189	180	173	169	166	159	153	147	142	137
Liquid/Chg	16CuIn/11oz	LO PR	71	66	61	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																	Part No:	
Unit Weight	202	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																	**1067320**	

Style No:	48GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	31	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	45.6	46.9	50.8	54.5	44.5	45.8	49.6	53.2	43.4	44.7	48.4	51.9	41.2	42.4	45.9	49.3	38.2	39.3	42.6	45.7
Delay Fuse	40		S/T	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.92	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.87	0.66	0.42
Max. Fuse	50	75	AMPS	15.9	16.3	16.8	17.5	17.3	17.7	18.3	19.0	18.5	18.9	19.6	20.3	19.7	20.2	20.9	21.7	20.9	21.4	22.1	23.0
Compressor	Copeland		HI PR	169	182	192	200	192	207	219	228	219	236	249	260	246	265	280	292	272	293	309	323
RLA	23.7		LO PR	62	66	72	77	64	68	75	80	68	72	78	84	71	75	82	88	73	78	85	91
LRA	129		MBh	46.4	47.4	50.6	54.1	45.3	46.3	49.4	52.8	44.2	45.1	48.2	51.5	42.0	42.9	45.8	49.0	38.9	39.7	42.4	45.4
Cap MFD/V	40/440		S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.99	0.80	0.60	1.00	1.00	0.81	0.61
CC Heater	None	80	AMPS	16.0	16.4	17.0	17.6	17.4	17.9	18.5	19.2	18.7	19.1	19.8	20.5	19.9	20.4	21.1	21.9	21.1	21.6	22.3	23.2
Start Kit	None		HI PR	171	184	194	202	194	209	221	230	221	238	251	262	249	268	283	295	275	296	313	326
Fan Motor-HP	1/4		LO PR	62	66	73	77	65	69	75	80	68	73	79	84	71	76	83	88	74	79	86	91
Type	PSC		MBh	47.2	48.1	50.4	53.7	46.1	47.0	49.2	52.5	44.9	45.8	48.0	51.2	42.7	43.5	45.6	48.6	39.5	40.3	42.2	45.0
FLA	1.4		S/T	1.00	0.97	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
LRA	3.24	85	AMPS	16.2	16.6	17.1	17.8	17.6	18.0	18.6	19.4	18.8	19.3	20.0	20.7	20.1	20.6	21.3	22.1	21.3	21.8	22.6	23.4
RPM	840		HI PR	173	186	196	204	196	211	223	233	223	240	254	265	251	271	286	298	278	299	316	329
Cap MFD/V	5/370		LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	79	87	92

PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20	MBh	61.6	58.3	54.9	51.3	49.0	47.5	44.1	40.7	37.4	34.5	31.8	30.0	28.9	25.9	23.0	20.0	17.1	14.0
Low Amb	None	T/R	35.6	33.7	31.8	29.7	28.4	27.5	25.5	23.5	21.6	20.0	18.4	17.4	16.7	15.0	13.3	11.6	9.9	8.1
Defrost	ElecTime-Temp	KW	4.85	4.76	4.66	4.57	4.51	4.47	4.38	4.29	4.36	4.26	4.17	4.11	4.07	3.97	3.87	3.77	3.67	3.58
Sensor	32/72	70 AMPS	24.1	22.3	20.8	19.5	18.8	18.5	17.4	16.5	15.8	15.0	14.3	13.9	13.8	13.0	12.1	11.4	10.5	9.4
Operating Chg	(R-22Oz)	COP	3.72	3.59	3.45	3.29	3.18	3.11	2.95	2.78	2.51	2.37	2.23	2.14	2.08	1.91	1.74	1.55	1.36	1.15
(25 Ft Lines)*	170	EER	12.7	12.3	11.8	11.2	10.9	10.6	10.1	9.5	8.6	8.1	7.6	7.3	7.1	6.5	5.9	5.3	4.7	3.9
Service Driers		HI PR	266	255	245	235	229	225	216	207	199	190	182	178	175	168	161	155	149	144
Liquid/Chg	30 CuIn/17 oz	LO PR	70	65	61	56	52	50	46	41	37	33	29	27	26	22	19	16	14	11
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																	Part No:	
Unit Weight	259	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																	**1067321**	

Technical Service Data Sheets 1067322 & 1080521

Style No:	60GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	37.5	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC	75	MBh	54.0	55.6	60.2	64.6	52.7	54.3	58.8	63.1	51.5	53.0	57.3	61.5	48.9	50.3	54.5	58.5	45.3	46.6	50.5	54.2
Delay Fuse	45		S/T	0.87	0.77	0.59	0.38	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.96	0.86	0.65	0.42
Max. Fuse	60		AMPS	17.9	18.4	19.0	19.7	19.5	20.0	20.7	21.5	20.9	21.4	22.1	23.0	22.3	22.8	23.6	24.5	23.6	24.2	25.0	26.0
Compressor	Copeland		HI PR	167	180	190	198	190	205	216	225	217	233	246	257	244	262	277	289	269	290	306	319
RLA	28.8		LO PR	61	65	70	75	63	67	73	78	66	70	77	82	69	74	81	86	72	76	83	89
LRA	169	80	MBh	55.0	56.2	60.0	64.2	53.7	54.8	58.6	62.6	52.4	53.5	57.2	61.1	49.7	50.8	54.3	58.1	46.1	47.1	50.3	53.8
Cap MFD/V	55/440		S/T	0.95	0.89	0.72	0.54	0.97	0.91	0.74	0.56	1.00	0.94	0.77	0.57	1.00	0.98	0.80	0.59	1.00	0.99	0.80	0.60
CC Heater	None		AMPS	18.1	18.5	19.2	19.9	19.7	20.2	20.9	21.7	21.1	21.6	22.4	23.2	22.5	23.0	23.8	24.8	23.8	24.4	25.3	26.3
Start Kit	None		HI PR	169	182	192	200	192	207	218	228	219	236	249	259	246	265	280	292	272	293	309	322
Fan Motor-HP	1/4		LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	81	87	73	77	84	90
Type	PSC	85	MBh	55.9	57.0	59.7	63.7	54.6	55.7	58.3	62.2	53.3	54.3	56.9	60.7	50.6	51.6	54.0	57.6	46.9	47.8	50.1	53.4
FLA	1.4		S/T	0.99	0.96	0.87	0.70	1.00	0.98	0.89	0.72	1.00	1.00	0.92	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
LRA	3.24		AMPS	18.3	18.7	19.4	20.1	19.9	20.4	21.1	21.9	21.3	21.8	22.6	23.4	22.7	23.3	24.1	25.0	24.1	24.7	25.5	26.5
RPM	840		HI PR	171	184	194	202	194	209	221	230	221	238	251	262	249	268	283	295	275	296	312	326
Cap MFD/V	5/370		LO PR	62	66	72	77	64	68	75	80	68	72	78	84	71	75	82	88	73	78	85	91

PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	410	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20	70	MBh	71.0	67.2	63.3	59.2	56.5	54.7	50.9	46.9	45.6	42.1	38.8	36.6	35.2	31.6	28.0	24.4	20.9	17.1
Low Amb	None		T/R	34.6	32.8	30.9	28.8	27.5	26.7	24.8	22.9	22.2	20.5	18.9	17.8	17.2	15.4	13.7	11.9	10.2	8.3
Defrost	ElecTime-Temp		KW	5.56	5.45	5.34	5.24	5.17	5.13	5.02	4.91	5.14	5.02	4.90	4.83	4.79	4.67	4.55	4.44	4.32	4.20
Sensor	32/72		AMPS	26.0	24.0	22.5	21.1	20.3	19.9	18.8	17.8	17.0	16.2	15.4	15.0	14.8	14.0	13.1	12.3	11.3	10.1
Operating Chg	(R-22Oz)		COP	3.74	3.61	3.47	3.31	3.20	3.13	2.96	2.79	2.60	2.46	2.31	2.22	2.16	1.98	1.80	1.61	1.41	1.19
(25 Ft Lines)*	249		EER	12.8	12.3	11.9	11.3	10.9	10.7	10.1	9.5	8.9	8.4	7.9	7.6	7.4	6.8	6.2	5.5	4.8	4.1
Service Driers			HI PR	276	264	254	243	237	233	224	215	206	196	189	184	181	174	167	160	155	149
Liquid/Chg	30 CuIn/17 oz		LO PR	76	70	66	60	57	55	51	45	41	36	32	30	29	24	21	18	15	12
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																		Part No:	
Unit Weight	303	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																		**1067322**	

Style No:	18GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	12.5	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC	75	MBh	17.5	18.0	19.5	21.0	17.1	17.6	19.1	20.5	16.7	17.2	18.6	20.0	15.9	16.3	17.7	19.0	14.7	15.1	16.4	17.6
Delay Fuse	20		S/T	0.84	0.75	0.57	0.37	0.86	0.77	0.58	0.37	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.93	0.83	0.63	0.40
Max. Fuse	20		AMPS	5.9	6.1	6.3	6.5	6.4	6.6	6.8	7.0	6.9	7.0	7.2	7.5	7.3	7.5	7.7	8.0	7.7	7.9	8.1	8.4
Compressor	Copeland		HI PR	164	177	187	195	187	201	212	221	213	229	242	252	239	258	272	284	265	285	301	314
RLA	9.6		LO PR	65	70	76	81	68	72	79	84	71	76	83	88	75	80	87	93	77	82	90	96
LRA	50	80	MBh	17.8	18.2	19.5	20.8	17.4	17.8	19.0	20.3	17.0	17.4	18.6	19.8	16.1	16.5	17.6	18.8	15.0	15.3	16.3	17.5
Cap MFD/V	25/370		S/T	0.92	0.86	0.70	0.52	0.94	0.88	0.72	0.54	0.97	0.91	0.74	0.56	1.00	0.95	0.77	0.58	1.00	0.96	0.78	0.58
CC Heater	None		AMPS	6.0	6.1	6.3	6.6	6.5	6.6	6.9	7.1	6.9	7.1	7.3	7.6	7.3	7.5	7.8	8.0	7.8	8.0	8.2	8.5
Start Kit	None		HI PR	166	179	189	197	189	203	214	224	215	231	244	255	242	260	275	287	267	288	304	317
Fan Motor-HP	1/6		LO PR	66	70	77	82	69	73	80	85	72	77	84	89	76	80	88	93	78	83	91	97
Type	PSC	85	MBh	18.2	18.5	19.4	20.7	17.7	18.1	18.9	20.2	17.3	17.6	18.5	19.7	16.4	16.7	17.5	18.7	15.2	15.5	16.2	17.3
FLA	1.1		S/T	0.96	0.93	0.84	0.68	0.99	0.95	0.86	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.93	0.75
LRA	2		AMPS	6.0	6.2	6.4	6.6	6.5	6.7	6.9	7.2	7.0	7.1	7.4	7.6	7.4	7.6	7.8	8.1	7.8	8.0	8.3	8.6
RPM	1100		HI PR	168	180	190	199	191	205	217	226	217	234	247	257	244	263	278	289	270	290	307	320
Cap MFD/V	5/370		LO PR	67	71	77	82	69	74	81	86	73	77	85	90	76	81	89	94	79	84	92	98

PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																	
Hi Press	-	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
Low Press	05 -- 20	70	MBh	22.5	21.3	20.1	18.8	17.9	17.4	16.1	14.9	13.8	12.7	11.7	11.1	10.7	9.6	8.5	7.4	6.3	5.2
Low Amb	None		T/R	34.8	32.9	31.0	28.9	27.6	26.8	24.9	22.9	21.3	19.6	18.1	17.1	16.4	14.8	13.1	11.4	9.7	8.0
Defrost	ElecTime-Temp		KW	1.83	1.79	1.76	1.72	1.70	1.69	1.65	1.62	1.67	1.63	1.59	1.57	1.56	1.52	1.48	1.44	1.41	1.37
Sensor	31-71		AMPS	8.6	8.0	7.5	7.0	6.8	6.7	6.3	6.0	5.7	5.5	5.2	5.1	5.1	4.8	4.5	4.3	3.9	3.6
Operating Chg	(R-22Oz)		COP	3.61	3.48	3.35	3.19	3.08	3.01	2.86	2.69	2.42	2.29	2.15	2.06	2.00	1.84	1.67	1.50	1.31	1.10
(25 Ft Lines)*	86		EER	12.3	11.9	11.4	10.9	10.5	10.3	9.8	9.2	8.3	7.8	7.4	7.0	6.8	6.3	5.7	5.1	4.5	3.8
Service Driers			HI PR	253	242	233	223	217	213	205	197	189	180	173	169	166	159	153	147	142	137
Liquid/Chg	5 CuIn/5 oz		LO PR	77	71	67	61	58	56	51	46	41	37	32	30	29	24	21	18	16	12
Suction	17 SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches.																		Part No:	
Unit Weight	134	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq																		**1080521**	

Technical Service Data Sheets 1080522 & 1080523

Style No:	24GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	15.4	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	22.6	23.3	25.2	27.1	22.1	22.7	24.6	26.4	21.5	22.2	24.0	25.8	20.5	21.1	22.8	24.5	19.0	19.5	21.1	22.7
Delay Fuse	20		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	25	75	AMPS	7.2	7.3	7.6	7.9	7.8	8.0	8.2	8.5	8.3	8.5	8.8	9.1	8.8	9.1	9.4	9.7	9.4	9.6	9.9	10.3
Compressor	COPELAND		HI PR	168	181	191	199	191	205	217	226	217	234	247	258	244	263	278	290	270	291	307	320
RLA	11.5		LO PR	64	68	75	80	67	71	78	83	70	75	82	87	74	78	85	91	76	81	88	94
LRA	63		MBh	23.0	23.5	25.1	26.9	22.5	23.0	24.5	26.2	21.9	22.4	23.9	25.6	20.8	21.3	22.7	24.3	19.3	19.7	21.1	22.5
Cap MFD/V	30/370		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	7.2	7.4	7.7	7.9	7.9	8.0	8.3	8.6	8.4	8.6	8.9	9.2	8.9	9.1	9.4	9.8	9.4	9.7	10.0	10.4
Start Kit	None		HI PR	169	182	193	201	193	207	219	228	220	236	249	260	247	266	281	293	273	294	310	323
Fan Motor-HP	1/6		LO PR	65	69	75	80	68	72	78	83	71	75	82	88	74	79	86	92	77	82	89	95
Type	PSC		MBh	23.4	23.9	25.0	26.7	22.9	23.3	24.4	26.0	22.3	22.7	23.8	25.4	21.2	21.6	22.6	24.1	19.6	20.0	21.0	22.4
FLA	1		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
LRA	2	85	AMPS	7.3	7.5	7.7	8.0	7.9	8.1	8.4	8.7	8.5	8.7	9.0	9.3	9.0	9.2	9.5	9.9	9.5	9.8	10.1	10.5
RPM	1100		HI PR	171	184	194	203	195	209	221	231	222	239	252	263	249	268	283	296	276	297	313	327
Cap MFD/V	5/370		LO PR	66	70	76	81	68	73	79	84	72	76	83	89	75	80	87	93	78	83	90	96
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	--	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	28.7	27.1	25.6	23.9	22.8	22.1	20.5	18.9	17.8	16.4	15.1	14.3	13.8	12.4	11.0	9.6	8.2	6.7		
Low Amb	None		T/R	33.2	31.4	29.6	27.6	26.4	25.6	23.8	21.9	20.6	19.0	17.5	16.6	15.9	14.3	12.7	11.1	9.4	7.7		
Defrost	ElecTime-Temp		KW	2.28	2.24	2.20	2.15	2.13	2.11	2.07	2.03	2.14	2.09	2.04	2.02	2.00	1.95	1.90	1.86	1.81	1.76		
Sensor	31-71	70	AMPS	10.4	9.7	9.1	8.5	8.2	8.1	7.6	7.2	6.9	6.6	6.3	6.2	6.1	5.8	5.4	5.1	4.7	4.2		
Operating Chg	(R-22Oz)		COP	3.67	3.54	3.40	3.24	3.13	3.06	2.90	2.73	2.44	2.30	2.17	2.08	2.02	1.85	1.68	1.51	1.32	1.11		
(25 Ft Lines)*	84		EER	12.5	12.1	11.6	11.1	10.7	10.5	9.9	9.3	8.3	7.9	7.4	7.1	6.9	6.3	5.8	5.1	4.5	3.8		
Service Driers			HI PR	250	239	230	220	215	211	203	195	186	178	171	167	164	158	152	145	140	135		
Liquid/Chg	8 CuIn/7 oz		LO PR	71	66	62	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																					
Unit Weight	140	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1080522**																					

Style No:	30GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	18.6	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	27.4	28.2	30.5	32.8	26.8	27.5	29.8	32.0	26.1	26.9	29.1	31.2	24.8	25.5	27.6	29.7	23.0	23.6	25.6	27.5
Delay Fuse	25		S/T	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.87	0.66	0.42
Max. Fuse	30	75	AMPS	9.3	9.6	9.9	10.3	10.2	10.4	10.8	11.2	10.9	11.1	11.5	12.0	11.6	11.9	12.3	12.8	12.3	12.6	13.0	13.5
Compressor	COPELAND		HI PR	180	193	204	213	204	220	232	242	233	250	264	276	262	282	297	310	289	311	329	343
RLA	14.1		LO PR	65	69	75	80	67	71	78	83	70	75	82	87	74	79	86	91	76	81	89	95
LRA	76		MBh	27.9	28.5	30.5	32.6	27.2	27.8	29.7	31.8	26.6	27.1	29.0	31.0	25.2	25.8	27.6	29.5	23.4	23.9	25.5	27.3
Cap MFD/V	35/370		S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.78	0.58	1.00	0.99	0.80	0.60	1.00	1.00	0.81	0.61
CC Heater	None	80	AMPS	9.4	9.7	10.0	10.4	10.3	10.5	10.9	11.3	11.0	11.3	11.6	12.1	11.7	12.0	12.4	12.9	12.4	12.7	13.1	13.7
Start Kit	None		HI PR	181	195	206	215	206	222	235	245	235	253	267	279	264	285	300	313	292	314	332	346
Fan Motor-HP	1/6		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	75	79	87	92	77	82	90	95
Type	PSC		MBh	28.4	28.9	30.3	32.3	27.7	28.2	29.6	31.6	27.0	27.6	28.9	30.8	25.7	26.2	27.4	29.2	23.8	24.2	25.4	27.1
FLA	1		S/T	1.00	0.97	0.88	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
LRA	2	85	AMPS	9.5	9.8	10.1	10.5	10.4	10.6	11.0	11.4	11.1	11.4	11.7	12.2	11.8	12.1	12.5	13.0	12.5	12.8	13.3	13.8
RPM	1110		HI PR	183	197	208	217	208	224	237	247	237	255	270	281	267	287	303	317	295	318	335	350
Cap MFD/V	5/370		LO PR	66	70	77	81	68	73	80	85	72	77	84	89	75	80	88	93	78	83	91	96
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	--	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	35.8	33.9	31.9	29.8	28.5	27.6	25.7	23.7	22.8	21.0	19.4	18.3	17.6	15.8	14.0	12.2	10.4	8.5		
Low Amb	None		T/R	33.2	31.4	29.6	27.6	26.4	25.6	23.8	21.9	21.1	19.5	17.9	16.9	16.3	14.6	13.0	11.3	9.6	7.9		
Defrost	ElecTime-Temp		KW	2.71	2.66	2.60	2.55	2.52	2.50	2.45	2.40	2.49	2.43	2.38	2.34	2.32	2.26	2.21	2.15	2.10	2.04		
Sensor	31-71	70	AMPS	12.9	11.9	11.1	10.5	10.1	9.9	9.3	8.8	8.5	8.1	7.7	7.5	7.4	7.0	6.5	6.1	5.7	5.1		
Operating Chg	(R-22Oz)		COP	3.87	3.74	3.59	3.42	3.31	3.24	3.07	2.89	2.68	2.53	2.38	2.28	2.22	2.04	1.86	1.66	1.45	1.22		
(25 Ft Lines)*	109		EER	13.2	12.8	12.3	11.7	11.3	11.1	10.5	9.9	9.2	8.6	8.1	7.8	7.6	7.0	6.3	5.7	5.0	4.2		
Service Driers			HI PR	239	229	220	210	205	201	194	186	178	170	163	159	156	150	145	139	134	129		
Liquid/Chg	16CuIn/11oz		LO PR	68	63	59	54	51	49	45	40	36	32	29	27	26	22	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																					
Unit Weight	160	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1080523**																					

Technical Service Data Sheets 1080524 & 1080551

Style No:	36GH-000094ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	24.0	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	33.1	34.1	36.9	39.6	32.3	33.3	36.0	38.7	31.5	32.5	35.1	37.7	30.0	30.8	33.4	35.8	27.7	28.6	30.9	33.2
Delay Fuse	30		S/T	0.86	0.77	0.58	0.38	0.88	0.79	0.60	0.38	0.91	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.95	0.85	0.65	0.42
Max. Fuse	40	75	AMPS	11.3	11.6	11.9	12.4	12.3	12.6	13.0	13.5	13.1	13.4	13.9	14.4	14.0	14.3	14.8	15.4	14.8	15.2	15.7	16.3
Compressor	Copeland		HI PR	187	201	212	221	212	228	241	251	242	260	275	286	272	293	309	322	300	323	341	356
RLA	17.9		LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	77	84	89	74	79	86	92
LRA	91		MBh	33.7	34.4	36.8	39.3	32.9	33.6	35.9	38.4	32.1	32.8	35.0	37.5	30.5	31.2	33.3	35.6	28.2	28.9	30.8	33.0
Cap MFD/V	50/370		S/T	0.94	0.89	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.60
CC Heater	None	80	AMPS	11.4	11.7	12.1	12.5	12.4	12.7	13.1	13.6	13.2	13.6	14.0	14.6	14.1	14.5	15.0	15.5	15.0	15.3	15.9	16.5
Start Kit	None		HI PR	188	203	214	223	214	231	244	254	244	263	277	289	275	296	312	325	303	327	345	360
Fan Motor-HP	1/3		LO PR	63	68	74	79	66	70	77	82	69	74	81	86	73	77	84	90	75	80	87	93
Type	PSC		MBh	34.3	34.9	36.6	39.0	33.5	34.1	35.7	38.1	32.7	33.3	34.9	37.2	31.0	31.6	33.1	35.3	28.7	29.3	30.7	32.7
FLA	1.5		S/T	0.99	0.96	0.86	0.70	1.00	0.98	0.88	0.72	1.00	1.00	0.91	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	11.5	11.8	12.2	12.6	12.5	12.8	13.2	13.7	13.4	13.7	14.2	14.7	14.2	14.6	15.1	15.7	15.1	15.5	16.0	16.6
RPM	1100		HI PR	190	205	216	226	216	233	246	257	247	265	280	292	277	298	315	329	306	330	348	363
Cap MFD/V	5/370		LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94
PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	--	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	43.4	40.9	38.2	35.7	34.1	33.0	30.4	27.9	29.6	26.5	23.4	21.5	20.7	18.6	16.5	14.4	12.3	10.0		
Low Amb	None		T/R	34.2	32.3	30.1	28.1	26.8	26.0	23.9	22.0	23.4	20.9	18.4	16.9	16.3	14.6	13.0	11.3	9.7	7.9		
Defrost	ElecTime-Temp		KW	3.36	3.30	3.23	3.16	3.13	3.10	3.04	2.97	3.07	3.00	2.93	2.89	2.87	2.79	2.73	2.66	2.59	2.52		
Sensor	31-71	70	AMPS	15.4	14.3	13.3	12.5	12.1	11.8	11.2	10.6	10.1	9.7	9.2	9.0	8.9	8.4	7.8	7.4	6.8	6.1		
Operating Chg	(R-22Oz)		COP	3.78	3.64	3.46	3.30	3.19	3.12	2.93	2.75	2.82	2.59	2.33	2.18	2.11	1.95	1.77	1.58	1.39	1.17		
(25 Ft Lines)*	112		EER	12.9	12.4	11.8	11.3	10.9	10.7	10.0	9.4	9.6	8.8	8.0	7.4	7.2	6.6	6.0	5.4	4.7	4.0		
Service Driers			HI PR	252	241	232	222	216	212	204	196	188	179	172	168	165	159	153	146	141	136		
Liquid/Chg	8 CuIn/7 oz		LO PR	70	65	61	56	53	51	47	42	37	33	29	27	26	22	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																				
Unit Weight	167	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1080524**																				

Style No:	42GH-000094ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	27.4	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	39.7	40.9	44.2	47.5	38.7	39.9	43.2	46.3	37.8	38.9	42.1	45.2	35.9	37.0	40.0	43.0	33.3	34.2	37.1	39.8
Delay Fuse	35		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	45	75	AMPS	14.0	14.4	14.9	15.4	15.3	15.6	16.2	16.8	16.3	16.7	17.3	18.0	17.4	17.8	18.4	19.1	18.4	18.9	19.5	20.3
Compressor	Copeland		HI PR	175	188	198	207	198	214	226	235	226	243	257	268	254	274	289	301	281	302	319	333
RLA	20.7		LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
LRA	107		MBh	40.4	41.3	44.1	47.1	39.4	40.3	43.1	46.0	38.5	39.3	42.0	44.9	36.5	37.3	39.9	42.7	33.9	34.6	37.0	39.5
Cap MFD/V	55/440		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	14.2	14.5	15.0	15.6	15.4	15.8	16.3	16.9	16.5	16.9	17.5	18.1	17.6	18.0	18.6	19.3	18.6	19.1	19.7	20.5
Start Kit	None		HI PR	176	190	200	209	200	216	228	238	228	246	259	271	257	276	292	304	284	305	323	336
Fan Motor-HP	1/3		LO PR	64	69	75	80	67	71	78	83	70	75	82	87	74	78	86	91	76	81	89	94
Type	PSC		MBh	41.1	41.9	43.9	46.8	40.1	40.9	42.8	45.7	39.1	39.9	41.8	44.6	37.2	37.9	39.7	42.4	34.4	35.1	36.8	39.2
FLA	1.5		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
LRA	3.6	85	AMPS	14.3	14.6	15.1	15.7	15.6	15.9	16.5	17.1	16.6	17.0	17.6	18.3	17.7	18.2	18.8	19.5	18.8	19.3	19.9	20.7
RPM	1110		HI PR	178	192	202	211	202	218	230	240	231	248	262	273	259	279	295	308	287	309	326	340
Cap MFD/V	5/370		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	74	79	86	92	77	82	89	95
PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	--	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	53.5	50.5	47.1	44.0	42.0	40.7	37.5	34.4	32.0	28.6	25.2	23.2	22.3	20.0	17.8	15.5	13.2	10.8		
Low Amb	None		T/R	35.4	33.4	31.1	29.1	27.8	26.9	24.8	22.7	21.2	18.9	16.7	15.3	14.8	13.3	11.8	10.2	8.7	7.2		
Defrost	ElecTime-Temp		KW	3.88	3.81	3.73	3.66	3.62	3.59	3.51	3.44	3.40	3.32	3.25	3.21	3.18	3.10	3.03	2.95	2.88	2.81		
Sensor	31-71	70	AMPS	20.6	19.1	17.8	16.8	16.1	15.8	14.9	14.1	13.5	12.9	12.3	12.0	11.8	11.2	10.4	9.8	9.0	8.1		
Operating Chg	(R-22Oz)		COP	4.03	3.88	3.69	3.52	3.40	3.32	3.12	2.92	2.75	2.52	2.27	2.12	2.06	1.89	1.72	1.53	1.34	1.13		
(25 Ft Lines)*	178		EER	13.8	13.3	12.6	12.0	11.6	11.4	10.7	10.0	9.4	8.6	7.8	7.2	7.0	6.5	5.9	5.2	4.6	3.9		
Service Driers			HI PR	253	242	233	223	217	213	205	197	189	180	173	169	166	159	153	147	142	137		
Liquid/Chg	16CuIn/11oz		LO PR	71	66	61	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																				
Unit Weight	202	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1080551**																				

Technical Service Data Sheets 1080552 & 1080553

Style No:	48GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	31	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	45.6	46.9	50.8	54.5	44.5	45.8	49.6	53.2	43.4	44.7	48.4	51.9	41.2	42.4	45.9	49.3	38.2	39.3	42.6	45.7
Delay Fuse	40		S/T	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.92	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.87	0.66	0.42
Max. Fuse	50	75	AMPS	15.9	16.3	16.8	17.5	17.3	17.7	18.3	19.0	18.5	18.9	19.6	20.3	19.7	20.2	20.9	21.7	20.9	21.4	22.1	23.0
Compressor	Copeland		HI PR	169	182	192	200	192	207	219	228	219	236	249	260	246	265	280	292	272	293	309	323
RLA	23.7		LO PR	62	66	72	77	64	68	75	80	68	72	78	84	71	75	82	88	73	78	85	91
LRA	129		MBh	46.4	47.4	50.6	54.1	45.3	46.3	49.4	52.8	44.2	45.1	48.2	51.5	42.0	42.9	45.8	49.0	38.9	39.7	42.4	45.4
Cap MFD/V	40/440		S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.99	0.80	0.60	1.00	1.00	0.81	0.61
CC Heater	None	80	AMPS	16.0	16.4	17.0	17.6	17.4	17.9	18.5	19.2	18.7	19.1	19.8	20.5	19.9	20.4	21.1	21.9	21.1	21.6	22.3	23.2
Start Kit	None		HI PR	171	184	194	202	194	209	221	230	221	238	251	262	249	268	283	295	275	296	313	326
Fan Motor-HP	1/4		LO PR	62	66	73	77	65	69	75	80	68	73	79	84	71	76	83	88	74	79	86	91
Type	PSC		MBh	47.2	48.1	50.4	53.7	46.1	47.0	49.2	52.5	44.9	45.8	48.0	51.2	42.7	43.5	45.6	48.6	39.5	40.3	42.2	45.0
FLA	1.4		S/T	1.00	0.97	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
LRA	3.24	85	AMPS	16.2	16.6	17.1	17.8	17.6	18.0	18.6	19.4	18.8	19.3	20.0	20.7	20.1	20.6	21.3	22.1	21.3	21.8	22.6	23.4
RPM	840		HI PR	173	186	196	204	196	211	223	233	223	240	254	265	251	271	286	298	278	299	316	329
Cap MFD/V	5/370		LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	79	87	92
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	--	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	61.6	58.3	54.9	51.3	49.0	47.5	44.1	40.7	37.4	34.5	31.8	30.0	28.9	25.9	23.0	20.0	17.1	14.0		
Low Amb	None		T/R	35.6	33.7	31.8	29.7	28.4	27.5	25.5	23.5	21.6	20.0	18.4	17.4	16.7	15.0	13.3	11.6	9.9	8.1		
Defrost	ElecTime-Temp		KW	4.85	4.76	4.66	4.57	4.51	4.47	4.38	4.29	4.36	4.26	4.17	4.11	4.07	3.97	3.87	3.77	3.67	3.58		
Sensor	32/72	70	AMPS	24.1	22.3	20.8	19.5	18.8	18.5	17.4	16.5	15.8	15.0	14.3	13.9	13.8	13.0	12.1	11.4	10.5	9.4		
Operating Chg	(R-22Oz)		COP	3.72	3.59	3.45	3.29	3.18	3.11	2.95	2.78	2.51	2.37	2.23	2.14	2.08	1.91	1.74	1.55	1.36	1.15		
(25 Ft Lines)*	170		EER	12.7	12.3	11.8	11.2	10.9	10.6	10.1	9.5	8.6	8.1	7.6	7.3	7.1	6.5	5.9	5.3	4.7	3.9		
Service Driers			HI PR	266	255	245	235	229	225	216	207	199	190	182	178	175	168	161	155	149	144		
Liquid/Chg	30 CuIn/17 oz		LO PR	70	65	61	56	52	50	46	41	37	33	29	27	26	22	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																					
Unit Weight	259	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1080552**																					

Style No:	60GH-000090ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	37.5	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	NEC		MBh	54.0	55.6	60.2	64.6	52.7	54.3	58.8	63.1	51.5	53.0	57.3	61.5	48.9	50.3	54.5	58.5	45.3	46.6	50.5	54.2
Delay Fuse	45		S/T	0.87	0.77	0.59	0.38	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.96	0.86	0.65	0.42
Max. Fuse	60	75	AMPS	17.9	18.4	19.0	19.7	19.5	20.0	20.7	21.5	20.9	21.4	22.1	23.0	22.3	22.8	23.6	24.5	23.6	24.2	25.0	26.0
Compressor	Copeland		HI PR	167	180	190	198	190	205	216	225	217	233	246	257	244	262	277	289	269	290	306	319
RLA	28.8		LO PR	61	65	70	75	63	67	73	78	66	70	77	82	69	74	81	86	72	76	83	89
LRA	169		MBh	55.0	56.2	60.0	64.2	53.7	54.8	58.6	62.6	52.4	53.5	57.2	61.1	49.7	50.8	54.3	58.1	46.1	47.1	50.3	53.8
Cap MFD/V	55/440		S/T	0.95	0.89	0.72	0.54	0.97	0.91	0.74	0.56	1.00	0.94	0.77	0.57	1.00	0.98	0.80	0.59	1.00	0.99	0.80	0.60
CC Heater	None	80	AMPS	18.1	18.5	19.2	19.9	19.7	20.2	20.9	21.7	21.1	21.6	22.4	23.2	22.5	23.0	23.8	24.8	23.8	24.4	25.3	26.3
Start Kit	None		HI PR	169	182	192	200	192	207	218	228	219	236	249	259	246	265	280	292	272	293	309	322
Fan Motor-HP	1/4		LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	81	87	73	77	84	90
Type	PSC		MBh	55.9	57.0	59.7	63.7	54.6	55.7	58.3	62.2	53.3	54.3	56.9	60.7	50.6	51.6	54.0	57.6	46.9	47.8	50.1	53.4
FLA	1.4		S/T	0.99	0.96	0.87	0.70	1.00	0.98	0.89	0.72	1.00	1.00	0.92	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
LRA	3.24	85	AMPS	18.3	18.7	19.4	20.1	19.9	20.4	21.1	21.9	21.3	21.8	22.6	23.4	22.7	23.3	24.1	25.0	24.1	24.7	25.5	26.5
RPM	840		HI PR	171	184	194	202	194	209	221	230	221	238	251	262	249	268	283	295	275	296	312	326
Cap MFD/V	5/370		LO PR	62	66	72	77	64	68	75	80	68	72	78	84	71	75	82	88	73	78	85	91
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	--	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	05 -- 20		MBh	71.0	67.2	63.3	59.2	56.5	54.7	50.9	46.9	45.6	42.1	38.8	36.6	35.2	31.6	28.0	24.4	20.9	17.1		
Low Amb	None		T/R	34.6	32.8	30.9	28.8	27.5	26.7	24.8	22.9	22.2	20.5	18.9	17.8	17.2	15.4	13.7	11.9	10.2	8.3		
Defrost	ElecTime-Temp		KW	5.56	5.45	5.34	5.24	5.17	5.13	5.02	4.91	5.14	5.02	4.90	4.83	4.79	4.67	4.55	4.44	4.32	4.20		
Sensor	32/72	70	AMPS	26.0	24.0	22.5	21.1	20.3	19.9	18.8	17.8	17.0	16.2	15.4	15.0	14.8	14.0	13.1	12.3	11.3	10.1		
Operating Chg	(R-22Oz)		COP	3.74	3.61	3.47	3.31	3.20	3.13	2.96	2.79	2.60	2.46	2.31	2.22	2.16	1.98	1.80	1.61	1.41	1.19		
(25 Ft Lines)*	249		EER	12.8	12.3	11.9	11.3	10.9	10.7	10.1	9.5	8.9	8.4	7.9	7.6	7.4	6.8	6.2	5.5	4.8	4.1		
Service Driers			HI PR	276	264	254	243	237	233	224	215	206	196	189	184	181	174	167	160	155	149		
Liquid/Chg	30 CuIn/17 oz		LO PR	76	70	66	60	57	55	51	45	41	36	32	30	29	24	21	18	15	12		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches. See Expanded Perf Data for exact matches. Part No:																					
Unit Weight	303	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq .75oz - 1/2 Liq **1080553**																					

Technical Service Data Sheets 1080914 & 1080915

Style No:	18MHD-000095ZR
Voltage	208-230
Phase	1
Ampacity	12.7
Wire Ga/Ft	14
Delay Fuse	15
Max. Fuse	20
Compressor	COPELAND
RLA	9
LRA	42
Cap MFD/V	30 / 370
CC Heater	None
Start Kit	None
Fan Motor-HP	1 / 8
Type	PSC
FLA	0.6
LRA	1.5
RPM	1120
Cap MFD/V	5/370
PTCR	None
Hi Press	NONE
Low Press	0
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(25 Ft Lines)*	80
Service Driers	
Liquid/Chg	5CuIn/5oz
Suction	17SqIn
Unit Weight	

Outdoor Ambient Temperature - Degrees F. Dry Bulb

		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	16.2	16.7	18.0	19.4	15.8	16.3	17.6	18.9	15.4	15.9	17.2	18.4	14.6	15.1	16.3	17.5	13.6	14.0	15.1	16.2
	S/T	0.87	0.77	0.59	0.38	0.89	0.79	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.96	0.86	0.65	0.42
	AMPS	5.6	5.8	6.0	6.2	6.1	6.3	6.5	6.7	6.5	6.7	6.9	7.2	7.0	7.1	7.4	7.6	7.4	7.6	7.8	8.1
	HI PR	180	194	205	214	205	221	233	243	233	251	265	277	263	283	298	311	290	312	330	344
	LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	76	83	89	74	79	86	92
80	MBh	16.5	16.8	18.0	19.2	16.1	16.4	17.5	18.8	15.7	16.0	17.1	18.3	14.9	15.2	16.3	17.4	13.8	14.1	15.1	16.1
	S/T	0.95	0.89	0.72	0.54	0.97	0.91	0.74	0.56	1.00	0.94	0.77	0.57	1.00	0.98	0.80	0.60	1.00	0.99	0.80	0.60
	AMPS	5.7	5.8	6.0	6.2	6.2	6.3	6.5	6.8	6.6	6.8	7.0	7.3	7.0	7.2	7.4	7.7	7.4	7.6	7.9	8.2
	HI PR	182	196	207	216	207	223	235	245	236	254	268	280	265	286	302	314	293	315	333	347
	LO PR	63	68	74	78	66	70	77	82	69	74	80	86	73	77	84	90	75	80	87	93
85	MBh	16.8	17.1	17.9	19.1	16.4	16.7	17.5	18.6	16.0	16.3	17.0	18.2	15.2	15.5	16.2	17.3	14.0	14.3	15.0	16.0
	S/T	1.00	0.96	0.87	0.70	1.00	0.98	0.89	0.72	1.00	1.00	0.92	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.96	0.78
	AMPS	5.8	5.9	6.1	6.3	6.2	6.4	6.6	6.8	6.7	6.8	7.1	7.3	7.1	7.3	7.5	7.8	7.5	7.7	8.0	8.3
	HI PR	184	198	209	218	209	225	238	248	238	256	271	282	268	288	305	318	296	319	336	351
	LO PR	64	68	74	79	67	71	77	82	70	74	81	87	73	78	85	91	76	81	88	94

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	21.6	20.5	19.3	18.0	17.2	16.7	15.5	14.3	12.0	11.1	10.2	9.7	9.3	8.3	7.4	6.4	5.5	4.5
	T/R	31.8	30.1	28.3	26.5	25.3	24.5	22.8	21.0	17.7	16.3	15.0	14.2	13.7	12.3	10.9	9.5	8.1	6.6
	KW	1.66	1.63	1.60	1.57	1.55	1.54	1.51	1.48	1.61	1.58	1.54	1.52	1.51	1.47	1.44	1.40	1.36	1.33
	AMPS	7.5	7.0	6.5	6.1	5.9	5.8	5.5	5.2	5.0	4.8	4.5	4.4	4.4	4.2	3.9	3.7	3.4	3.1
	COP	3.81	3.67	3.53	3.36	3.25	3.17	3.01	2.83	2.18	2.06	1.94	1.86	1.80	1.66	1.51	1.35	1.18	0.99
	EER	13.0	12.5	12.0	11.5	11.1	10.8	10.3	9.7	7.4	7.0	6.6	6.3	6.2	5.7	5.1	4.6	4.0	3.4
	HI PR	254	243	234	224	218	214	206	198	189	181	174	169	166	160	154	148	142	137
	LO PR	74	69	64	59	56	54	49	44	40	35	31	29	28	24	20	17	15	12

Calculated averaged performance data, for service applications for all matches. Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq **1080914**

Style No:	24MHD-000095ZR
Voltage	208-230
Phase	1
Ampacity	16.3
Wire Ga/Ft	14
Delay Fuse	20
Max. Fuse	25
Compressor	COPELAND
RLA	11.9
LRA	59
Cap MFD/V	35 / 370
CC Heater	None
Start Kit	None
Fan Motor-HP	1 / 8
Type	PSC
FLA	0.6
LRA	1.5
RPM	1120
Cap MFD/V	5/370
PTCR	None
Hi Press	NONE
Low Press	0
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(25 Ft Lines)*	94
Service Driers	
Liquid/Chg	5CuIn/5oz
Suction	17SqIn
Unit Weight	

Outdoor Ambient Temperature - Degrees F. Dry Bulb

		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
75	MBh	22.4	23.0	24.9	26.8	21.8	22.5	24.3	26.1	21.3	21.9	23.8	25.5	20.2	20.8	22.6	24.2	18.8	19.3	20.9	22.4
	S/T	0.84	0.75	0.57	0.37	0.86	0.77	0.58	0.38	0.89	0.80	0.60	0.39	0.92	0.83	0.63	0.40	0.93	0.83	0.63	0.41
	AMPS	8.3	8.5	8.8	9.1	9.0	9.2	9.5	9.9	9.6	9.9	10.2	10.6	10.3	10.5	10.9	11.3	10.9	11.2	11.5	12.0
	HI PR	187	202	213	222	213	229	242	252	243	261	276	288	273	294	310	324	302	325	343	357
	LO PR	62	66	72	77	64	69	75	80	68	72	79	84	71	75	82	88	73	78	85	91
80	MBh	22.8	23.3	24.9	26.6	22.2	22.7	24.3	25.9	21.7	22.2	23.7	25.3	20.6	21.1	22.5	24.0	19.1	19.5	20.8	22.3
	S/T	0.92	0.87	0.70	0.53	0.95	0.89	0.72	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.96	0.78	0.58
	AMPS	8.3	8.5	8.8	9.2	9.1	9.3	9.6	10.0	9.7	10.0	10.3	10.7	10.4	10.6	11.0	11.4	11.0	11.3	11.6	12.1
	HI PR	189	204	215	224	215	232	245	255	245	264	278	290	276	297	313	327	305	328	346	361
	LO PR	63	67	73	77	65	69	76	80	68	73	79	85	72	76	83	89	74	79	86	92
85	MBh	23.2	23.6	24.7	26.4	22.6	23.1	24.2	25.8	22.1	22.5	23.6	25.1	21.0	21.4	22.4	23.9	19.4	19.8	20.7	22.1
	S/T	0.97	0.93	0.84	0.68	0.99	0.96	0.86	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.93	0.75	1.00	1.00	0.93	0.76
	AMPS	8.4	8.6	8.9	9.3	9.2	9.4	9.7	10.1	9.8	10.1	10.4	10.8	10.5	10.7	11.1	11.5	11.1	11.4	11.8	12.2
	HI PR	191	206	217	226	217	234	247	258	248	266	281	293	278	300	316	330	308	331	350	365
	LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	80	87	93

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
70	MBh	31.1	29.5	27.8	25.9	24.8	24.0	22.3	20.6	18.4	17.0	15.6	14.8	14.2	12.7	11.3	9.9	8.4	6.9
	T/R	36.1	34.1	32.2	30.0	28.7	27.8	25.8	23.8	21.3	19.6	18.1	17.1	16.4	14.8	13.1	11.4	9.7	8.0
	KW	2.30	2.25	2.21	2.16	2.14	2.12	2.08	2.03	2.08	2.03	1.99	1.96	1.94	1.89	1.85	1.80	1.75	1.71
	AMPS	11.2	10.4	9.7	9.1	8.8	8.6	8.1	7.7	7.3	7.0	6.7	6.5	6.4	6.1	5.7	5.3	4.9	4.4
	COP	3.97	3.83	3.68	3.51	3.39	3.32	3.14	2.96	2.58	2.44	2.30	2.20	2.14	1.97	1.79	1.60	1.40	1.18
	EER	13.6	13.1	12.6	12.0	11.6	11.3	10.7	10.1	8.8	8.3	7.9	7.5	7.3	6.7	6.1	5.5	4.8	4.0
	HI PR	250	240	231	221	215	211	203	195	187	178	171	167	164	158	152	146	140	135
	LO PR	73	68	63	58	55	53	49	43	39	35	31	29	27	23	20	17	15	12

Calculated averaged performance data, for service applications for all matches. Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq **1080915**

Technical Service Data Sheets 1080916 & 1080917

Style No:	30MHD-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	18.9	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14/27		MBh	26.7	27.5	29.8	31.9	26.1	26.8	29.1	31.2	25.4	26.2	28.3	30.4	24.2	24.9	26.9	28.9	22.4	23.0	24.9	26.8
Delay Fuse	25		S/T	0.86	0.76	0.58	0.37	0.88	0.78	0.59	0.38	0.91	0.81	0.61	0.39	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41
Max. Fuse	30	75	AMPS	9.1	9.3	9.6	10.0	9.9	10.1	10.5	10.9	10.6	10.8	11.2	11.6	11.2	11.5	11.9	12.3	11.9	12.2	12.6	13.1
Compressor	COPELAND		HI PR	179	192	203	212	203	219	231	241	232	249	263	274	261	280	296	309	288	310	327	341
RLA	14.1		LO PR	62	66	72	76	64	68	75	79	67	72	78	83	71	75	82	87	73	78	85	90
LRA	73		MBh	27.2	27.8	29.7	31.7	26.5	27.1	29.0	31.0	25.9	26.5	28.3	30.2	24.6	25.1	26.8	28.7	22.8	23.3	24.9	26.6
Cap MFD/V	35/370		S/T	0.94	0.88	0.72	0.54	0.96	0.90	0.73	0.55	0.99	0.93	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.97	0.79	0.59
CC Heater	None	80	AMPS	9.2	9.4	9.7	10.1	10.0	10.2	10.6	11.0	10.7	10.9	11.3	11.7	11.3	11.6	12.0	12.5	12.0	12.3	12.7	13.2
Start Kit	None		HI PR	181	194	205	214	205	221	233	243	234	252	266	277	263	283	299	312	291	313	330	345
Fan Motor-HP	1 / 3		LO PR	62	66	72	77	65	69	75	80	68	72	79	84	71	76	83	88	74	79	86	91
Type	PSC		MBh	27.7	28.2	29.5	31.5	27.0	27.5	28.8	30.8	26.3	26.8	28.1	30.0	25.0	25.5	26.7	28.5	23.2	23.6	24.7	26.4
FLA	1.3		S/T	0.98	0.95	0.86	0.69	1.00	0.97	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.94	0.76	1.00	1.00	0.95	0.77
LRA	3.56	85	AMPS	9.3	9.5	9.8	10.2	10.1	10.3	10.7	11.1	10.8	11.0	11.4	11.8	11.4	11.7	12.1	12.6	12.1	12.4	12.8	13.3
RPM	1100		HI PR	182	196	207	216	207	223	236	246	236	254	268	280	266	286	302	315	294	316	334	348
Cap MFD/V	5/370		LO PR	63	67	73	78	65	70	76	81	69	73	80	85	72	77	84	89	75	79	87	92
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0 PSIG		MBh	36.1	34.2	32.2	30.1	28.7	27.8	25.8	23.8	21.9	20.2	18.6	17.6	16.9	15.2	13.5	11.8	10.0	8.2		
Low Amb	None		T/R	33.4	31.6	29.8	27.8	26.6	25.8	23.9	22.1	20.3	18.7	17.3	16.3	15.7	14.1	12.5	10.9	9.3	7.6		
Defrost	ElecTime-Temp		KW	2.77	2.71	2.66	2.61	2.58	2.56	2.50	2.45	2.46	2.41	2.35	2.32	2.30	2.25	2.19	2.14	2.09	2.03		
Sensor	31-51	70	AMPS	12.2	11.3	10.6	10.0	9.6	9.4	8.9	8.5	8.1	7.8	7.4	7.2	7.1	6.8	6.3	6.0	5.5	5.0		
Operating Chg	(R-22Oz)		COP	3.82	3.68	3.54	3.37	3.26	3.19	3.02	2.84	2.60	2.46	2.32	2.22	2.15	1.98	1.80	1.61	1.41	1.18		
(25 Ft Lines)*	103		EER	13.0	12.6	12.1	11.5	11.1	10.9	10.3	9.7	8.9	8.4	7.9	7.6	7.4	6.8	6.1	5.5	4.8	4.0		
Service Driers			HI PR	241	231	222	212	207	203	195	187	180	171	165	161	158	152	146	140	135	130		
Liquid/Chg	8CuIn/7oz		LO PR	71	66	61	56	53	51	47	42	38	34	30	28	27	23	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080916**	

Style No:	36MHD-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	21.3	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	12/32		MBh	33.2	34.1	37.0	39.7	32.4	33.3	36.1	38.7	31.6	32.5	35.2	37.8	30.0	30.9	33.4	35.9	27.8	28.6	31.0	33.2
Delay Fuse	30		S/T	0.80	0.72	0.54	0.35	0.82	0.74	0.56	0.36	0.85	0.76	0.57	0.37	0.88	0.79	0.60	0.38	0.89	0.79	0.60	0.39
Max. Fuse	35	75	AMPS	13.0	13.3	13.7	14.3	14.1	14.5	14.9	15.5	15.1	15.5	16.0	16.6	16.1	16.5	17.0	17.7	17.1	17.5	18.1	18.8
Compressor	COPELAND		HI PR	187	201	212	221	212	228	241	252	242	260	275	286	272	293	309	322	300	323	341	356
RLA	16		LO PR	60	64	69	74	62	66	72	77	65	69	76	81	68	73	79	85	71	75	82	88
LRA	100		MBh	33.8	34.5	36.8	39.4	32.9	33.7	36.0	38.4	32.1	32.8	35.1	37.5	30.5	31.2	33.3	35.6	28.3	28.9	30.9	33.0
Cap MFD/V	40/440		S/T	0.88	0.83	0.67	0.50	0.90	0.85	0.69	0.51	0.93	0.87	0.71	0.53	0.97	0.91	0.74	0.55	0.97	0.91	0.74	0.56
CC Heater	None	80	AMPS	13.1	13.4	13.9	14.4	14.2	14.6	15.1	15.7	15.2	15.6	16.1	16.8	16.2	16.6	17.2	17.9	17.2	17.6	18.3	19.0
Start Kit	None		HI PR	188	203	214	223	214	231	244	254	244	263	277	289	275	296	312	326	303	327	345	360
Fan Motor-HP	1 / 3		LO PR	60	64	70	75	63	67	73	78	66	70	77	82	69	74	80	85	71	76	83	88
Type	PSC		MBh	34.3	35.0	36.7	39.1	33.5	34.2	35.8	38.2	32.7	33.3	34.9	37.2	31.1	31.7	33.2	35.4	28.8	29.3	30.7	32.8
FLA	1.3		S/T	0.92	0.89	0.80	0.65	0.95	0.91	0.82	0.67	0.98	0.94	0.85	0.69	1.00	0.98	0.88	0.72	1.00	0.99	0.89	0.72
LRA	3.56	85	AMPS	13.2	13.5	14.0	14.5	14.4	14.7	15.2	15.8	15.4	15.8	16.3	16.9	16.4	16.8	17.4	18.0	17.4	17.8	18.4	19.1
RPM	1100		HI PR	190	205	216	226	216	233	246	257	247	265	280	292	277	299	315	329	306	330	348	363
Cap MFD/V	5/370		LO PR	61	65	71	75	63	67	74	78	67	71	77	82	70	74	81	86	72	77	84	89
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0 PSIG		MBh	45.0	42.6	40.1	37.5	35.8	34.7	32.2	29.7	27.2	25.1	23.1	21.8	21.0	18.8	16.7	14.6	12.4	10.2		
Low Amb	None		T/R	35.3	33.4	31.5	29.4	28.1	27.2	25.3	23.3	21.3	19.7	18.1	17.1	16.5	14.8	13.1	11.4	9.8	8.0		
Defrost	ElecTime-Temp		KW	3.37	3.30	3.24	3.18	3.14	3.11	3.05	2.99	3.05	2.98	2.92	2.88	2.85	2.78	2.72	2.65	2.58	2.52		
Sensor	31-51	70	AMPS	17.2	15.9	14.8	14.0	13.4	13.2	12.4	11.8	11.3	10.8	10.2	10.0	9.8	9.3	8.7	8.2	7.5	6.8		
Operating Chg	(R-22Oz)		COP	3.91	3.77	3.62	3.45	3.34	3.26	3.09	2.91	2.61	2.46	2.32	2.22	2.16	1.98	1.80	1.61	1.41	1.18		
(25 Ft Lines)*	123		EER	13.4	12.9	12.4	11.8	11.4	11.1	10.6	9.9	8.9	8.4	7.9	7.6	7.4	6.8	6.1	5.5	4.8	4.0		
Service Driers			HI PR	252	242	232	222	217	213	205	196	188	180	172	168	165	159	153	147	141	136		
Liquid/Chg	16CuIn/11oz		LO PR	69	64	60	55	52	50	46	41	37	33	29	27	26	22	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080917**	

Technical Service Data Sheets 1080918 & 1080919

Style No:	42MHD-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	24.5	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	12/26	26	MBh	38.0	39.1	42.3	45.4	37.1	38.2	41.3	44.3	36.2	37.2	40.3	43.2	34.3	35.4	38.3	41.1	31.8	32.8	35.5	38.1
Delay Fuse	30		S/T	0.81	0.73	0.55	0.35	0.83	0.75	0.56	0.36	0.86	0.77	0.58	0.37	0.89	0.80	0.60	0.39	0.90	0.81	0.61	0.39
Max. Fuse	40	75	AMPS	16.9	17.3	17.9	18.6	18.4	18.9	19.5	20.3	19.7	20.2	20.9	21.7	21.0	21.5	22.3	23.2	22.3	22.9	23.7	24.6
Compressor	COPELAND		HI PR	187	202	213	222	213	229	242	253	243	261	276	288	273	294	310	324	302	325	343	358
RLA	18.6		LO PR	59	63	69	73	61	65	71	76	65	69	75	80	68	72	79	84	70	74	81	87
LRA	127		MBh	38.6	39.5	42.2	45.1	37.7	38.5	41.2	44.0	36.8	37.6	40.2	42.9	35.0	35.7	38.2	40.8	32.4	33.1	35.3	37.8
Cap MFD/V	40/440		S/T	0.89	0.84	0.68	0.51	0.91	0.86	0.70	0.52	0.94	0.88	0.72	0.54	0.98	0.92	0.75	0.56	0.99	0.93	0.75	0.56
CC Heater	None	80	AMPS	17.1	17.5	18.1	18.8	18.6	19.0	19.7	20.5	19.9	20.4	21.1	21.9	21.2	21.8	22.5	23.4	22.5	23.1	23.9	24.8
Start Kit	None		HI PR	189	204	215	224	215	232	245	255	245	264	279	291	276	297	313	327	305	328	346	361
Fan Motor-HP	1 / 3		LO PR	60	64	69	74	62	66	72	77	65	69	76	81	68	73	79	84	71	75	82	87
Type	PSC		MBh	39.3	40.1	42.0	44.8	38.4	39.1	41.0	43.7	37.4	38.2	40.0	42.6	35.6	36.3	38.0	40.5	32.9	33.6	35.2	37.5
FLA	1.3		S/T	0.93	0.90	0.81	0.66	0.96	0.92	0.83	0.68	0.99	0.95	0.86	0.70	1.00	0.99	0.89	0.73	1.00	1.00	0.90	0.73
LRA	3.56	85	AMPS	17.2	17.6	18.2	19.0	18.8	19.2	19.9	20.7	20.1	20.6	21.3	22.1	21.4	22.0	22.7	23.6	22.7	23.3	24.1	25.1
RPM	1100		HI PR	191	206	217	227	217	234	247	258	248	266	281	293	279	300	317	330	308	331	350	365
Cap MFD/V	5/370		LO PR	60	64	70	75	63	67	73	78	66	70	76	81	69	73	80	85	71	76	83	88
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0 PSIG		MBh	50.0	47.3	44.6	41.6	39.8	38.5	35.8	33.0	29.4	27.1	25.0	23.6	22.7	20.4	18.1	15.8	13.5	11.0		
Low Amb	None		T/R	34.3	32.4	30.6	28.5	27.3	26.4	24.5	22.6	20.2	18.6	17.1	16.2	15.6	14.0	12.4	10.8	9.2	7.6		
Defrost	ElecTime-Temp		KW	3.88	3.81	3.73	3.66	3.62	3.59	3.51	3.44	3.56	3.48	3.40	3.36	3.33	3.25	3.17	3.09	3.01	2.93		
Sensor	31-51	70	AMPS	24.0	22.2	20.8	19.5	18.8	18.4	17.3	16.4	15.7	14.9	14.2	13.9	13.7	12.9	12.0	11.3	10.4	9.3		
Operating Chg	(R-22Oz)		COP	3.77	3.64	3.49	3.33	3.22	3.14	2.98	2.81	2.42	2.28	2.15	2.06	2.00	1.84	1.67	1.49	1.31	1.10		
(25 Ft Lines)*	127		EER	12.9	12.4	11.9	11.4	11.0	10.7	10.2	9.6	8.3	7.8	7.3	7.0	6.8	6.3	5.7	5.1	4.5	3.8		
Service Driers			HI PR	241	231	222	212	207	203	195	188	180	172	165	161	158	152	146	140	135	130		
Liquid/Chg	16CuIn/11oz		LO PR	64	60	56	51	48	47	43	38	34	31	27	25	24	20	18	15	13	10		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080918**	

Style No:	48MHD-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	28.6	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	10/40		MBh	43.9	45.2	48.9	52.5	42.8	44.1	47.7	51.2	41.8	43.0	46.6	50.0	39.7	40.9	44.3	47.5	36.8	37.9	41.0	44.0
Delay Fuse	35		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.61	0.39	0.92	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.86	0.65	0.42
Max. Fuse	50	75	AMPS	16.6	17.1	17.6	18.3	18.1	18.5	19.2	19.9	19.4	19.8	20.5	21.3	20.6	21.1	21.8	22.7	21.9	22.4	23.2	24.1
Compressor	COPELAND		HI PR	174	188	198	207	198	213	225	235	226	243	257	268	254	273	289	301	281	302	319	333
RLA	21.8		LO PR	59	63	69	73	62	66	72	76	65	69	75	80	68	72	79	84	70	75	82	87
LRA	131		MBh	44.7	45.6	48.8	52.1	43.6	44.6	47.6	50.9	42.5	43.5	46.4	49.6	40.4	41.3	44.1	47.2	37.4	38.3	40.9	43.7
Cap MFD/V	40/370		S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.99	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	None	80	AMPS	16.8	17.2	17.8	18.5	18.3	18.7	19.3	20.1	19.5	20.0	20.7	21.5	20.8	21.3	22.1	22.9	22.1	22.6	23.4	24.3
Start Kit	None		HI PR	176	190	200	209	200	216	228	237	228	245	259	270	257	276	292	304	284	305	322	336
Fan Motor-HP	1 / 4		LO PR	60	64	70	74	62	66	72	77	65	70	76	81	69	73	80	85	71	76	82	88
Type	PSC		MBh	45.5	46.3	48.5	51.8	44.4	45.2	47.4	50.5	43.3	44.1	46.2	49.3	41.1	41.9	43.9	46.8	38.1	38.8	40.7	43.4
FLA	1.4		S/T	1.00	0.97	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
LRA	3.24	85	AMPS	17.0	17.4	17.9	18.6	18.4	18.9	19.5	20.3	19.7	20.2	20.9	21.7	21.0	21.5	22.3	23.1	22.3	22.8	23.6	24.5
RPM	840		HI PR	178	191	202	211	202	218	230	240	230	248	262	273	259	279	295	307	286	308	325	339
Cap MFD/V	5/370		LO PR	61	64	70	75	63	67	73	78	66	70	77	82	69	74	81	86	72	76	83	89
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0 PSIG		MBh	60.1	56.9	53.6	50.1	47.8	46.4	43.1	39.7	36.9	34.1	31.4	29.6	28.5	25.6	22.7	19.8	16.9	13.8		
Low Amb	None		T/R	34.8	32.9	31.0	29.0	27.7	26.8	24.9	23.0	21.4	19.7	18.2	17.1	16.5	14.8	13.1	11.5	9.8	8.0		
Defrost	ElecTime-Temp		KW	4.42	4.34	4.25	4.17	4.12	4.09	4.01	3.92	3.97	3.88	3.79	3.74	3.71	3.62	3.53	3.45	3.36	3.27		
Sensor	31-51	70	AMPS	23.2	21.4	20.1	18.9	18.2	17.8	16.8	15.9	15.2	14.5	13.8	13.5	13.3	12.6	11.8	11.1	10.2	9.2		
Operating Chg	(R-22Oz)		COP	3.98	3.84	3.69	3.51	3.40	3.32	3.14	2.96	2.72	2.57	2.42	2.32	2.25	2.07	1.88	1.68	1.47	1.24		
(25 Ft Lines)*	151		EER	13.6	13.1	12.6	12.0	11.6	11.3	10.7	10.1	9.3	8.8	8.3	7.9	7.7	7.1	6.4	5.7	5.0	4.2		
Service Driers			HI PR	241	231	222	212	207	203	195	187	179	171	165	161	158	152	146	140	135	130		
Liquid/Chg	30CuIn/17oz		LO PR	67	62	59	54	51	49	45	40	36	32	28	26	25	21	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080919**	

Technical Service Data Sheets 1080920 & 1080925

Style No:	60MHD-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	35.2	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	8/49		MBh	54.8	56.4	61.1	65.6	53.5	55.1	59.6	64.0	52.2	53.7	58.2	62.4	49.6	51.1	55.3	59.3	45.9	47.3	51.2	54.9
Delay Fuse	45		S/T	0.81	0.73	0.55	0.35	0.83	0.75	0.56	0.36	0.86	0.77	0.58	0.37	0.89	0.80	0.60	0.39	0.90	0.81	0.61	0.39
Max. Fuse	60	75	AMPS	22.7	23.2	24.0	25.0	24.7	25.3	26.2	27.2	26.5	27.1	28.1	29.2	28.2	29.0	30.0	31.1	30.0	30.7	31.8	33.1
Compressor	COPELAND		HI PR	179	193	204	212	204	219	232	242	232	250	264	275	261	281	297	310	289	311	328	342
RLA	27.1		LO PR	58	62	67	72	60	64	70	75	63	67	74	78	66	71	77	82	69	73	80	85
LRA	172		MBh	55.8	57.0	60.9	65.1	54.5	55.6	59.5	63.6	53.1	54.3	58.0	62.0	50.5	51.6	55.1	58.9	46.8	47.8	51.0	54.6
Cap MFD/V	60/370		S/T	0.89	0.84	0.68	0.51	0.91	0.86	0.70	0.52	0.94	0.88	0.72	0.54	0.98	0.92	0.75	0.56	0.99	0.93	0.75	0.56
CC Heater	None	80	AMPS	22.9	23.5	24.3	25.2	24.9	25.6	26.5	27.5	26.7	27.4	28.4	29.5	28.5	29.2	30.2	31.4	30.3	31.0	32.1	33.4
Start Kit	None		HI PR	181	195	206	215	206	222	234	244	235	252	267	278	264	284	300	313	292	314	331	346
Fan Motor-HP	1 / 4		LO PR	59	62	68	72	61	65	71	75	64	68	74	79	67	71	78	83	69	74	80	86
Type	PSC		MBh	56.8	57.9	60.6	64.6	55.4	56.5	59.2	63.1	54.1	55.1	57.7	61.6	51.4	52.3	54.8	58.5	47.6	48.5	50.8	54.2
FLA	1.4		S/T	0.93	0.90	0.81	0.66	0.96	0.92	0.83	0.68	0.99	0.95	0.86	0.70	1.00	0.99	0.89	0.73	1.00	1.00	0.90	0.73
LRA	3.24	85	AMPS	23.1	23.7	24.5	25.4	25.2	25.8	26.7	27.7	27.0	27.7	28.6	29.7	28.8	29.5	30.5	31.7	30.6	31.3	32.4	33.7
RPM	840		HI PR	183	197	208	217	208	224	236	247	237	255	269	281	266	287	303	316	294	317	335	349
Cap MFD/V	5/370		LO PR	59	63	69	73	61	65	71	76	65	69	75	80	68	72	79	84	70	74	81	87
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0 PSIG		MBh	75.4	71.4	67.3	62.8	60.0	58.1	54.0	49.8	46.5	43.0	39.6	37.4	36.0	32.3	28.6	24.9	21.3	17.4		
Low Amb	None		T/R	39.9	37.8	35.6	33.2	31.7	30.8	28.6	26.3	24.6	22.7	20.9	19.8	19.0	17.1	15.1	13.2	11.3	9.2		
Defrost	ElecTime-Temp		KW	5.77	5.66	5.54	5.43	5.36	5.31	5.20	5.09	5.00	4.88	4.77	4.70	4.65	4.54	4.43	4.31	4.20	4.08		
Sensor	31-51	70	AMPS	31.4	29.0	27.1	25.4	24.5	24.0	22.6	21.4	20.4	19.5	18.5	18.0	17.8	16.8	15.7	14.7	13.5	12.1		
Operating Chg	(R-22Oz)		COP	3.82	3.69	3.55	3.39	3.27	3.20	3.04	2.86	2.73	2.58	2.43	2.33	2.26	2.08	1.89	1.69	1.48	1.25		
(25 Ft Lines)*	203		EER	13.1	12.6	12.1	11.6	11.2	10.9	10.4	9.8	9.3	8.8	8.3	7.9	7.7	7.1	6.5	5.8	5.1	4.3		
Service Driers			HI PR	263	252	243	232	227	222	214	205	196	188	180	176	173	166	160	153	148	143		
Liquid/Chg	30CuIn/17oz		LO PR	64	59	55	51	48	46	42	38	34	30	27	25	24	20	18	15	13	10		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080920**	

Style No:	24DHA-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	13.82	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14 / 20		MBh	21.5	22.2	24.0	25.8	21.0	21.7	23.4	25.2	20.5	21.1	22.9	24.5	19.5	20.1	21.7	23.3	18.1	18.6	20.1	21.6
Delay Fuse	20		S/T	0.88	0.79	0.60	0.38	0.90	0.81	0.61	0.39	0.93	0.83	0.63	0.41	0.97	0.86	0.65	0.42	0.98	0.87	0.66	0.42
Max. Fuse	20	75	AMPS	6.8	7.0	7.2	7.5	7.4	7.6	7.9	8.1	7.9	8.1	8.4	8.7	8.4	8.6	8.9	9.3	8.9	9.2	9.5	9.8
Compressor	Copeland		HI PR	165	177	187	195	187	202	213	222	213	230	243	253	240	258	273	285	265	286	301	314
RLA	11.4		LO PR	65	69	76	81	68	72	79	84	71	76	83	88	75	79	87	92	77	82	90	96
LRA	56		MBh	21.9	22.4	23.9	25.6	21.4	21.9	23.4	25.0	20.9	21.3	22.8	24.4	19.8	20.3	21.7	23.2	18.4	18.8	20.1	21.4
Cap MFD/V	40/370		S/T	0.97	0.91	0.74	0.55	0.99	0.93	0.76	0.56	1.00	0.96	0.78	0.58	1.00	0.99	0.81	0.61	1.00	1.00	0.82	0.61
CC Heater	None	80	AMPS	6.9	7.1	7.3	7.6	7.5	7.7	7.9	8.2	8.0	8.2	8.5	8.8	8.5	8.7	9.0	9.4	9.0	9.2	9.5	9.9
Start Kit	None		HI PR	166	179	189	197	189	204	215	224	216	232	245	256	243	261	276	287	268	288	305	318
Fan Motor-HP	1/6		LO PR	66	70	77	82	69	73	80	85	72	77	84	89	75	80	88	93	78	83	91	97
Type	PSC		MBh	22.3	22.7	23.8	25.4	21.8	22.2	23.3	24.8	21.2	21.7	22.7	24.2	20.2	20.6	21.6	23.0	18.7	19.1	20.0	21.3
FLA	1		S/T	1.00	0.98	0.88	0.72	1.00	1.00	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.97	0.79	1.00	1.00	0.98	0.79
LRA	1.86	85	AMPS	7.0	7.1	7.4	7.6	7.6	7.7	8.0	8.3	8.1	8.3	8.5	8.9	8.6	8.8	9.1	9.4	9.1	9.3	9.6	10.0
RPM	1100		HI PR	168	181	191	199	191	206	217	227	218	234	247	258	245	264	278	290	271	291	308	321
Cap MFD/V	5/370		LO PR	67	71	77	82	69	74	80	86	73	77	84	90	76	81	88	94	79	84	92	97
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	29.9	28.3	26.7	24.9	23.8	23.1	21.4	19.8	17.7	16.3	15.0	14.2	13.7	12.3	10.9	9.5	8.1	6.6		
Low Amb	None		T/R	34.6	32.8	30.9	28.8	27.5	26.7	24.8	22.9	20.5	18.9	17.4	16.4	15.8	14.2	12.6	11.0	9.4	7.7		
Defrost	ElecTime-Temp		KW	2.22	2.18	2.14	2.09	2.07	2.05	2.01	1.97	2.01	1.97	1.93	1.90	1.88	1.84	1.79	1.75	1.71	1.66		
Sensor	31-51	70	AMPS	10.0	9.2	8.6	8.1	7.8	7.7	7.2	6.9	6.6	6.3	6.0	5.9	5.8	5.5	5.1	4.8	4.5	4.0		
Operating Chg	(R-22Oz)		COP	3.94	3.81	3.66	3.48	3.36	3.29	3.12	2.93	2.57	2.43	2.29	2.19	2.13	1.95	1.77	1.58	1.39	1.17		
(25 Ft Line)*	109		EER	13.5	13.0	12.5	11.9	11.5	11.2	10.6	10.0	8.8	8.3	7.8	7.5	7.3	6.7	6.1	5.4	4.7	4.0		
Service Driers			HI PR	256	245	236	225	220	216	207	199	191	182	175	171	168	161	155	149	143	138		
Liquid/Chg	8CuIn/7oz		LO PR	76	70	66	60	57	55	50	45	40	36	32	30	28	24	21	18	15	12		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight	NA	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080925**	

Technical Service Data Sheets 1080926 & 1080927

Style No:	30DHA-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	17.8	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	25-Dec		MBh	27.0	27.8	30.1	32.3	26.4	27.2	29.4	31.6	25.7	26.5	28.7	30.8	24.5	25.2	27.3	29.2	22.7	23.3	25.2	27.1
Delay Fuse	25		S/T	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.91	0.81	0.61	0.40	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41
Max. Fuse	30	75	AMPS	8.9	9.1	9.4	9.7	9.6	9.9	10.2	10.6	10.3	10.6	10.9	11.3	11.0	11.3	11.6	12.1	11.6	11.9	12.3	12.8
Compressor	Copeland		HI PR	173	186	196	205	197	212	223	233	224	241	254	265	252	271	286	299	278	299	316	330
RLA	15		LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	90	75	80	87	93
LRA	72.5		MBh	27.5	28.1	30.0	32.1	26.9	27.4	29.3	31.3	26.2	26.8	28.6	30.6	24.9	25.4	27.2	29.0	23.1	23.6	25.2	26.9
Cap MFD/V	45/370		S/T	0.94	0.88	0.72	0.54	0.96	0.90	0.74	0.55	1.00	0.93	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.59
CC Heater	None	80	AMPS	9.0	9.2	9.5	9.8	9.7	10.0	10.3	10.7	10.4	10.7	11.0	11.5	11.1	11.4	11.8	12.2	11.8	12.1	12.5	12.9
Start Kit	None		HI PR	175	188	198	207	199	214	226	235	226	243	257	268	254	274	289	302	281	303	319	333
Fan Motor-HP	1/6		LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	94
Type	PSC		MBh	28.0	28.5	29.9	31.9	27.3	27.9	29.2	31.1	26.7	27.2	28.5	30.4	25.3	25.8	27.0	28.8	23.5	23.9	25.0	26.7
FLA	1		S/T	0.99	0.95	0.86	0.70	1.00	0.98	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.94	0.77	1.00	1.00	0.95	0.77
LRA	1.86	85	AMPS	9.0	9.3	9.6	9.9	9.8	10.1	10.4	10.8	10.5	10.8	11.1	11.6	11.2	11.5	11.9	12.3	11.9	12.2	12.6	13.1
RPM	1100		HI PR	176	190	200	209	201	216	228	238	228	246	260	271	257	277	292	305	284	306	323	337
Cap MFD/V	5/370		LO PR	65	69	75	80	67	71	78	83	70	75	82	87	74	79	86	91	76	81	89	94
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	35.7	33.8	31.8	29.7	28.4	27.5	25.6	23.6	21.2	19.6	18.0	17.0	16.4	14.7	13.0	11.4	9.7	7.9		
Low Amb	None		T/R	33.1	31.3	29.5	27.5	26.3	25.5	23.7	21.8	19.6	18.1	16.7	15.7	15.2	13.6	12.1	10.5	9.0	7.4		
Defrost	ElecTime-Temp		KW	2.59	2.54	2.49	2.44	2.41	2.39	2.35	2.30	2.38	2.33	2.28	2.25	2.23	2.18	2.12	2.07	2.02	1.97		
Sensor	31-51	70	AMPS	11.8	10.9	10.2	9.6	9.2	9.1	8.5	8.1	7.8	7.4	7.0	6.9	6.8	6.4	6.0	5.6	5.2	4.7		
Operating Chg	(R-22Oz)		COP	4.04	3.90	3.74	3.56	3.44	3.37	3.19	3.00	2.60	2.45	2.31	2.21	2.15	1.98	1.79	1.60	1.40	1.18		
(25 Ft Line)*	106		EER	13.8	13.3	12.8	12.2	11.8	11.5	10.9	10.3	8.9	8.4	7.9	7.6	7.3	6.8	6.1	5.5	4.8	4.0		
Service Driers			HI PR	229	220	211	202	197	193	186	178	171	163	157	153	150	145	139	133	129	124		
Liquid/Chg	8CuIn/7oz		LO PR	74	69	65	59	56	54	50	44	40	36	31	29	28	24	20	17	15	12		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight	NA	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080926**	

Style No:	36DHA-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	21.33	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	10 / 30		MBh	32.7	33.7	36.4	39.1	31.9	32.9	35.6	38.2	31.1	32.1	34.7	37.2	29.6	30.5	33.0	35.4	27.4	28.2	30.5	32.8
Delay Fuse	30		S/T	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.91	0.81	0.61	0.40	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41
Max. Fuse	35	75	AMPS	10.5	10.7	11.0	11.4	11.3	11.6	12.0	12.4	12.1	12.4	12.8	13.2	12.8	13.1	13.6	14.1	13.6	13.9	14.4	14.9
Compressor	COPELAND		HI PR	161	174	183	191	184	198	209	218	209	225	238	248	235	253	267	279	260	280	295	308
RLA	17.9		LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87	73	77	84	90
LRA	88		MBh	33.3	34.0	36.3	38.8	32.5	33.2	35.5	37.9	31.7	32.4	34.6	37.0	30.1	30.8	32.9	35.1	27.9	28.5	30.4	32.5
Cap MFD/V	50/370		S/T	0.94	0.88	0.72	0.54	0.96	0.90	0.74	0.55	1.00	0.93	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.59
CC Heater	NONE	80	AMPS	10.5	10.8	11.1	11.5	11.4	11.7	12.1	12.5	12.2	12.5	12.9	13.4	13.0	13.3	13.7	14.2	13.7	14.0	14.5	15.0
Start Kit	NONE		HI PR	163	175	185	193	185	200	211	220	211	227	240	250	238	256	270	282	263	283	298	311
Fan Motor-HP	1 / 3		LO PR	62	66	72	77	65	69	75	80	68	72	79	84	71	76	82	88	73	78	85	91
Type	PSC		MBh	33.9	34.5	36.1	38.6	33.1	33.7	35.3	37.6	32.2	32.9	34.4	36.7	30.6	31.2	32.7	34.9	28.4	28.9	30.3	32.3
FLA	1.3		S/T	0.99	0.95	0.86	0.70	1.00	0.98	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.94	0.77	1.00	1.00	0.95	0.77
LRA	3.56	85	AMPS	10.6	10.9	11.2	11.6	11.5	11.8	12.2	12.6	12.3	12.6	13.0	13.5	13.1	13.4	13.8	14.3	13.8	14.2	14.6	15.2
RPM	1120		HI PR	165	177	187	195	187	202	213	222	213	230	242	253	240	258	273	284	265	285	301	314
Cap MFD/V	5/370		LO PR	63	67	73	78	65	69	76	81	68	73	79	85	72	76	83	89	74	79	86	92
PTCR	NONE	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	45.3	42.8	40.4	37.7	36.0	34.9	32.4	29.9	26.7	24.6	22.7	21.4	20.6	18.5	16.4	14.3	12.2	10.0		
Low Amb	NONE		T/R	34.9	33.1	31.1	29.1	27.8	26.9	25.0	23.1	20.6	19.0	17.5	16.5	15.9	14.3	12.6	11.0	9.4	7.7		
Defrost	ElecTime-Temp		KW	3.53	3.46	3.39	3.33	3.29	3.26	3.20	3.13	3.15	3.08	3.01	2.97	2.94	2.87	2.81	2.74	2.67	2.60		
Sensor	31-51	70	AMPS	16.4	15.2	14.2	13.4	12.9	12.7	11.9	11.3	10.9	10.4	9.9	9.7	9.5	9.1	8.5	8.0	7.4	6.7		
Operating Chg	(R-22Oz)		COP	3.75	3.62	3.48	3.31	3.20	3.13	2.97	2.79	2.48	2.34	2.20	2.11	2.05	1.88	1.71	1.53	1.34	1.12		
(25 Ft Line)*	149		EER	12.8	12.4	11.9	11.3	10.9	10.7	10.1	9.5	8.5	8.0	7.5	7.2	7.0	6.4	5.8	5.2	4.6	3.8		
Service Driers			HI PR	272	261	251	240	234	230	221	212	203	194	186	182	178	172	165	158	153	147		
Liquid/Chg	16CuIn/11oz		LO PR	74	69	65	59	56	54	50	44	40	36	31	29	28	24	20	17	15	12		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight	NA	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**1080927**	

Technical Service Data Sheets 1080928 & 1080929

Style No:	42DHA-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	23.8	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	10 / 30		MBh	37.8	38.9	42.1	45.2	36.9	38.0	41.1	44.1	36.0	37.1	40.1	43.1	34.2	35.2	38.1	40.9	31.7	32.6	35.3	37.9
Delay Fuse	30		S/T	0.85	0.76	0.58	0.37	0.87	0.78	0.59	0.38	0.90	0.81	0.61	0.39	0.94	0.84	0.63	0.41	0.94	0.84	0.64	0.41
Max. Fuse	40	75	AMPS	12.3	12.6	13.0	13.5	13.3	13.7	14.1	14.7	14.3	14.6	15.1	15.7	15.2	15.6	16.1	16.7	16.1	16.5	17.0	17.7
Compressor	Copeland		HI PR	161	173	183	191	183	197	208	217	208	224	237	247	234	252	266	278	259	279	294	307
RLA	20		LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	81	87	73	77	84	90
LRA	104		MBh	38.5	39.3	42.0	44.9	37.6	38.4	41.0	43.8	36.6	37.4	40.0	42.8	34.8	35.6	38.0	40.6	32.2	32.9	35.2	37.6
Cap MFD/V	55/370		S/T	0.93	0.88	0.71	0.53	0.96	0.90	0.73	0.55	0.99	0.93	0.76	0.56	1.00	0.96	0.78	0.59	1.00	0.97	0.79	0.59
CC Heater	None	80	AMPS	12.4	12.7	13.1	13.6	13.5	13.8	14.3	14.8	14.4	14.7	15.2	15.8	15.3	15.7	16.2	16.8	16.2	16.6	17.2	17.9
Start Kit	None		HI PR	162	175	185	192	185	199	210	219	210	226	239	249	237	255	269	280	261	281	297	310
Fan Motor-HP	1/4		LO PR	62	66	72	77	64	68	75	80	68	72	79	84	71	75	82	88	73	78	85	91
Type	PSC		MBh	39.1	39.9	41.8	44.6	38.2	39.0	40.8	43.5	37.3	38.0	39.8	42.5	35.4	36.1	37.8	40.3	32.8	33.4	35.0	37.4
FLA	1.4		S/T	0.98	0.95	0.85	0.69	1.00	0.97	0.87	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.94	0.76	1.00	1.00	0.95	0.77
LRA	3.24	85	AMPS	12.5	12.8	13.2	13.7	13.6	13.9	14.4	14.9	14.5	14.9	15.4	16.0	15.5	15.8	16.4	17.0	16.4	16.8	17.4	18.0
RPM	840		HI PR	164	176	186	194	187	201	212	221	212	229	241	252	239	257	272	283	264	284	300	313
Cap MFD/V	5/370		LO PR	63	67	73	77	65	69	75	80	68	73	79	84	72	76	83	88	74	79	86	92
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	52.8	50.0	47.1	44.0	42.0	40.7	37.8	34.9	31.4	29.0	26.7	25.2	24.3	21.8	19.3	16.8	14.4	11.8		
Low Amb	None		T/R	40.7	38.6	36.3	33.9	32.4	31.4	29.2	26.9	24.2	22.4	20.6	19.4	18.7	16.8	14.9	13.0	11.1	9.1		
Defrost	ElecTime-Temp		KW	3.95	3.89	3.83	3.77	3.74	3.71	3.66	3.60	3.43	3.37	3.31	3.28	3.26	3.20	3.15	3.09	3.03	2.98		
Sensor	31-51	70	AMPS	18.5	17.1	16.0	15.0	14.5	14.2	13.4	12.7	12.2	11.6	11.1	10.8	10.6	10.1	9.4	8.8	8.2	7.3		
Operating Chg	(R-22Oz)		COP	3.91	3.76	3.59	3.41	3.29	3.21	3.02	2.84	2.68	2.52	2.36	2.25	2.18	1.99	1.80	1.59	1.39	1.16		
(25 Ft Line)*	189		EER	13.4	12.8	12.3	11.7	11.2	11.0	10.3	9.7	9.2	8.6	8.1	7.7	7.4	6.8	6.1	5.4	4.7	4.0		
Service Driers			HI PR	258	247	238	227	222	218	209	201	192	184	176	172	169	163	157	150	145	140		
Liquid/Chg	16CuIn/11oz		LO PR	76	70	66	60	57	55	50	45	41	36	32	30	29	24	21	18	15	12		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																		Part No:			
Unit Weight	NA	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																		**1080928**			

Style No:	48DHA-000095ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	31	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	8 / 40		MBh	43.9	45.2	49.0	52.6	42.9	44.2	47.8	51.3	41.9	43.1	46.6	50.1	39.8	40.9	44.3	47.6	36.8	37.9	41.0	44.0
Delay Fuse	40		S/T	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.91	0.81	0.61	0.40	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41
Max. Fuse	50	75	AMPS	13.9	14.2	14.7	15.3	15.1	15.5	16.0	16.6	16.2	16.6	17.1	17.8	17.2	17.6	18.2	18.9	18.3	18.7	19.3	20.1
Compressor	Copeland		HI PR	157	169	179	186	179	192	203	212	204	219	231	241	229	246	260	271	253	272	288	300
RLA	26.4		LO PR	58	62	67	72	60	64	70	74	63	67	73	78	66	70	77	82	68	73	79	85
LRA	129		MBh	44.7	45.7	48.8	52.2	43.7	44.6	47.7	51.0	42.6	43.5	46.5	49.7	40.5	41.3	44.2	47.2	37.5	38.3	40.9	43.7
Cap MFD/V	60 / 370		S/T	0.94	0.88	0.72	0.54	0.96	0.90	0.74	0.55	1.00	0.93	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.59
CC Heater	None	80	AMPS	14.0	14.4	14.9	15.4	15.3	15.6	16.2	16.8	16.3	16.7	17.3	18.0	17.4	17.8	18.4	19.1	18.4	18.9	19.5	20.3
Start Kit	None		HI PR	159	171	180	188	181	194	205	214	206	221	234	244	231	249	263	274	256	275	290	303
Fan Motor-HP	1/4		LO PR	58	62	68	72	61	65	71	75	64	68	74	79	67	71	78	83	69	74	80	86
Type	PSC		MBh	45.5	46.4	48.6	51.8	44.4	45.3	47.4	50.6	43.3	44.2	46.3	49.4	41.2	42.0	44.0	46.9	38.1	38.9	40.7	43.4
FLA	1.4		S/T	0.99	0.95	0.86	0.70	1.00	0.98	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.94	0.77	1.00	1.00	0.95	0.77
LRA	3.24	85	AMPS	14.2	14.5	15.0	15.6	15.4	15.8	16.3	16.9	16.5	16.9	17.5	18.1	17.5	18.0	18.6	19.3	18.6	19.1	19.7	20.5
RPM	840		HI PR	160	173	182	190	182	196	207	216	208	224	236	246	234	251	266	277	258	278	293	306
Cap MFD/V	5/370		LO PR	59	63	69	73	61	65	71	76	64	69	75	80	68	72	78	83	70	74	81	86
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	60.3	57.1	53.8	50.3	48.0	46.5	43.2	39.8	41.4	38.2	35.2	33.2	32.0	28.7	25.4	22.2	18.9	15.5		
Low Amb	None		T/R	39.9	37.8	35.6	33.2	31.7	30.8	28.6	26.3	27.4	25.3	23.3	22.0	21.1	19.0	16.8	14.7	12.5	10.3		
Defrost	ElecTime-Temp		KW	5.11	5.01	4.91	4.80	4.75	4.70	4.60	4.50	4.56	4.45	4.34	4.28	4.24	4.13	4.03	3.92	3.82	3.71		
Sensor	31/51	70	AMPS	23.7	21.9	20.4	19.2	18.5	18.1	17.1	16.2	15.5	14.8	14.0	13.7	13.5	12.8	11.9	11.2	10.3	9.2		
Operating Chg	(R-22Oz)		COP	3.45	3.34	3.21	3.06	2.96	2.90	2.75	2.59	2.66	2.51	2.37	2.27	2.21	2.03	1.85	1.65	1.45	1.22		
(25 Ft Line)*	214		EER	11.8	11.4	11.0	10.5	10.1	9.9	9.4	8.9	9.1	8.6	8.1	7.8	7.5	6.9	6.3	5.7	5.0	4.2		
Service Driers			HI PR	299	286	275	263	257	252	242	233	223	213	204	199	196	188	181	174	168	162		
Liquid/Chg	30CuIn/17oz		LO PR	76	71	66	61	57	55	51	45	41	36	32	30	29	24	21	18	15	12		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																		Part No:			
Unit Weight	NA	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																		**1080929**			

Technical Service Data Sheets 1080930 & 2146951

Style No:	60DHA-000095ZR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	37.5	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	8 / 40		MBh	56.2	57.9	62.7	67.3	54.9	56.5	61.2	65.7	53.6	55.1	59.7	64.1	50.9	52.4	56.7	60.8	47.1	48.5	52.5	56.4
Delay Fuse	45		S/T	0.84	0.75	0.57	0.36	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.92	0.82	0.62	0.40	0.93	0.83	0.63	0.40
Max. Fuse	60	75	AMPS	18.6	19.1	19.7	20.5	20.3	20.8	21.5	22.3	21.7	22.2	23.0	23.9	23.1	23.7	24.5	25.4	24.5	25.1	26.0	27.0
Compressor	Copeland		HI PR	164	177	186	195	187	201	212	221	213	229	242	252	239	257	272	283	264	284	300	313
RLA	32.1		LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	81	87	72	77	84	90
LRA	169		MBh	57.2	58.5	62.5	66.8	55.9	57.1	61.0	65.2	54.5	55.7	59.5	63.6	51.8	52.9	56.5	60.4	48.0	49.0	52.4	56.0
Cap MFD/V	80/370		S/T	0.92	0.86	0.70	0.52	0.94	0.88	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.77	0.57	1.00	0.95	0.77	0.58
CC Heater	None	80	AMPS	18.8	19.3	19.9	20.7	20.4	21.0	21.7	22.5	21.9	22.4	23.2	24.1	23.3	23.9	24.7	25.7	24.7	25.4	26.2	27.2
Start Kit	None		HI PR	166	178	188	196	189	203	214	223	215	231	244	254	242	260	275	286	267	287	303	316
Fan Motor-HP	1/4		LO PR	62	66	72	76	64	68	75	79	68	72	78	83	71	75	82	88	73	78	85	91
Type	PSC		MBh	58.2	59.4	62.2	66.3	56.8	57.9	60.7	64.7	55.5	56.5	59.2	63.2	52.7	53.7	56.2	60.0	48.8	49.7	52.1	55.6
FLA	1.4		S/T	0.96	0.93	0.84	0.68	0.98	0.95	0.86	0.70	1.00	0.98	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.93	0.75
LRA	3.24	85	AMPS	19.0	19.4	20.1	20.9	20.6	21.2	21.9	22.7	22.1	22.6	23.4	24.3	23.5	24.1	24.9	25.9	25.0	25.6	26.5	27.5
RPM	840		HI PR	167	180	190	198	190	205	216	226	217	233	246	257	244	263	277	289	270	290	306	319
Cap MFD/V	5/370		LO PR	62	66	73	77	65	69	75	80	68	73	79	84	71	76	83	88	74	79	86	91
PTCR	None	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	0		MBh	75.4	71.4	67.3	62.8	60.0	58.1	54.0	49.8	47.3	43.7	40.2	38.0	36.6	32.8	29.1	25.4	21.7	17.7		
Low Amb	None		T/R	38.8	36.7	34.6	32.3	30.9	29.9	27.8	25.6	24.4	22.5	20.7	19.5	18.8	16.9	15.0	13.1	11.1	9.1		
Defrost	ElecTime-Temp		KW	5.96	5.85	5.73	5.61	5.55	5.50	5.38	5.27	5.31	5.19	5.07	5.00	4.95	4.83	4.71	4.59	4.47	4.35		
Sensor	31/51	70	AMPS	30.8	28.5	26.6	24.9	24.0	23.5	22.2	21.0	20.1	19.1	18.2	17.7	17.5	16.6	15.4	14.5	13.3	11.9		
Operating Chg	(R-22Oz)		COP	3.70	3.57	3.44	3.28	3.17	3.10	2.94	2.77	2.61	2.46	2.32	2.22	2.16	1.99	1.81	1.62	1.42	1.19		
(25 Ft Line)*	264		EER	12.6	12.2	11.7	11.2	10.8	10.6	10.0	9.5	8.9	8.4	7.9	7.6	7.4	6.8	6.2	5.5	4.8	4.1		
Service Driers			HI PR	273	262	252	241	235	231	222	213	204	195	187	182	179	172	166	159	153	148		
Liquid/Chg	30CuIn/17oz		LO PR	69	64	60	55	52	50	46	41	37	33	29	27	26	22	19	16	14	11		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																		Part No:			
Unit Weight	NA	*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																		**1080930**		

Style No:	18HND-000094BR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	12.2	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	14		MBh	17.0	17.5	19.0	20.3	16.6	17.1	18.5	19.9	16.2	16.7	18.1	19.4	15.4	15.8	17.2	18.4	14.3	14.7	15.9	17.1
Delay Fuse	15		S/T	0.83	0.74	0.56	0.36	0.85	0.76	0.57	0.37	0.88	0.78	0.59	0.38	0.91	0.81	0.62	0.40	0.92	0.82	0.62	0.40
Max. Fuse	20	75	AMPS	6.4	6.5	6.8	7.0	6.9	7.1	7.3	7.6	7.4	7.6	7.8	8.1	7.9	8.1	8.3	8.6	8.3	8.5	8.8	9.2
Compressor	BRISTOL		HI PR	182	196	207	216	207	223	235	245	236	254	268	279	265	285	301	314	293	315	333	347
RLA	9.0		LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	74	81	87	72	77	84	90
LRA	48		MBh	17.3	17.7	18.9	20.2	16.9	17.3	18.5	19.7	16.5	16.8	18.0	19.2	15.7	16.0	17.1	18.3	14.5	14.8	15.8	16.9
Cap MFD/V	30/370		S/T	0.91	0.85	0.69	0.52	0.93	0.87	0.71	0.53	0.96	0.90	0.73	0.55	1.00	0.94	0.76	0.57	1.00	0.94	0.77	0.57
CC Heater	NONE	80	AMPS	6.4	6.6	6.8	7.1	7.0	7.2	7.4	7.7	7.5	7.6	7.9	8.2	7.9	8.1	8.4	8.7	8.4	8.6	8.9	9.2
Start Kit	NONE		HI PR	184	198	209	218	209	225	238	248	238	256	271	282	268	288	304	317	296	318	336	351
Fan Motor-HP	8-Jan		LO PR	62	66	72	76	64	68	75	79	67	72	78	83	71	75	82	87	73	78	85	90
Type	PSC		MBh	17.6	18.0	18.8	20.1	17.2	17.5	18.4	19.6	16.8	17.1	17.9	19.1	15.9	16.2	17.0	18.2	14.8	15.0	15.8	16.8
FLA	0.57		S/T	0.95	0.92	0.83	0.67	0.98	0.94	0.85	0.69	1.00	0.97	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.92	0.74
LRA	1.45	85	AMPS	6.5	6.7	6.9	7.1	7.1	7.2	7.5	7.7	7.5	7.7	8.0	8.3	8.0	8.2	8.5	8.8	8.5	8.7	9.0	9.3
RPM	1120		HI PR	186	200	211	220	211	227	240	250	240	259	273	285	271	291	307	321	299	322	340	354
Cap MFD/V	5/370		LO PR	62	66	73	77	65	69	75	80	68	73	79	84	71	76	83	88	74	79	86	91
PTCR	NONE	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	NONE		MBh	22.6	21.4	20.2	18.8	18.0	17.4	16.2	14.9	14.1	13.0	12.0	11.3	10.9	9.8	8.7	7.6	6.5	5.3		
Low Amb	NONE		T/R	32.4	30.7	28.9	27.0	25.8	25.0	23.2	21.4	20.2	18.7	17.2	16.2	15.6	14.0	12.4	10.8	9.2	7.6		
Defrost	ElecTime-Temp		KW	1.89	1.85	1.81	1.78	1.75	1.74	1.70	1.66	1.77	1.73	1.69	1.66	1.64	1.60	1.56	1.51	1.47	1.43		
Sensor	31-51	70	AMPS	9.1	8.5	7.9	7.5	7.2	7.1	6.7	6.3	6.1	5.8	5.5	5.4	5.3	5.1	4.7	4.5	4.1	3.7		
Operating Chg	(R-22Oz)		COP	3.50	3.38	3.25	3.11	3.01	2.94	2.79	2.64	2.33	2.21	2.08	2.00	1.94	1.79	1.63	1.46	1.29	1.08		
(15 ft Lines)*	76		EER	12.0	11.6	11.1	10.6	10.3	10.0	9.5	9.0	8.0	7.5	7.1	6.8	6.6	6.1	5.6	5.0	4.4	3.7		
Service Driers			HI PR	297	285	274	262	256	251	241	231	222	212	203	198	195	187	180	173	167	161		
Liquid/Chg	5CuIn/5oz		LO PR	76	70	66	60	57	55	50	45	40	36	32	30	28	24	21	18	15	12		
Suction	17SqIn	Calculated averaged performance data, for service applications for all matches.																		Part No:			
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																		**2146951**		

Technical Service Data Sheets 2146952 & 2146953

Style No:	24HND-000094CR
Voltage	208-230
Phase	1
Ampacity	13.3
Wire Ga/Ft	14
Delay Fuse	20
Max. Fuse	20
Compressor	Copeland
RLA	9.8
LRA	56
Cap MFD/V	35/370
CC Heater	None
Start Kit	None
Fan Motor-HP	6-Jan
Type	PSC
FLA	1.0
LRA	1.81
RPM	1100
Cap MFD/V	5
PTCR	None
Hi Press	None
Low Press	None
Low Amb	None
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(15 ft Lines)*	100
Service Driers	
Liquid/Chg	8CuIn/7oz
Suction	30SqIn
Unit Weight	

Outdoor Ambient Temperature - Degrees F. Dry Bulb

		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
	MBh	21.3	21.9	23.7	25.4	20.8	21.4	23.1	24.8	20.3	20.8	22.6	24.2	19.2	19.8	21.4	23.0	17.8	18.3	19.9	21.3
	S/T	0.84	0.75	0.57	0.36	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.92	0.82	0.62	0.40	0.93	0.83	0.63	0.40
75	AMPS	7.5	7.7	7.9	8.2	8.1	8.3	8.6	8.9	8.7	8.9	9.2	9.6	9.3	9.5	9.8	10.2	9.8	10.1	10.4	10.8
	HI PR	173	186	196	205	196	211	223	233	224	241	254	265	252	271	286	298	278	299	316	330
	LO PR	60	64	70	75	63	67	73	77	66	70	76	81	69	73	80	85	71	76	83	88
	MBh	21.6	22.1	23.6	25.3	21.1	21.6	23.1	24.7	20.6	21.1	22.5	24.1	19.6	20.0	21.4	22.8	18.1	18.5	19.8	21.2
	S/T	0.92	0.86	0.70	0.52	0.94	0.88	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.77	0.57	1.00	0.95	0.77	0.58
80	AMPS	7.6	7.7	8.0	8.3	8.2	8.4	8.7	9.0	8.8	9.0	9.3	9.7	9.3	9.6	9.9	10.3	9.9	10.2	10.5	10.9
	HI PR	174	188	198	207	198	213	225	235	226	243	257	268	254	274	289	301	281	302	319	333
	LO PR	61	65	71	75	63	67	73	78	66	71	77	82	70	74	81	86	72	77	84	89
	MBh	22.0	22.4	23.5	25.1	21.5	21.9	22.9	24.5	21.0	21.4	22.4	23.9	19.9	20.3	21.3	22.7	18.5	18.8	19.7	21.0
	S/T	0.96	0.93	0.84	0.68	0.98	0.95	0.86	0.70	1.00	0.98	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.93	0.75
85	AMPS	7.6	7.8	8.1	8.4	8.3	8.5	8.8	9.1	8.9	9.1	9.4	9.7	9.4	9.7	10.0	10.4	10.0	10.2	10.6	11.0
	HI PR	176	190	200	209	200	216	228	237	228	246	259	270	257	276	292	304	284	305	322	336
	LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87	73	77	84	90

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
	MBh	29.5	28.0	26.3	24.6	23.5	22.8	21.2	19.5	15.6	14.4	13.2	12.5	12.0	10.8	9.6	8.4	7.1	5.8
	T/R	34.2	32.4	30.5	28.5	27.2	26.4	24.5	22.6	18.0	16.6	15.3	14.5	13.9	12.5	11.1	9.7	8.2	6.8
	KW	2.28	2.23	2.19	2.14	2.12	2.10	2.06	2.01	2.02	1.98	1.93	1.91	1.89	1.84	1.80	1.76	1.71	1.67
70	AMPS	11.0	10.1	9.5	8.9	8.6	8.4	8.0	7.5	7.2	6.9	6.6	6.4	6.3	6.0	5.6	5.3	4.9	4.4
	COP	3.80	3.67	3.52	3.36	3.25	3.17	3.01	2.83	2.25	2.13	2.00	1.92	1.86	1.71	1.56	1.39	1.22	1.03
	EER	13.0	12.5	12.0	11.5	11.1	10.8	10.3	9.7	7.7	7.3	6.8	6.6	6.4	5.9	5.3	4.8	4.2	3.5
	HI PR	293	281	270	258	252	247	238	228	218	209	200	196	192	185	178	170	164	159
	LO PR	78	72	68	62	59	56	52	46	42	37	33	30	29	25	21	18	16	12

Calculated averaged performance data, for service applications for all matches. Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq **2146952**

Style No:	30HND-000094CR
Voltage	208-230
Phase	1
Ampacity	18.1
Wire Ga/Ft	12
Delay Fuse	25
Max. Fuse	30
Compressor	COPELAND
RLA	13.7
LRA	75
Cap MFD/V	35/370
CC Heater	NONE
Start Kit	NONE
Fan Motor-HP	6-Jan
Type	PSC
FLA	1.0
LRA	1.81
RPM	1100
Cap MFD/V	5/370
PTCR	NONE
Hi Press	NONE
Low Press	NONE
Low Amb	NONE
Defrost	ElecTime-Temp
Sensor	31-51
Operating Chg	(R-22Oz)
(15 ft Lines)*	104
Service Driers	
Liquid/Chg	8CuIn/7oz
Suction	30SqIn
Unit Weight	

Outdoor Ambient Temperature - Degrees F. Dry Bulb

		75				85				95				105				115			
		Entering Indoor Temperature - Degrees F. Wet Bulb																			
IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
	MBh	26.9	27.7	30.0	32.2	26.3	27.1	29.3	31.4	25.7	26.4	28.6	30.7	24.4	25.1	27.2	29.1	22.6	23.2	25.2	27.0
	S/T	0.85	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.94	0.84	0.63	0.41
75	AMPS	9.7	9.9	10.3	10.7	10.6	10.8	11.2	11.6	11.3	11.6	12.0	12.4	12.1	12.4	12.8	13.3	12.8	13.1	13.6	14.1
	HI PR	180	194	205	213	205	220	233	243	233	251	265	276	262	282	298	311	290	312	329	344
	LO PR	61	65	71	75	63	67	73	78	66	71	77	82	69	74	81	86	72	76	83	89
	MBh	27.4	28.0	29.9	32.0	26.8	27.3	29.2	31.2	26.1	26.7	28.5	30.5	24.8	25.3	27.1	28.9	23.0	23.5	25.1	26.8
	S/T	0.93	0.87	0.71	0.53	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.96	0.78	0.58	1.00	0.96	0.78	0.59
80	AMPS	9.8	10.0	10.4	10.8	10.7	10.9	11.3	11.7	11.4	11.7	12.1	12.6	12.2	12.5	12.9	13.4	12.9	13.2	13.7	14.2
	HI PR	182	196	207	216	207	223	235	245	236	253	268	279	265	285	301	314	293	315	333	347
	LO PR	61	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87	73	77	84	90
	MBh	27.9	28.4	29.8	31.8	27.2	27.8	29.1	31.0	26.6	27.1	28.4	30.3	25.2	25.7	26.9	28.7	23.4	23.8	25.0	26.6
	S/T	0.97	0.94	0.85	0.69	1.00	0.96	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.94	0.76
85	AMPS	9.9	10.1	10.5	10.9	10.8	11.0	11.4	11.8	11.5	11.8	12.2	12.7	12.3	12.6	13.0	13.5	13.0	13.4	13.8	14.4
	HI PR	184	198	209	218	209	225	237	248	238	256	270	282	268	288	304	317	296	318	336	350
	LO PR	62	66	72	77	64	69	75	80	68	72	79	84	71	75	82	88	73	78	85	91

Heating — Outdoor Ambient Temperature - Degrees F. Dry Bulb

IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
	MBh	35.2	33.3	31.4	29.3	28.0	27.1	25.2	23.2	20.5	18.9	17.4	16.5	15.8	14.2	12.6	11.0	9.4	7.7
	T/R	32.6	30.9	29.1	27.1	25.9	25.1	23.3	21.5	19.0	17.5	16.1	15.2	14.7	13.2	11.7	10.2	8.7	7.1
	KW	2.71	2.66	2.61	2.56	2.53	2.51	2.46	2.41	2.35	2.30	2.25	2.22	2.20	2.15	2.10	2.05	2.00	1.95
70	AMPS	13.0	12.1	11.3	10.6	10.2	10.0	9.4	8.9	8.5	8.1	7.7	7.6	7.5	7.1	6.6	6.2	5.7	5.1
	COP	3.80	3.66	3.52	3.35	3.24	3.16	3.00	2.82	2.55	2.41	2.26	2.17	2.11	1.93	1.76	1.57	1.37	1.15
	EER	13.0	12.5	12.0	11.4	11.1	10.8	10.2	9.6	8.7	8.2	7.7	7.4	7.2	6.6	6.0	5.4	4.7	3.9
	HI PR	257	246	237	226	221	217	208	200	192	183	176	171	168	162	156	149	144	139
	LO PR	66	61	58	53	50	48	44	39	36	32	28	26	25	21	18	15	13	11

Calculated averaged performance data, for service applications for all matches. Part No:

*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq **2146953**

Technical Service Data Sheets 2146954 & 2146955

Style No:	36HND-000094BR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	19.8	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	12		MBh	30.6	31.5	34.1	36.6	29.9	30.8	33.3	35.8	29.2	30.0	32.5	34.9	27.7	28.5	30.9	33.1	25.7	26.4	28.6	30.7
Delay Fuse	25		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.61	0.39	0.92	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.86	0.65	0.42
Max. Fuse	30	75	AMPS	11.2	11.5	11.8	12.3	12.1	12.4	12.9	13.3	13.0	13.3	13.7	14.3	13.8	14.2	14.6	15.2	14.6	15.0	15.5	16.1
Compressor	BRISTOL		HI PR	185	199	210	219	210	226	239	249	239	257	272	284	269	290	306	319	297	320	338	352
RLA	15.1		LO PR	59	63	68	73	61	65	71	76	64	68	75	79	67	72	78	83	70	74	81	86
LRA	81		MBh	31.2	31.8	34.0	36.4	30.4	31.1	33.2	35.5	29.7	30.3	32.4	34.6	28.2	28.8	30.8	32.9	26.1	26.7	28.5	30.5
Cap MFD/V	40/370		S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.99	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	NONE	80	AMPS	11.3	11.6	11.9	12.4	12.3	12.6	13.0	13.5	13.1	13.4	13.9	14.4	13.9	14.3	14.8	15.3	14.8	15.1	15.6	16.2
Start Kit	NONE		HI PR	187	201	212	221	212	228	241	251	242	260	275	286	272	293	309	322	300	323	341	356
Fan Motor-HP	1/6		LO PR	59	63	69	73	62	66	72	76	65	69	75	80	68	72	79	84	70	75	82	87
Type	PSC		MBh	31.7	32.3	33.8	36.1	31.0	31.6	33.0	35.3	30.2	30.8	32.2	34.4	28.7	29.2	30.6	32.7	26.6	27.1	28.4	30.3
FLA	1		S/T	1.00	0.97	0.87	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
LRA	1.2	85	AMPS	11.4	11.7	12.0	12.5	12.4	12.7	13.1	13.6	13.2	13.5	14.0	14.5	14.1	14.4	14.9	15.5	14.9	15.3	15.8	16.4
RPM	1075		HI PR	188	203	214	223	214	231	243	254	244	263	277	289	275	295	312	325	303	326	345	360
Cap MFD/V	5/370		LO PR	60	64	70	74	62	66	72	77	66	70	76	81	69	73	80	85	71	76	82	88
PTCR	NONE	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	NONE		MBh	41.8	39.6	37.3	34.8	33.3	32.2	29.9	27.6	24.1	22.3	20.5	19.4	18.7	16.7	14.8	12.9	11.0	9.0		
Low Amb	NONE		T/R	33.2	31.4	29.6	27.6	26.4	25.6	23.8	21.9	19.2	17.7	16.3	15.4	14.8	13.3	11.8	10.3	8.8	7.2		
Defrost	ElecTime-Temp		KW	3.16	3.10	3.04	2.98	2.95	2.92	2.86	2.80	2.81	2.75	2.69	2.65	2.63	2.57	2.51	2.45	2.38	2.32		
Sensor	31-51	70	AMPS	14.5	13.5	12.6	11.9	11.4	11.2	10.6	10.0	9.6	9.2	8.8	8.6	8.4	8.0	7.5	7.1	6.5	5.9		
Operating Chg	(R-22Oz)		COP	3.87	3.74	3.59	3.42	3.30	3.23	3.06	2.88	2.51	2.37	2.23	2.14	2.08	1.91	1.73	1.55	1.36	1.14		
(15 ft Lines)*	120		EER	13.2	12.8	12.3	11.7	11.3	11.0	10.5	9.8	8.6	8.1	7.6	7.3	7.1	6.5	5.9	5.3	4.6	3.9		
Service Driers			HI PR	249	239	230	220	215	211	202	194	186	178	171	167	164	157	151	145	140	135		
Liquid/Chg	16CuIn/11oz		LO PR	66	61	57	53	50	48	44	39	35	32	28	26	25	21	18	15	13	10		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																		Part No:			
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																		**2146954**			

Style No:	42HND-000094CR		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230		75				85				95				105				115			
Phase	1		Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	23.7	IDB	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	12		MBh	38.5	39.6	42.9	46.1	37.6	38.7	41.9	45.0	36.7	37.8	40.9	43.9	34.8	35.9	38.8	41.7	32.3	33.2	36.0	38.6
Delay Fuse	30		S/T	0.87	0.78	0.59	0.38	0.89	0.80	0.60	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.65	0.42	0.96	0.86	0.65	0.42
Max. Fuse	40	75	AMPS	14.3	14.7	15.1	15.7	15.5	15.9	16.4	17.0	16.6	17.0	17.5	18.2	17.6	18.1	18.6	19.3	18.7	19.1	19.7	20.5
Compressor	COPELAND		HI PR	183	196	207	216	208	223	236	246	236	254	269	280	266	286	302	315	294	316	334	348
RLA	17.1		LO PR	63	67	73	77	65	69	76	80	68	73	79	85	72	76	83	89	74	79	86	92
LRA	105		MBh	39.2	40.0	42.8	45.7	38.3	39.1	41.8	44.7	37.3	38.1	40.8	43.6	35.5	36.2	38.7	41.4	32.8	33.6	35.9	38.3
Cap MFD/V	40/440		S/T	0.95	0.89	0.73	0.54	0.98	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	0.98	0.80	0.60	1.00	0.99	0.81	0.60
CC Heater	NONE	80	AMPS	14.5	14.8	15.3	15.8	15.7	16.1	16.6	17.2	16.7	17.1	17.7	18.4	17.8	18.2	18.8	19.5	18.8	19.3	19.9	20.7
Start Kit	NONE		HI PR	184	198	210	219	210	226	238	249	239	257	271	283	269	289	305	319	297	320	337	352
Fan Motor-HP	1/3		LO PR	63	67	73	78	66	70	76	81	69	73	80	85	72	77	84	89	75	80	87	93
Type	PSC		MBh	39.9	40.6	42.6	45.4	38.9	39.7	41.6	44.3	38.0	38.7	40.5	43.3	36.1	36.8	38.5	41.1	33.4	34.1	35.7	38.1
FLA	2.3		S/T	1.00	0.96	0.87	0.71	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.96	0.78
LRA		85	AMPS	14.6	14.9	15.4	16.0	15.8	16.2	16.7	17.3	16.9	17.3	17.9	18.5	18.0	18.4	19.0	19.7	19.0	19.5	20.1	20.9
RPM	1075		HI PR	186	200	212	221	212	228	241	251	241	260	274	286	271	292	308	322	300	323	341	355
Cap MFD/V	5		LO PR	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	93
PTCR	NONE	Heating	Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	NONE	IDB	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	NONE		MBh	48.1	45.5	42.9	40.0	38.3	37.1	34.4	31.7	31.2	28.8	26.5	25.0	24.1	21.6	19.2	16.7	14.3	11.7		
Low Amb	NONE		T/R	31.8	30.1	28.4	26.5	25.3	24.5	22.8	21.0	20.6	19.0	17.5	16.5	15.9	14.3	12.7	11.0	9.4	7.7		
Defrost	ElecTime-Temp		KW	3.90	3.82	3.75	3.68	3.64	3.61	3.54	3.47	3.35	3.28	3.21	3.17	3.14	3.07	3.00	2.93	2.86	2.79		
Sensor	31-51	70	AMPS	18.5	17.1	16.1	15.1	14.6	14.3	13.5	12.9	12.3	11.8	11.3	11.0	10.9	10.3	9.7	9.1	8.5	7.7		
Operating Chg	(R-22Oz)		COP	3.61	3.48	3.34	3.18	3.08	3.01	2.85	2.68	2.72	2.56	2.41	2.31	2.24	2.06	1.87	1.67	1.46	1.22		
(15 ft Lines)*	138		EER	12.3	11.9	11.4	10.9	10.5	10.3	9.7	9.2	9.3	8.8	8.2	7.9	7.7	7.0	6.4	5.7	5.0	4.2		
Service Driers			HI PR	249	238	229	219	214	210	202	194	186	177	170	166	163	157	151	145	140	135		
Liquid/Chg	16CuIn/11oz		LO PR	63	59	55	50	48	46	42	38	34	30	27	25	24	20	17	15	13	10		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																		Part No:			
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																		**2146955**			

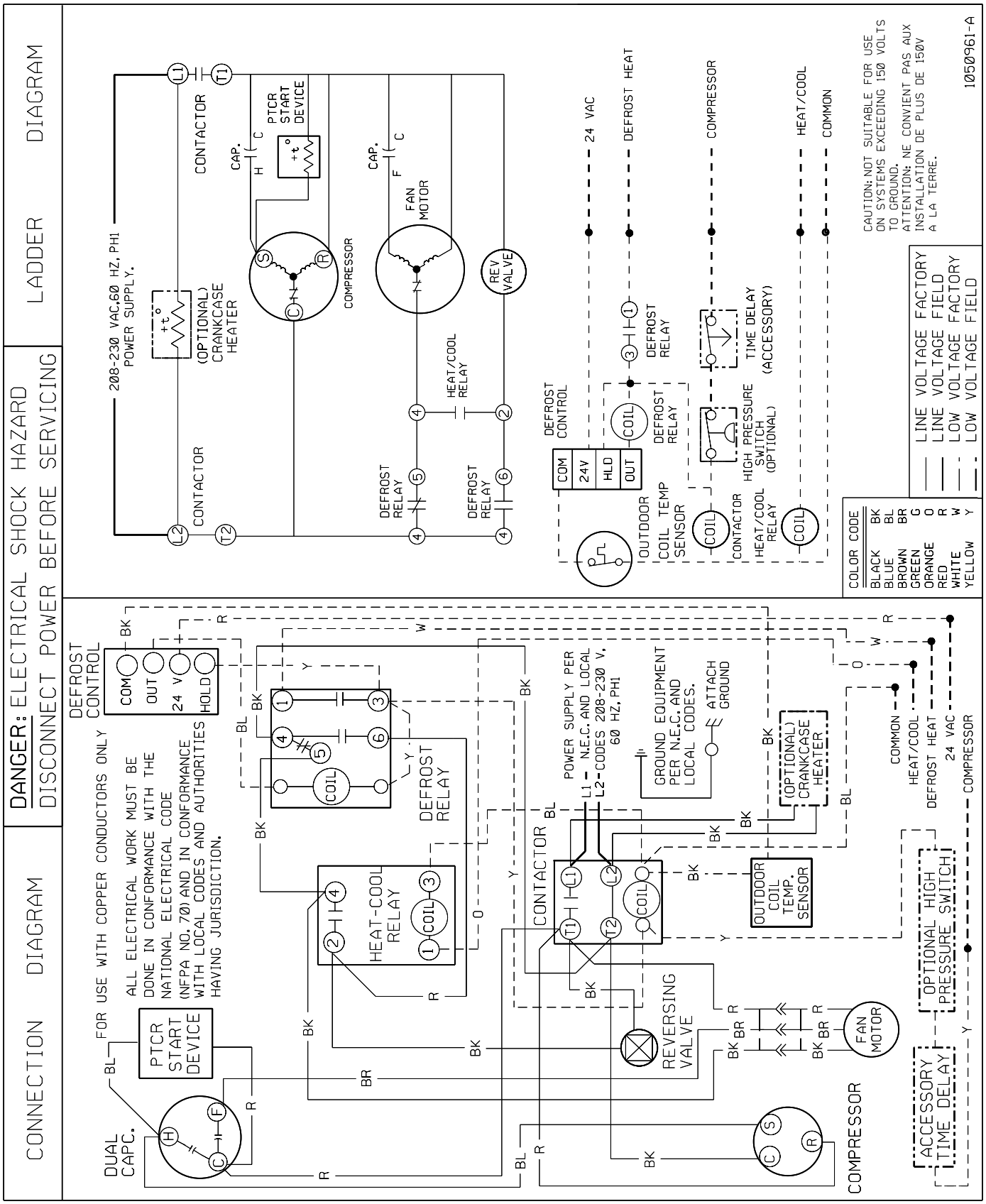
Technical Service Data Sheets 2146956 & 2146957

Style No:	48HND-000094ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208-230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	29.5	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	10		MBh	41.8	43.1	46.6	50.0	40.8	42.0	45.5	48.8	39.8	41.0	44.4	47.6	37.8	39.0	42.2	45.3	35.0	36.1	39.1	41.9
Delay Fuse	35		S/T	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.87	0.66	0.42
Max. Fuse	50	75	AMPS	16.8	17.3	17.8	18.5	18.3	18.8	19.4	20.1	19.6	20.1	20.8	21.5	20.9	21.4	22.1	23.0	22.1	22.7	23.4	24.3
Compressor	Copeland		HI PR	199	214	226	236	226	243	257	268	258	277	293	305	290	312	329	343	320	344	364	379
RLA	21.8		LO PR	62	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87	73	77	85	90
LRA	131		MBh	42.6	43.5	46.5	49.7	41.5	42.5	45.4	48.5	40.5	41.4	44.3	47.3	38.5	39.3	42.0	44.9	35.7	36.4	38.9	41.6
Cap MFD/V	40/370		S/T	0.96	0.90	0.73	0.55	0.98	0.92	0.75	0.56	1.00	0.95	0.78	0.58	1.00	0.99	0.80	0.60	1.00	1.00	0.81	0.61
CC Heater	None	80	AMPS	17.0	17.4	18.0	18.7	18.5	18.9	19.6	20.3	19.8	20.3	21.0	21.8	21.1	21.6	22.3	23.2	22.3	22.9	23.7	24.6
Start Kit	None		HI PR	201	216	228	238	228	246	260	271	260	280	296	308	293	315	333	347	323	348	367	383
Fan Motor-HP	1/3		LO PR	62	66	72	77	65	69	75	80	68	72	79	84	71	76	83	88	74	78	85	91
Type	PSC		MBh	43.3	44.1	46.2	49.3	42.3	43.1	45.1	48.1	41.2	42.0	44.0	47.0	39.2	39.9	41.8	44.6	36.3	37.0	38.7	41.3
FLA	2.3		S/T	1.00	0.97	0.88	0.71	1.00	0.99	0.90	0.73	1.00	1.00	0.93	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.97	0.79
LRA		85	AMPS	17.2	17.6	18.2	18.9	18.7	19.1	19.8	20.5	20.0	20.5	21.1	22.0	21.3	21.8	22.5	23.4	22.5	23.1	23.9	24.8
RPM	1075		HI PR	203	218	230	240	231	248	262	273	263	283	299	311	296	318	336	350	327	351	371	387
Cap MFD/V	5		LO PR	63	67	73	78	65	69	76	81	69	73	80	85	72	76	83	89	74	79	86	92
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5		MBh	55.9	53.0	49.9	46.6	44.5	43.1	40.1	36.9	36.0	33.2	30.6	28.9	27.8	25.0	22.1	19.3	16.5	13.5		
Low Amb	None		T/R	32.4	30.6	28.9	27.0	25.8	25.0	23.2	21.4	20.8	19.2	17.7	16.7	16.1	14.5	12.8	11.2	9.5	7.8		
Defrost	ElecTime-Temp		KW	4.38	4.30	4.21	4.13	4.08	4.05	3.97	3.88	3.85	3.77	3.69	3.64	3.60	3.52	3.43	3.35	3.27	3.18		
Sensor	31-51	70	AMPS	21.5	19.9	18.7	17.5	16.9	16.6	15.6	14.8	14.2	13.6	12.9	12.6	12.4	11.8	11.0	10.3	9.6	8.6		
Operating Chg	(R-22Oz)		COP	3.74	3.61	3.47	3.30	3.19	3.12	2.96	2.78	2.73	2.58	2.43	2.33	2.26	2.08	1.89	1.69	1.48	1.24		
(15 ft Lines)*	171		EER	12.8	12.3	11.8	11.3	10.9	10.7	10.1	9.5	9.3	8.8	8.3	7.9	7.7	7.1	6.4	5.8	5.0	4.2		
Service Driers			HI PR	258	247	238	227	222	218	209	201	192	184	176	172	169	163	157	150	145	140		
Liquid/Chg	30CuIn/17oz		LO PR	62	58	54	50	47	45	42	37	33	30	26	24	24	20	17	14	13	10		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**2146956**	

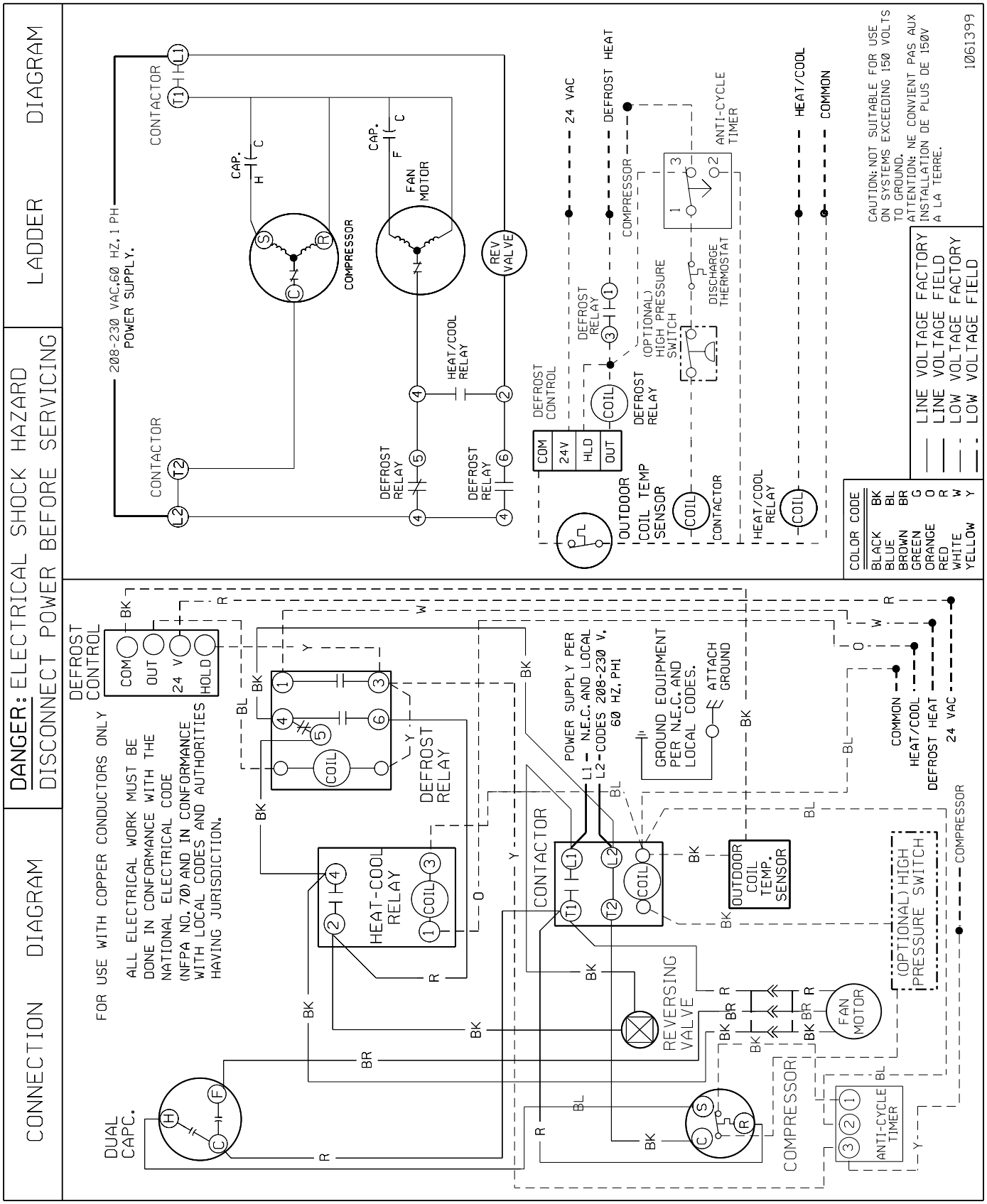
Style No:	60HND-000094ZR			Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Voltage	208/230			75				85				95				105				115			
Phase	1			Entering Indoor Temperature - Degrees F. Wet Bulb																			
Ampacity	36.1	IDB		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
Wire Ga/Ft	8		MBh	52.0	53.5	57.9	62.2	50.7	52.2	56.5	60.7	49.5	51.0	55.2	59.2	47.0	48.4	52.4	56.2	43.6	44.8	48.5	52.1
Delay Fuse	45		S/T	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.91	0.81	0.61	0.40	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41
Max. Fuse	60	75	AMPS	22.9	23.5	24.3	25.2	25.0	25.6	26.5	27.5	26.7	27.4	28.3	29.4	28.5	29.2	30.2	31.4	30.2	31.0	32.0	33.3
Compressor	COPELAND		HI PR	195	210	222	231	222	239	252	263	253	272	287	299	284	306	323	337	314	338	357	372
RLA	27.1		LO PR	56	60	65	69	58	62	68	72	61	65	71	76	64	68	74	79	66	71	77	82
LRA	172		MBh	52.9	54.1	57.8	61.7	51.6	52.8	56.4	60.3	50.4	51.5	55.0	58.8	47.9	48.9	52.3	55.9	44.3	45.3	48.4	51.7
Cap MFD/V	60/370		S/T	0.94	0.88	0.72	0.54	0.96	0.90	0.74	0.55	1.00	0.93	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.59
CC Heater	None	80	AMPS	23.1	23.7	24.5	25.5	25.2	25.8	26.7	27.7	27.0	27.7	28.6	29.7	28.8	29.5	30.5	31.7	30.5	31.3	32.4	33.6
Start Kit	None		HI PR	197	212	224	234	224	241	255	266	255	275	290	302	287	309	326	340	317	341	360	376
Fan Motor-HP	1/3		LO PR	57	60	66	70	59	63	68	73	62	66	72	76	65	69	75	80	67	71	78	83
Type	PSC		MBh	53.8	54.9	57.5	61.3	52.5	53.6	56.1	59.8	51.3	52.3	54.7	58.4	48.7	49.6	52.0	55.5	45.1	46.0	48.2	51.4
FLA	2.3		S/T	0.99	0.95	0.86	0.70	1.00	0.98	0.88	0.71	1.00	1.00	0.91	0.74	1.00	1.00	0.94	0.77	1.00	1.00	0.95	0.77
LRA		85	AMPS	23.4	23.9	24.8	25.7	25.4	26.1	27.0	28.0	27.2	27.9	28.9	30.0	29.0	29.8	30.8	32.0	30.8	31.6	32.7	33.9
RPM	1075		HI PR	199	214	226	236	226	244	257	268	258	277	293	305	290	312	330	344	320	345	364	380
Cap MFD/V	5/370		LO PR	57	61	66	71	59	63	69	74	62	66	73	77	65	70	76	81	68	72	79	84
PTCR	None	Heating		Outdoor Ambient Temperature - Degrees F. Dry Bulb																			
Hi Press	None	IDB		65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10		
Low Press	5 psig		MBh	75.4	71.4	67.3	62.8	60.0	58.1	54.0	49.8	44.4	40.9	37.7	35.6	34.3	30.8	27.3	23.8	20.3	16.6		
Low Amb	None		T/R	38.8	36.7	34.6	32.3	30.9	29.9	27.8	25.6	22.8	21.1	19.4	18.3	17.6	15.8	14.0	12.2	10.4	8.6		
Defrost	ElecTime-Temp		KW	5.77	5.66	5.54	5.43	5.36	5.31	5.20	5.09	4.86	4.75	4.64	4.58	4.53	4.42	4.31	4.20	4.09	3.98		
Sensor	31-51	70	AMPS	31.6	29.2	27.3	25.6	24.7	24.2	22.8	21.6	20.7	19.7	18.7	18.3	18.0	17.1	15.9	14.9	13.8	12.3		
Operating Chg	(R-22Oz)		COP	3.83	3.69	3.55	3.39	3.28	3.20	3.04	2.87	2.67	2.52	2.38	2.28	2.21	2.04	1.85	1.66	1.45	1.22		
(15 ft Lines)*	198		EER	13.1	12.6	12.1	11.6	11.2	10.9	10.4	9.8	9.1	8.6	8.1	7.8	7.6	7.0	6.3	5.7	5.0	4.2		
Service Driers			HI PR	271	260	250	239	233	229	220	211	202	193	185	181	178	171	164	158	152	147		
Liquid/Chg	30CuIn/17oz		LO PR	65	60	56	52	49	47	43	39	35	31	27	25	24	21	18	15	13	10		
Suction	30SqIn	Calculated averaged performance data, for service applications for all matches.																				Part No:	
Unit Weight		*Add or Substract (Oz per Ft) for Lines: .25oz -1/4 Liq, .45oz- 5/16 Liq, .60oz - 3/8 Liq, 1.2 oz - 1/2 Liq																				**2146957**	

WIRING DIAGRAM INDEX

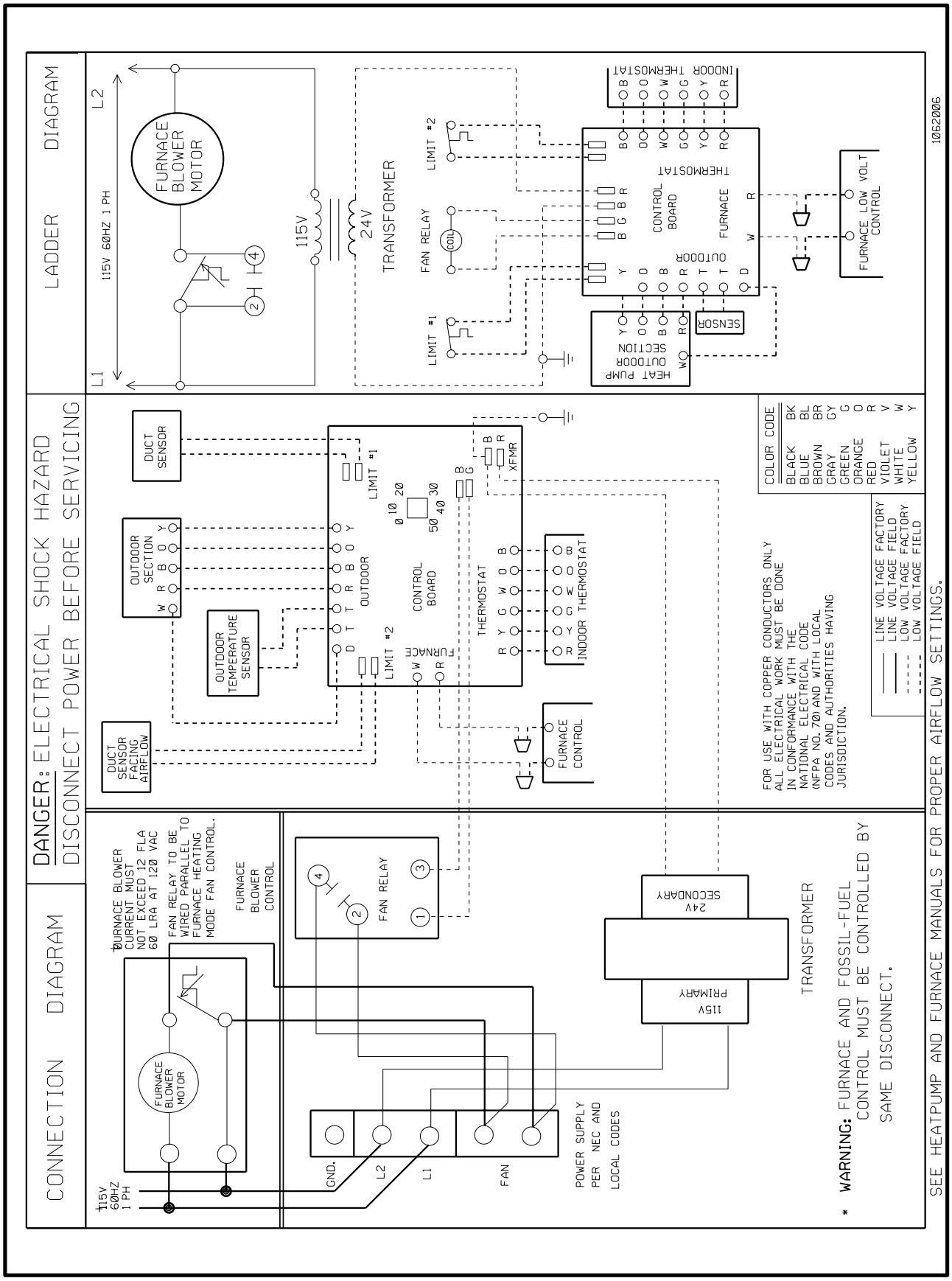
WIRING DIAGRAM # 1. (Part # 1050961)



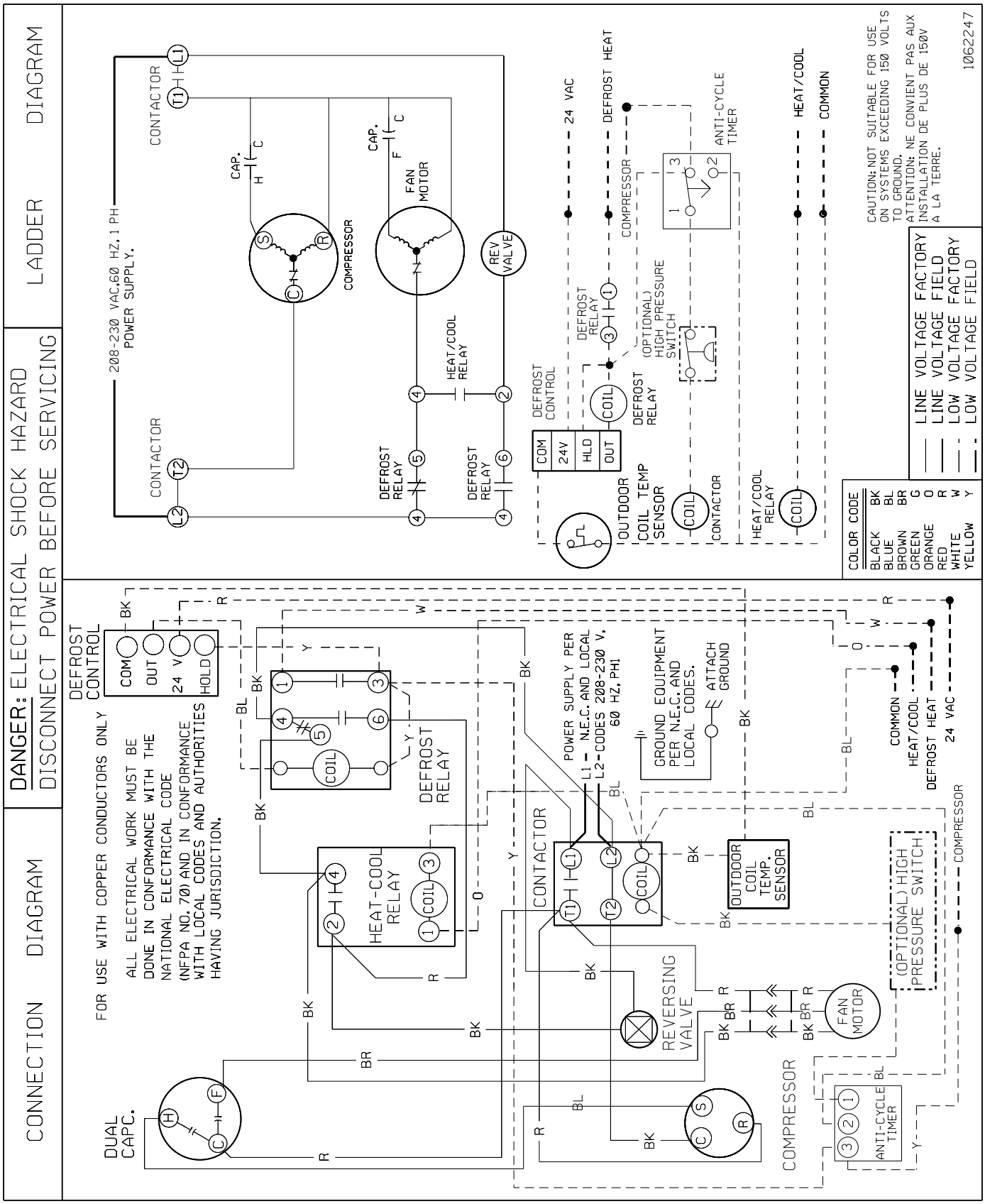
WIRING DIAGRAM # 2. (Part # 1061399)



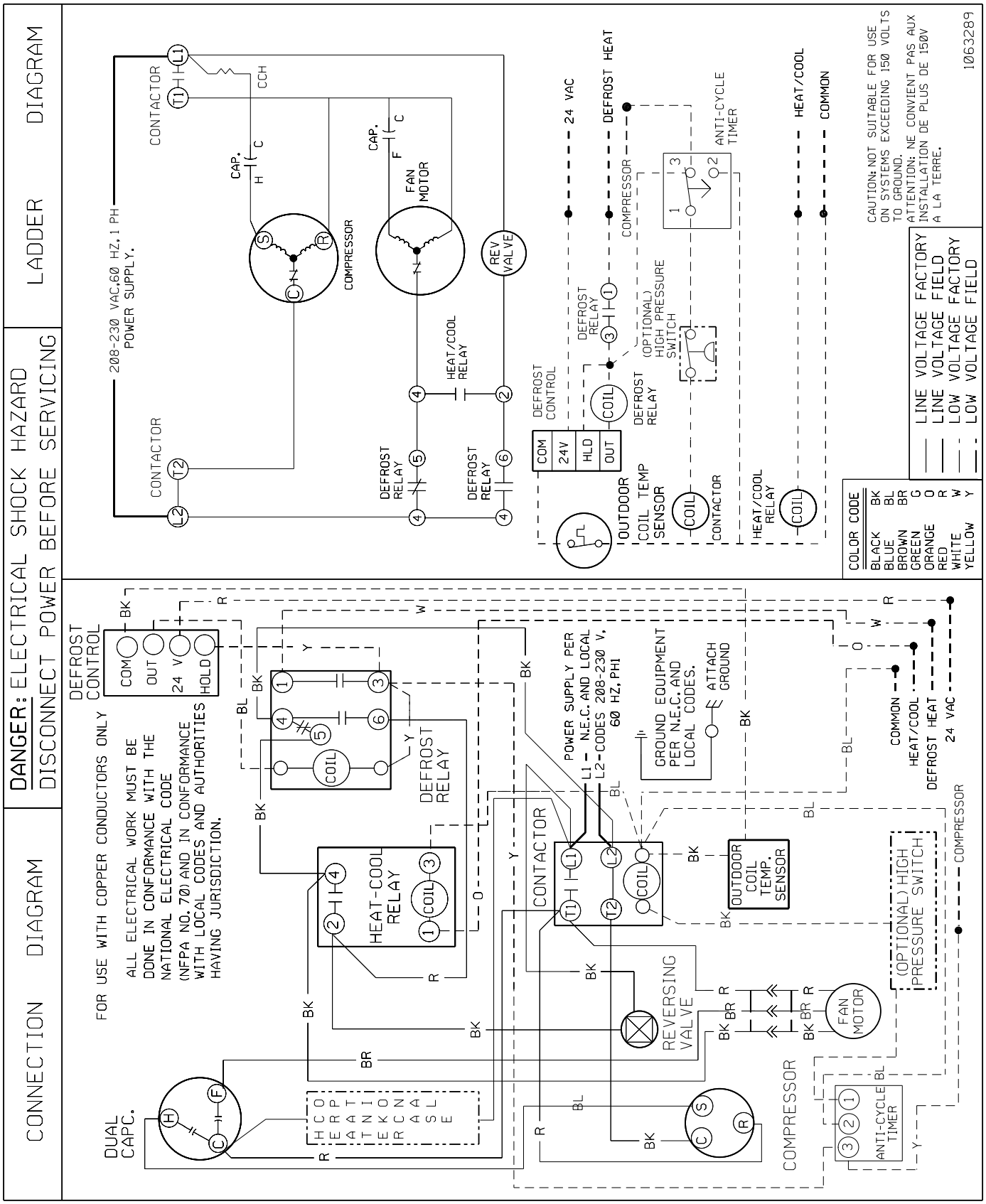
WIRING DIAGRAM # 3. (Part # 1062006)



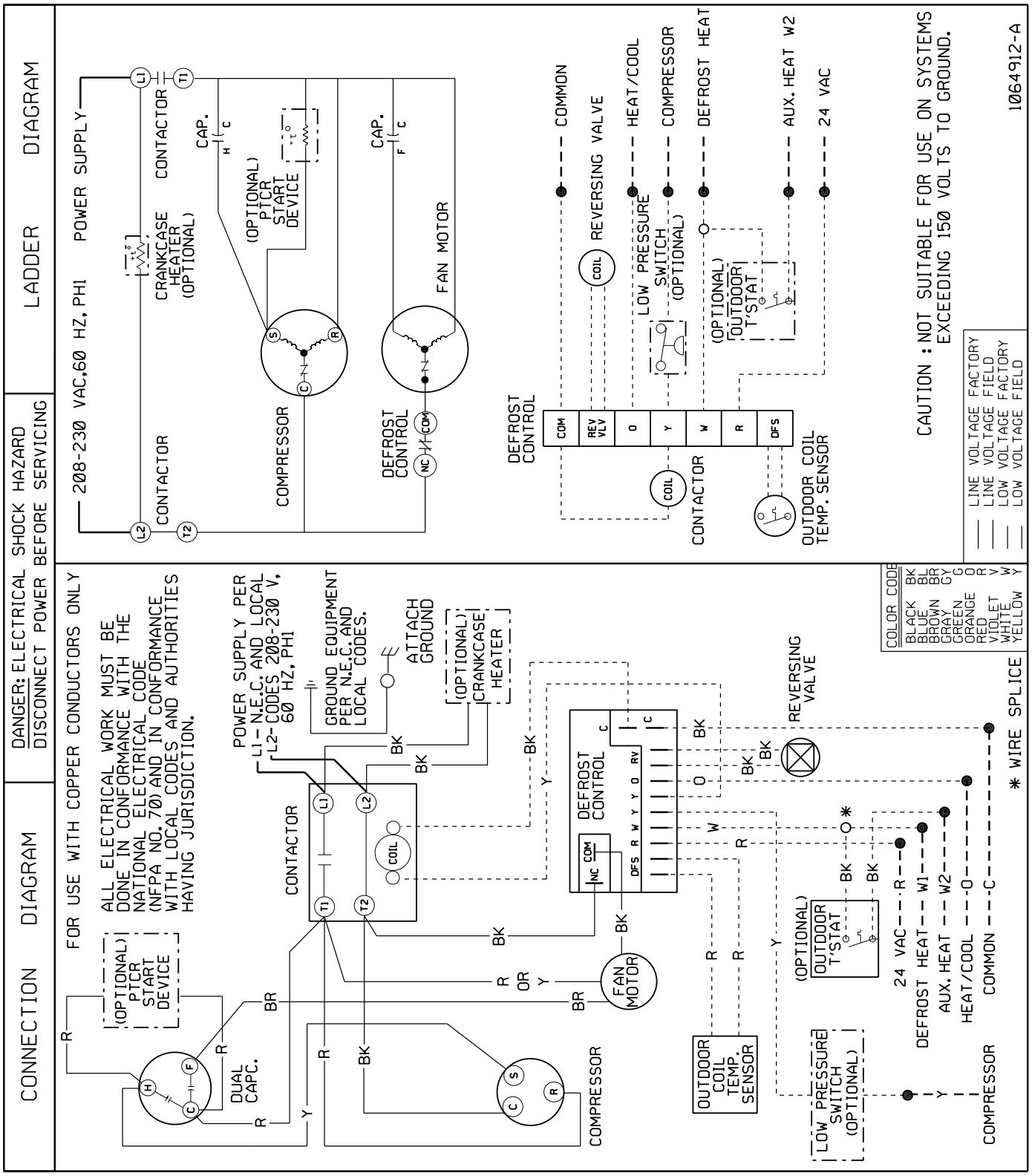
WIRING DIAGRAM # 4. (Part # 1062247)



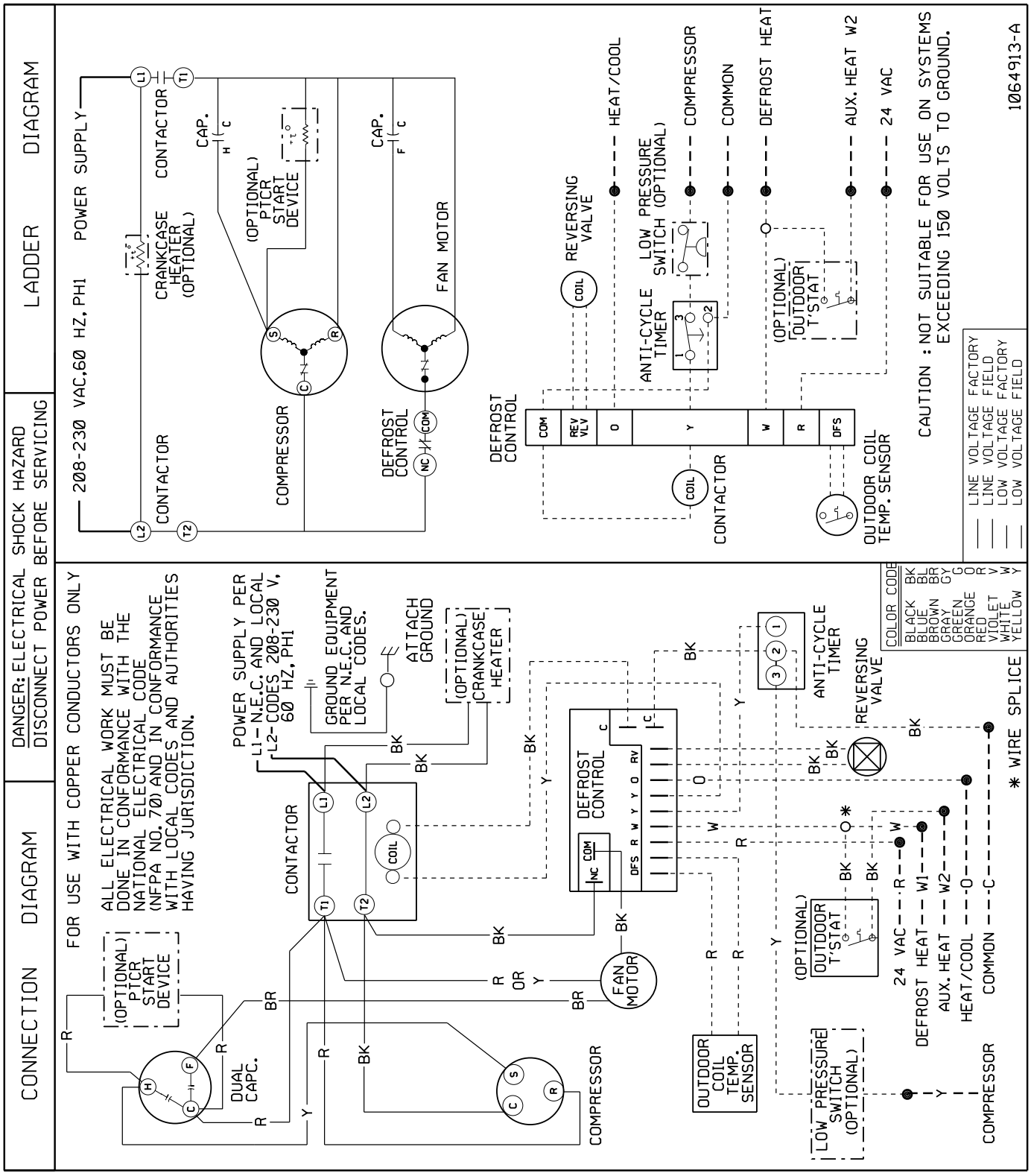
WIRING DIAGRAM # 5. (Part # 1063289)



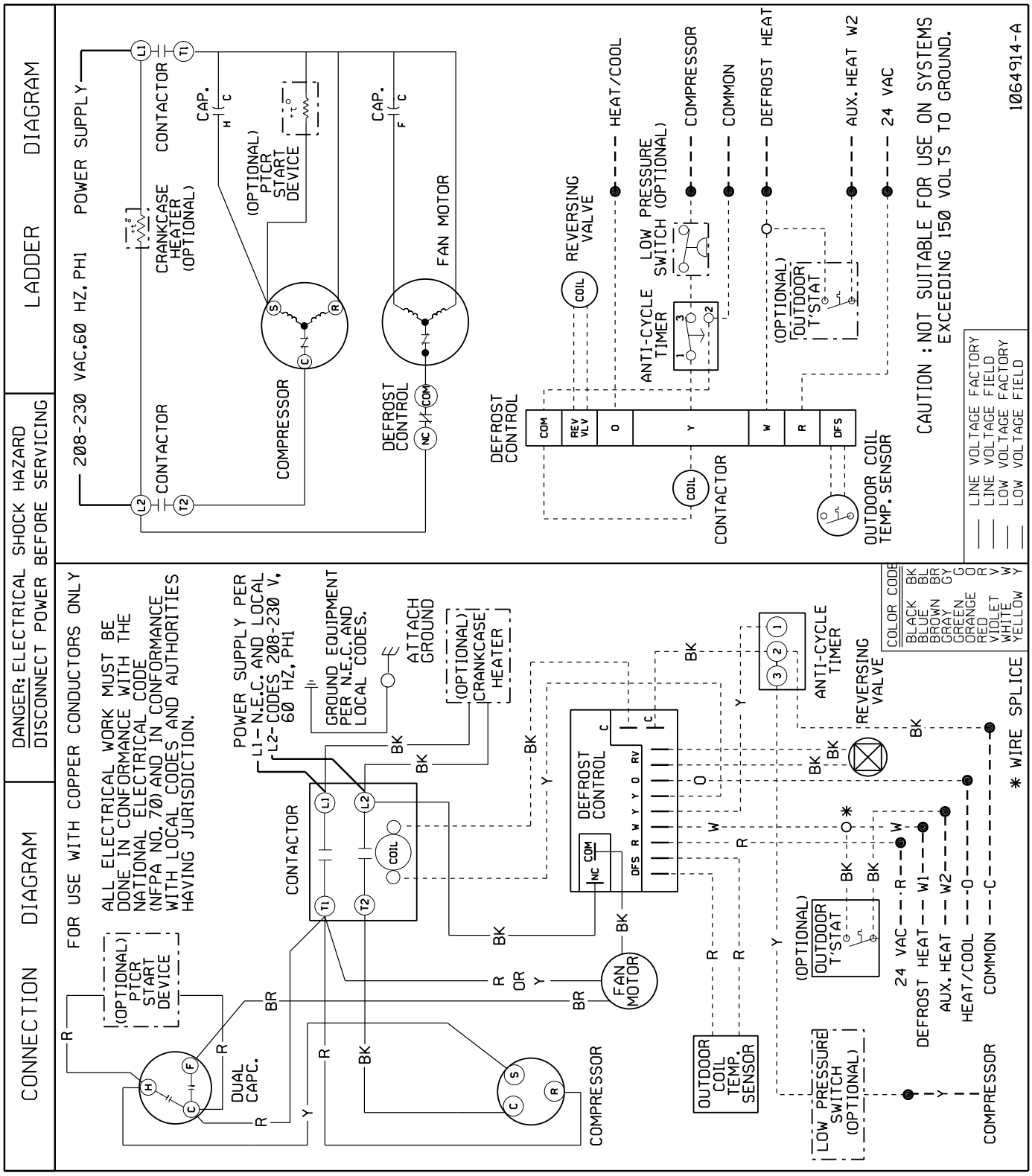
WIRING DIAGRAM # 6. (Part # 1064912)



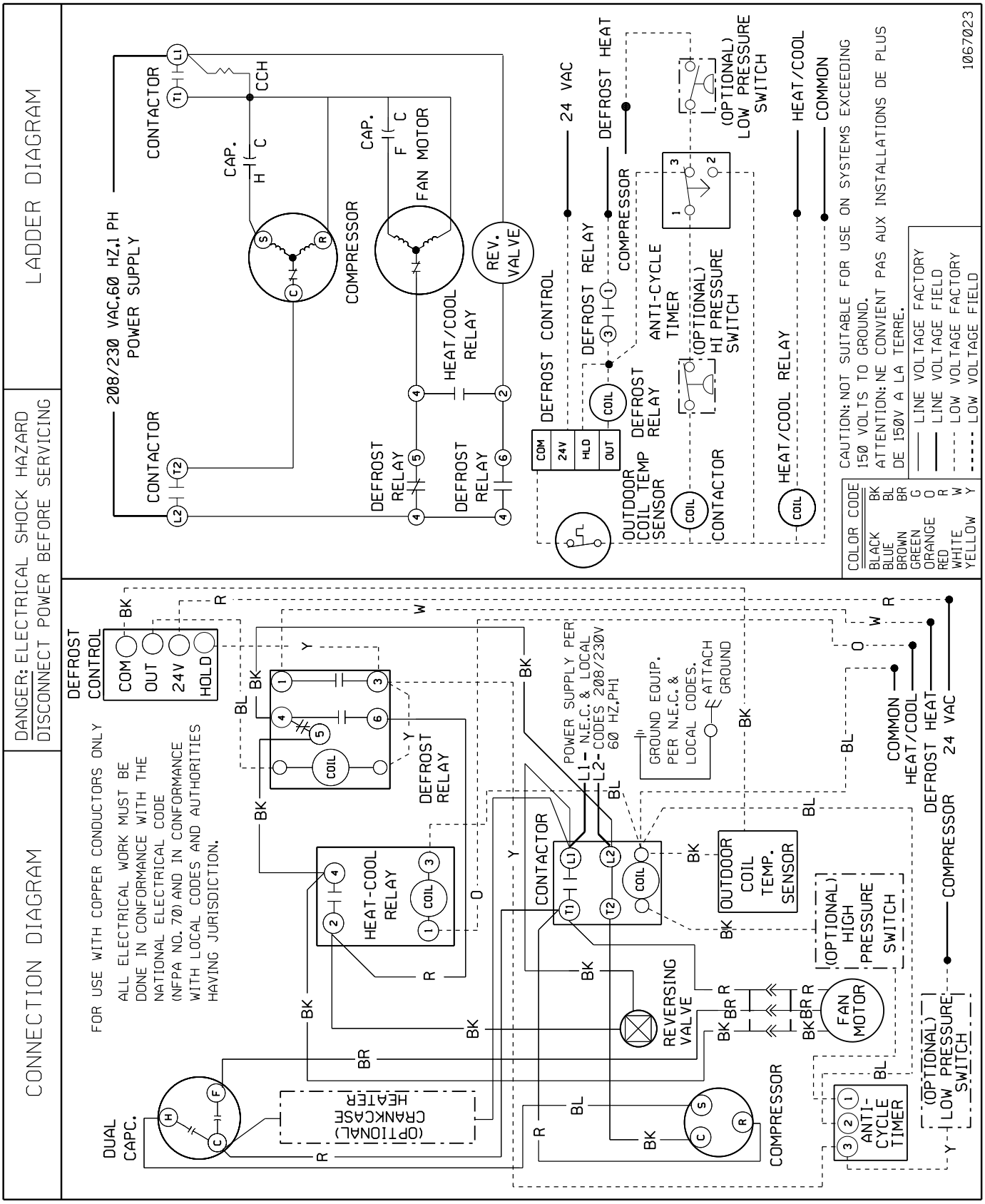
WIRING DIAGRAM # 7. (Part # 1064913)



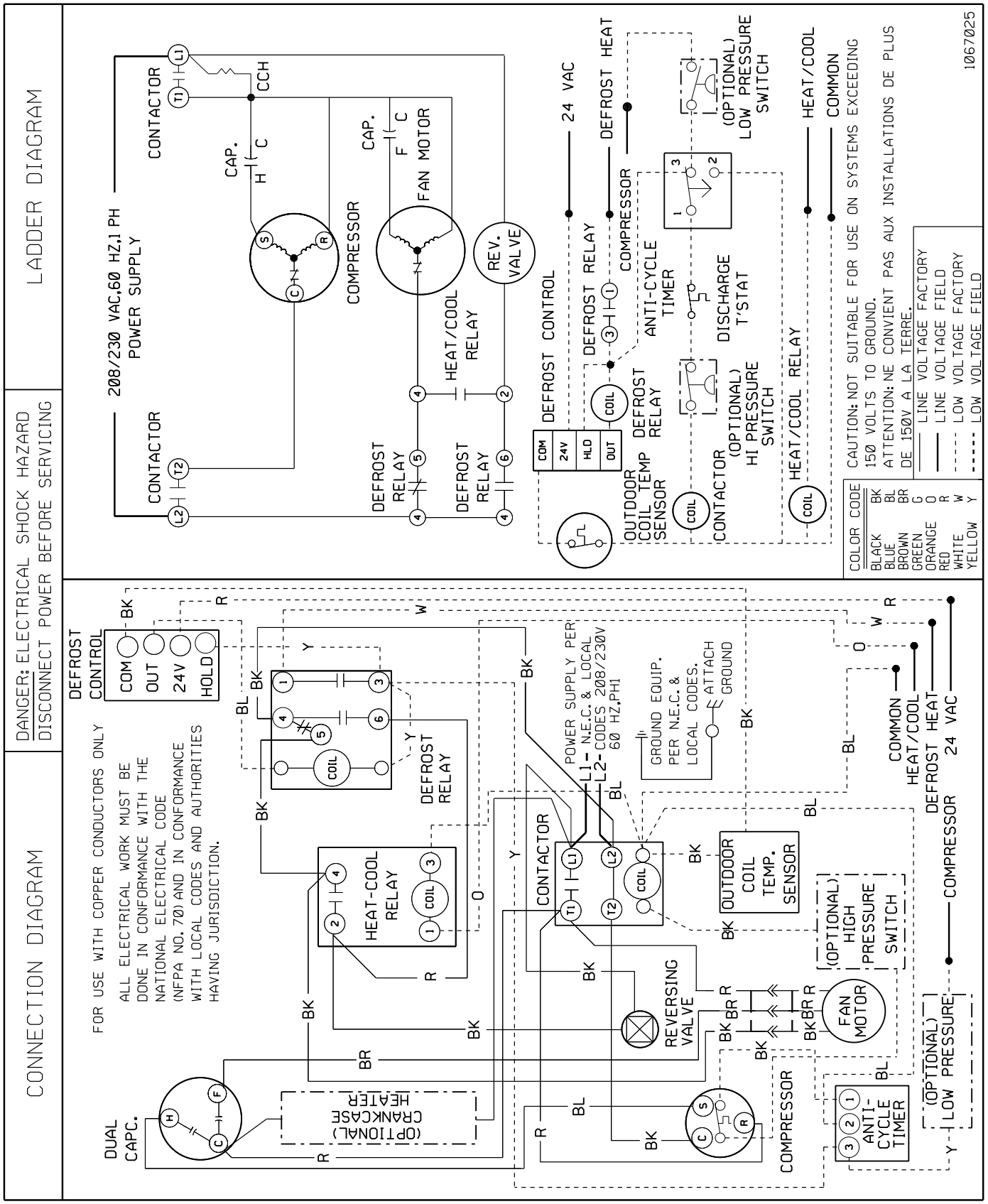
WIRING DIAGRAM # 8. (Part # 1064914)



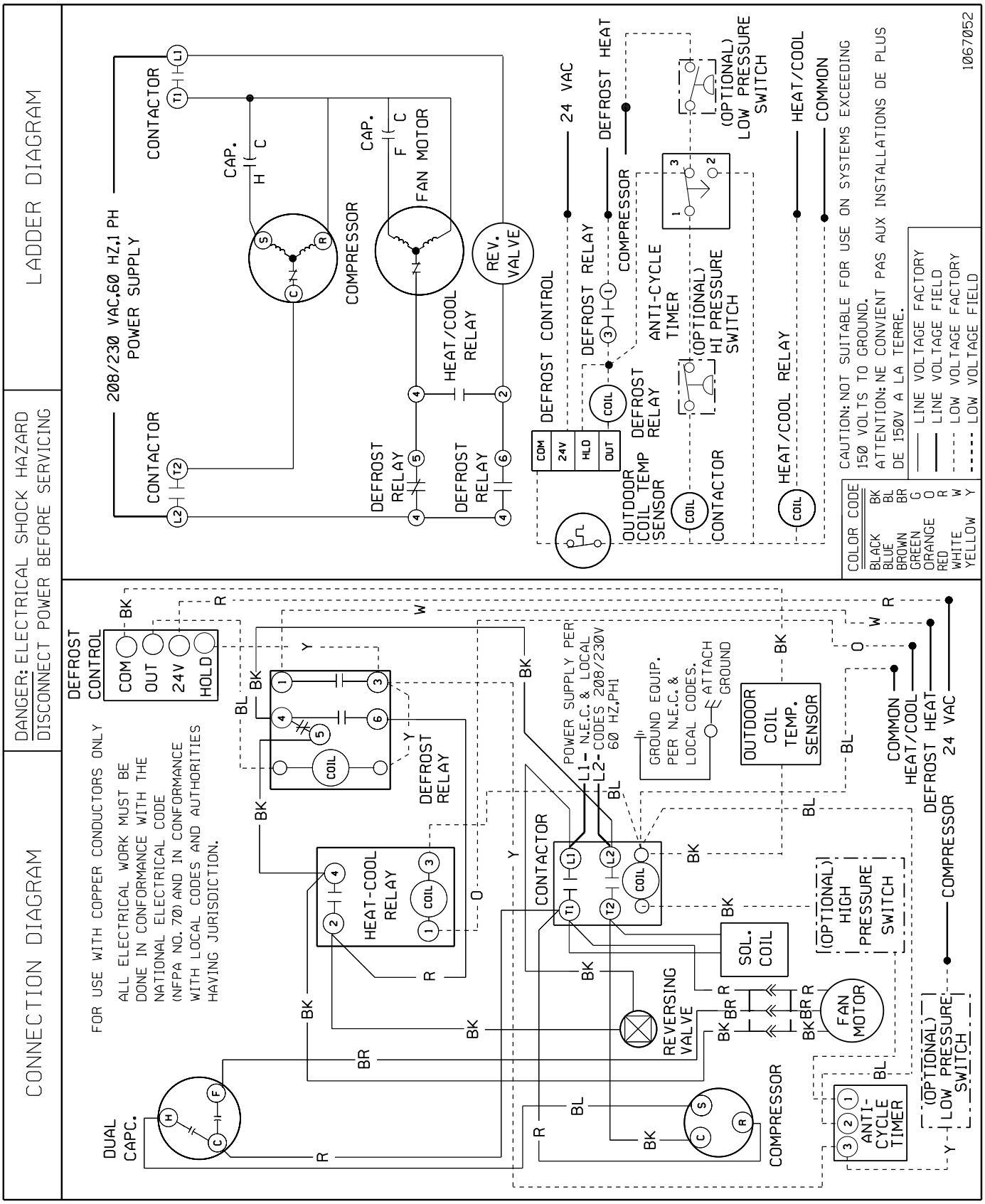
WIRING DIAGRAM # 9. (Part # 1067023)



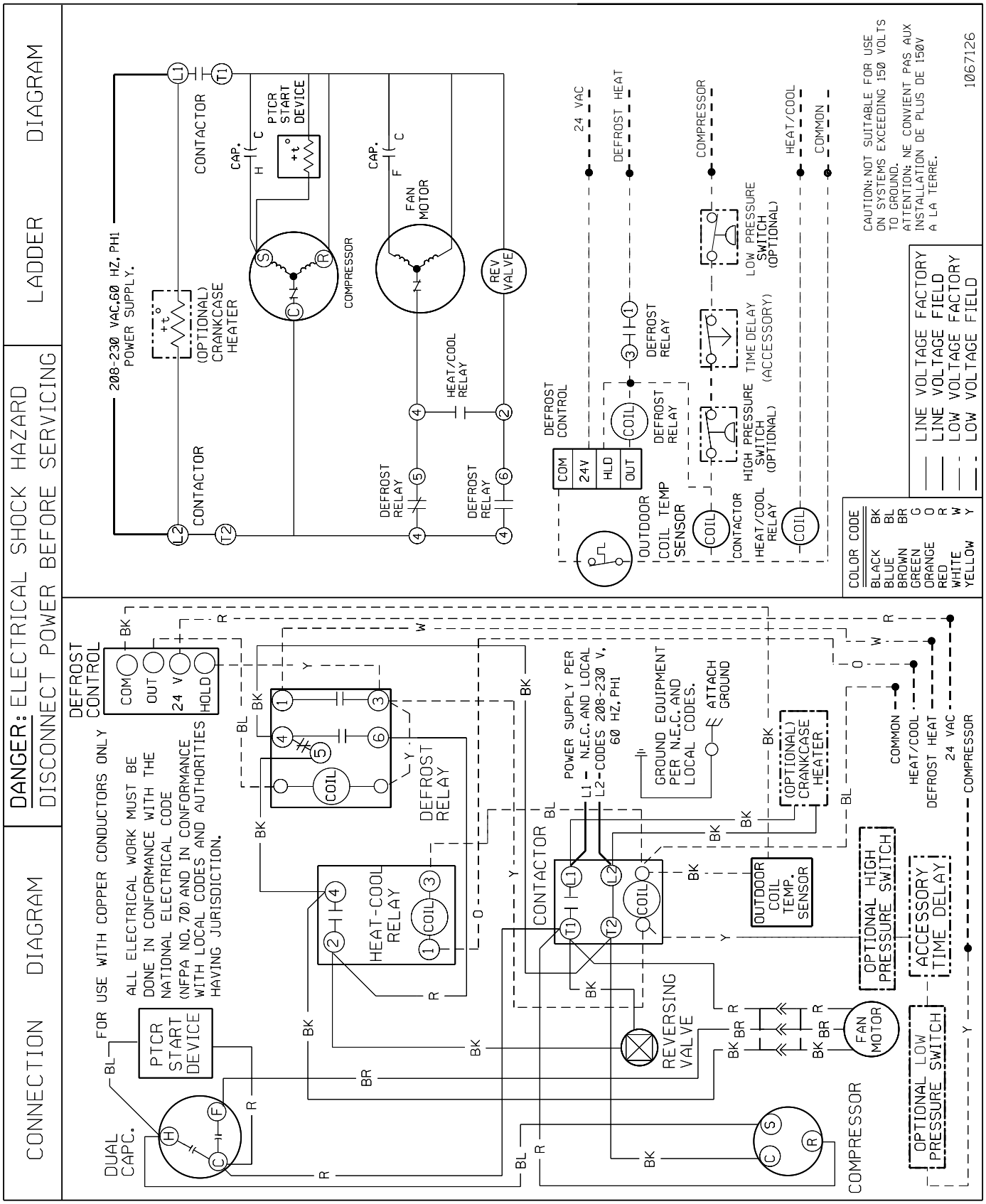
WIRING DIAGRAM # 10. (Part # 1067025)



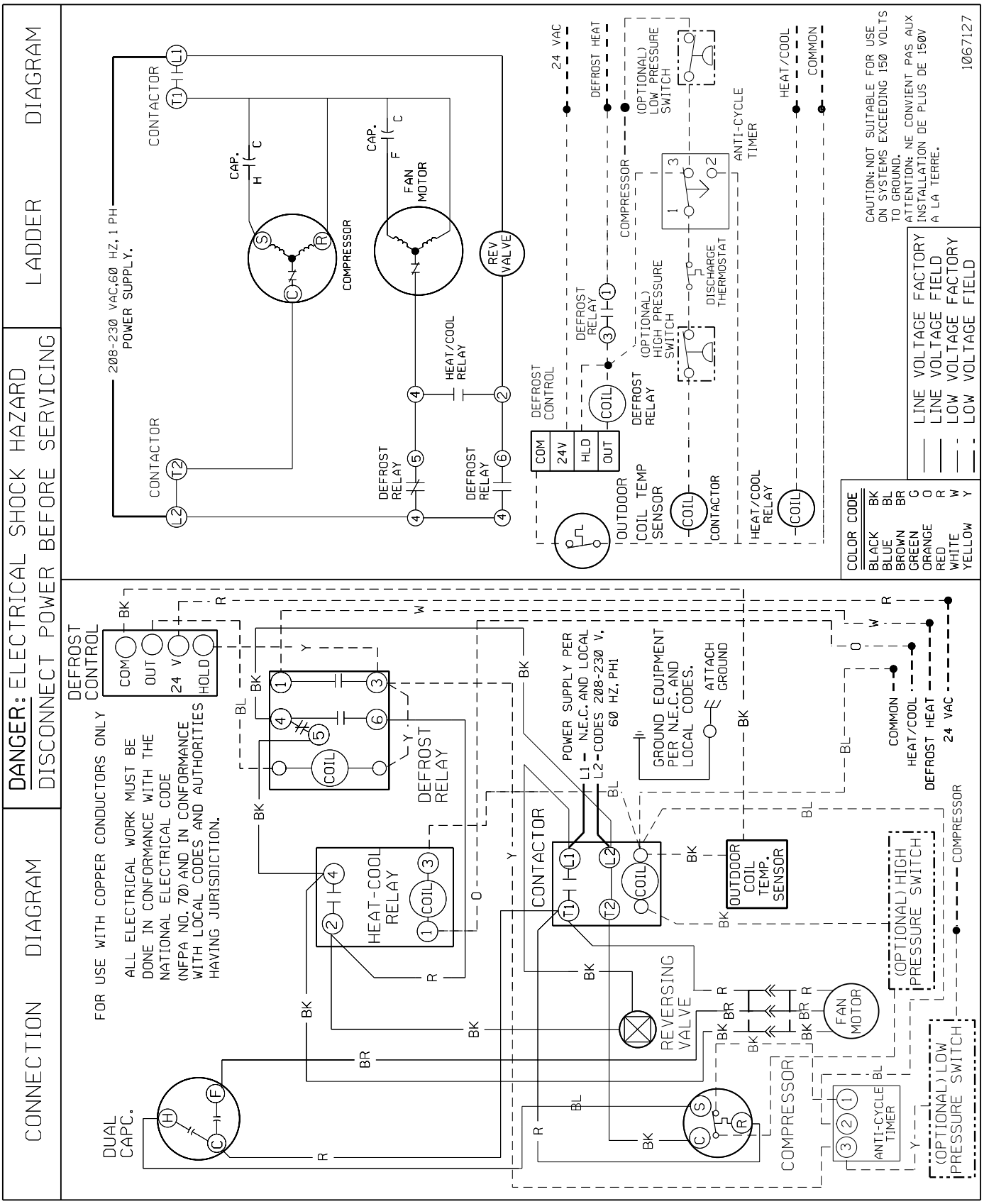
WIRING DIAGRAM # 11. (Part # 1067052)



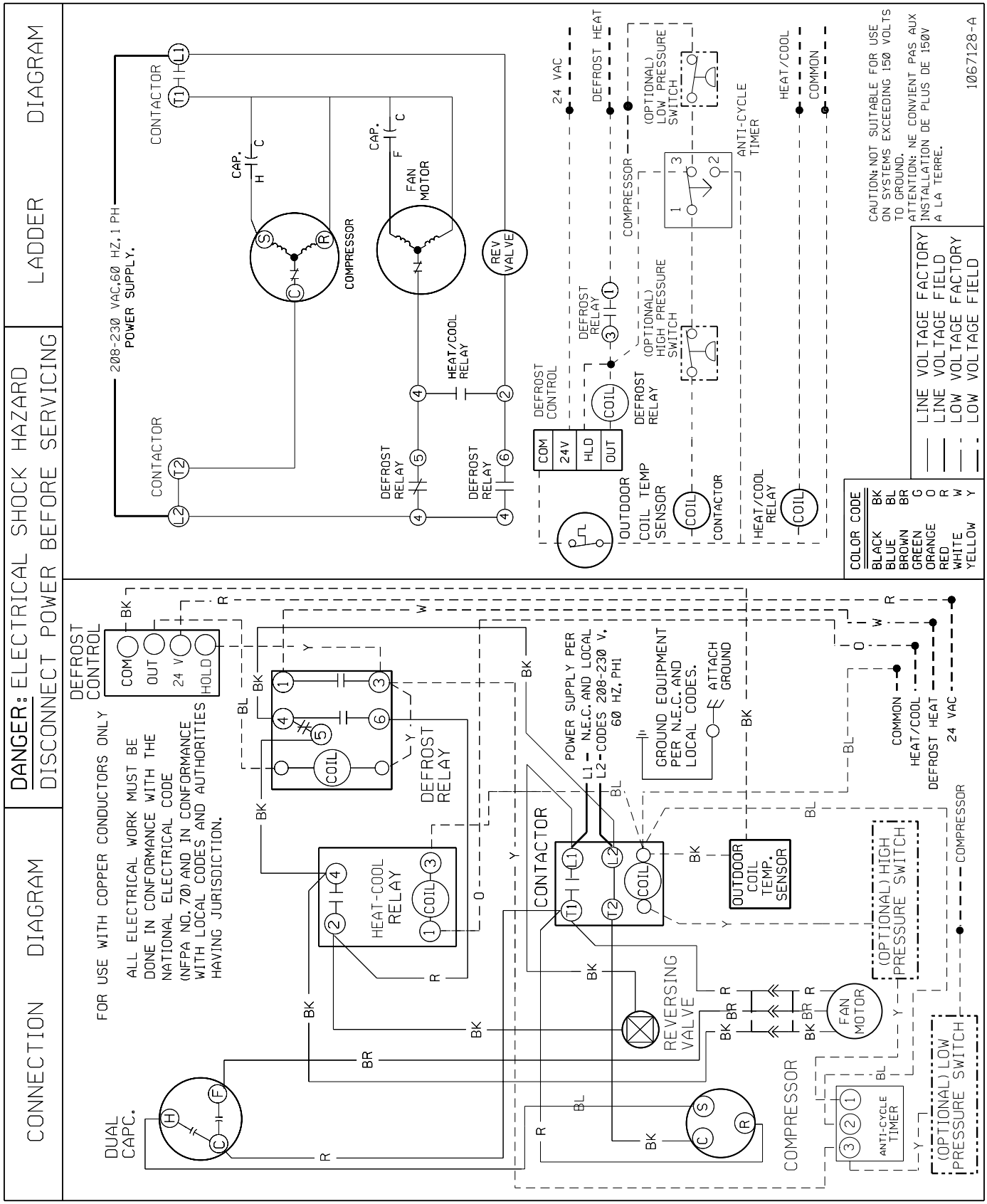
WIRING DIAGRAM # 12. (Part # 1067126)



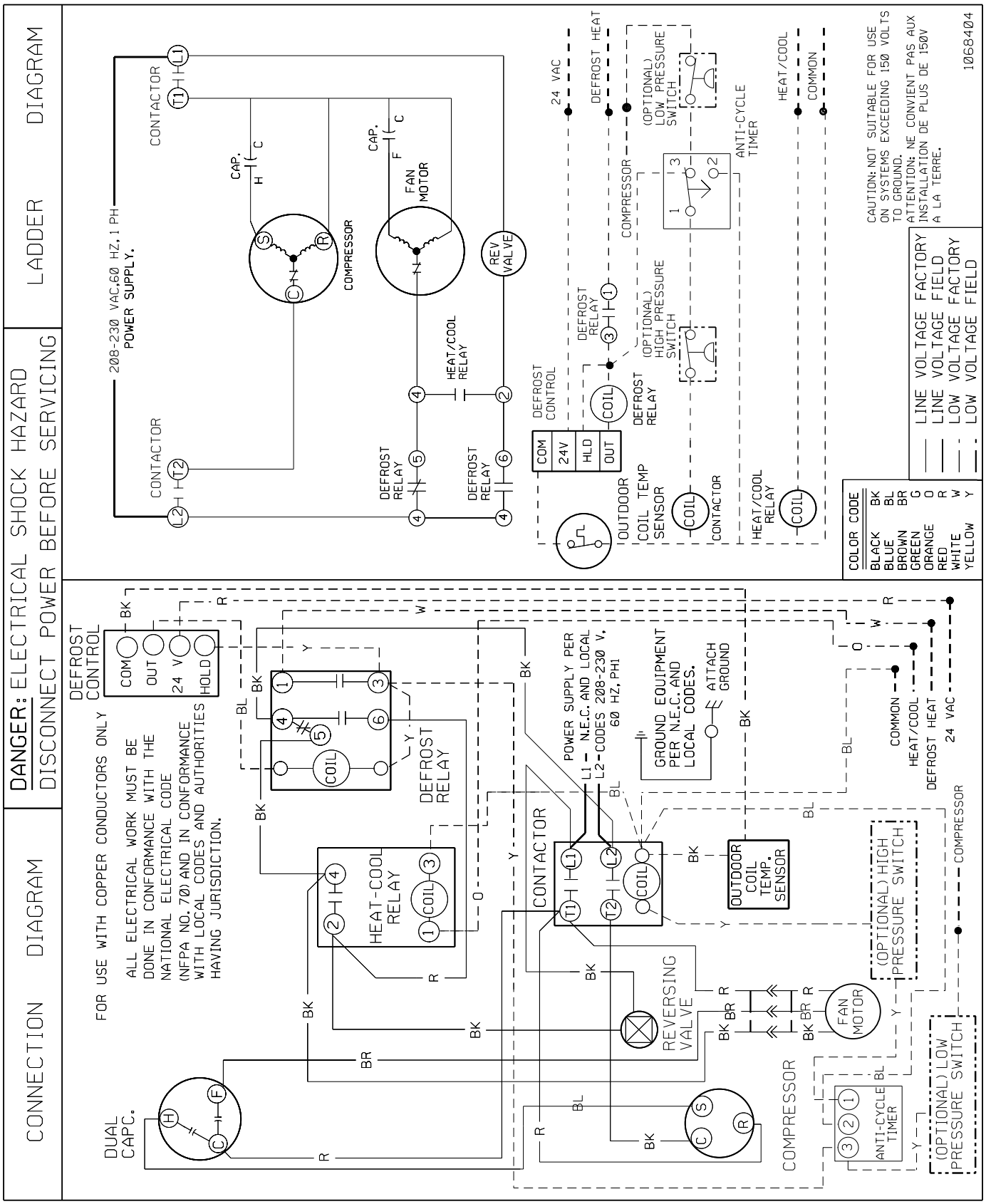
WIRING DIAGRAM # 13. (Part # 1067127)



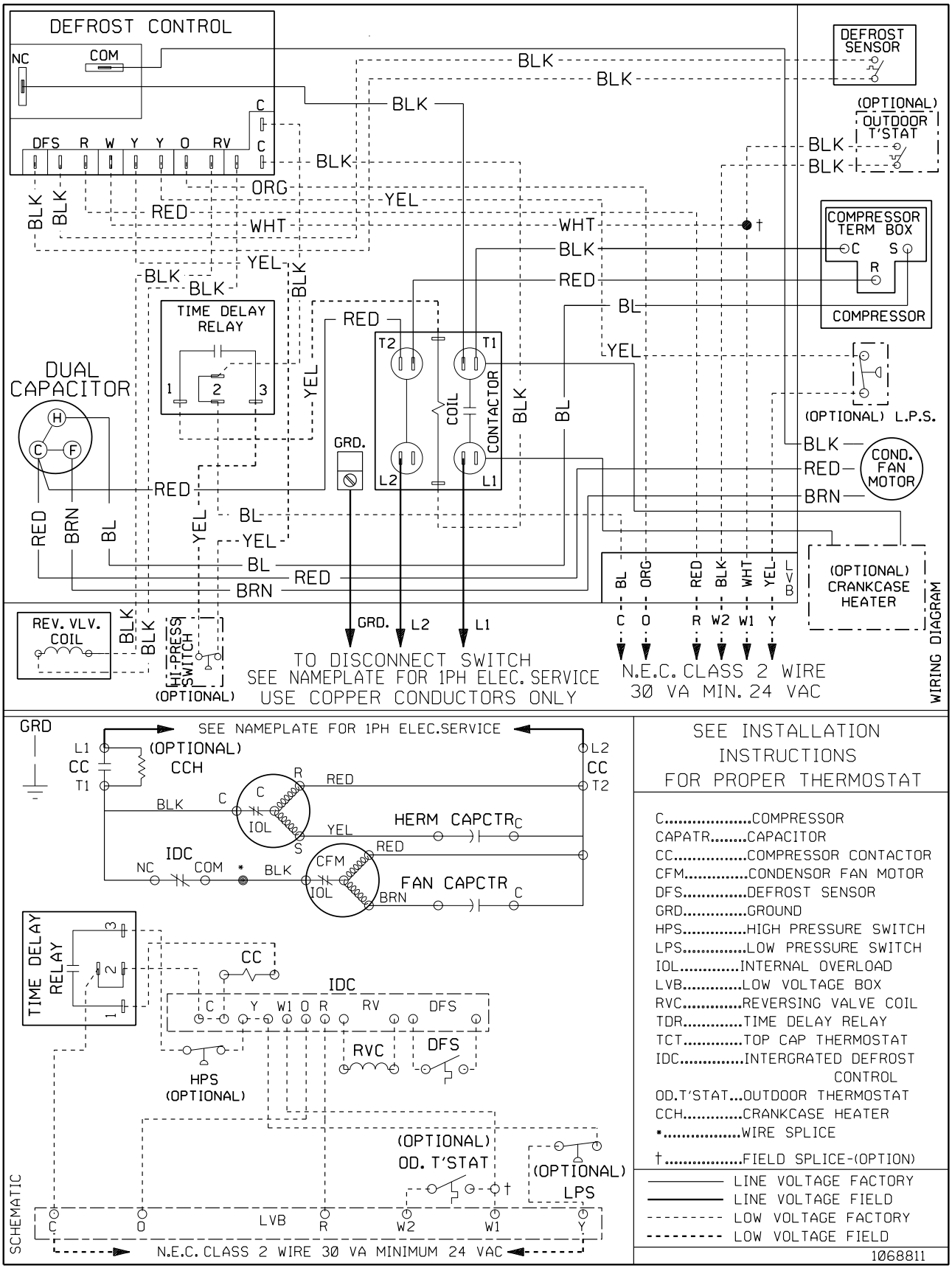
WIRING DIAGRAM # 14. (Part # 1067128-A)



WIRING DIAGRAM # 15. (Part # 1068404)



WIRING DIAGRAM # 16. (Part # 1068811)



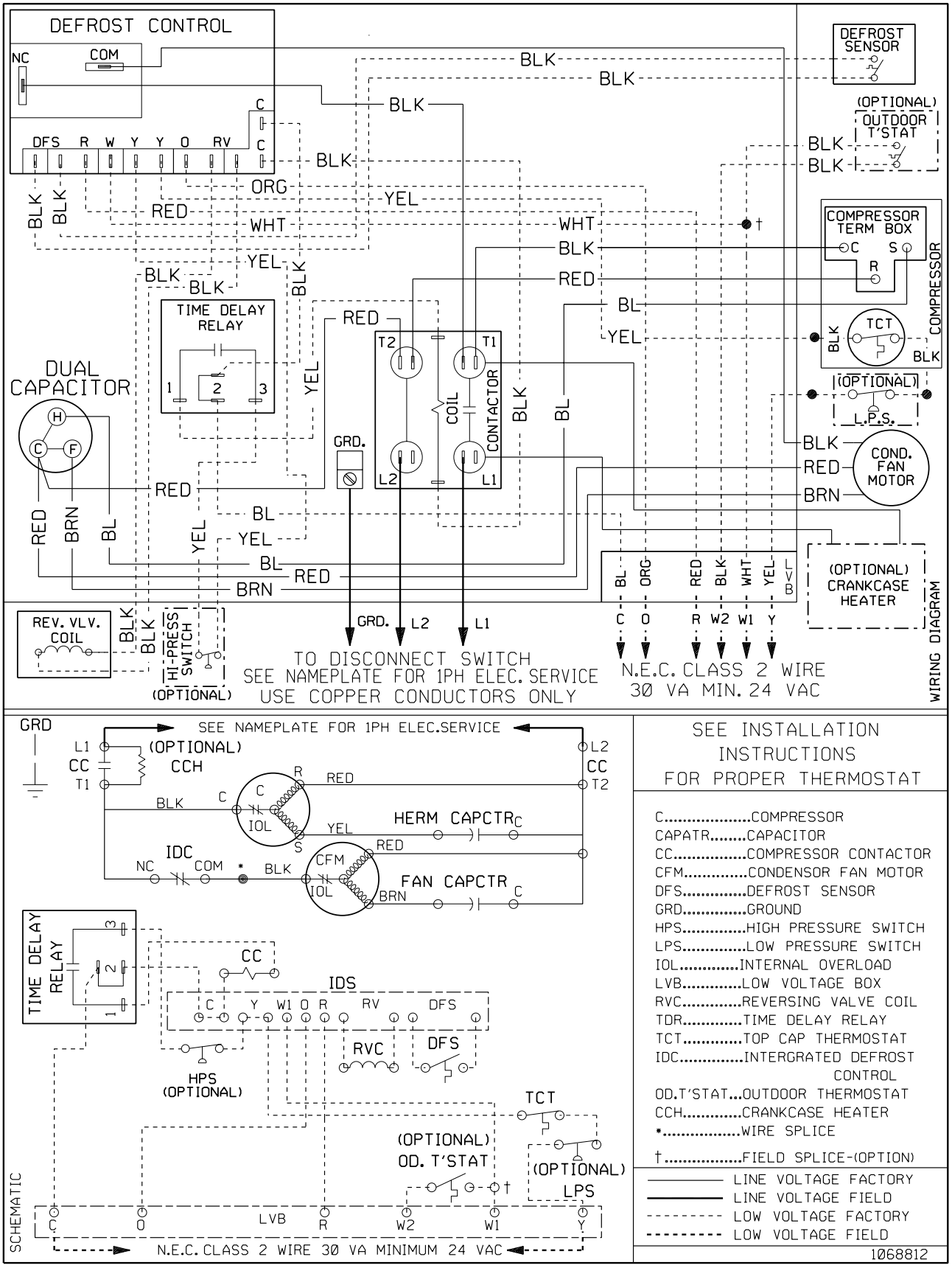
SEE INSTALLATION INSTRUCTIONS FOR PROPER THERMOSTAT

C.....COMPRESSOR
CAPATR.....CAPACITOR
CC.....COMPRESSOR CONTACTOR
CFM.....CONDENSOR FAN MOTOR
DFS.....DEFROST SENSOR
GRD.....GROUND
HPS.....HIGH PRESSURE SWITCH
LPS.....LOW PRESSURE SWITCH
IOL.....INTERNAL OVERLOAD
LVB.....LOW VOLTAGE BOX
RVC.....REVERSING VALVE COIL
TDR.....TIME DELAY RELAY
TCT.....TOP CAP THERMOSTAT
IDC.....INTERGRATED DEFROST CONTROL
OD.T'STAT...OUTDOOR THERMOSTAT
CCH.....CRANKCASE HEATER
*.....WIRE SPLICE
†.....FIELD SPLICE-(OPTION)

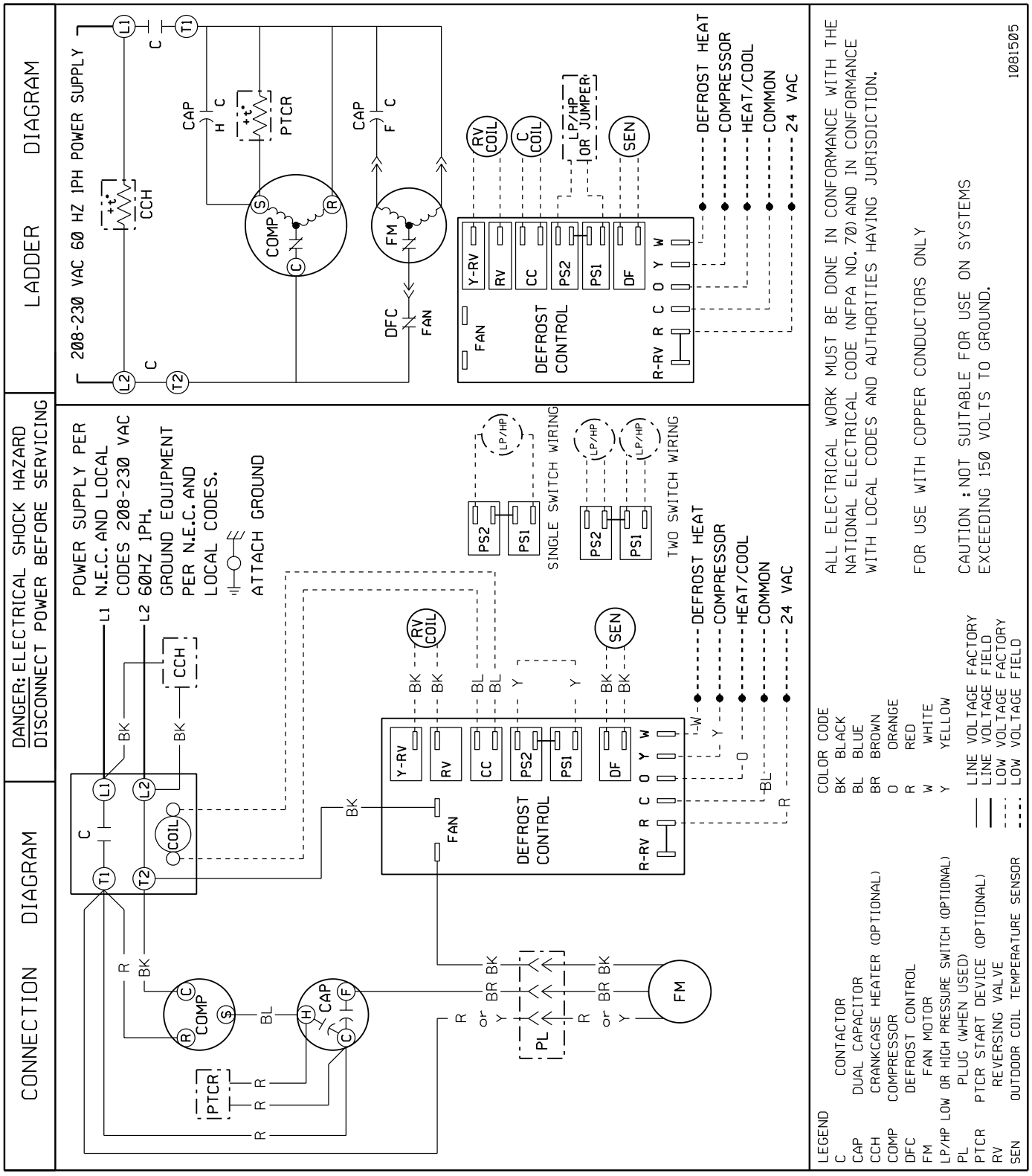
LINE VOLTAGE FACTORY
LINE VOLTAGE FIELD
LOW VOLTAGE FACTORY
LOW VOLTAGE FIELD

1068811

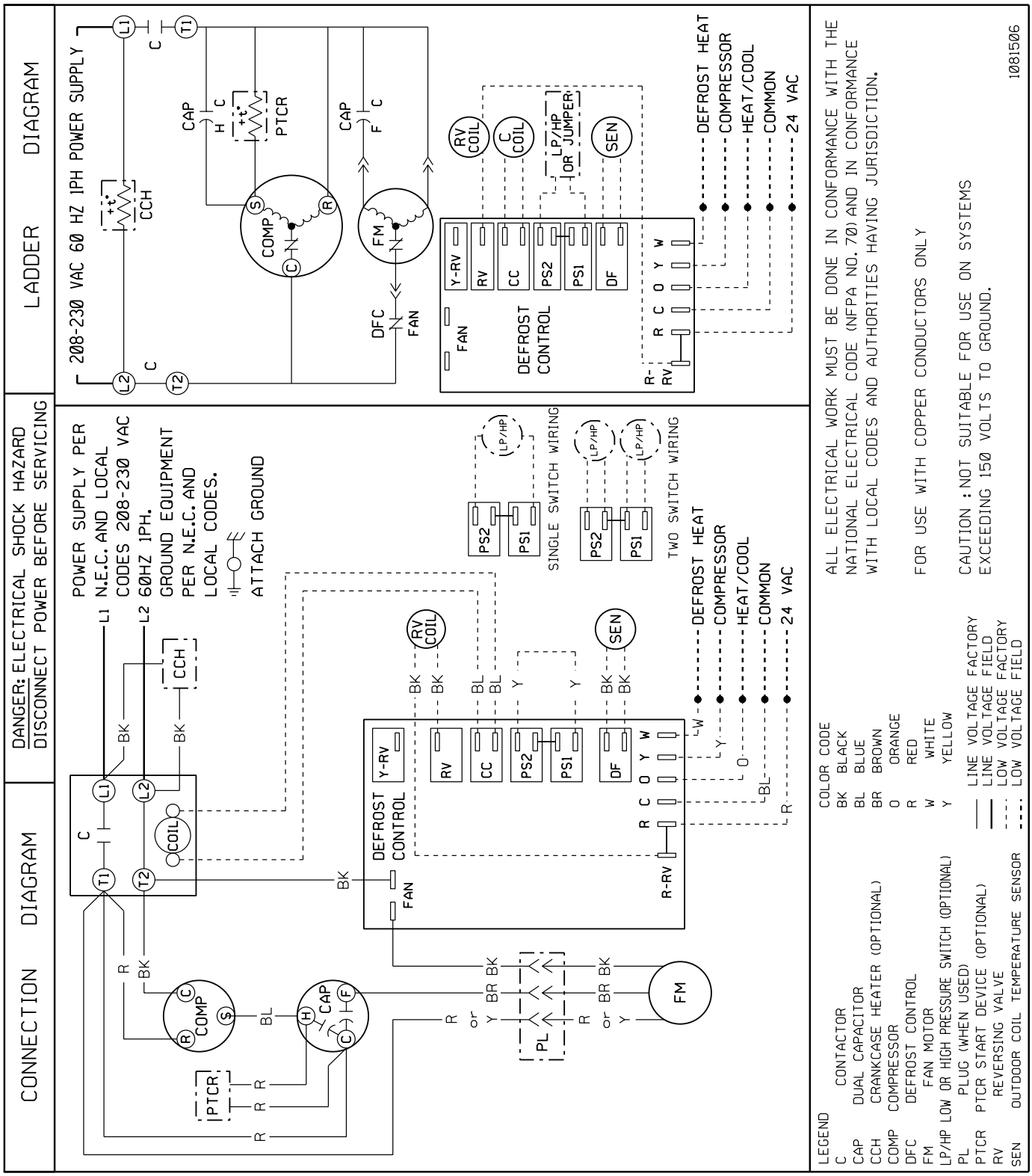
WIRING DIAGRAM # 17. (Part # 1068812)



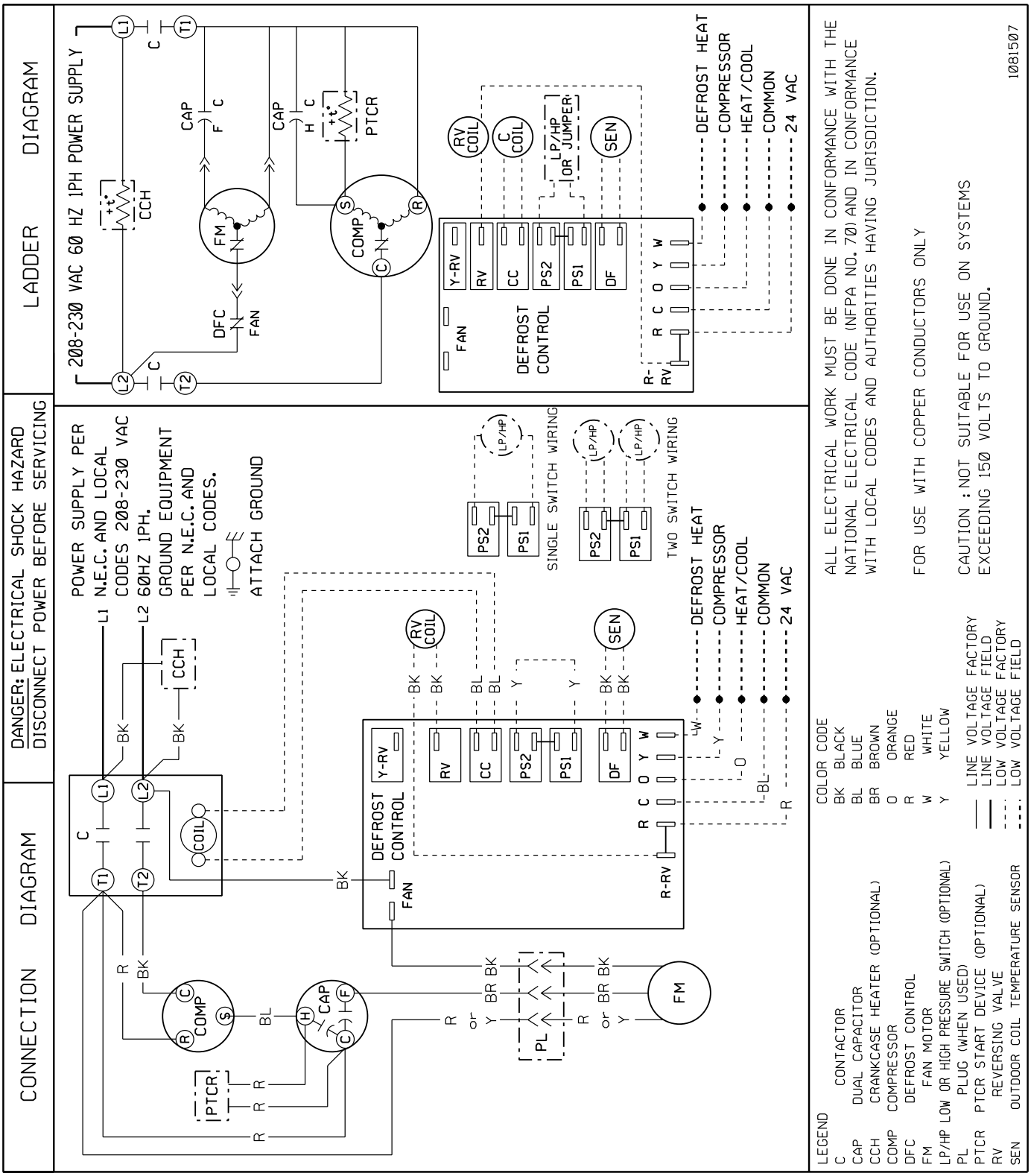
WIRING DIAGRAM # 18. (Part # 1081505)



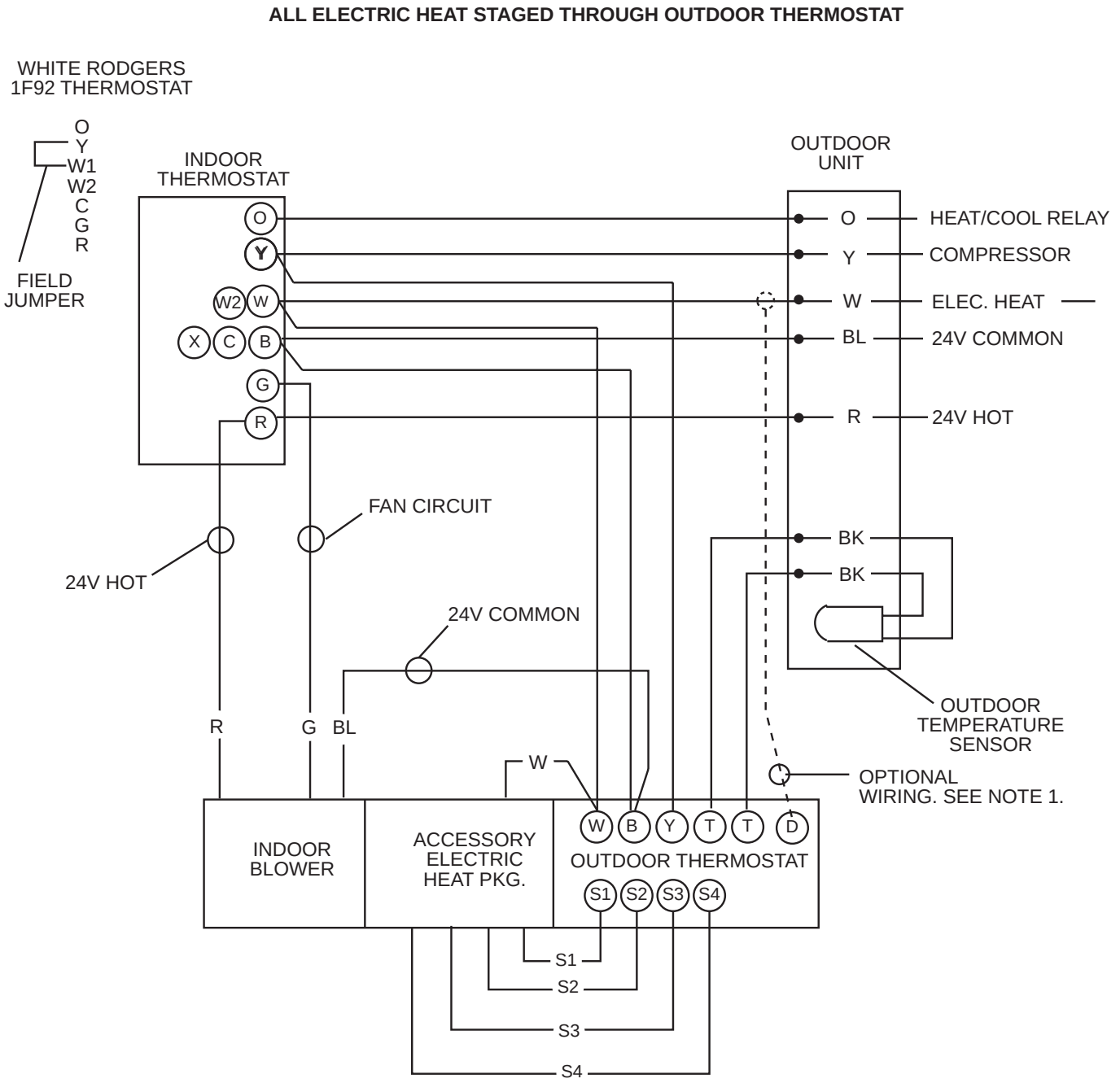
WIRING DIAGRAM # 19. (Part # 1081506)



WIRING DIAGRAM # 20. (Part # 1081507)



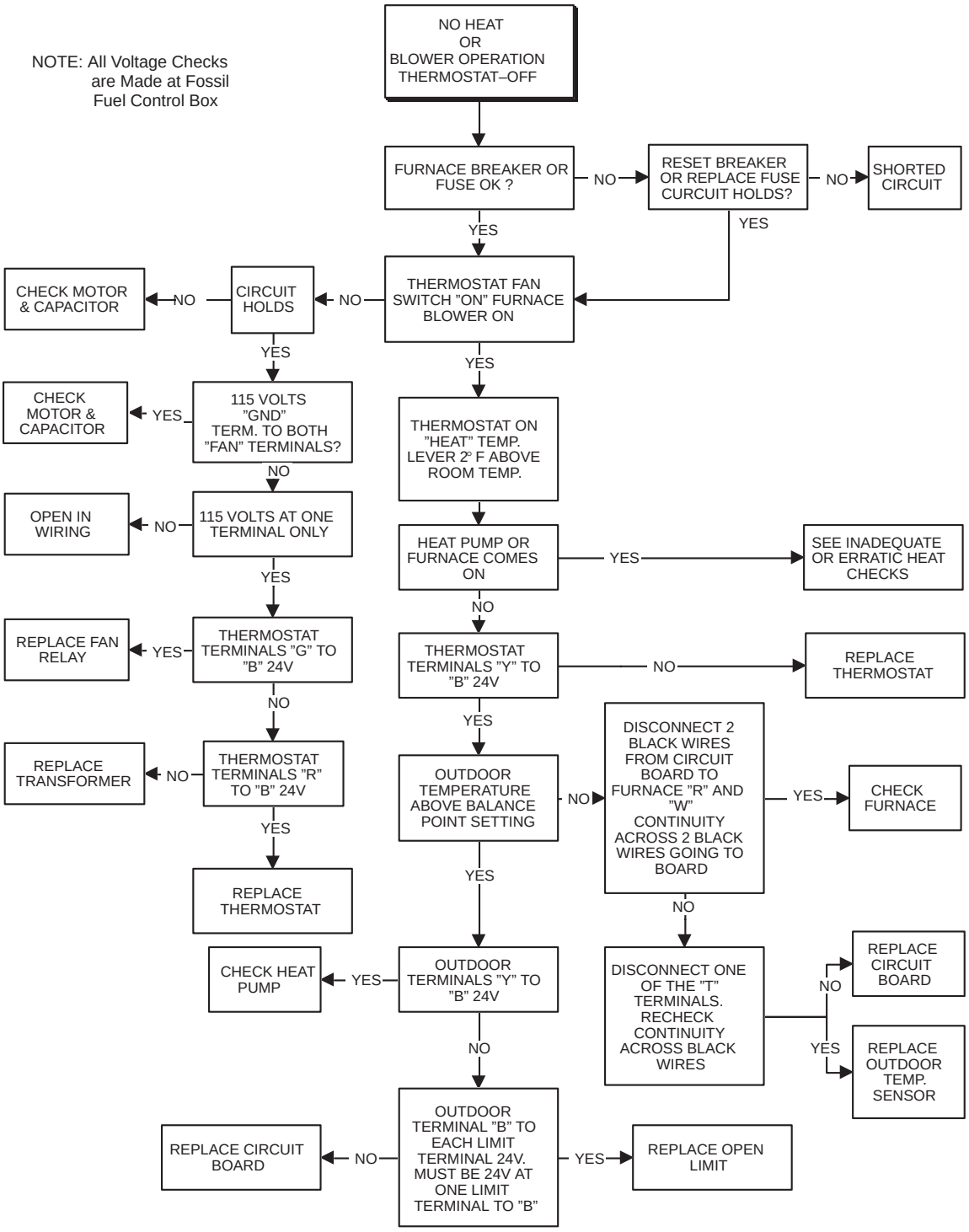
WIRING DIAGRAM # 21. Typical Control Wiring (with Electronic ODT)



Wire "S1" is the first stage of electric heat through the outdoor thermostat. To energize off indoor thermostat connect to "B" on outdoor thermostat with blue wire from blower. See Heater Wiring Diagram for wire color for each stage.

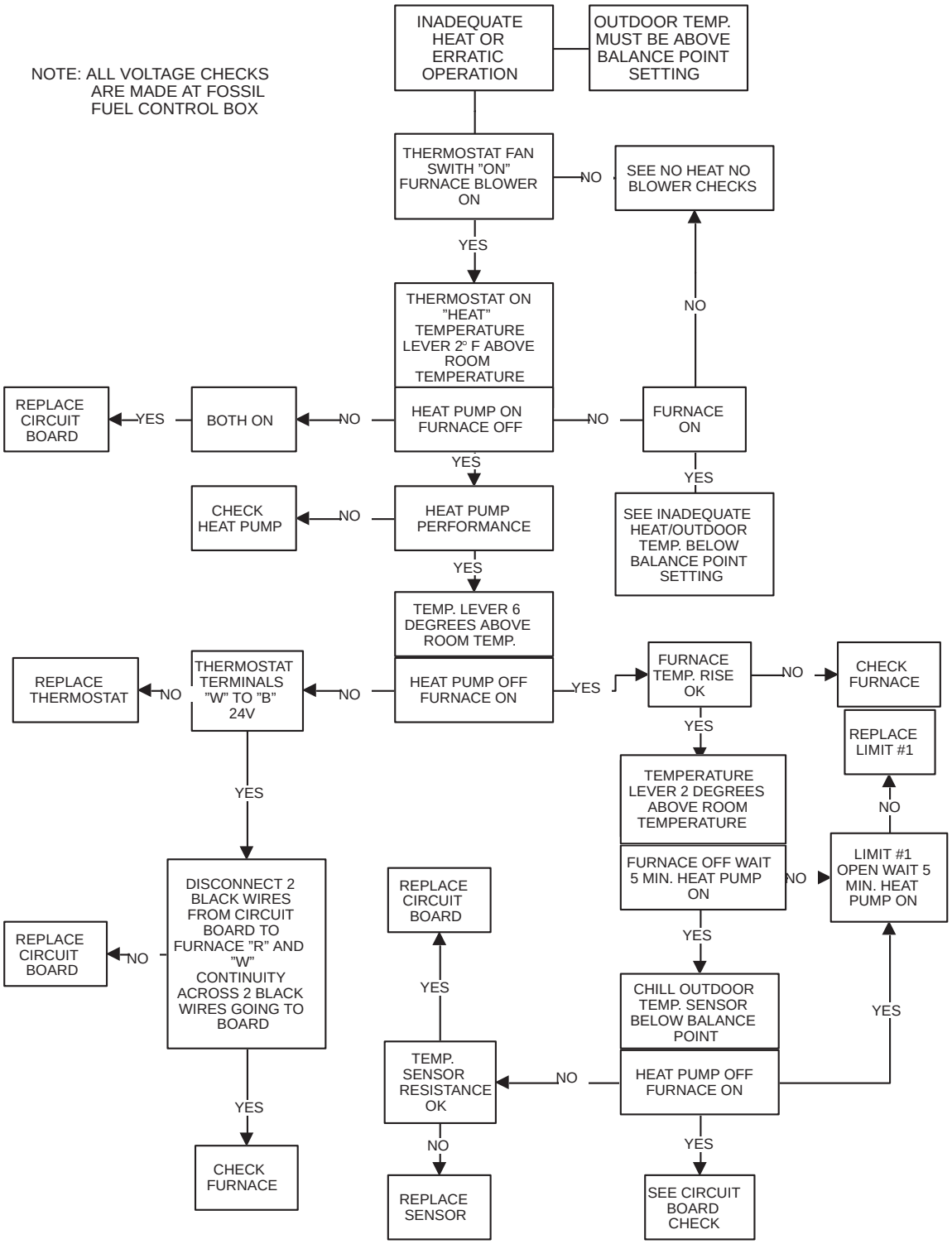
NOTE 1; Optional Wiring: Connect "W" from the outdoor unit to "D", on the outdoor thermostat instead of "W", on the indoor thermostat. This allows the first stage of heat to come on during the defrost cycle regardless of the outdoor thermostat setting.

FOSSIL FUEL CONTROL KIT - Troubleshooting Flow Chart # 1

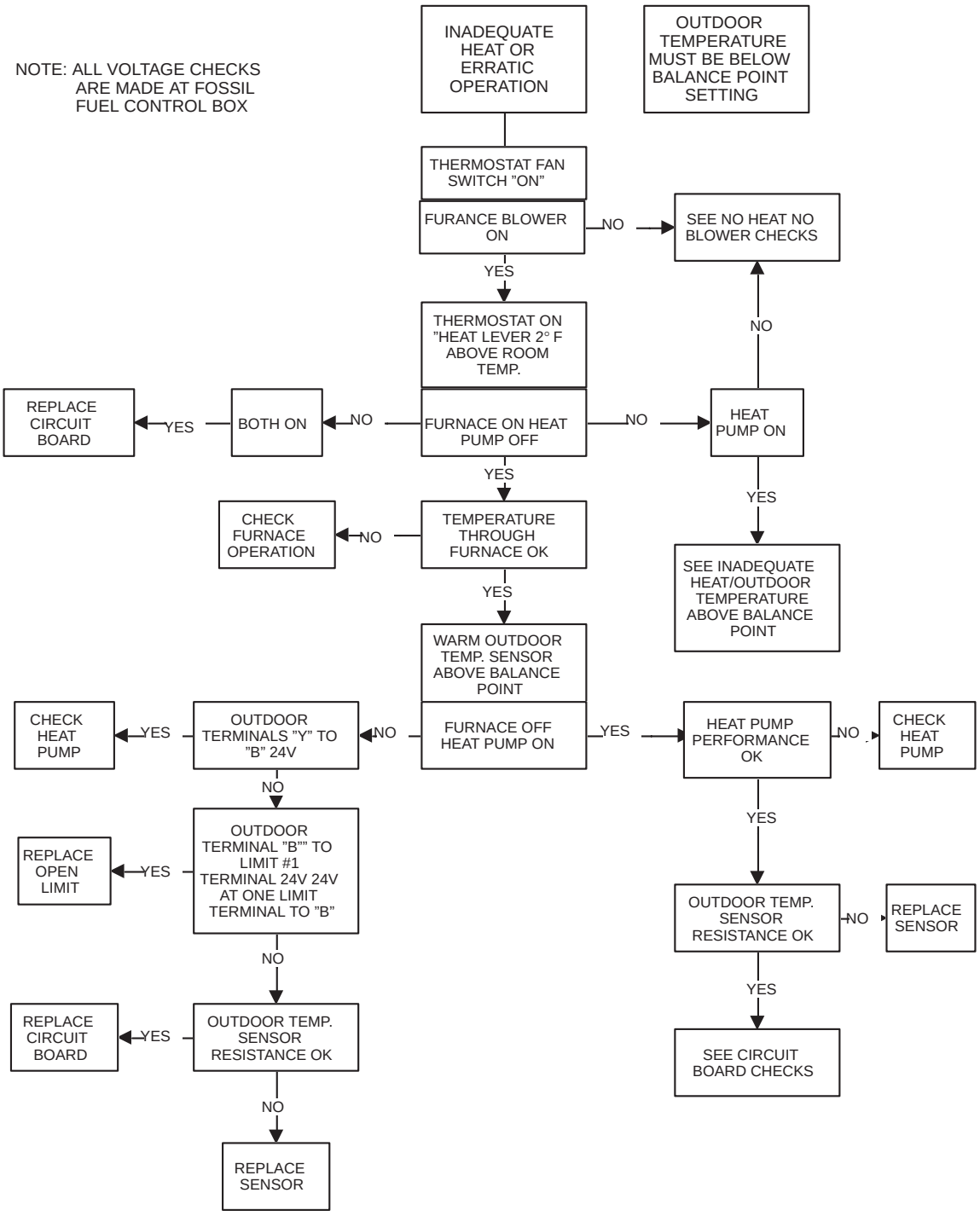


1

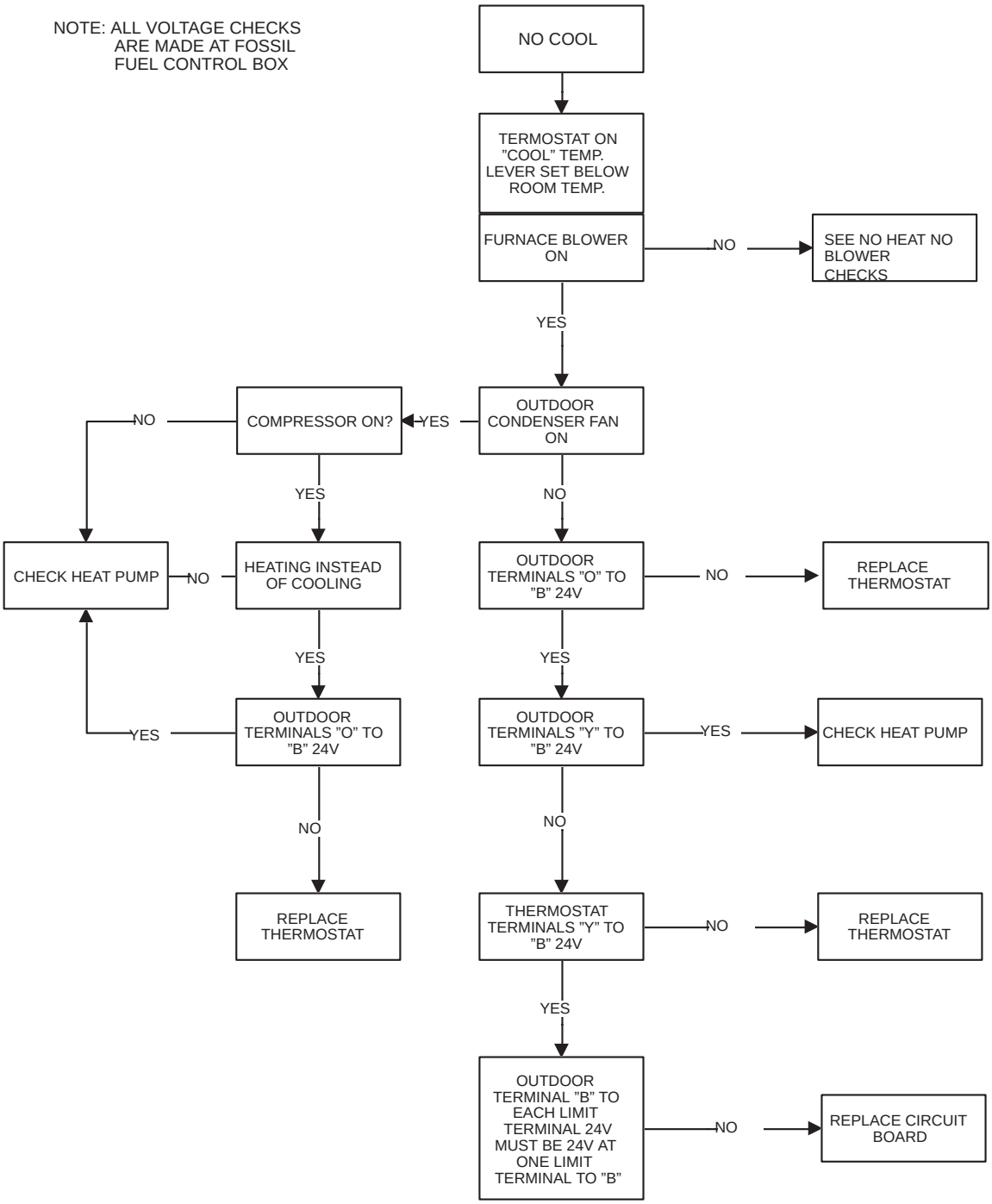
FOSSIL FUEL CONTROL KIT - Troubleshooting Flow Chart # 2



FOSSIL FUEL CONTROL KIT - Troubleshooting Chart # 3

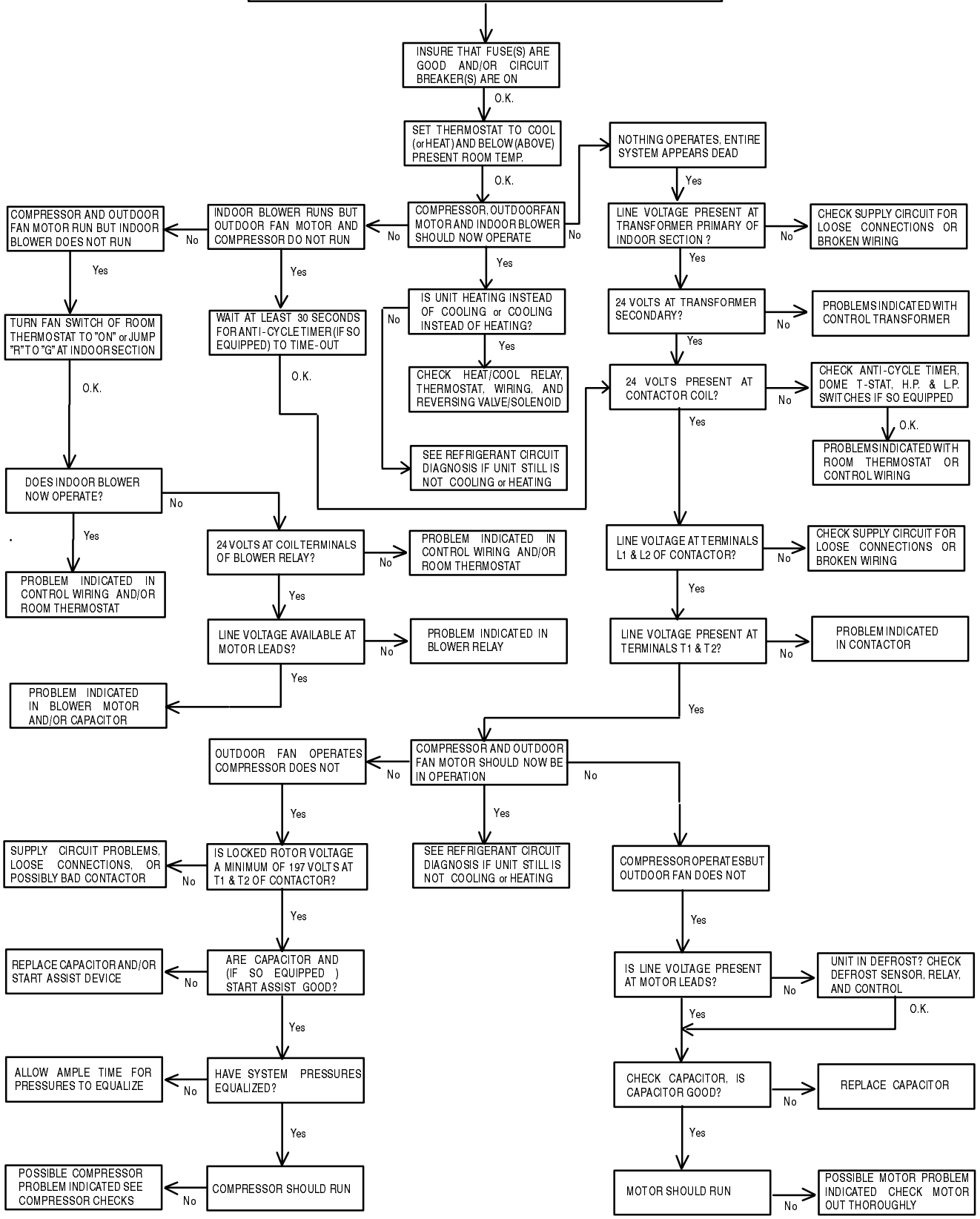


FOSSIL FUEL CONTROL KIT - Troubleshooting Chart # 4



NO COOLING/ 1st STAGE HEATING

ELECTRICAL TROUBLESHOOTING



COOLING - Refrigerant Circuit Diagnosis

Symptoms Exhibited *				Condition/Solutions
Suction Pressure	**Discharge Pressure**	**Superheat**	**Sub-Cooling**	
Lower Than Normal	Lower Than Normal	Lower Than Normal	Lower Than Normal	Insufficient air flow across INDOOR coil. Check filter, blower speed tap selected, blower motor, wheel, and capacitor.
Lower Than Normal	Lower Than Normal	Higher Than Normal	Lower Than Normal	Insufficient refrigerant charge. Check system for leak(s). Recover refrigerant, repair leak(s), evacuate system to 500 microns, and re-charge with refrigerant.
Lower Than Normal	Lower Than Normal	Higher Than Normal	Higher Than Normal	Restriction in refrigerant circuit. Look for significant temperature difference at point of restriction. Possible incorrect orifice pin (too small) or TXV stuck closed.
Higher Than Normal	Higher Than Normal	Higher Than Normal	Higher Than Normal	Excessive loading of INDOOR coil. Due to excessive air flow across indoor coil or open return duct in unconditioned space. Check blower speed tap setting (too high) and return duct for leakage.
Higher Than Normal	Higher Than Normal	Lower Than Normal	Lower Than Normal	Insufficient air flow across OUTDOOR coil. Check cleanliness of outdoor coil. Check outdoor fan motor, blade, and capacitor.
Higher Than Normal	Higher Than Normal	Lower Than Normal	Higher Than Normal	Excessive refrigerant charge. Recover refrigerant from system and re-charge using "Weighed in Charge" method.
Higher Than Normal	Higher Than Normal	Lower Than Normal	May Be Either Lower or Higher Than Normal	Air and/or Non-Condensibles in system. Recover refrigerant from system, evacuate system to 500 microns, and re-charge using "Weighed in Charge" method.
Higher Than Normal	Lower Than Normal	Lower Than Normal	Lower Than Normal	Incorrect/over feeding INDOOR Metering device. Check for proper pin size or loose TXV sensing bulb, or TXV stuck open.
Higher Than Normal	Lower Than Normal	May Be Either Lower or Higher Than Normal	May Be Either Lower or Higher Than Normal	Defective valves in compressor (I.E. runs but doesn't pump) abnormally low Amp draw and abnormally high compressor temperature may be indicated.

* "Normal" refers to Pressures, Temperatures, and/or values obtained at rated air flow under a given set of conditions and assumes that no changes have been made to factory refrigerant charge. Check the Tech. Service Data Sheet for the specific model you are servicing to obtain this information. Charging by weight is accomplished using the quantity of refrigerant indicated on the Tech. Service Data Sheet and/or Unit Rating Plate. Information on Superheat and Sub-Cooling is contained on page 32 of this manual.

1st STAGE HEATING - Refrigerant Circuit Diagnosis

Symptoms Exhibited *				Condition/Solutions
Suction Pressure	**Discharge Pressure**	**Superheat**	**Sub-Cooling**	
Lower Than Normal	Lower Than Normal	Lower Than Normal	Lower Than Normal	Insufficient air flow across OUTDOOR coil. Unit not defrosting, coil dirty, etc. Check outdoor fan motor, and capacitor.
Lower Than Normal	Lower Than Normal	Higher Than Normal	Lower Than Normal	Insufficient refrigerant charge. Check system for leak(s). Recover refrigerant, repair leak(s), evacuate system to 500 microns, and re-charge using "Weighed in Charge" method..
Lower Than Normal	Lower Than Normal	Higher Than Normal	Higher Than Normal	Restriction in refrigerant circuit. Look for significant temperature difference at point of restriction. Possible incorrect orifice pin (too small) or TXV stuck closed.
Higher Than Normal	Higher Than Normal	Higher Than Normal	Higher Than Normal	Excessive loading of OUTDOOR coil. Due to excessive outdoor air temperature for operation (see Tech. Service Data) in heating mode.
Higher Than Normal	Higher Than Normal	Lower Than Normal	Lower Than Normal	Insufficient air flow across INDOOR coil. Check cleanliness of filter, and indoor coil. Check blower speed tap selected, motor, wheel, and capacitor.
Higher Than Normal	Higher Than Normal	Lower Than Normal	Higher Than Normal	Excessive refrigerant charge. Recover refrigerant from system, and re-charge using "Weighed in Charge" method.
Higher Than Normal	Higher Than Normal	Lower Than Normal	May Be Either Lower or Higher Than Normal	Air and/or Non-Condensibles in system. Recover refrigerant from system, evacuate system to 500 microns, and re-charge using "Weighed in Charge" method.
Higher Than Normal	Lower Than Normal	Lower Than Normal	Lower Than Normal	Incorrect/over feeding OUTDOOR metering device. Check for proper pin size loose TXV sensing bulb, or TXV stuck open.
Higher Than Normal	Lower Than Normal	May Be Either Lower or Higher Than Normal	May Be Either Lower or Higher Than Normal	Defective valves in compressor (I.E. runs but doesn't pump) abnormally low Amp draw and abnormally high compressor temperature may be indicated.

* "Normal" refers to Pressures, Temperatures, and/or values obtained at rated air flow under a given set of conditions and assumes that no changes have been made to factory refrigerant charge. Check the Tech. Service Data Sheet for the specific model you are servicing to obtain this information. Charging by weight is accomplished using the quantity of refrigerant indicated on the Tech. Service Data Sheet and/or Unit Rating Plate. Information on Superheat and Sub-Cooling is contained on page 32 of this manual.

INDEX

T

U

V

W