MANUAL 2100-006D

INSTALLATION INSTRUCTIONS

MODELS
18HPQ2, 24HPQ2
30HPQ4, 36HPQ4

SPLIT HEAT PUMP UNIT
OUTDOOR SECTIONS

FOR USE WITH:
MATCHING BARD INDOOR BLOWER COIL UNITS AND MATCHING ADD ON COIL ONLY UNITS

APPLICATION AND INSTALLATION INSTRUCTIONS FOR SPLIT SYSTEM HEAT PUMPS

IMPORTANT

The equipment covered in this manual is to be installed by trained, experienced service and installation technicians. Any heat pump is more critical of proper operating, charge and an adequate duct system than a straight air conditioning unit. All ductwork, supply and return, must be properly sized for the design air flow requirement of the equipment. NESCA is an excellent guide to proper sizing. All duct work or portions thereof not in the conditioned space should be properly insulated in order to both conserve energy and prevent condensation or moisture damage.

SHIPPING DAMAGE

Upon receipt of equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

GENERAL

These instructions explain the recommended method to install the air cooled split type heat pump, the interconnected refrigerant tubing, and the electrical wiring required for both unit power and control circuit.

These units are to be used in conjunction with the matching indoor coil sections as shown on the specification sheet. Only those combinations as shown are authorized or recommended.

These instructions and any instructions packaged with any separate equipment required to make up the entire heat pump system should be carefully read before beginning the installation. Note particularly any tags and/or labels attached to the equipment.

While these instructions are intended as a general recommended guide, they do not supersede any national and/or local codes in any way. Authorities having jurisdiction should be consulted before the installation is made.

INSTALLATION

Size of unit for a proposed installation should be based on heat loss calculation made according to methods of National Warm Air Heating and Air Conditioning Association. The air duct should be installed in accordance with the Standards of the National Fire Protection Association for the Installation of Air Conditioning and Ventilating Systems of Other Than Residence Type, NFPA No. 90A, and Residence Type Warm Air Heating and Air Conditioning Systems, NFPA No. 90B. Where local regulations are at a variance with instructions, installer should adhere to local codes.

DUCTWORK

Design the ductwork according to methods given by the National Warm Air Heating and Air Conditioning Association. When duct runs through unheated spaces, it should be insulated with a minimum of two inches of insulation. Use insulation with a vapor barrier on the outside of the insulation. Flexible joints should be used to connect the ductwork to the equipment in order to keep the noise transmission to a minimum.

PRESSURE SERVICE PORTS

High and low pressure service ports are installed on all units so that the system operating pressures can be observed. Pressure curves can be found later in the manual covering all models on both cooling and heating cycles. It is imperative to match the correct pressure curve to the unit by model number.

SETTING THE UNIT

General - The unit must be located outside, or in a well ventilated area. It must not be in the space being heated or cooled. A sound absorbing material should be considered if the unit is to be installed in such a position or location that might cause transmission of sound or vibration to the living area or adjacent buildings.

SLAB MOUNTING

In areas where winter temperatures DO NOT go below 32°F for periods over twelve hours, the unit may be slab mounted at grade level. When installing unit at grade level, install on a concrete slab at least four inches above finished grade level. Slab should have a slope tolerance away from the building structure of at least 1/4 inch per foot, while being level from side to side. This will prevent ice buildup under the unit during defrost cycles. Place slab in a location where run-off water from higher ground will not collect around unit. See Figure 1.

A minimum of 18 inches should be provided between the coil inlet and any building surfaces. Provide at least four feet between coil outlet and any building wall, fences or other vertical structures. Provide a minimum of three feet clearance on the service access side of the unit. Refer to Figure 2.

ROOF MOUNTING

When a unit is installed in areas where low ambient temperatures or strong winter winds exist, it should be placed so prevailing winter winds are not in direct line with the heat pump coil. If this is not possible, a wind barrier should be constructed. Place herrier 24 inches from the coil inlet side of the unit and in the direction of prevailing winds. Size barrier at least the same height and width as the unit. See Figure 3.

WINTER INSTALLATION BELOW 32°F

In areas where winter conditions go below 32°F for extended periods, the unit must be elevated above the mounting surface to prevent snowfall or defrost ice accumulation from interfering with the operation of the unit. A minimum of twelve inch elevation is recommended, while greater elevation may be required for areas of high snow accumulation. Poured concrete, steel framework, brick, cement block, etc. can be utilized to construct a suitable raised mounting platform. See Figure 4.

WIRING - MAIN POWER

Refer to the unit rating plate for wire sizing information and maximum fuse or "HACR Type" circuit breaker size. Each outdoor unit is marked with a "Minimum Circuit Ampacity." This means that the field wiring used must be sized to carry that amount of current. Depending on the installed Kw of electric heat, there may be two field power circuits required. If this is the case, the unit serial plate will so indicate. Some models are suitable only for connection with copper wire, while others can be wired with either copper or aluminum wire. Each unit and/or wiring diagram will be marked "Use Copper Conductors Only" or "Use Copper or Aluminum Conductors." These instructions MUST BE adhered to. Refer to the National Electrical Code for complete current carrying capacity data on the various insulation grades of wiring material.

The unit rating plate lists a "Maximum Time Delay Fuse" or "HACR Type" circuit breaker that is to be used with the equipment. The correct size must be used for proper circuit protection and also to assure that there will be no nuisance tripping due to the momentary high starting current of the compressor motor.

WIRING - Control Circuit

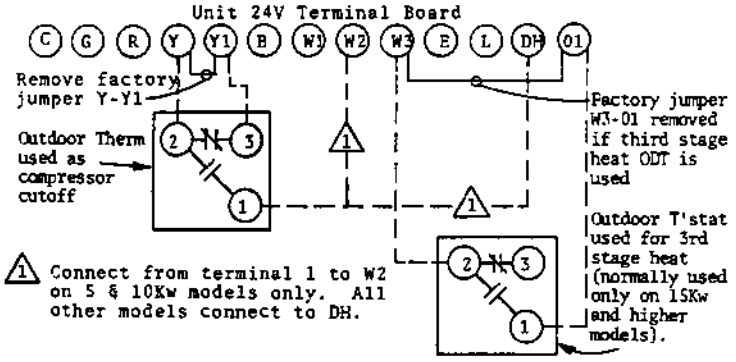
Since the same outdoor unit can in most cases be matched with more than one indoor unit, the appropriate control circuit wiring diagrams are included with the indoor coil section installation instructions. These control circuit wiring diagrams cover all the available wiring options required in the various geographic areas of the country.

COMPRESSOR CUT-OFF THERMOSTAT AND OUTDOOR THERMOSTATS

Heat pump compressor operation at outdoor temperatures below 0°F are neither desirable nor advantageous in terms of efficiency. Since most equipment at time of manufacture is not designated for any specific destination of the country, and most of the equipment is installed in areas not approaching the lower outdoor temperature range, the compressor cut-offs are not factory installed.

Outdoor thermostats are available to hold off various banks of electric heat until needed as determined by outdoor temperature. The set point of either type of thermostat is variable with geographic region and sizing of the heating equipment to the structure. Utilization of the Heating Application Data and the heat loss calculation of the building are useful in determining the correct set points.

COMPRESSOR CUT-OFF & OUTDOOR THERMOSTAT WIRING



WALL THERMOSTAT AND SUBBASE COMBINATIONS

Group	Thermostat	Subbase	Predominant Feature
A	8403-017 (T874R1129)	8404-009 (Q674L1181)	Heat or Cool No Auto ⚠1
B	8403-018 (T874N1024)	8404-010 (Q674F1261)	Automatic Heat-Cool Changeover Position ⚠2

⚠1 No automatic changeover position—must manually place in heat or cool. Reversing valve remains energized at all times system switch is in heat position (except during defrost cycle). No pressure equalization noise when thermostat is satisfied on either heating or cooling.

⚠2 Allows thermostat to control both heating and cooling operation when set in "AUTO" position. Reversing valve de-energizes at end of each "ON" heating cycle.

IMPORTANT NOTE: Both thermostat and sub-base combinations shown above incorporate the following features: Man-Auto fan switch, Off-Heat-Cool-Em. Heat Switch, and two (2) indicator lamps—one for Emergency Heat and one for compressor malfunction.

THERMOSTAT INDICATOR LAMPS

The red lamp marked "EM.HT." comes on and stays on whenever the system switch is placed in the Em. Ht. position. The green lamp marked "check" will come on if there is any problem that prevents the compressor from running when it is supposed to be.

EMERGENCY HEAT POSITION

The operator of the equipment must manually place the system switch in this position. This is done when there is a known problem with the outdoor section, or when the green "check" lamp comes on indicating a problem.

COMPRESSOR MALFUNCTION RELAY (Single Phase Models Only)

Actuation of the green "check" lamp is accomplished by a voltage type relay which is factory installed. Any condition such as loss of charge, defective capacitor, defective contactor, etc., that will prevent compressor from operating will cause green lamp to activate. This is a signal to the operator of the equipment to place system in emergency heat position.

SEQUENCE OF OPERATION

Cooling - Circuit R-Y makes at thermostat pulling in compressor contactor starting the compressor and outdoor motor. The G (indoor motor) circuit is automatically completed on any call for cooling operation, or can be energized by manual fan switch on subbase for constant air circulation.

Heating - A 24V solenoid coil on reversing valve controls heating cycle operation. Two thermostat options, one allowing "Auto" changeover from cycle to cycle and the other constantly energizing solenoid coil during heating season and thus eliminating pressure equalization noise except during defrost, are to be used. On "Auto" option, a circuit is completed from R-W1 and R-Y on each heating "on" cycle, energizing reversing valve solenoid and pulling in compressor contactor starting compressor and outdoor motor. R-G also make starting indoor blower motor. Heat pump heating cycle now in operation. The second option has no "Auto" changeover position, but instead energizes the reversing valve solenoid constantly whenever the system switch on subbase is placed in "Heat" position , the "B" terminal being constantly energized from R. A thermostat demand for heat completes R-Y circuit, pulling in compressor contactor starting compressor and outdoor motor. R-G also make starting indoor blower motor.

DEFROST CYCLE

The defrost cycle is controlled by time and temperature, The 240 volt timer motor runs all the time the compressor is in operation. When the outdoor temperature is in the lower 40°F temperature range or colder the outdoor coil temperature is 32°F or below. This temperature is sensed by the defrost thermostat mounted near the bottom of the outdoor coil on a return bend. The defrost thermostat closes at approximately 32°F. Every 60 (or 30) minutes that the compressor is running, contacts 3-5 close for 7 minutes, with contacts 3-4 closed for the first 40 seconds of that 7 minutes. If the defrost thermostat is closed, the defrost relay energizes and places the system in defrost mode. An interlocking circuit is created with timer contact 3-5 and defrost relay contact 7-9 in series.

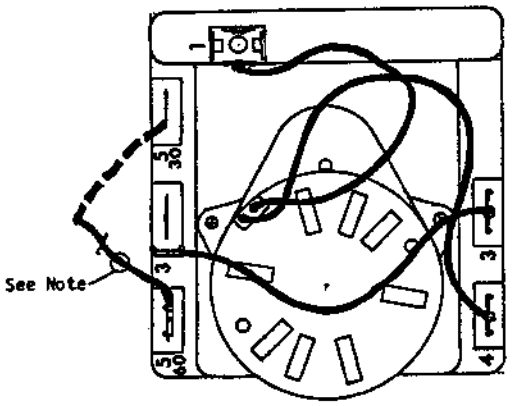
During the defrost mode, the refrigerant cycle switches back to the cooling cycle, the outdoor motor stops, electric heaters are energized, and hot gas passing through the outdoor coil melts any accumulated frost. When the temperature rises to approximately 57°F, the defrost thermostat opens, de-energizing the defrost relay and returning the system to heating operation.

If some abnormal or temporary condition such as a high wind causes the heat pump to have a prolonged defrost cycle, contacts 3-5 of the defrost timer will open after 7 minutes and restore the system to heating operations automatically.

There are two time settings on the defrost timer—30 minutes and 60 minutes. Most models are shipped wired on the 60 minute setting for greatest operating economy. If special circumstances require a change to the shorter time, remove wire connected to terminal 5/60 and reconnect to terminal 5/30. See next page.

There is a manual advance knob located on the timer. This can be used to advance timer to contact closure point if it is desired to check out defrost cycle operation, without waiting for time to elapse.

DEFROST TIMER WIRING



NOTE: All models are connected to 5/60 terminal (60 minute). Any model can be changed from 60 minutes to 30 minutes by unplugging from 5/60 terminal and reconnecting to 5/30 terminal as shown by dotted line.

SERVICE HINTS

1. Caution homeowner to maintain clean air filters at all times. Also, not to needlessly close off supply and return air registers. This reduces air flow through the system, which shortens equipment service life as well as increasing operating costs.
2. Switching to heating cycle at 75°F or higher outside temperature may cause a nuisance trip of the manual reset high pressure switch.
3. The heat pump wall thermostats perform multiple functions. Be sure that all function switches are correctly set for the desired operating mode before trying to diagnose any reported service problems.
4. Check all power fuses or circuit breakers to be sure that they are the correct rating.
5. Periodic cleaning of the outdoor coil to permit full and unrestricted airflow circulation is essential.

IMPORTANT INSTALLER NOTES:

1. For improved start-up performance wash the indoor coil with a dishwasher detergent.

REFRIGERANT CHARGE

The correct system R-22 charge is shown on the unit rating plate. Optimum unit performance will occur with a refrigerant charge resulting in a suction line temperature (6" from compressor) as shown in the following table:

Models	Rated Airflow	95°F O.D. Temp.	82°F O.D. Temp.
18HPQ2/B18EHQ1	622	63 - 65	71 - 73
18HPQ2/H18QS1	622	63 - 65	71 - 73
24HPQ2/B24EHQ1	800	69 - 71	73 - 75
24HPQ2/H24QS1	800	69 - 71	73 - 75
30HPQ4/B36EHQ1	1080	57 - 59	65 - 67
30HPQ4/H3AQ	1080	56 - 58	67 - 69
30HPQ4/B30EHQ	800	50 - 52	55 - 57
30HPQ4/H30QS	760	36 - 38	42 - 44
36HPQ4/B36EHQ1	1325	60 - 62	69 - 71
36HPQ4/H3AQ	1300	63 - 65	70 - 72

NOTE: The suction line temperatures are based upon 80°F dry bulb/67°F wet bulb (50% R.H.) temperature and rated airflow across the evaporator during cooling cycle.

CRANKCASE HEATERS

All units are provided with some form of compressor crankcase heat. Some single phase units utilize the compressor motor start winding in series with a portion of the run capacitor to generate heat within the compressor shell to prevent liquid refrigerant migration.

Some three phase units utilize a wraparound type of crankcase heater that warms the compressor oil from the outside.

Some single and three phase models have an insertion well-type heater located in the lower section of the compressor housing. This is a self-regulating type heater that draws only enough power to maintain the compressor at a safe temperature.

Some form of crankcase heat is essential to prevent liquid refrigerant from migrating to the compressor, causing oil pump out on compressor start-up and possible valve failure due to compressing a liquid.

Refer to unit wiring diagram to find exact type of crankcase heater used.

The following decal is affixed to all outdoor units detailing start-up procedure. This is very important. Please read carefully.

IMPORTANT

THESE PROCEDURES MUST BE FOLLOWED AT INITIAL START-UP AND AT ANY TIME POWER HAS BEEN REMOVED FOR 12 HOURS OR LONGER.

TO PREVENT COMPRESSOR DAMAGE WHICH MAY RESULT FROM THE PRESENCE OF LIQUID REFRIGERANT IN THE COMPRESSOR CRANKCASE

1. MAKE CERTAIN THE ROOM THERMOSTAT IS IN THE "OFF" POSITION (THE COMPRESSOR IS NOT TO OPERATE).
2. APPLY POWER BY CLOSING THE SYSTEM DISCONNECT SWITCH. THIS ENERGIZES THE COMPRESSOR HEATER WHICH EVAPORATES THE LIQUID REFRIGERANT IN THE CRANKCASE.
3. ALLOW 4 HOURS OR 60 MINUTES PER POUND OF REFRIGERANT IN THE SYSTEM AS NOTED ON THE UNIT RATING PLATE, WHICHEVER IS GREATER.
4. AFTER PROPERLY ELAPSED TIME THE THERMOSTAT MAY BE SET TO OPERATE THE COMPRESSOR.
5. EXCEPT AS REQUIRED FOR SAFETY WHILE SERVICING — DO NOT OPEN SYSTEM DISCONNECT SWITCH.

7961-081

FIGURE 1

SLAB MOUNTING AT GROUND LEVEL
(ABOVE 32°F OUTSIDE TEMPERATURE)

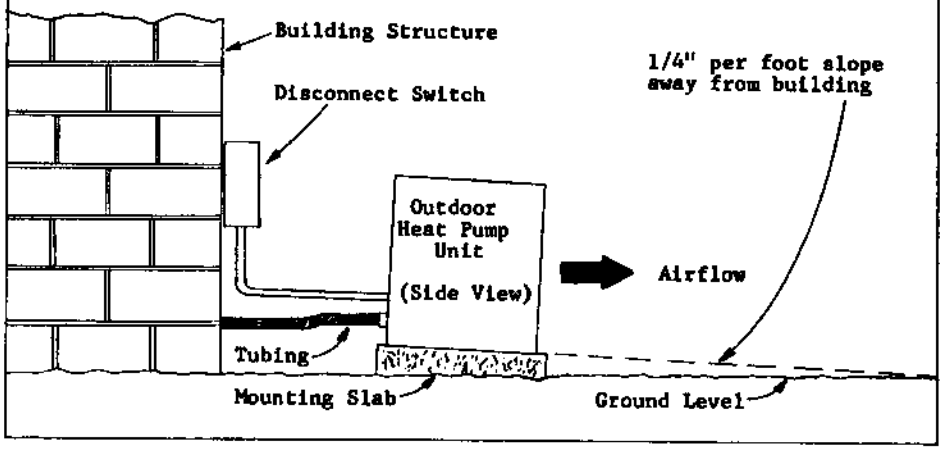


FIGURE 2

AIRFLOW AND SERVICE ACCESS CLEARANCES

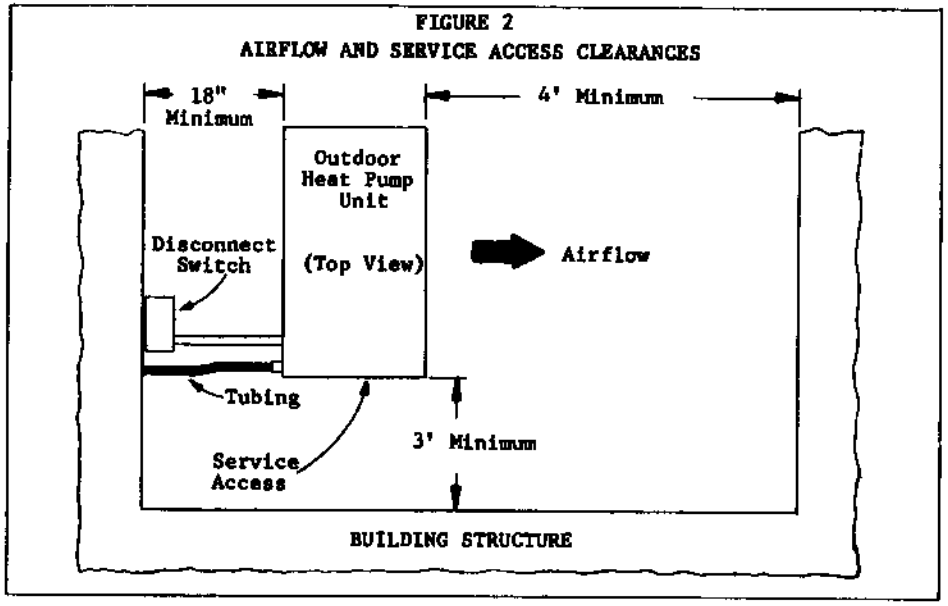


FIGURE 3

ROOFTOP APPLICATION

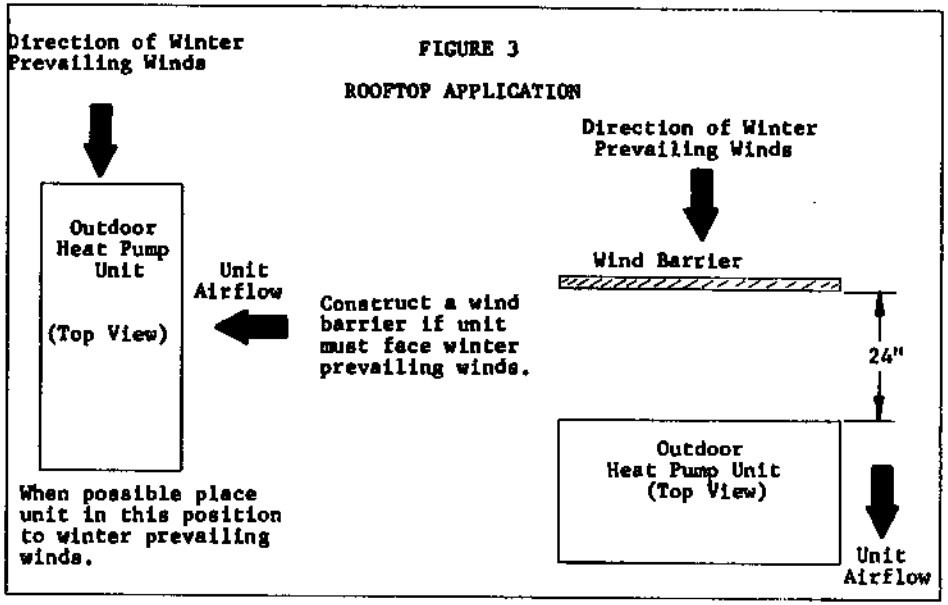
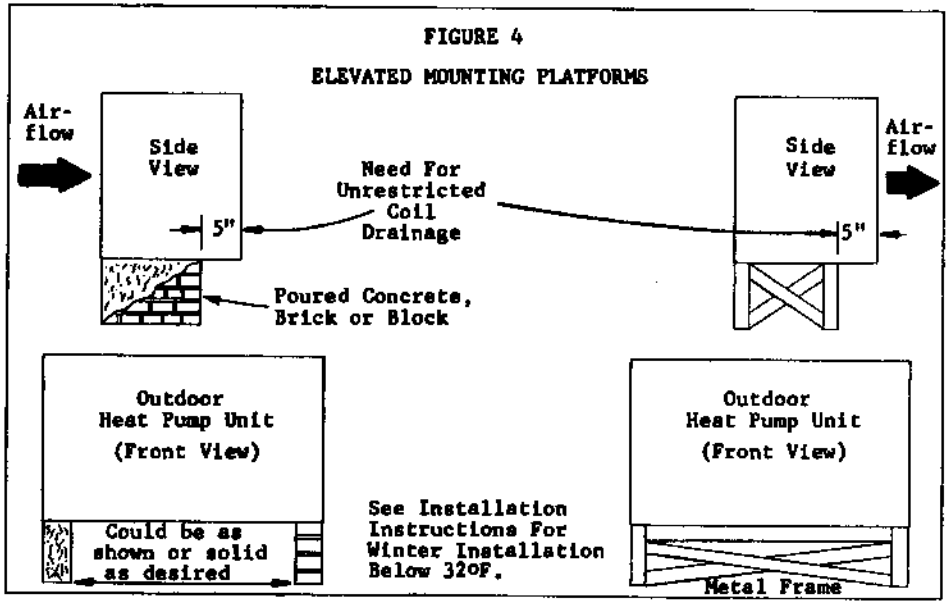


FIGURE 4

ELEVATED MOUNTING PLATFORMS



INSTALLING REFRIGERANT TUBING

PRE-CHARGED TUBING - Examine carefully the two lengths of pre-charged tubing furnished with the Unit. The larger is the suction line. The smaller is the liquid line. The end of the tubing with the hex nut and gauge port is to be attached to the Condensing Unit.

Unroll the tubing, being careful not to kink, and install it between the Condensing Unit and the Evaporator Coil.

CAUTION: Be careful not to tear the insulation when pushing it through holes in masonry or frame walls.

When sealing tube opening in house wall use a soft material to prevent tube damage and vibration transmission.

Before fastening either end, use a tubing bender to make any necessary bends in the tubing. (AVOID EXCESSIVE BENDING IN ANY ONE PLACE TO AVOID KINKING).

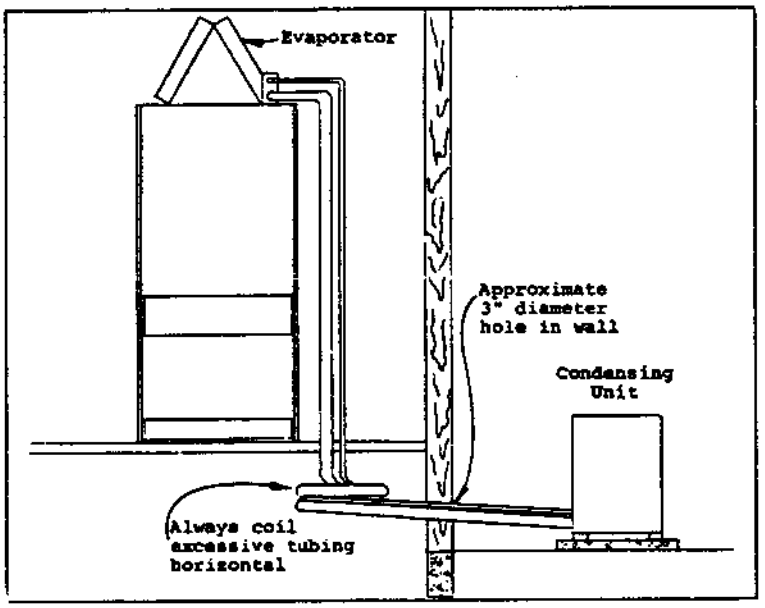
Start connecting the tubing at the Evaporator coil end, first remove the protective caps and plugs from the quick-connect fittings on the Evaporator Coil and the pre-charged tubing. Inspect fittings and clean if necessary, making sure they are clear of foreign materials. If you clean the fittings, lubricate them with refrigeration oil. Connect both tubes to the fittings on the coil and draw up by hand.

When necessary to bend the insulated tube, suction line, cut the insulation around its circumference at a distance far enough beyond the point of the bend so as to clear the tubing bender.

Slip the insulation back together and vapor seal the joint with tape.

NOTE: The maximum distance for pre-cherge tubing between the Condenser and the Evaporator is 45 feet.

CAUTION: Prior to connecting the pre-charged tubing to the Evaporator Coil or Condensing Unit, be sure all bends have been made, then coil any excess tubing in a horizontal plane, with the slope of the tubing toward the Condensing Unit.



CAUTION: Be sure to hold the coupling firmly to prevent movement of the coupling and tubing. Failure to do so could tear out the diaphram causing a blockage of the system.

CAUTION: After starting to tighten up the fitting never try to back it off or take it apart.

For connecting the tubing at the condensing unit end, first remove the protective caps and plugs from the quick-connect fittings on the condensing unit and the pre-charged tubing. Inspect fittings and clean if necessary, making sure they are clear of foreign materials. If you clean the fittings, lubricate them with refrigeration oil. Connect both tubes to the fittings on the coil and draw up by hand.

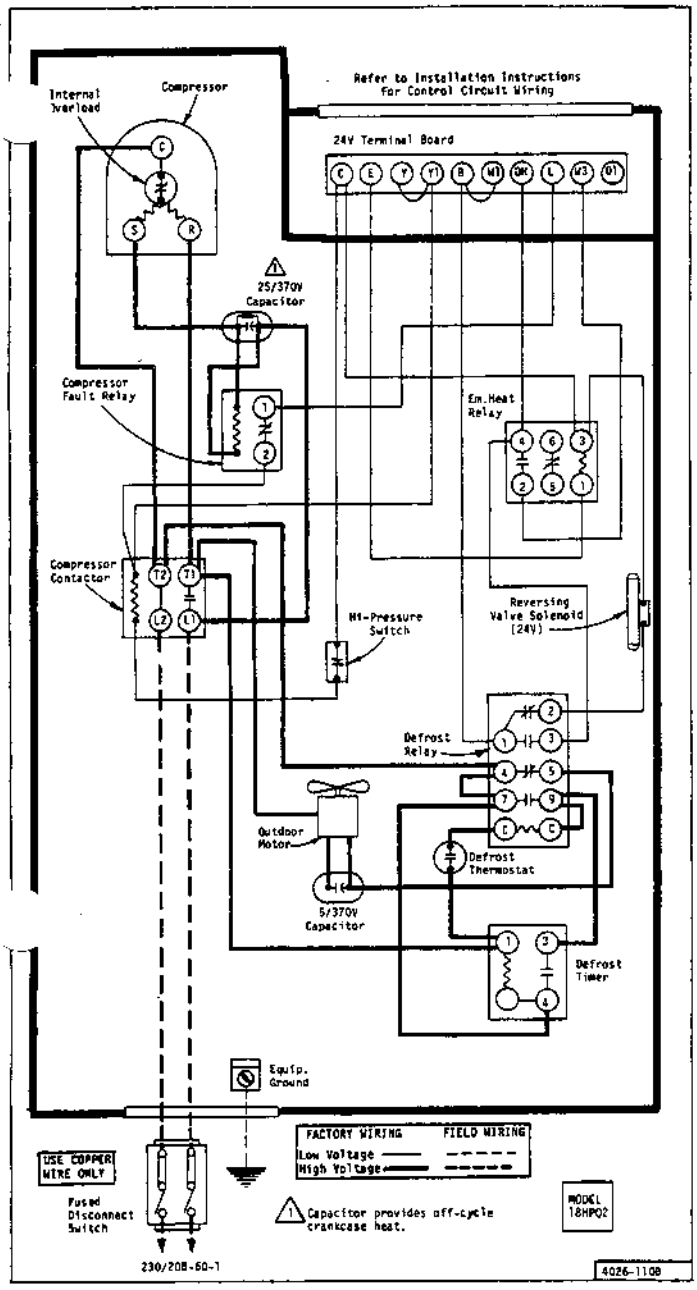
Locate the Gauge Port in a 45° angle from a vertical up position so as to be accessible for gauge connections.

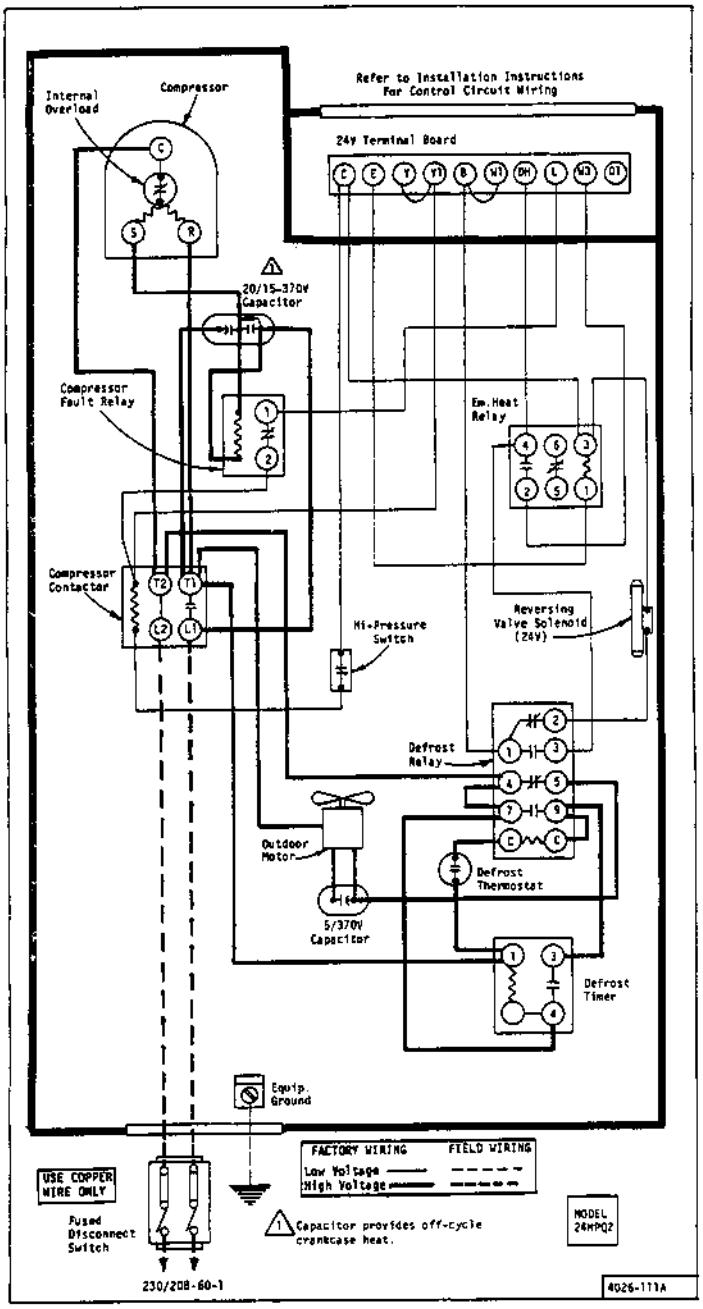
Use a wrench on the hex nut of the female fitting backing up the fitting with another wrench to keep tube from turning. Tighten the fittings together until they bottom out then tighten for an additional 1/4 turn so that coupling will seat properly.

Check the gauge port cap to make sure it is tight. If loose, tighten, being careful not to tighten too much as it will damage the valve in the gauge port.

Leak test all connections using an Electronic Leak Detector or a Halide Torch.

When tubing is installed in attics or drop ceiling, insulate the quick connect fitting on the larger tube thoroughly with 3/8" wall thickness, closed cell sponge tube insulation or equivalent. Failure to insulate will result in water damage to ceiling since the fitting will "sweat" and drop water on the ceiling.





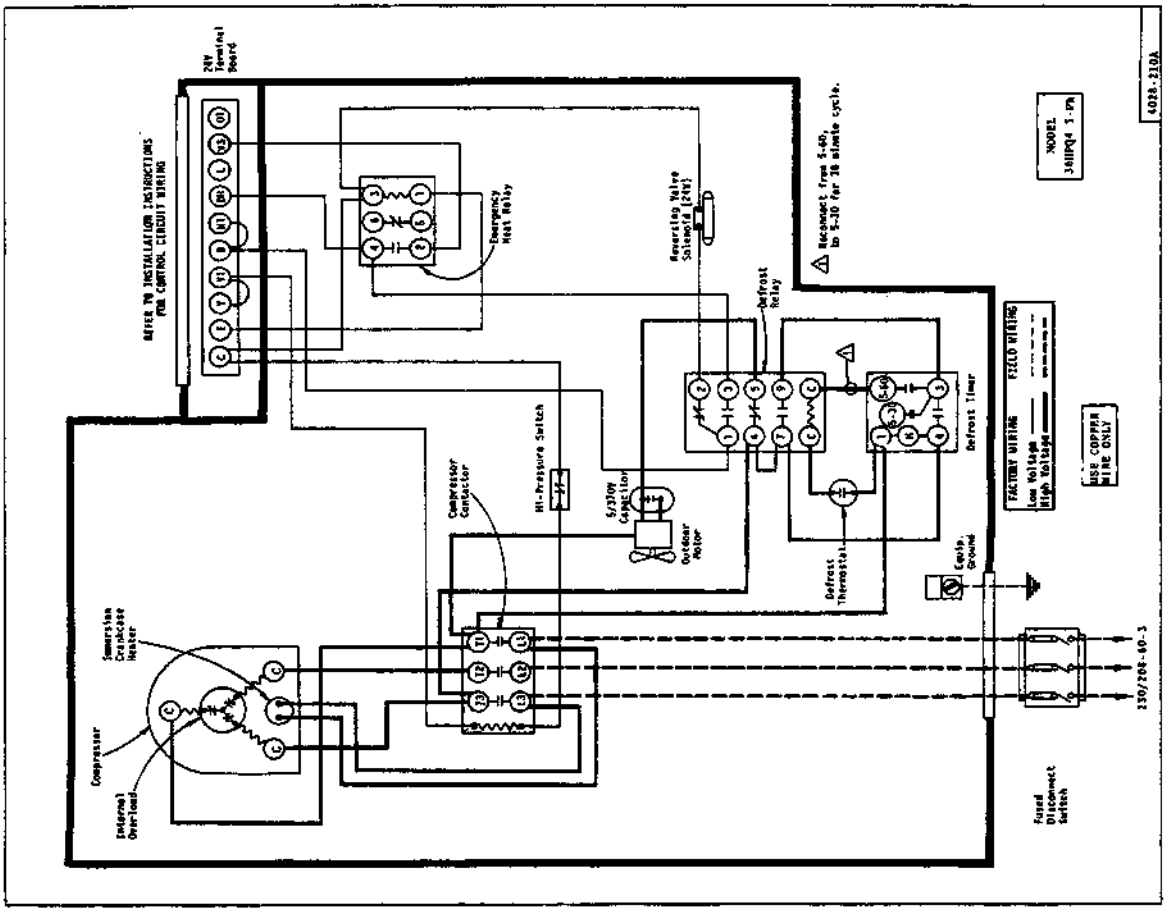
These two models temporarily use a defrost timer different than the one described on page 2. Following is a description of its operation.

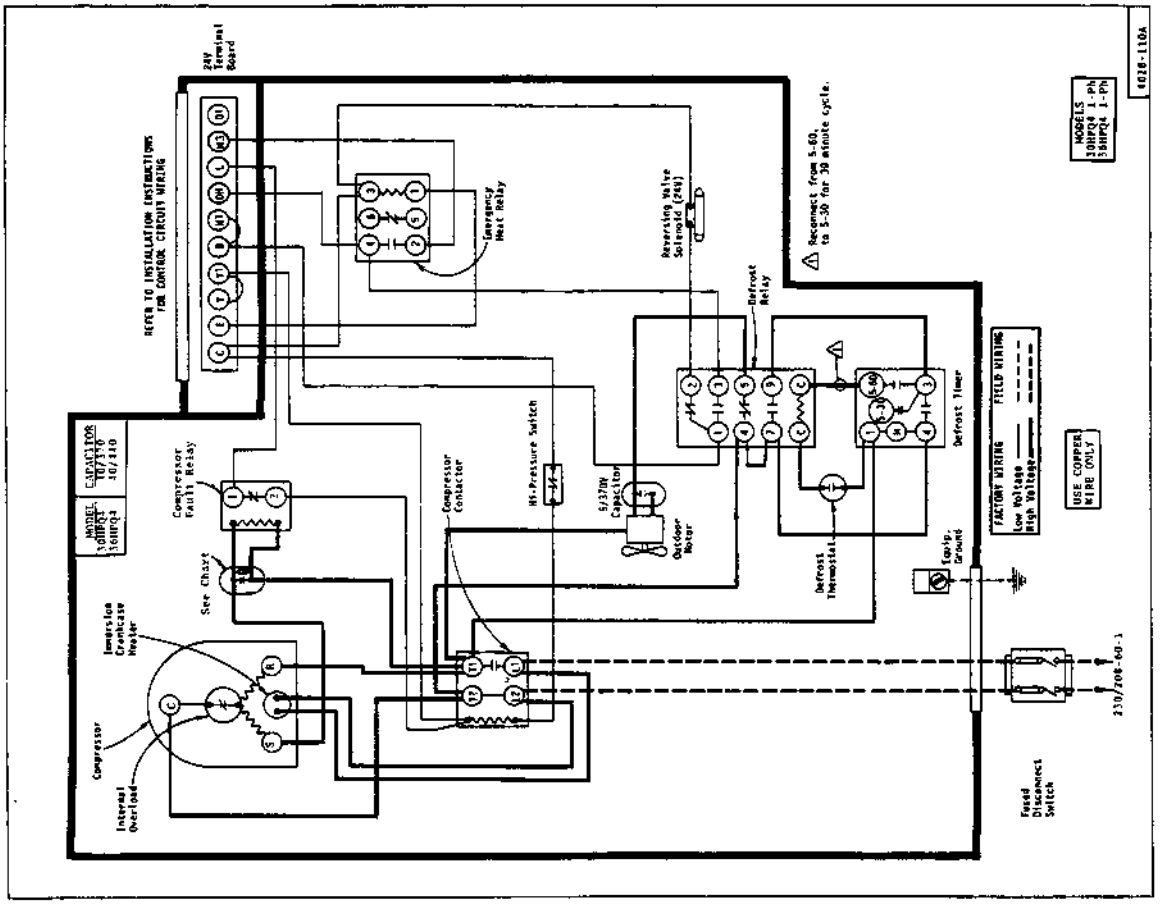
DEFROST CYCLE

The defrost cycle is controlled by time and temperature. When the outdoor temperature is in the lower 40°F temperature range or colder, the outdoor coil temperature is 32°F or below. This temperature is sensed by a defrost thermostat mounted low and at the return bend end of the outdoor coil. The defrost thermostat makes at approximately 32°F refrigerant temperature. The MAKE of the contacts starts the defrost timer motor. The defrost timer motor can run only when the heat pump is in operation. After approximately 30 minutes of heat pump running time, with the outdoor coil below 32°F, the defrost timer contacts make. This causes the defrost relay to pull in.

Terminals 4-5 of the defrost relay open, breaking power to the outdoor fan and the reversing valve. The outdoor fan motor stops and the reversing valve shifts to the cooling cycle. Terminals 7-9 of the defrost relay make which pulls in W2, second stage strip heaters, with the indoor blower continuing to operate.

the heat pump continues to operate in the defrost cycle, the outdoor coil warms up from the hot gas flow. the temperature rises to approximately 57°F at the defrost thermostat location, the contacts now open. This de-energizes the defrost timer and defrost relay. All the components then return to the normal heating cycle as before.


24V Terminal Board
REFER TO INSTALLATION INSTRUCTIONS FOR CONTROL CIRCUIT WIRING
Emergency Heat Relay
Reversing Valve Solenoid (24V)
Defrost Relay
Reconnect from 5-60, to 5-30 for 30 minute cycle.
Defrost Timer
Hi-Pressure Switch
Compressor Contactor
5/370V Capacitor
Outdoor Motor
Defrost Thermostat
Equip. Ground
FACTORY WIRING
FIELD WIRING
Low Voltage
High Voltage
USE COPPER WIRE ONLY
MODEL 36HPQ4 1-Ph
4028-210A
Immersion Crankcase Heater
Compressor
Internal Overload
230/208-60-1
Fused Disconnect Switch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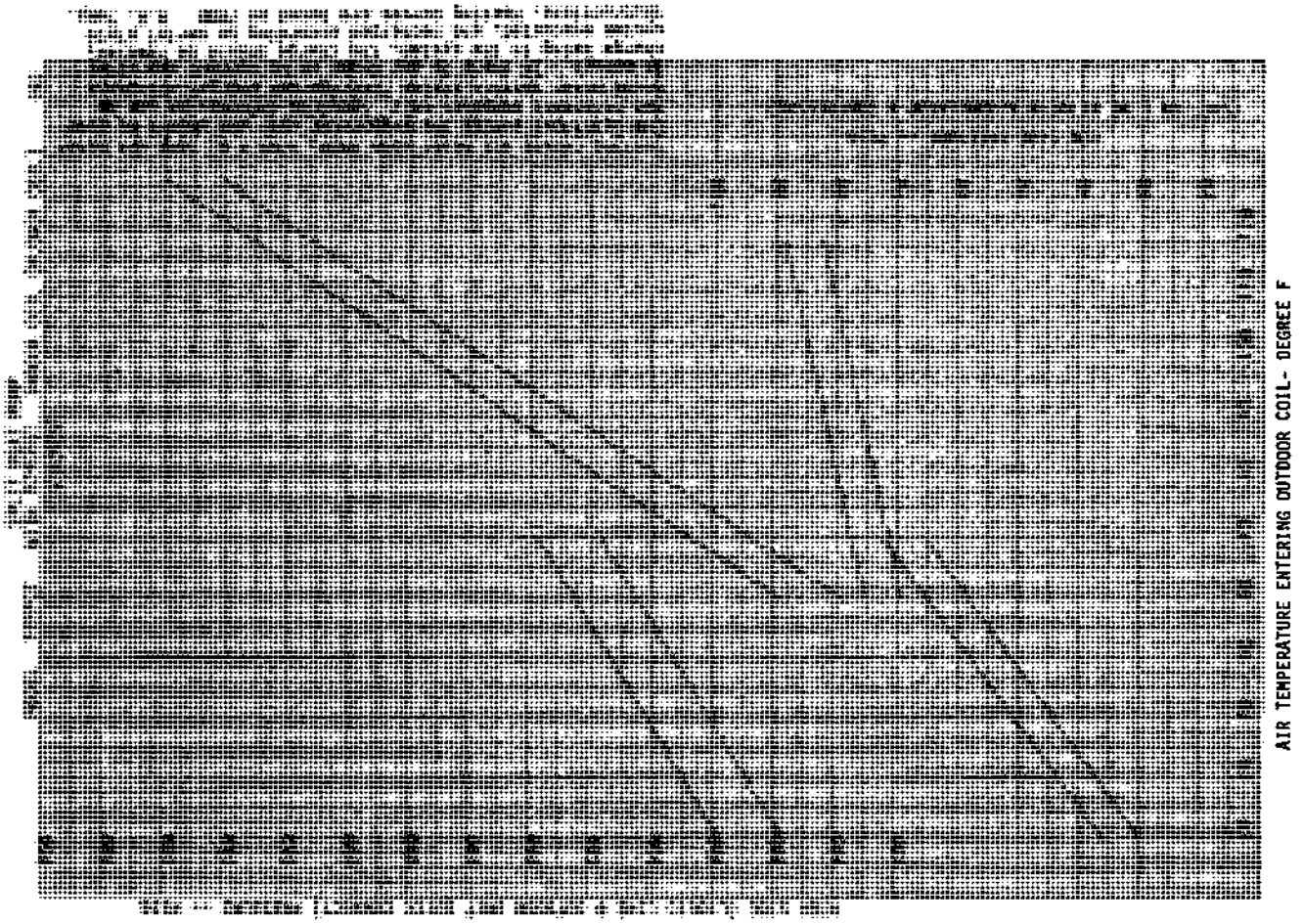
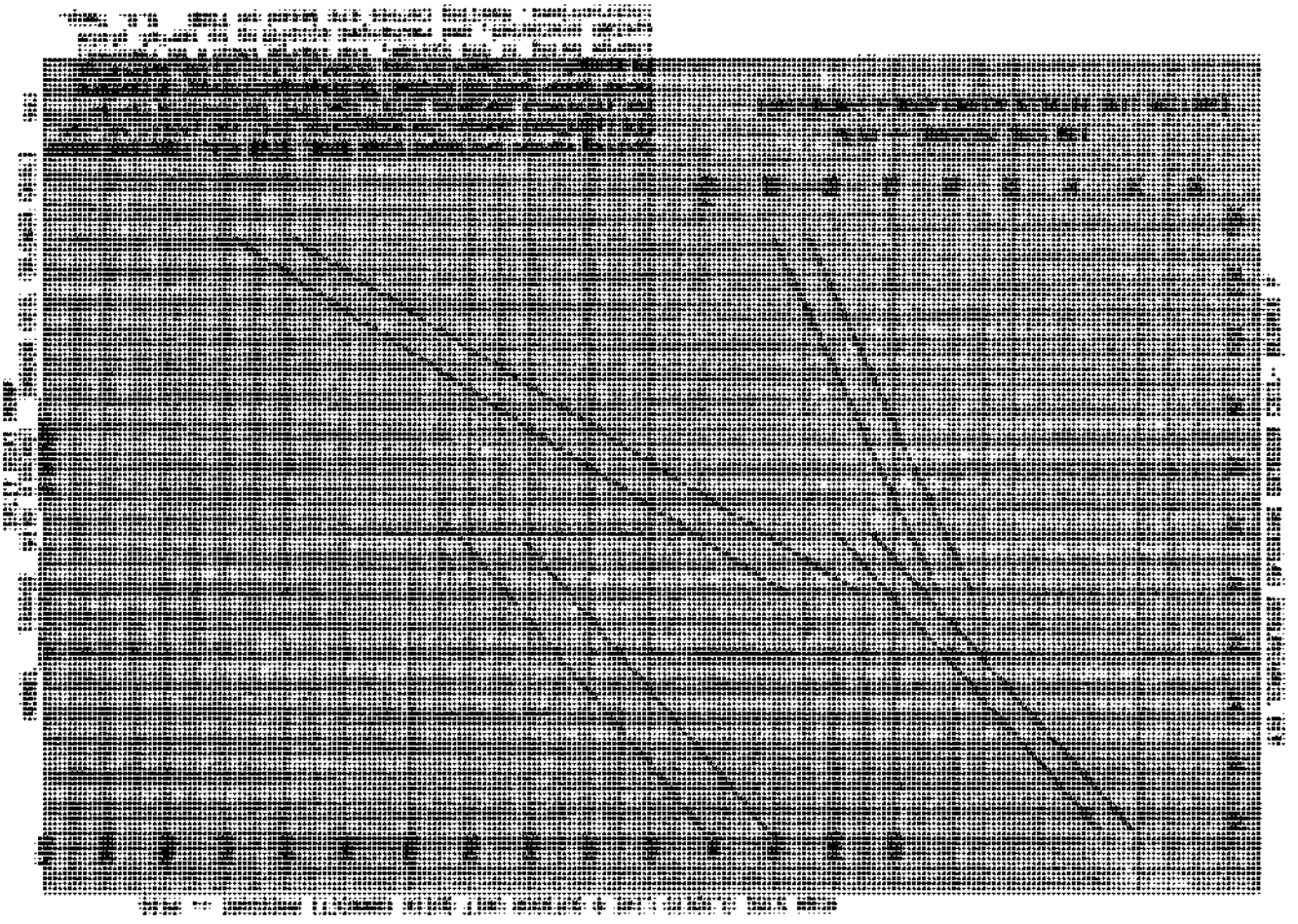
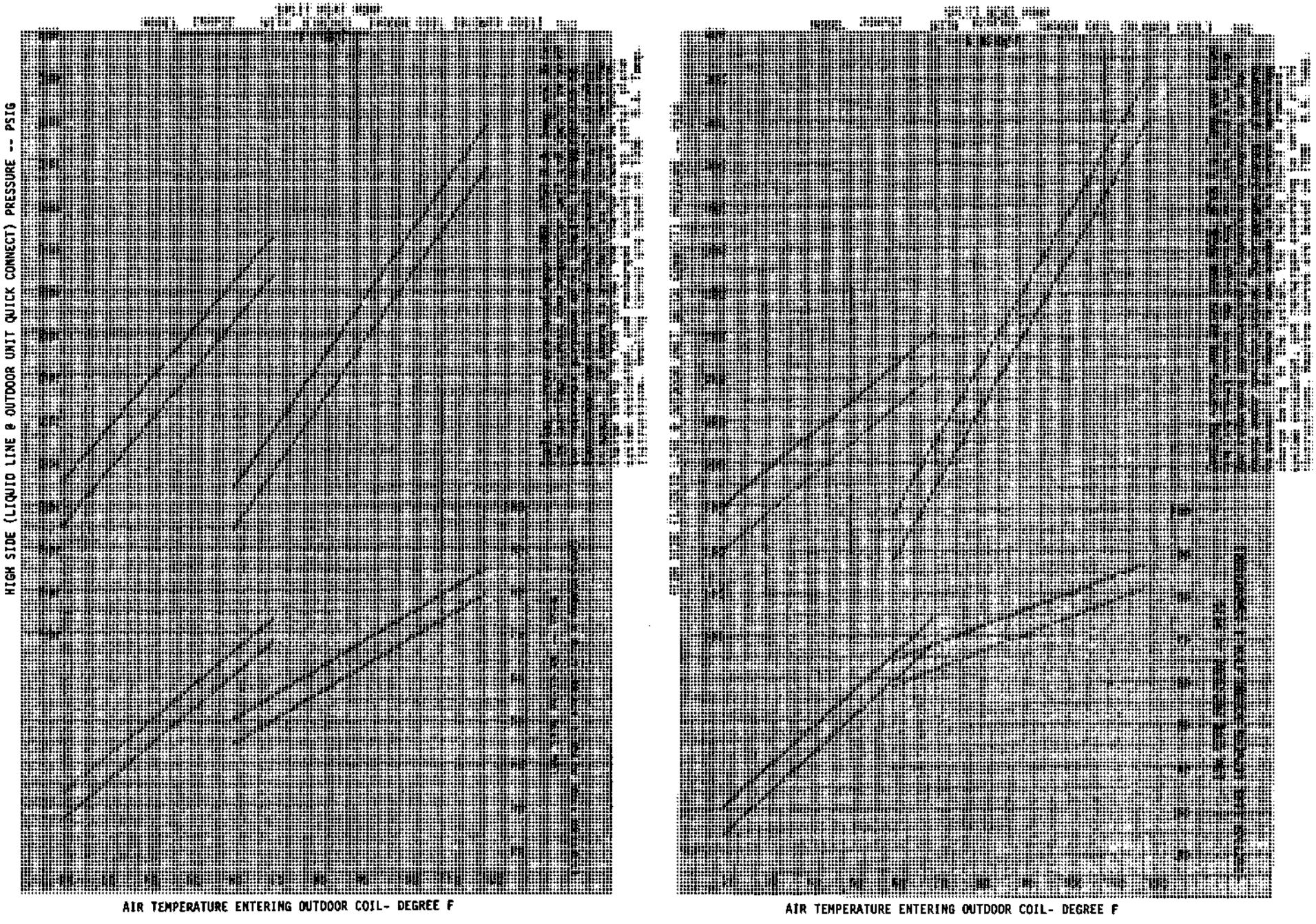
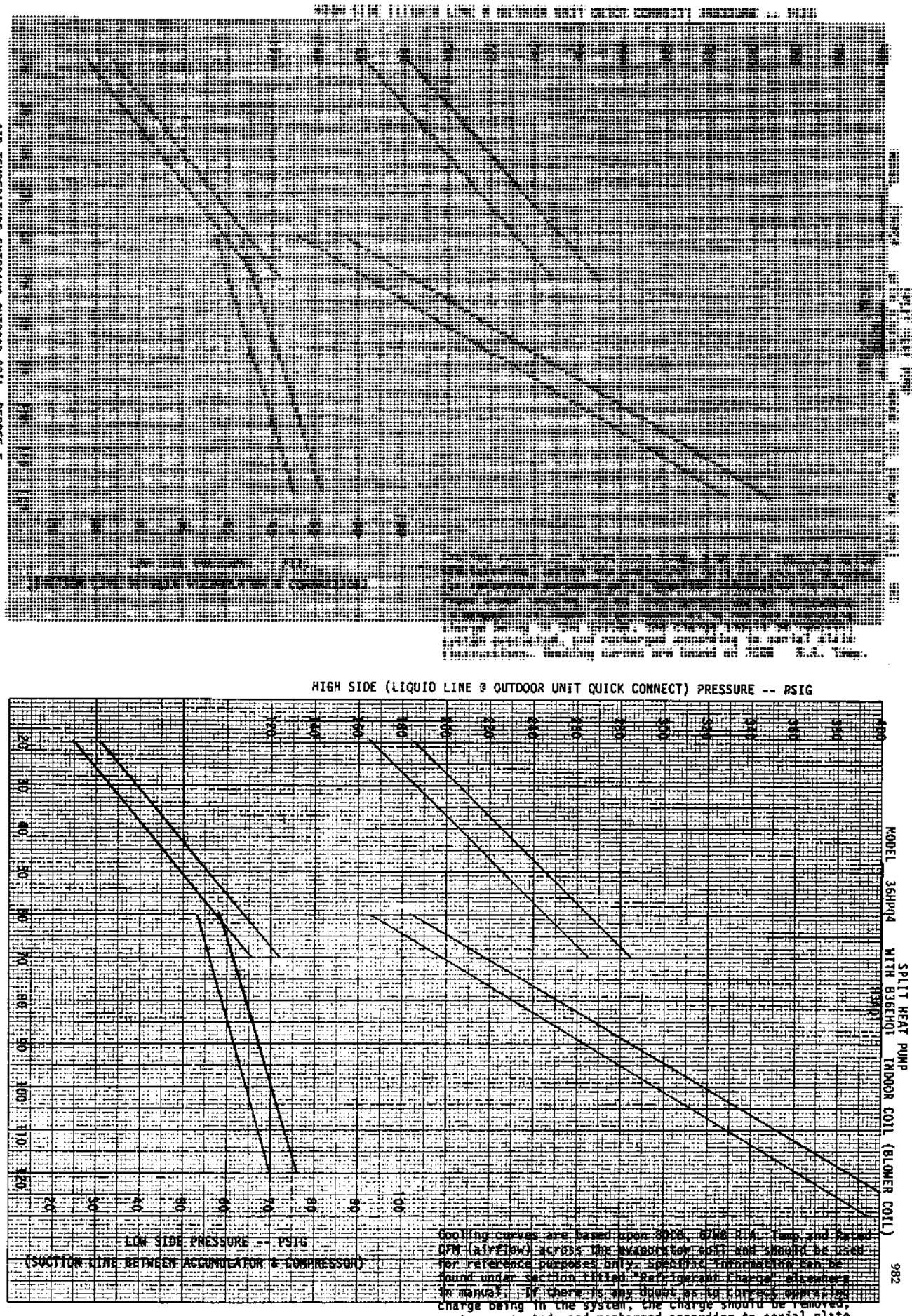
Defrost Thermostat
Equip. Ground
FACTORY WIRING
FIELD WIRING
Low Voltage
High Voltage
USE COPPER WIRE ONLY
MODELS 30HPQ4 1-Ph 36HPQ4 1-Ph
4028-110A
MODEL 30HPQ4
CAPACITOR 10/370 10/440
Compressor Fault Relay
See Chart
Immersion Crankcase Heater
Compressor
Internal Overload
230/208-60-1
Fused Disconnect Switch



AIR TEMPERATURE ENTERING OUTDOOR COIL- DEGREE F




HIGH SIDE (LIQUID LINE @ OUTDOOR UNIT QUICK CONNECT) PRESSURE -- PSIG
AIR TEMPERATURE ENTERING OUTDOOR COIL- DEGREE F
AIR TEMPERATURE ENTERING OUTDOOR COIL- DEGREE F



MODEL 36HPQ4 WITH B36FHQ1 INDOOR COIL (BLOWER COIL)
SPLIT HEAT PUMP

Cooling curves are based upon 80DB, 67WB R.A. Temp and Rated CFM (airflow) across the evaporator coil and should be used for reference purposes only. Specific information can be found under section titled "Refrigerant Charge" elsewhere in manual. If there is any doubt as to correct operating charge being in the system, the charge should be removed, system evacuated, and recharged according to serial plate instructions. Heating curves are based on 70DB R.A. Temp.

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PARTS LIST
SPLIT SYSTEM HEAT PUMPS

Effective 1/1/82
Supersedes 1/29/81

PART NO.	DESCRIPTION	18HPQ2	24HPQ2	30HPQ4	36HPQ4	36HPQ4-3	42HPQ	42HPQ-3	48HPQ2	48HPQ2-3	60HPQ3	60HPQ3-3	36HPQ4-3 460v	48HPQ2-3 460v	60HPQ3-3 460v
5202-001	Accumulator	x													
5202-003	Accumulator		x	x											
5202-004	Accumulator				x	x							x		
5202-007	Accumulator						x	x	x	x				x	
5202-005	Accumulator										x	x			x
8552-002	Capacitor 5/370V	x	x	x	x	x							x		
8552-040	Capacitor 20/15-370V		x												
8552-027	Capacitor 25/370V	x													
8552-030	Capacitor 40/440V				x										
8552-032	Capacitor 35/370V						x								
8552-033	Capacitor 20/370V						x								
8552-031	Capacitor 45/440V								x		x				
8552-026	Capacitor 15/370V						x	x	x	x	x	x		x	x
8552-035	Capacitor 40/370V			x											
5811-007	Capillary Tube - Heat	x													
5811-021	Capillary Tube - Heat		x												
5811-020	Capillary Tube - Heat			x											
5811-023	Capillary Tube - Heat				x	x									
5811-018	Capillary Tube - Heat						(2)	(2)	(2)	(2)				(2)	
5811-019	Capillary Tube - Heat										(2)	(2)			(2)
5651-036	Check Valve	x	x												
5651-006	Check Valve			x	x	x	x	x	x	x	x	x	x	x	x
8000-061	Compressor RES3-0175-PFV-270	x													
8000-071	Compressor AB225HT		x												
8000-052	Compressor CRG1-025D-PFV-270			x											
8000-072	Compressor AV144ET				x										
8000-064	Compressor CRK1-0325-TF5					x									
8000-045	Compressor H2EA413AB						x								
8000-046	Compressor H2EA413DB							x							
8000-026	Compressor AG5546E								x						
8000-030	Compressor AG111RT									x					
8000-027	Compressor AG122ET										x				
8000-031	Compressor AG122RT											x			
8000-065	Compressor CRK1-0325-TFD												x		
8000-047	Compressor AG111UT													x	
8000-048	Compressor AG122UT														x
5051-008	Condenser Coil	x	x												
5051-003	Condenser Coil			x	x	x							x		
5051-021	Condenser Coil						x	x	x	x				x	
5051-022	Condenser Coil										x	x			x
8401-007	Contactor - Comp. 25A	x	x	x											
8401-003	Contactor - Comp. 30A				x		x		x						
8401-002	Contactor - Comp. 25A					x		x		x		x	x	x	x
8401-016	Contactor - Comp. 35A										x				
8605-001	Crankcase Heater							x							

PARTS LIST
SPLIT SYSTEM HEAT PUMPS

Effective 1/1/82
Supersedes 11/24/81

PART NO.	DESCRIPTION	18HPQ2	24HPQ2	30HPQ4	36HPQ4	36HPQ4-3	42HPQ	42HPQ-3	48HPQ2	48HPQ2-3	60HPQ3	60HPQ3-3	36HPQ4-3 460v	48HPQ2-3 460v	60HPQ3-3 460v
8408-004	Defrost Mounting Plate	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8408-002	Defrost Thermostat	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5151-001	Fan Blade TF1839	x	x												
5151-007	Fan Blade TP2029			x	x	x							x		
5151-017	Fan Blade FA2430-4B						x	x	x	x	x	x		x	x
7051-009	Grille - Condenser	x	x												
7051-010	Wire Grille - Inlet	x	x												
7051-001	Grille - Condenser			x	x	x							x		
7051-003	Wire Grille - Inlet			x	x	x							x		
7051-005	Grille - Condenser						x	x	x	x	x	x		x	x
7051-004	Wire Grille - Inlet						x	x	x	x	x	x		x	x
8406-010	High Pressure Switch	x	x	x	x	x							x		
8406-011	High Pressure Switch						x	x	x	x	x	x		x	x
8103-008	Motor - Fan 1/5	x	x												
8103-009	Motor - Fan 1/5			x	x	x							x		
8105-021	Motor - Fan 1/3						x	x	x	x	x	x		x	x
8200-001	Motor Mount - Fan	x	x	x	x	x							x		
8200-004	Motor Mount - Fan						x	x	x	x	x	x		x	x
8201-023	Relay - Defrost	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8201-015	Relay - Emergency Heat	x	x	x	x	x							x		
8201-024	Relay - Compressor Fault	x	x	x	x		x		x		x				
5650-004	Reversing Valve	x													
5650-005	Reversing Valve		x												
5650-009	Reversing Valve			x											
5650-006	Reversing Valve				x	x	x	x					x		
5650-010	Reversing Valve								x	x	x	x		x	x
5650-008	Solenoid Coil	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5210-002	Strainer	x	x	x	x	x							x		
5210-005	Strainer						x	x	x	x	x	x		x	x
8607-007	Terminal Block												x	x	x
8607-011	Terminal Board	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8612-008	Timer	x	x												
8612-011	Timer			x	x	x	x	x	x	x	x	x	x	x	x
8407-003	Transformer - Stepdown												x	x	x