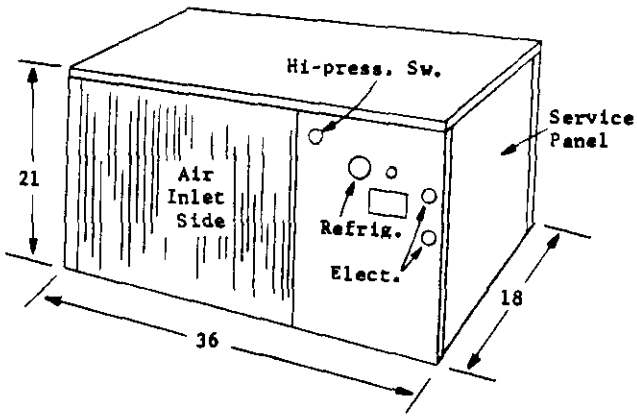
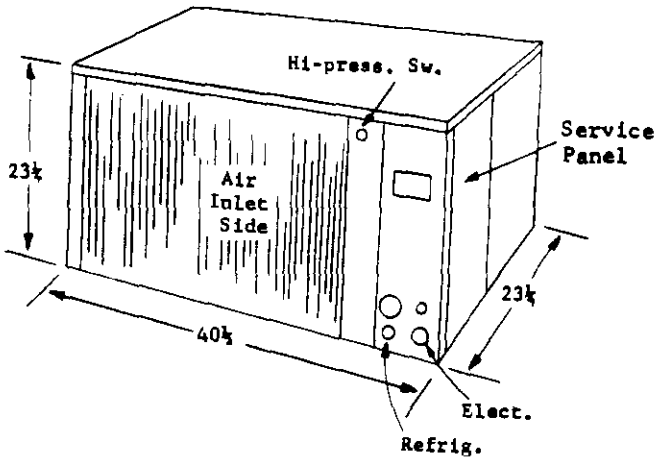
SPLIT HEAT PUMP SYSTEMS

INSTALLATION INSTRUCTIONS

MODELS 18HPQ1 & 24HPQ1

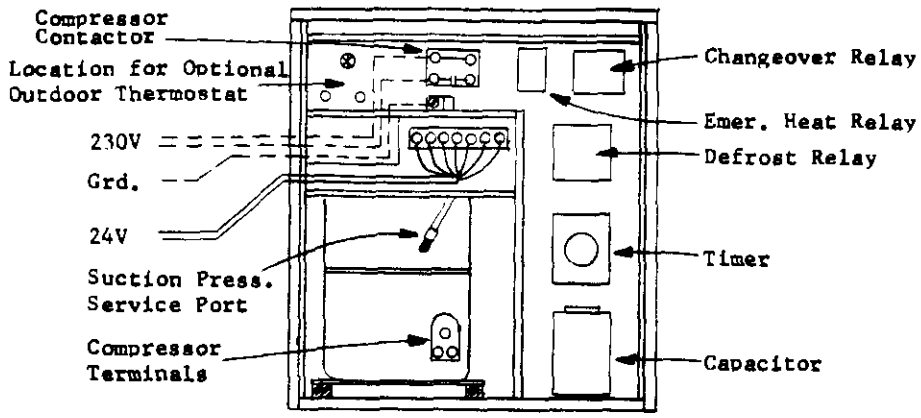


MODELS 30HPQ3 & 36HPQ3

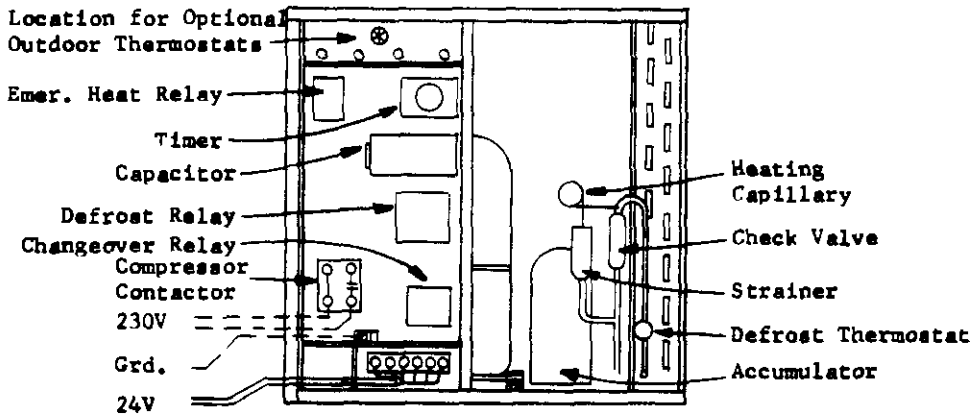


MODEL	18HPQ1	24HPQ1	30HPQ3	36HPQ3	36HPQ3-3
Electrical Rating	230V 1-Ph 60Hz				230V 3-Ph 60Hz
Operating Voltage-Minimum	197	197	207	197	187
Operating Voltage-Maximum	253	253	253	253	264
Total Unit Amps	10.5	13	18.6	22	15.1
Minimum Circuit Ampacity	15	18	23	29	18
60°C Copper Wire Size	14	12	10	10	12
Ground Wire Size	14	12	10	10	12
Maximum Time Delay Fuse	25	30	35	50	30
Compressor Type	PSC				3-Phase
Crankcase Heat	Capacitor Type				Wraparound
Fan Motor H.P./RPM	1/5 / 1050		1/5 / 1075		
Fan Motor Amps	1.5		1.6		
Fan Diameter/CFM	18"/2150	18"/1960	20" / 2600		
Coil Face Area	3.75 ft		5.04 ft		
Coil Rows/FPI	2/14	3/14	3/14		
Refrigerant Control	Capillary				
Suction Line Accumulator	Standard				
Shipping Weight Lbs.	170	180	210	220	

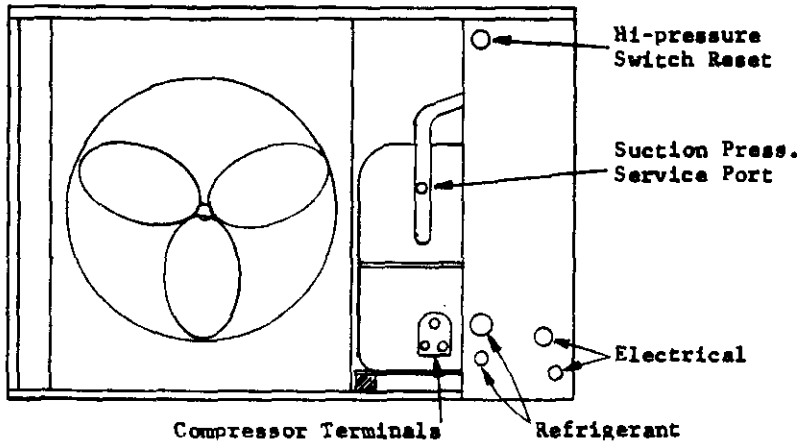
Models 18HPQ1 & 24HPQ1
Control Panel End View



Models 30HPQ3 & 36HPQ3
Control Panel End View



Models 30HPQ3 & 36HPQ3
Back View-Air Inlet Side
Compressor Access Panel Removed



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 duct work, 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.

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.

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.

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 barrier 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 serial plate for wire sizing information and maximum fuse 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. Each unit and/or unit wiring diagram is also marked "Use Copper Conductors Only," meaning that the terminations are not suitable for aluminum wiring. 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" that is to be used with the equipment. The correct size fuse 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.

SEQUENCE OF OPERATION

Cooling - R-Y make at thermostat pulls in the compressor contactor starting the compressor and outdoor fan. The same R-Y also feeds G, which pulls in the fan relay for blower operation. The reversing valve is not energized, so the system is in the cooling cycle.

Heating - R-W (or W1) make at thermostat on a call for heat. This pulls in the changeover relay. Terminals 6-4 of changeover relay make R-Y circuit which pulls in compressor contactor starting the compressor and outdoor fan, also R-Y at the thermostat completes G circuit, pulling in fan relay starting indoor blower. Terminals 1-3 on changeover relay make, energizing the reversing valve to put the system into the heating cycle. SEE REFRIGERANT FLOW DIAGRAM. The system will now be producing warm air indoors.

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.

As the heat pump continues to operate in the defrost cycle, the outdoor coil warms up from the hot gas flow. As 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.

CRANKCASE HEATERS

All units are provided with some form of compressor crankcase heat. 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.

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

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.

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.

7981-081

COMPRESSOR CUT-OFF THERMOSTAT

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. Specific mounting locations have been provided in the outdoor units for ease of installation.

EMERGENCY HEAT RELAY

The feature of emergency electric heat in case of heat pump malfunction has become so popular that the emergency heat relay is being factory installed in most heat pump units. When a special heat pump thermostat sub-base is utilized, the homeowner can control this feature from the wall thermostat. Consult the appropriate control circuit wiring diagram with the matching indoor coil section installation instructions.

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 airflow 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 to be sure that they are the correct rating and are the time-delay type.

(5) Periodic cleaning of the outdoor coil to permit full and unrestricted airflow circulation is essential.

(6) System operating pressures may be checked against the appropriate pressure curves. These are included with the indoor coil section installation instructions.

INSTALLER NOTE: Optimum unit performance will occur with a refrigerant charge resulting in a suction line temperature (near the compressor) of 53° to 58°F with 95°F outdoor temperature and 80°F dry bulb/67°F wet bulb (50% R.H.) indoor temperatures and rated airflow across the indoor coil.

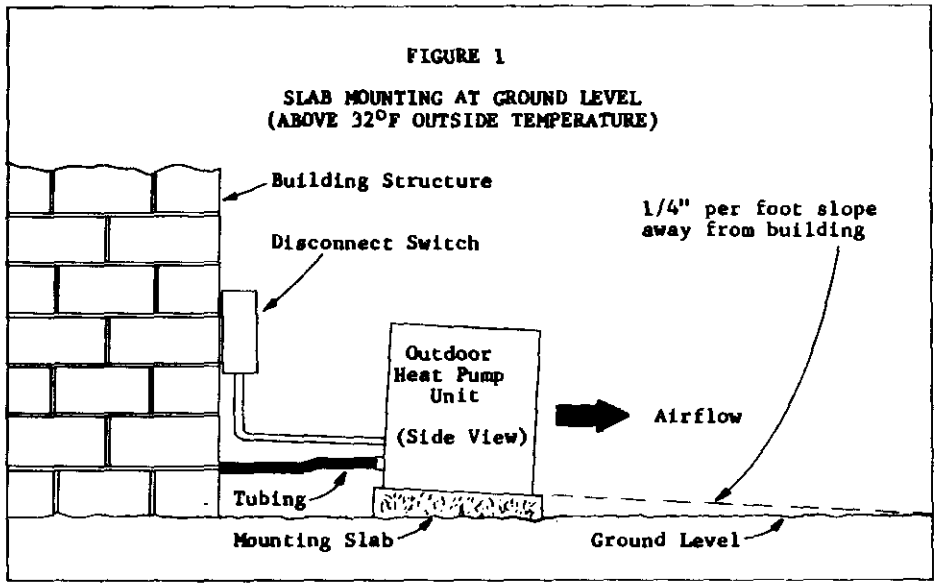
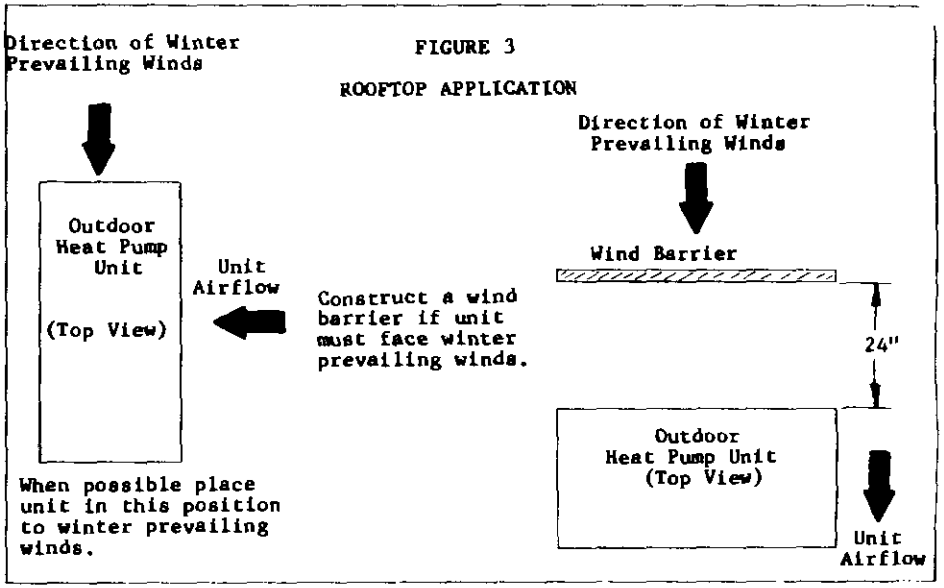


FIGURE 1
SLAB MOUNTING AT GROUND LEVEL
(ABOVE 32°F OUTSIDE TEMPERATURE)
Building Structure
Disconnect Switch
1/4" per foot slope
away from building
Outdoor
Heat Pump
Unit
(Side View)
Airflow
Tubing
Mounting Slab
Ground Level


Direction of Winter
Prevailing Winds
FIGURE 3
ROOFTOP APPLICATION
Direction of Winter
Prevailing Winds
Outdoor
Heat Pump
Unit
(Top View)
Unit
Airflow
Construct a wind
barrier if unit
must face winter
prevailing winds.
Wind Barrier
24"
Outdoor
Heat Pump Unit
(Top View)
When possible place
unit in this position
to winter prevailing
winds.
Unit
Airflow

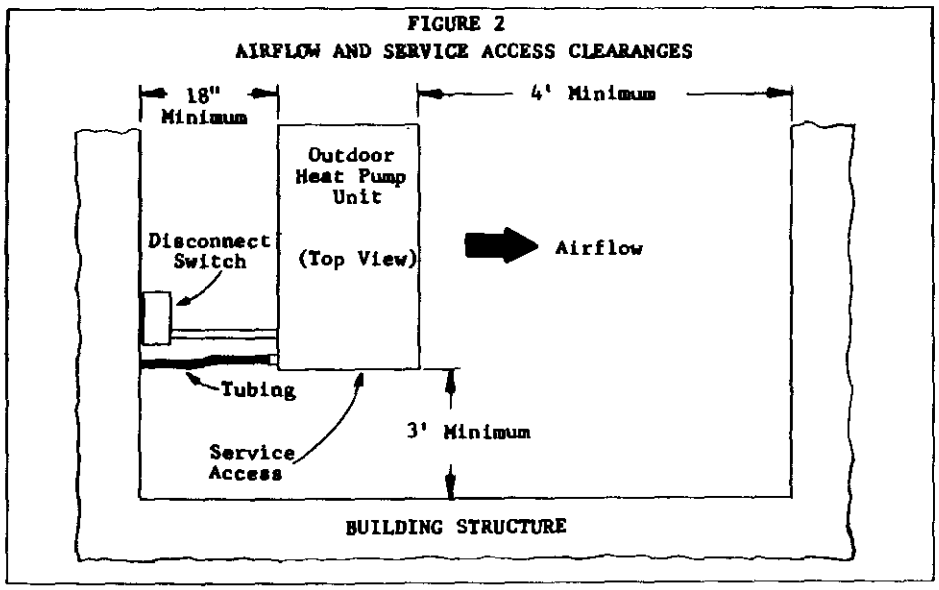


FIGURE 2
AIRFLOW AND SERVICE ACCESS CLEARANCES
18"
Minimum
4' Minimum
Outdoor
Heat Pump
Unit
(Top View)
Disconnect
Switch
Airflow
Tubing
3' Minimum
Service
Access
BUILDING STRUCTURE

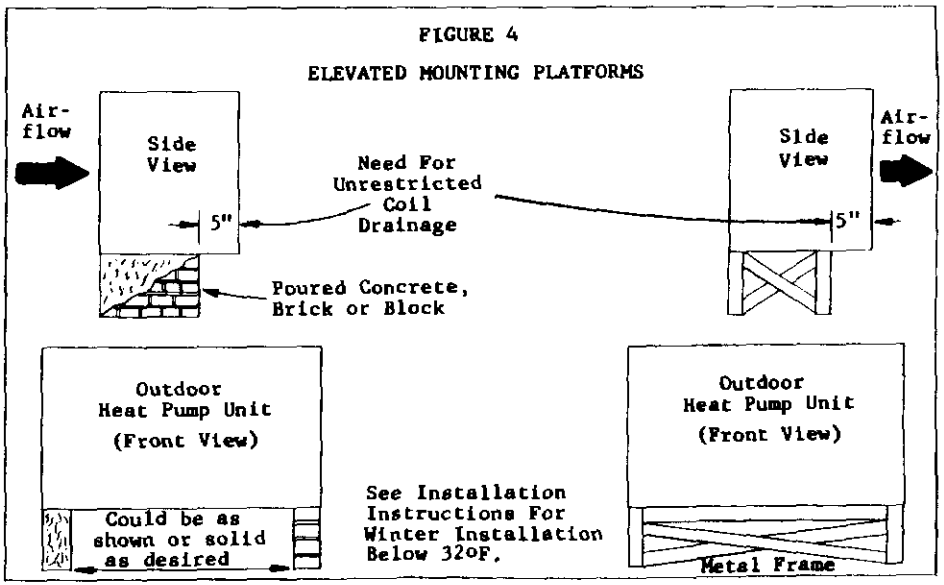


FIGURE 4
ELEVATED MOUNTING PLATFORMS
Air-
flow
Side
View
5"
Need For
Unrestricted
Coil
Drainage
Poured Concrete,
Brick or Block
Side
View
5"
Air-
flow
Outdoor
Heat Pump Unit
(Front View)
Could be as
shown or solid
as desired
See Installation
Instructions For
Winter Installation
Below 32°F.
Outdoor
Heat Pump Unit
(Front View)
Metal Frame

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).

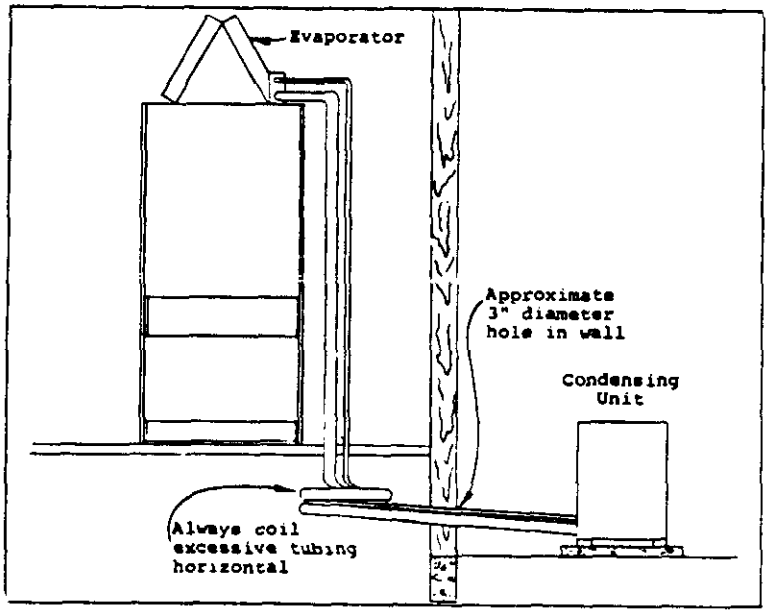
Start connecting the tubing at the Evaporator coil end, first remove the protective caps and plugs from the quick-connect fittings on the Evaporator Coil and the pre-charged tubing. Inspect fittings and clean if necessary, making sure they are clear of foreign materials. If you clean the fittings, lubricate 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-charge 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.

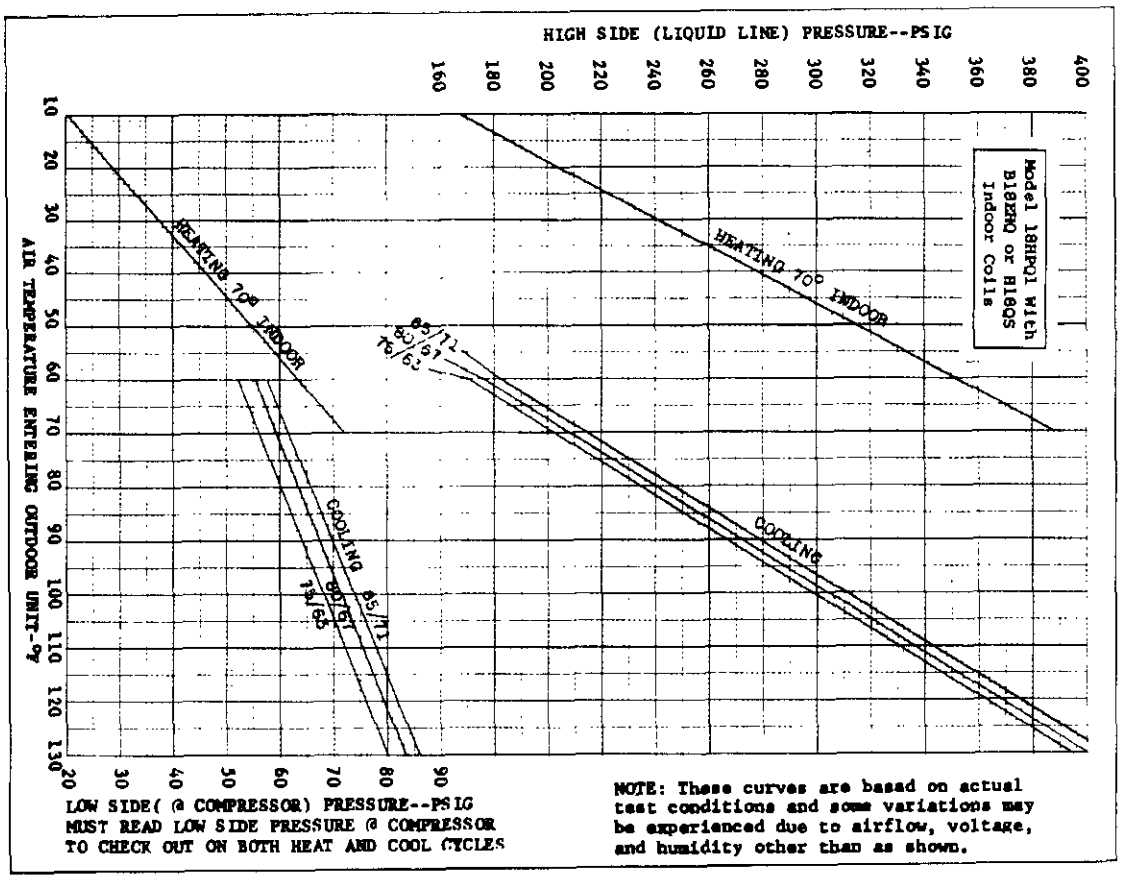
Locate the Gauge Port in a 45° angle from a vertical up position so as to be accessible for gauge connections.

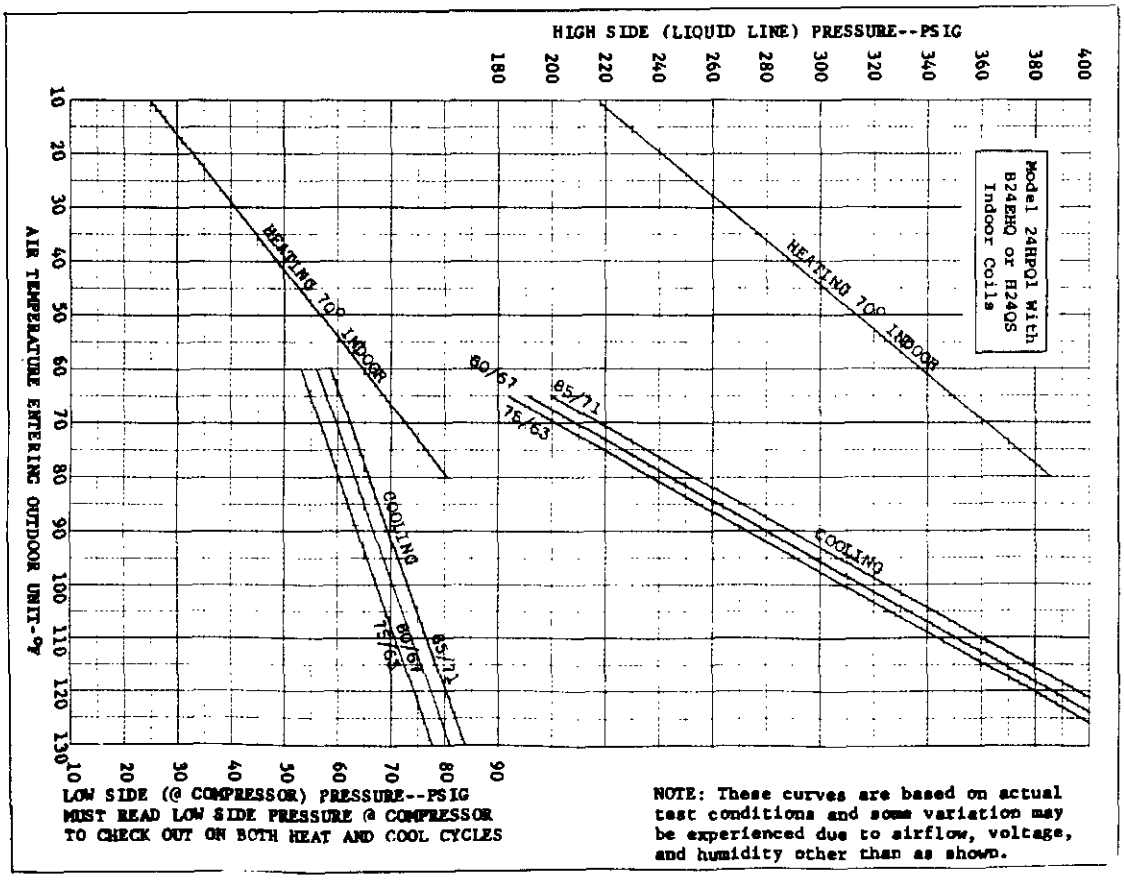
Use a wrench on the hex nut of the female fitting backing up the fitting with another wrench to keep tube from turning. Tighten the fittings together until they bottom out then tighten for an additional 1/4 turn so that coupling will seat properly.

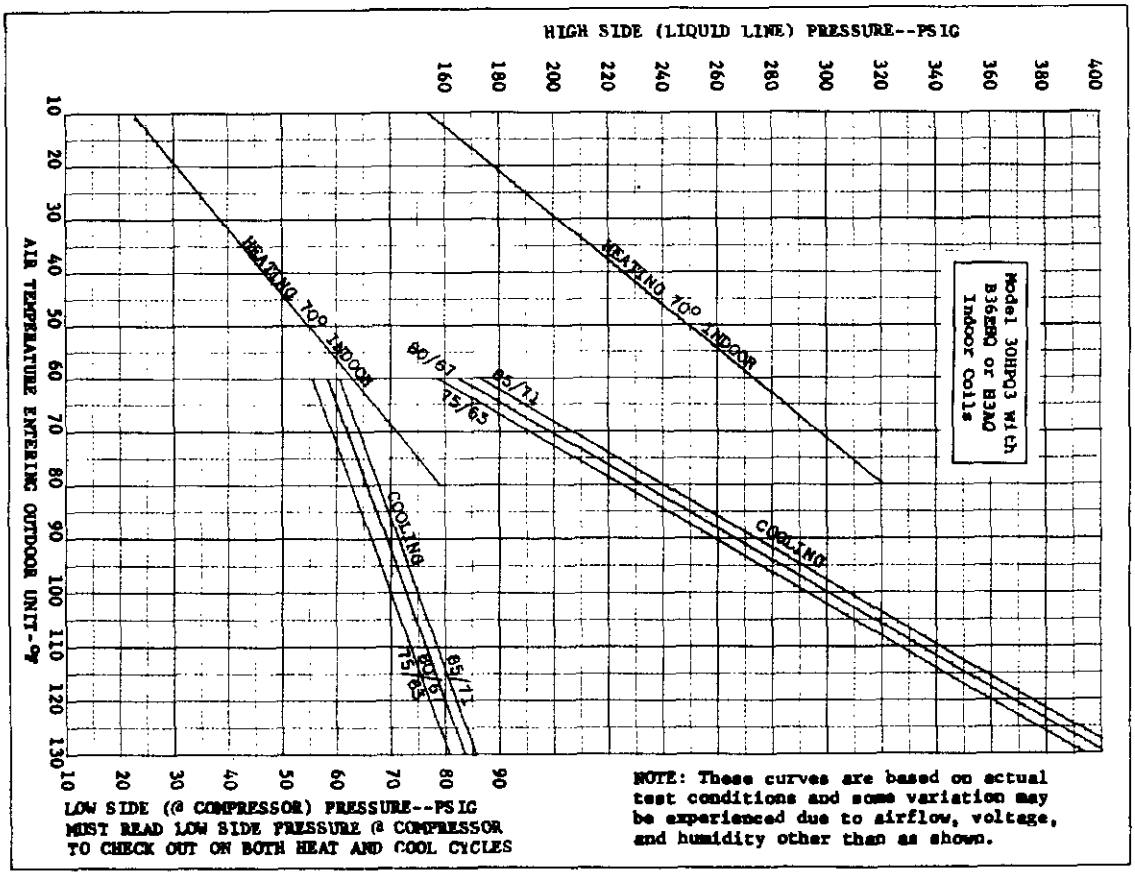
Check the gauge port cap to make sure it is tight. If loose, tighten, being careful not to tighten too much as it will damage the valve in the gauge port.

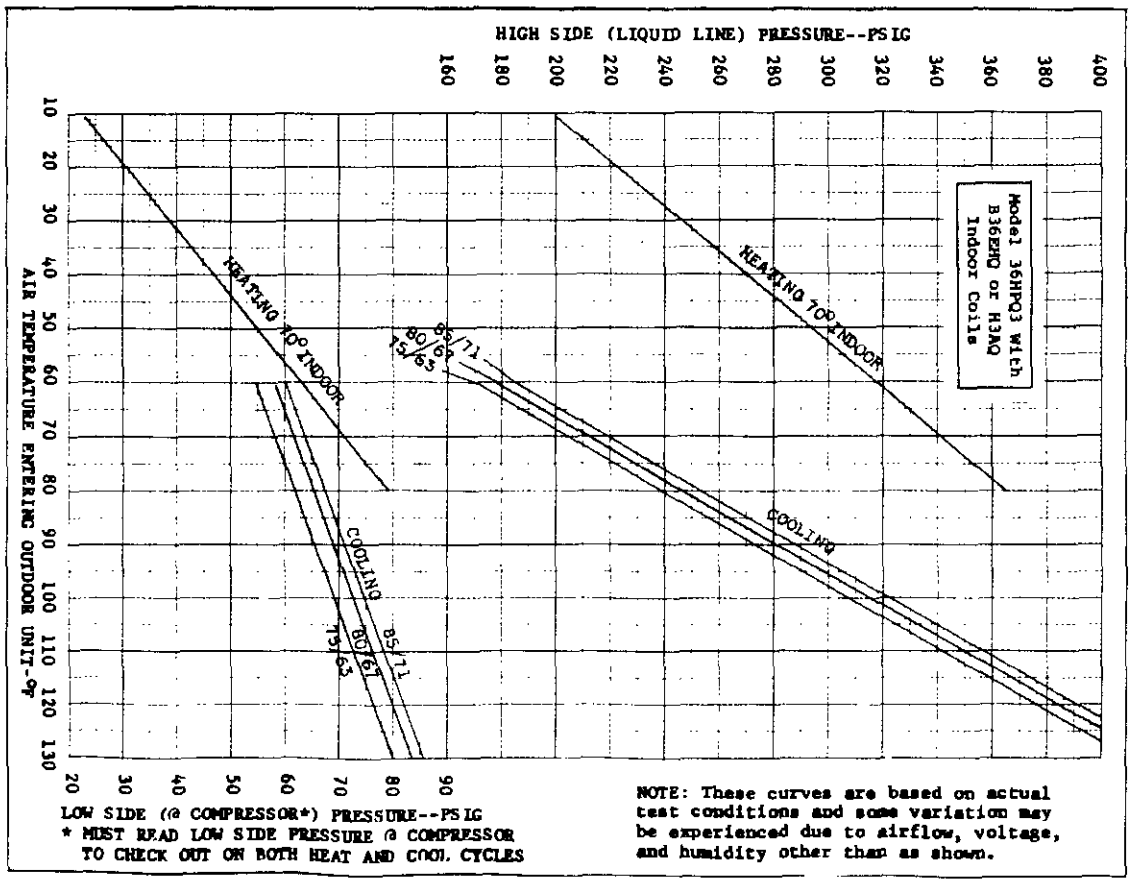
Leak test all connections using an Electronic Leak Detector or a Halide Torch.

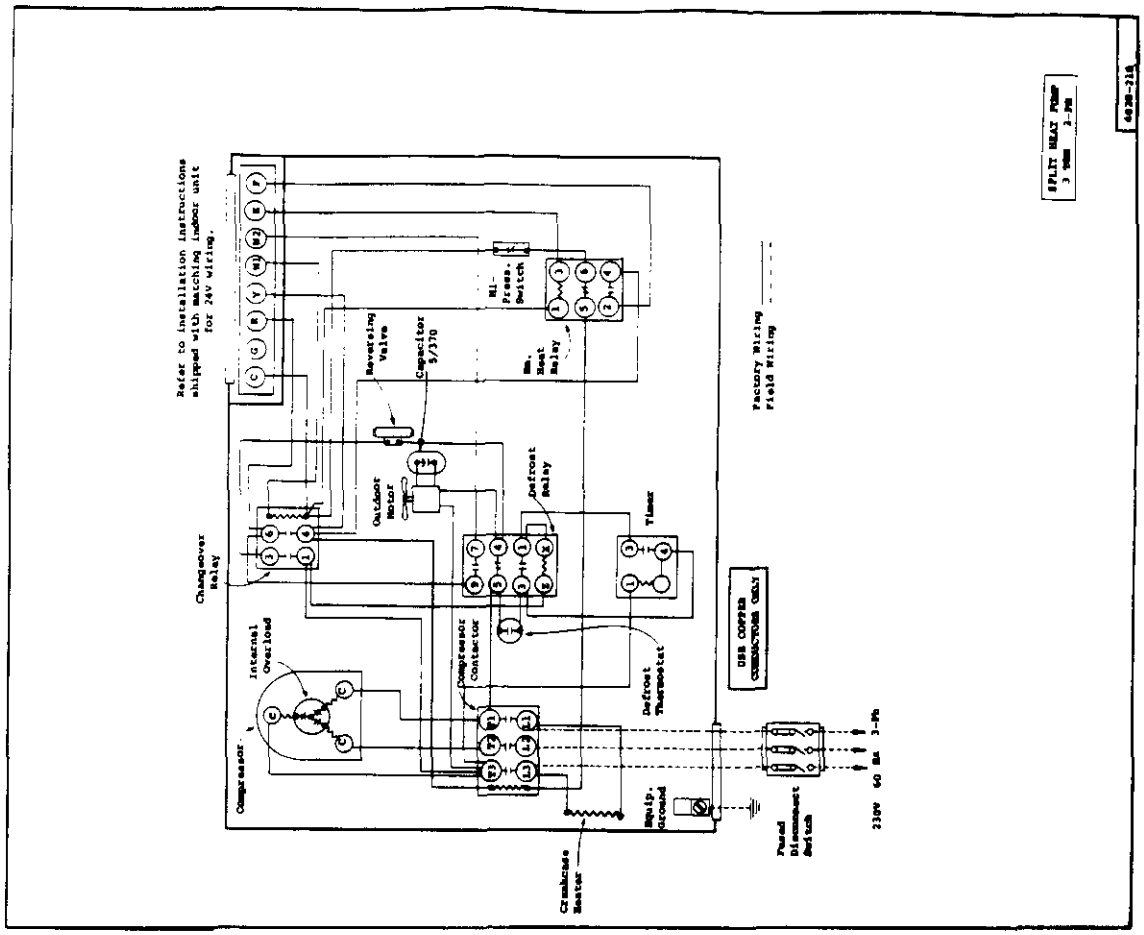
When tubing is installed in attics or drop ceiling, insulate the quick connect fitting on the larger tube thoroughly with 3/8" wall thickness, closed cell sponge tube insulation or equivalent. Failure to insulate will result in water damage to ceiling since the fitting will "sweat" and drop water on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

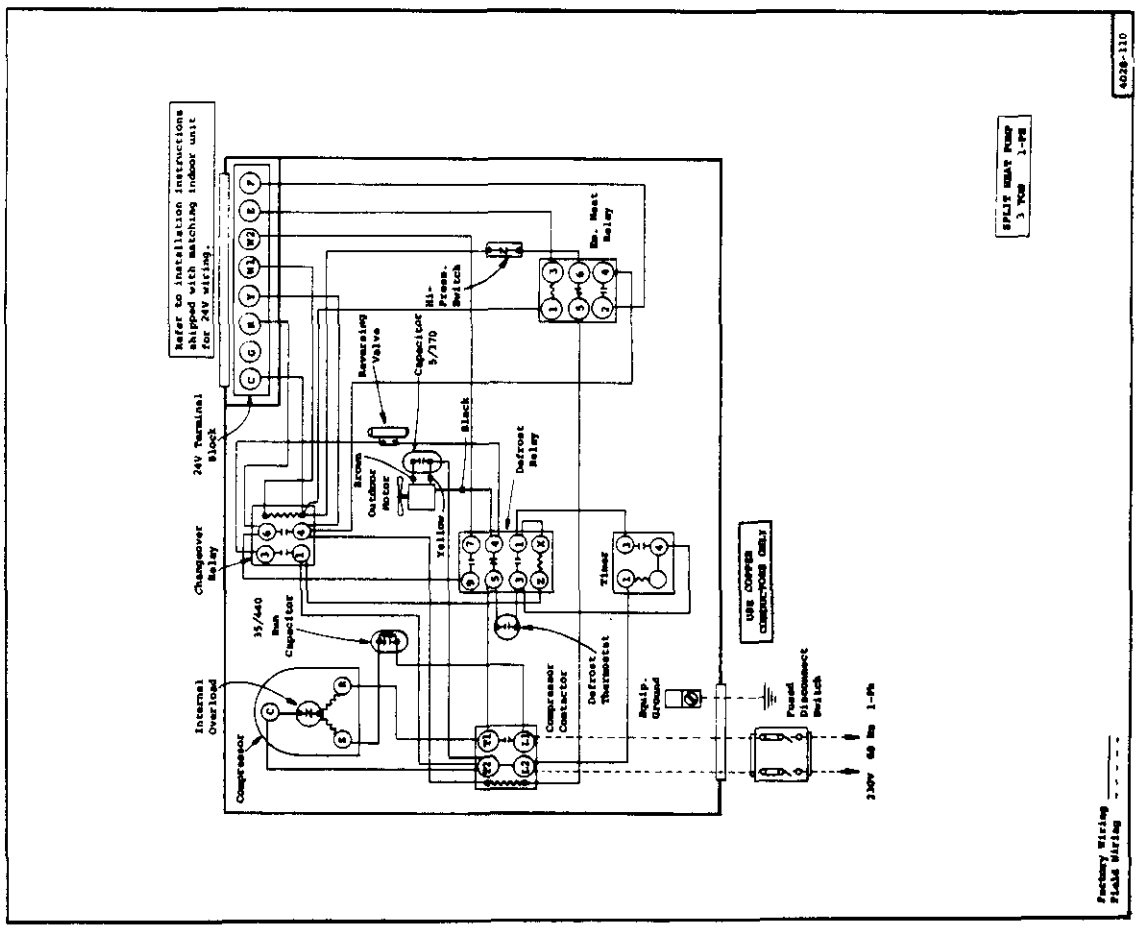

HIGH SIDE (LIQUID LINE) PRESSURE--PSIG
160 180 200 220 240 260 280 300 320 340 360 380 400
AIR TEMPERATURE ENTERING OUTDOOR UNIT-°F
10 20 30 40 50 60 70 80 90 100 110 120 130
Model 18HPQ1 with B18EHQ or H18QS Indoor Coils
HEATING 70° INDOOR
HEATING 70° INDOOR
COOLING
COOLING
85/71
80/67
75/63
85/71
80/67
75/63
20 30 40 50 60 70 80 90
LOW SIDE(@ COMPRESSOR) PRESSURE--PSIG
MUST READ LOW SIDE PRESSURE @ COMPRESSOR
TO CHECK OUT ON BOTH HEAT AND COOL CYCLES
NOTE: These curves are based on actual test conditions and some variations may be experienced due to airflow, voltage, and humidity other than as shown.

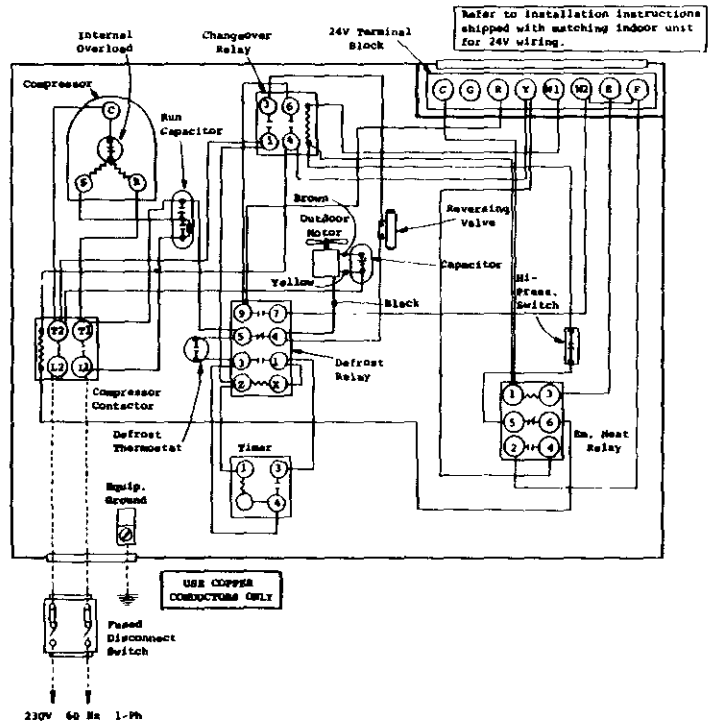

HIGH SIDE (LIQUID LINE) PRESSURE--PSIG
180 200 220 240 260 280 300 320 340 360 380 400
AIR TEMPERATURE ENTERING OUTDOOR UNIT-°F
10 20 30 40 50 60 70 80 90 100 110 120 130
Model 24HPQ1 with B24EHQ or H24QS Indoor Coils
HEATING 70° INDOOR
HEATING 70° INDOOR
COOLING
COOLING
80/67
85/71
75/63
80/67
85/71
75/63
10 20 30 40 50 60 70 80 90
LOW SIDE (@ COMPRESSOR) PRESSURE--PSIG
MUST READ LOW SIDE PRESSURE @ COMPRESSOR
TO CHECK OUT ON BOTH HEAT AND COOL CYCLES
NOTE: These curves are based on actual test conditions and some variation may be experienced due to airflow, voltage, and humidity other than as shown.


HIGH SIDE (LIQUID LINE) PRESSURE--PSIG
AIR TEMPERATURE ENTERING OUTDOOR UNIT-°F
LOW SIDE (@ COMPRESSOR) PRESSURE--PSIG
MUST READ LOW SIDE PRESSURE @ COMPRESSOR
TO CHECK OUT ON BOTH HEAT AND COOL CYCLES
HEATING 70° INDOOR
COOLING
80/67
75/63
85/71
Model 30HPQ3 with
B36EMQ or H3AQ
Indoor Coils
NOTE: These curves are based on actual
test conditions and some variation may
be experienced due to airflow, voltage,
and humidity other than as shown.


HIGH SIDE (LIQUID LINE) PRESSURE--PSIG
AIR TEMPERATURE ENTERING OUTDOOR UNIT-°F
LOW SIDE (@ COMPRESSOR*) PRESSURE--PSIG
* MUST READ LOW SIDE PRESSURE @ COMPRESSOR
TO CHECK OUT ON BOTH HEAT AND COOL CYCLES
HEATING 70° INDOOR
COOLING
80/67
75/63
85/71
Model 36HPQ3 with
B36EMQ or H3AQ
Indoor Coils
NOTE: These curves are based on actual
test conditions and some variation may
be experienced due to airflow, voltage,
and humidity other than as shown.


Refer to installation instructions shipped with matching indoor unit for 24V wiring.
Reversing Valve
Capacitor 5/370
Hi-Press. Switch
Rh. Heat Relay
Outdoor Motor
Defrost Relay
Timer
Changeover Relay
Internal Overload
Compressor Contactor
Defrost Thermostat
Compressor
Equip. Ground
Crankcase Heater
Panel Disconnect Switch
Factory Wiring
Field Wiring
SPLIT HEAT PUMP

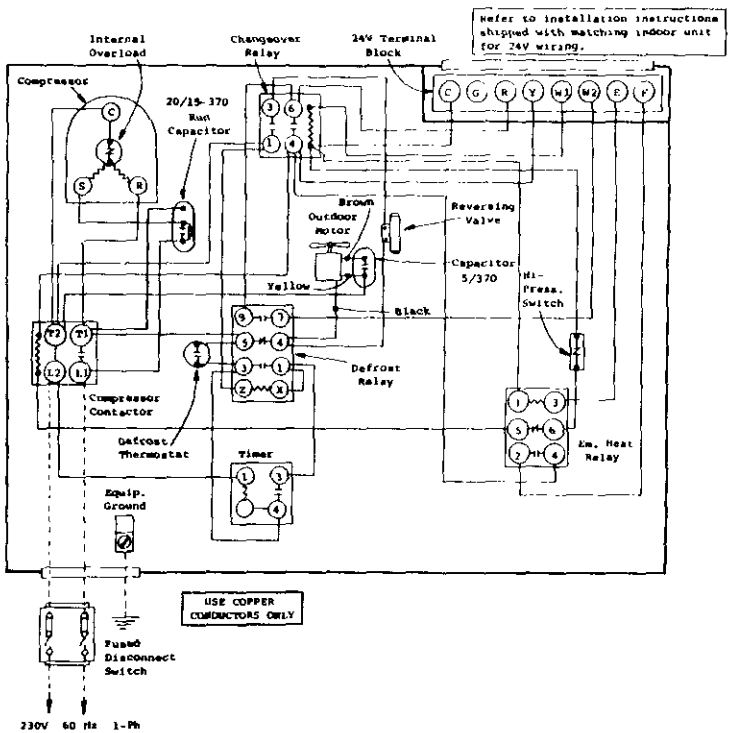

Refer to installation instructions shipped with matching indoor unit for 24V wiring.
24V Terminal Block
Reversing Valve
Capacitor 5/370
Hi-Press. Switch
Rh. Heat Relay
Black
Brown
Yellow
Outdoor Motor
Defrost Relay
Timer
Changeover Relay
35/440 Run Capacitor
Internal Overload
Compressor
Compressor Contactor
Defrost Thermostat
Equip. Ground
Panel Disconnect Switch
Factory Wiring
Field Wiring
SPLIT HEAT PUMP



SPLIT HEAT PUMP
1½ & 2 Ton 1-Ph

Factory Wiring _____
Field Wiring - - - - -

4026-110



SPLIT HEAT PUMP
2-1/2 TON 1-PH

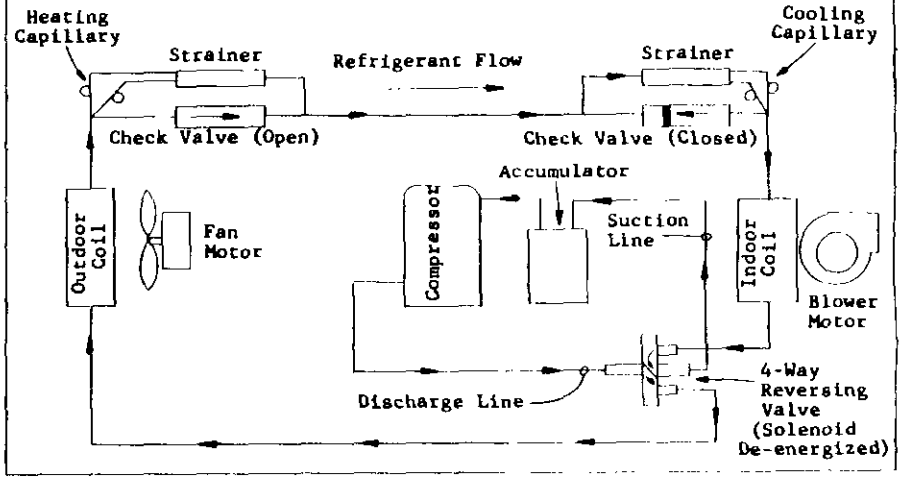
Factory Wiring _____
Field Wiring - - - - -

4027-110

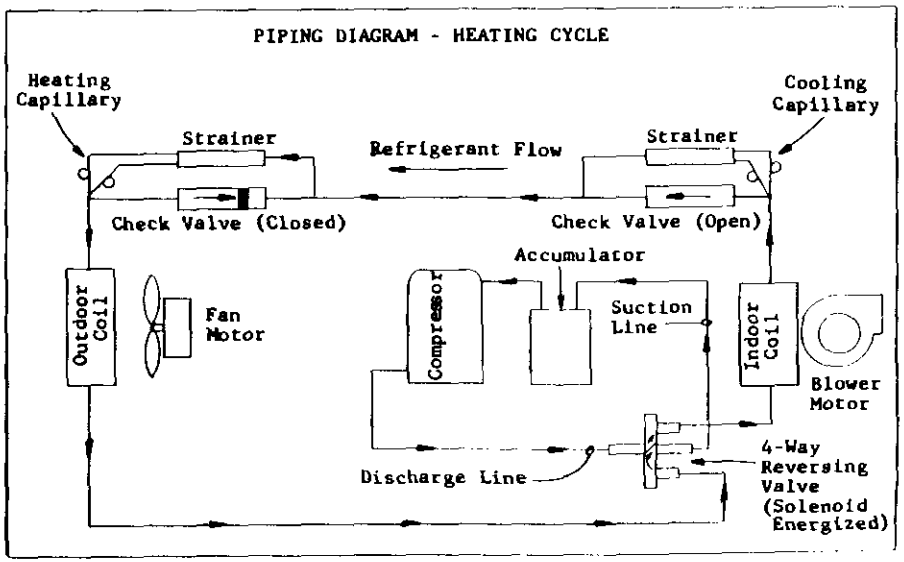
PARTS LIST
SPLIT SYSTEM HEAT PUMPS

PART NO.	DESCRIPTION	18HPQ1	24HPQ1	30HPQ3	36HPQ3	36HPQ3-3
5202-001	Accumulator	x	x			
5202-003	Accumulator			x		
5202-004	Accumulator				x	x
8552-007	Capacitor 370V	x	x	x		
8552-012	Capacitor 440V				x	
8552-002	Capacitor 370V	x	x	x	x	x
5811-031	Cap Tube - Heat	x				
5811-014	Cap Tube - Heat		x			
5811-027	Cap Tube - Heat			x	x	x
5651-006	Check Valve	x	x	x	x	x
8000-004	Compressor 1-Ph	x				
8000-005	Compressor 1-Ph		x			
8000-006	Compressor 1-Ph			x		
8000-008	Compressor 1-Ph				x	
8000-009	Compressor 3-Ph					x
5051-004	Condenser Coil	x				
5051-008	Condenser Coil		x			
5051-003	Condenser Coil			x	x	x
8401-007	Contactor - Compressor	x	x	x		
8401-003	Contactor - Compressor				x	
8401-002	Contactor - Compressor					x
8605-001	Crankcase Heater					x
8408-004	Defrost Mounting Plate	x	x	x	x	x
8408-002	Defrost Thermostat	x	x	x	x	x
5151-001	Fan Blade	x	x			
5151-007	Fan Blade			x	x	x
8406-010	High Pressure Switch	x	x	x	x	x
8103-008	Motor - Fan	x	x			
8103-009	Motor - Fan			x	x	
8200-001	Motor Mount - Fan	x	x	x	x	x
8201-013	Relay - Changeover	x	x	x	x	x
8201-018	Relay - Defrost	x	x	x	x	x
8201-015	Relay - Emergency Heat	x	x	x	x	x
5650-004	Reversing Valve	x	x			
5650-005	Reversing Valve			x		
5650-006	Reversing Valve				x	x
5650-002	Solenoid Coil	x	x	x	x	x
5210-002	Strainer	x	x	x	x	x
8607-006	Terminal Board 24V	x	x	x	x	x
8612-008	Timer	x	x	x	x	x

PIPING DIAGRAM - COOLING CYCLE AND DEFROST



PIPING DIAGRAM - HEATING CYCLE



SCT-1
R-22 TOTAL SYSTEM CHARGE FOR
SPLIT HEAT PUMP SYSTEMS

The following table lists the total system operating charge for split heat pump systems when using standard charged tubing lengths of 15 ft, 25 ft, 35 ft, or 45 ft. The values shown are the total amount of refrigerant received in the precharged system components, which include the outdoor unit, indoor unit, and inter-connecting tubing. This is also the amount of refrigerant required for a system recharge following any refrigeration system repairs.

Find the outdoor section and matching indoor section being used, and follow across horizontally to the correct column based on number of feet of inter-connecting tubing. This value is the TOTAL SYSTEM CHARGE.

Outdoor Unit Model	Indoor Unit Model	Outdoor Unit Basic Charge	Total System Charge For Standard Tubing Lengths			
			15 ft	25 ft	35 ft	45 ft
18HPQ1	B18EHQ	3# 8 oz	3# 14 oz	4# 2 oz	4# 6 oz	4# 10 oz
24HPQ1	B24EHQ	2# 15 oz	3# 5 oz	3# 9 oz	3# 13 oz	4# 1 oz
	H24QS	2# 15 oz	3# 5 oz	3# 9 oz	3# 13 oz	4# 1 oz
30HPQ3	B36EHQ	4# 3 oz	4# 10 oz	4# 14 oz	5# 9 oz	5# 15 oz
	H3AQ	4# 3 oz	4# 12 oz	5# 0 oz	5# 11 oz	6# 1 oz
36HPQ3	B36EHQ	5# 4 oz	5# 11 oz	5# 15 oz	6# 10 oz	7# 0 oz
	H3AQ	5# 4 oz	5# 13 oz	6# 1 oz	6# 12 oz	7# 2 oz

In the event that the installer is running his own tubing or is modifying a precharged tubing set by adding or subtracting a few feet of tubing length, the tubing set should be evacuated and charged before being connected to the outdoor and indoor sections.

To determine LINE SET ONLY charges, use the following table:

Liquid Line Size		Oz of R-22 per ft.		Less
1/4" O.D.	x	.4	-	7 oz
3/8" O.D.	x	.6	-	7 oz

Example: A 32 ft. line set with 3/8" liquid line is being used.

32 ft. x .6 oz/ft = 19.2 oz -7 oz = 12.2 oz

After evacuating the line set, weigh in 12 oz of R-22 to line set. Note: The 12 oz should be introduced into both the liquid line and vapor line so that there is a positive pressure in both lines when connected.

To determine a TOTAL SYSTEM CHARGE for a system that is connected with a non-standard tubing length, the outdoor unit basic charge (from above table) is added to the line set calculation based on liquid line O.D. size (.4 oz per ft of 1/4" and .6 oz per ft of 3/8"). An additional adjustment factor may be required depending on the indoor coil section used. Determine this adjustment from the following chart:

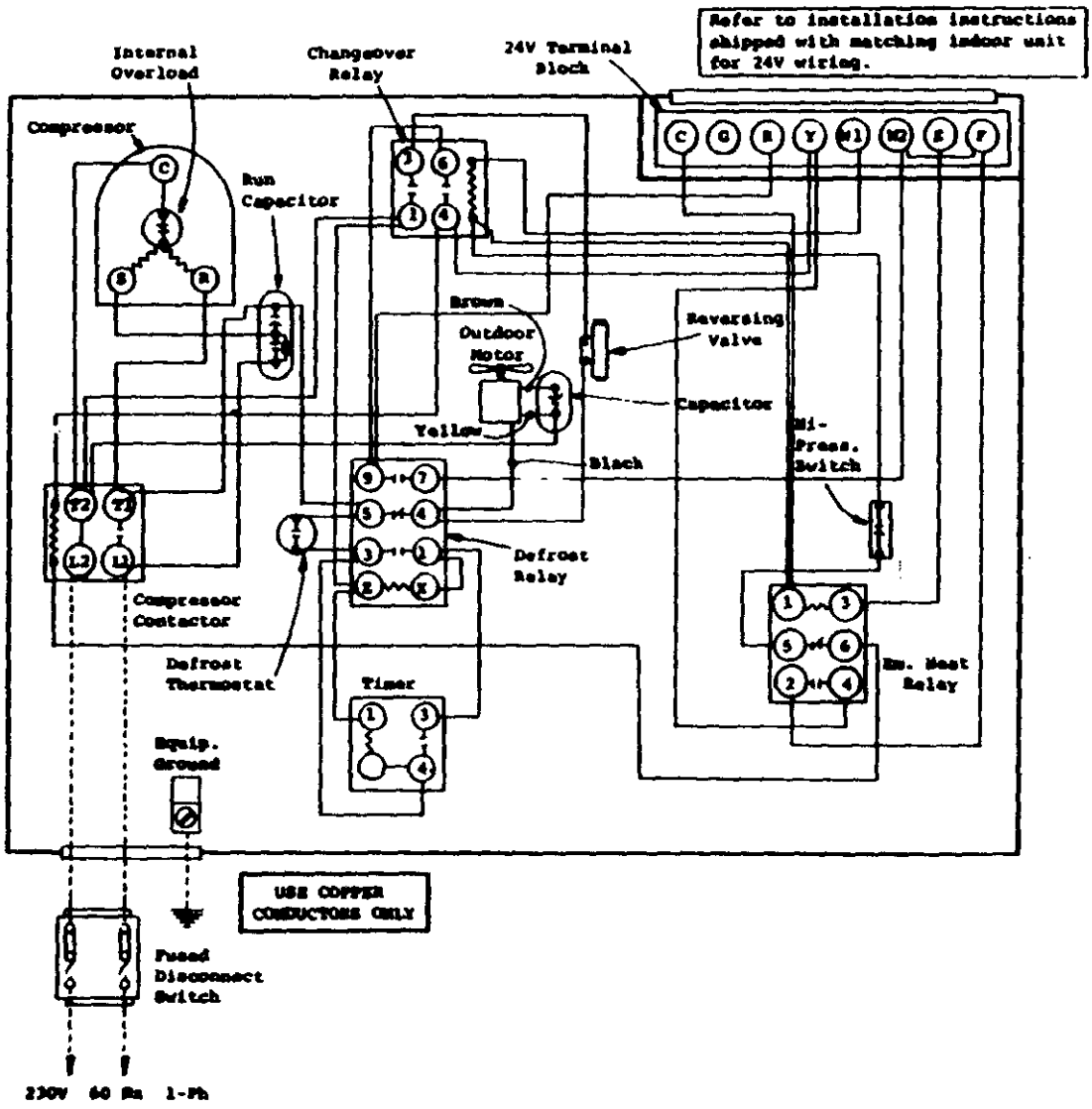
B18EHQ B24EHQ	0
H24QS	0
B36EHQ	+1
H3AQ	+3

IMPORTANT NOTE: All these models use 1/4" O.D. liquid lines up to and including 25 ft. Anything over 25 ft. should be 3/8" O.D. The precharged tubing sets are supplied accordingly.

Example: Model 36HPQ3 matched with model B36EHQ and connected by a 28 ft line set.

Basic charge 5# 4 oz plus .6 x 28 ft plus 1 oz adjustment factor
5# 4 oz plus 16.8 oz* plus 1 oz = 6# 6 oz total

*Round off to nearest whole number



Factory Wiring _____
Field Wiring - - - - -

SPLIT HEAT PUMP
1½ & 2 Ton 1-Ph