

USER'S MANUAL / INSTALLATION INSTRUCTIONS

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IMPORTANT

Please read this information thoroughly and become familiar with the capabilities and use of your appliance before attempting to operate or maintain this unit. Keep this literature where you have easy access to it in the future. If a problem occurs, check the instructions and follow recommendations given. If these suggestions don't eliminate the problem, call your servicing contractor.

The Installation Instructions are primarily intended to assist qualified individuals experienced in the proper installation of this appliance. Some local codes require licensed installation/service personnel for this type of equipment. Please read all instructions carefully before starting the installation.

**DO NOT DESTROY. PLEASE READ CAREFULLY AND
KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.**

USER INFORMATION

IMPORTANT SAFETY INFORMATION

Safety markings are used frequently throughout this manual to designate a degree or level of seriousness and should not be ignored. **WARNING** indicates a potentially hazardous situation that if not avoided, could result in personal injury or death. **CAUTION** indicates a potentially hazardous situation that if not avoided, may result in minor or moderate injury or property damage.

ABOUT THE HEAT PUMP

Your heat pump is a unique, all weather comfort-control appliance that will heat and cool your home year round and provide energy saving comfort. It's an unknown fact that heat is always in the air, even when the outside temperature is below freezing. The heat pump uses this basic law of physics to provide energy saving heat during the winter months. For example, if the outdoor temperature is 47° F (8° C), your heat pump can deliver approximately 3.5 units of heat energy per each unit of electrical energy used, as compared to a maximum of only 1 unit of heat energy produced with conventional heating systems.

In colder temperatures, the heat pump performs like an air conditioner run in reverse. Available heat energy outside the home is absorbed by the refrigerant and exhausted inside the home. This efficient process means you only pay for "moving" the heat from the outdoors to the indoor area. You do not pay to generate the heat, as is the case with more traditional furnace designs.

During summer, the heat pump reverses the flow of the heat-absorbing refrigerant to become an energy-efficient, central air conditioner. Excess heat energy inside the home is absorbed by the refrigerant and exhausted outside the home.

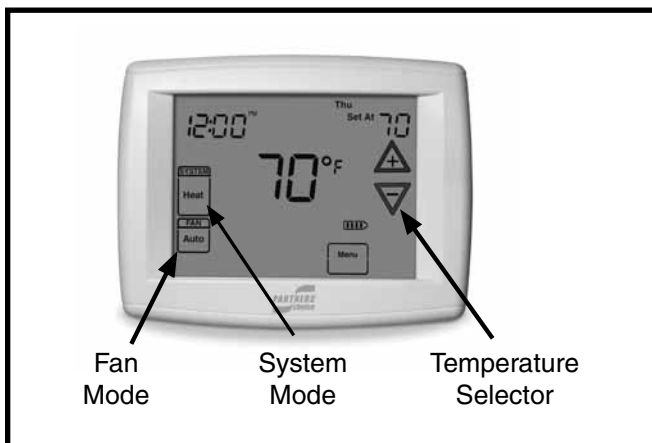


Figure 1. Digital Thermostat

OPERATING INSTRUCTIONS

Please refer to the thermostat manufacturer's User manual for detailed programming instructions.

Cooling Operation

1. Set the thermostat's system mode to COOL or AUTO and change the fan mode to AUTO. See Figure 1
2. Set the temperature selector to the desired temperature level. The outdoor fan, compressor, and blower motor will all cycle on and off to maintain the indoor temperature at the desired cooling level.

NOTE: If the temperature level is re-adjusted, or the system mode is reset, the fan and compressor in the outdoor unit may not start immediately. A protective timer circuit holds the compressor and the outdoor fan off for approximately 5 minutes following a previous operation or the interruption of the main electrical power.

Heating Operation

1. Set the thermostat's system mode to HEAT or AUTO and change the fan mode to AUTO. See Figure 1.
2. Set the temperature selector to the desired temperature level. The compressor, outdoor fan, and blower motor will cycle on and off to maintain the indoor temperature at the desired heating level.

NOTE: If the temperature level is re-adjusted, or the system mode is reset, the fan and compressor in the outdoor unit may not start immediately. A protective timer circuit holds the compressor and the outdoor fan off for approximately 5 minutes following a previous operation or the interruption of the main electrical power.

Emergency Heat

Some thermostats may include a system mode called EM HT or AUX HT, etc. This is a back-up heating mode that should only be used if a problem is suspected. With the mode set to EM HT, etc., the compressor and outdoor fan will be locked off and supplemental heat (electric resistance heating) will be used as a source of heat. Sustained use of electric resistance heat in place of the heat pump will result in an increase in electric utility costs.

Defrost Operation

During cold weather heating operation, the outdoor unit will develop a coating of snow and ice on the heat transfer coil. This is normal and the unit will defrost itself. This unit monitors ambient and coil temperatures to regulate the defrost function accordingly.

USER INFORMATION

At the beginning of the defrost cycle, both the outdoor condenser fan and compressor will turn off. After approximately 30 seconds, the compressor will turn on and begin to heat the outdoor coil causing the ice and snow to melt.

NOTE: While the ice and snow is melting, some steam may rise from the outdoor unit as the warm coil causes the melting frost to evaporate. When defrost is completed, the outdoor fan motor will start, and the compressor will turn off again. In approximately 30 seconds the compressor will start up again and continue normal operation.

Operating the Heat Pump for Automatic Cooling and Heating

1. Set the thermostat system switch to AUTO and the thermostat fan switch to AUTO. See Figure 1.

NOTE: Thermostat styles vary. Some models will not include the AUTO mode and others will have the AUTO in place of the HEAT and COOL. Others may include all three. Refer to the instructions supplied with your thermostat for specific instructions.

2. Set the thermostat temperature to the desired temperature level. The outdoor unit and the indoor blower will then cycle on and off in either the heating or cooling mode of operation as required to automatically maintain the indoor temperature within the desired limits.

Operating the Indoor Blower Continuously

The continuous indoor blower operation is typically used to circulate the indoor air to equalize a temperature unbalance due to a sun load, cooking, or fireplace operation.

Set the thermostat fan mode to ON (Figure 1). The indoor blower starts immediately, and will run continually until the fan mode is reset to AUTO.

The continuous indoor blower operation can be obtained with the thermostat system mode set in any position, including OFF.

Turning the Heat Pump Off

Change the thermostat's system mode to OFF and the fan mode to AUTO. See Figure 1. **NOTE:** The system will not operate, regardless of the temperature selector setting.

HEAT PUMP MAINTENANCE

CAUTION:

Shut off all electrical power to the unit before performing any maintenance. Failure to comply may result in personal injury or death.

Proper maintenance is most important to achieve the best performance from the appliance and should be performed by a qualified service technician at least once a year. Read the maintenance items below and follow the instructions for years of safe, trouble free operation.

Regular Cleaning

WARNING:

Do not place combustible material on or against the unit cabinet. Do not place combustible materials, including gasoline and any other flammable vapors and liquids, in the vicinity of the unit.

- Clean or replace the indoor air filter at the start of each heating and cooling season, and when an accumulation of dust and dirt is visible on the air filter.
- Remove any leaves and grass clippings from around the coil of the outdoor unit, being careful not to damage the aluminum fins.
- Check and remove any obstructions, such as twigs, sticks, etc.

TROUBLESHOOTING

If the unit fails to operate, check the following:

- The thermostat is properly set. See Cooling Operation for air conditioning or Heating Operation for furnace.
- The unit disconnect fuses are in good condition and the electrical power to the unit is turned on.

WARRANTY INFORMATION

A warranty certificate with full details is included with the Heat Pump. Carefully review these responsibilities with your dealer or service company. The manufacturer will not be responsible for any costs found necessary to correct problems due to improper setup, improper installation, adjustments, improper operating procedure on the part of the user, etc. Some specific examples of service calls which are not included in the limited warranty are:

- Correcting wiring problems in the electrical circuit supplying the Heat Pump.
- Resetting circuit breakers or other switches.
- Adjusting or calibrating of thermostat.

INSTALLER INFORMATION

IMPORTANT SAFETY INFORMATION

INSTALLER: Please read all instructions before servicing this equipment. Pay attention to all safety warnings and any other special notes highlighted in the manual. Safety markings are used frequently throughout this manual to designate a degree or level of seriousness and should not be ignored. **WARNING** indicates a potentially hazardous situation that if not avoided, could result in personal injury or death. **CAUTION** indicates a potentially hazardous situation that if not avoided, may result in minor or moderate injury or property damage.

WARNING:

Shut off all electrical power to the unit before performing any maintenance or service on the system. Failure to comply may result in personal injury or death.

WARNING:

Unless noted otherwise in these instructions, only factory authorized parts or accessory kits may be used with this product. Improper service, installation, adjustment, or maintenance may cause explosion, fire, electrical shock or other hazardous conditions which may result in personal injury or property damage.

WARNING:

This split system heat pump left the factory with a nitrogen holding charge. Follow all charging instructions for maximum unit performance and efficiency. Some local codes require licensed installation/service personnel to service this type of equipment. Refrigerant charging must be done by qualified personnel familiar with safe and environmentally responsible refrigerant handling procedures. Under no circumstances should the owner attempt to install and/or service this equipment. Failure to comply with this warning could result in property damage, personal injury, or death.

CAUTION:

This unit uses R-22 refrigerant. DO NOT use any other refrigerant in this unit. Use of another refrigerant will damage the unit.

WARNING:

The information listed below must be followed during the installation, service, and operation of this unit. Unqualified individuals should not attempt to interpret these instructions or install this equipment. Failure to follow safety recommendations could result in possible damage to the equipment, serious personal injury or death.

- The installer must comply with all local codes and regulations which govern the installation of this type of equipment. Local codes and regulations take precedence over any recommendations contained in these instructions. Consult local building codes and the National Electrical Code (ANSI CI) for special installation requirements.
- All electrical wiring must be completed in accordance with local, state and national codes and regulations and with the National Electric Code (ANSI/NFPA 70) or in Canada the Canadian Electric Code Part 1 CSA C.22.1.
- This equipment contains liquid and gaseous refrigerant under high pressure. **DO NOT USE ANY PORTION OF THE CHARGE FOR PURGING OR LEAK TESTING.** Installation or servicing should only be performed by qualified trained personnel thoroughly familiar with this type equipment.
- Fully annealed, refrigerant grade copper tubing should be used when installing the system. Refrigerant suction line tubing should be fully insulated.
- Installation of equipment may require brazing operations. Installer must comply with safety codes and wear appropriate safety equipment (safety glasses, work gloves, fire extinguisher, etc.) when performing brazing operations.
- This unit is designed for outdoor installations only and should be located as described on page 5.
- Follow all precautions in the literature, on tags, and on labels provided with the equipment. Read and thoroughly understand the instructions provided with the equipment prior to performing the installation and operational checkout of the equipment.

HEAT PUMP INSTALLATION

General Information

This split system heat pump is designed only for outdoor rooftop or ground level installations. The unit has been tested for capacity and efficiency in accordance with AHRI Standards and will provide many years of safe and dependable comfort, providing it is properly installed and maintained. Abuse, improper use, and/or improper maintenance can shorten the life of the appliance and create unsafe hazards.

To achieve optimum performance and minimize equipment failure, it is recommended that periodic maintenance be performed on this unit. The ability to properly perform maintenance on this equipment requires certain mechanical skills and tools.

Before You Install this Unit

- ✓ The cooling load of the area to be conditioned must be calculated and a system of the proper capacity selected. It is recommended that the area to be conditioned be completely insulated and vapor sealed.
- ✓ Check the electrical supply and verify the power supply is adequate for unit operation. The system must be wired and provided with circuit protection in accordance with local building codes. If there is any question concerning the power supply, contact the local power company.
- ✓ The indoor section (air handler, furnace, etc) should be installed before routing the refrigerant tubing. Refer to the indoor unit's installation instructions for installation details.
- ✓ All units are securely packed at the time of shipment and upon arrival should be carefully inspected for damage prior to installing the equipment at the job site. Verify coil fins are straight. If necessary, comb fins to remove flattened or bent fins. Claims for damage (apparent or concealed) should be filed immediately with the carrier.
- ✓ Please consult your dealer for maintenance information and availability of maintenance contracts. Please read all instructions before installing the unit.

Locating the Heat Pump

- Survey the job site to determine the best location for mounting the outdoor unit. See Figure 4 (page 10) for unit dimensions.
- Overhead obstructions (Figure 2), poorly ventilated areas, and areas subject to accumulation of debris should be avoided.
- Sufficient clearance for unobstructed airflow through the outdoor coil must be maintained in order to achieve rated performance. See Figure 2 for minimum clearances to obstructions.
- Consideration should be given to availability of electric power, service access, noise, and shade.

Packaging Removal

NOTE: To prevent damage to the tubing connections, carefully remove the carton and user's manual from the equipment. Discard the shipping carton.

Ground Level

Ground level installations must be located according to local building codes or ordinances and these requirements:

- Clearances must be in accordance with those shown in Figure 2.
- A suitable mounting pad must be provided and separate from the building foundation. The pad must be level and strong enough to support the weight of the unit. The slab height must be a minimum of 2" (5 cm) above grade and with adequate drainage. See Figure 2.

Roof Mount

- The method of mounting should be designed so that it does not overload roof structures or transmit noise to the interior of the structure. The roof must be structurally capable of handling the weight of the unit.
- Full perimeter support is required under the unit. Support must be made of weather resistant materials and installed prior to unit installation.
- The support must be built to raise the unit 6" above the roof.

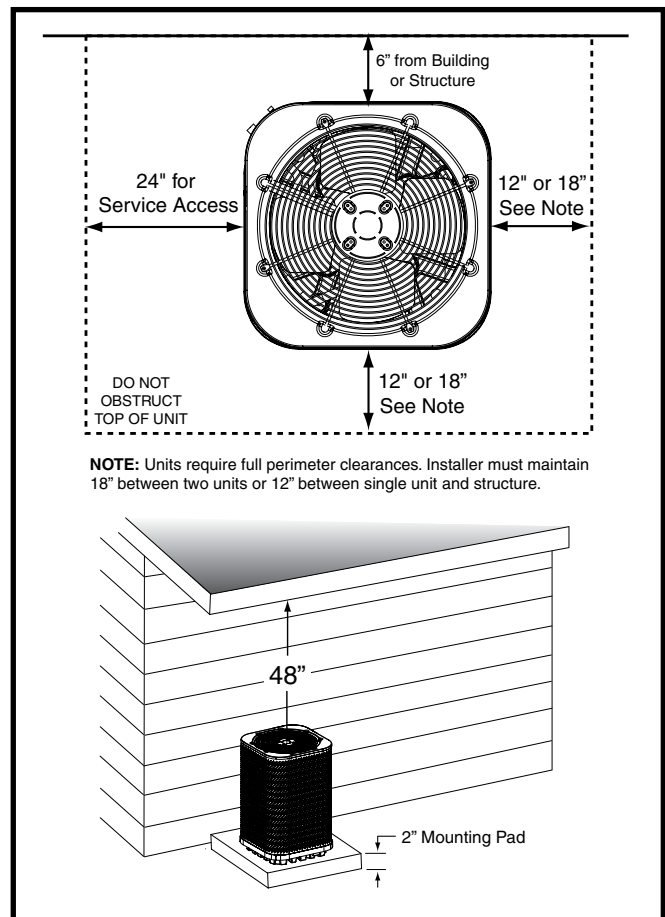


Figure 2. Clearance Requirements

Connecting Refrigerant Tubing Between the Indoor & Outdoor Unit

CAUTION:

This system uses R-22 refrigerant which may contain POE oil. When servicing, cover or seal openings to minimize the exposure of the refrigerant system to air to prevent accumulation of moisture and other contaminants. See page 9 for additional info.

After outdoor and indoor unit placement has been determined, route refrigerant tubing between the equipment in accordance with sound installation practices.

- When connecting refrigerant linesets together, it is recommended that dry nitrogen be flowing through the joints during brazing to prevent internal oxidation and scaling.
- Refrigerant tubing should be routed in a manner that minimizes the length of tubing and the number of bends in the tubing. If precise forming of refrigerant lines is required, a copper tubing bender is recommended. Avoid sharp bends and contact of the refrigerant lines with metal surfaces.
- Refrigerant tubing should be supported in a manner that the tubing will not vibrate or abrade during system operation.
- Tubing should be kept clean of foreign debris during installation.
- Every effort should be made by the installer to ensure that the field installed refrigerant containing components of the system have been installed in accordance with these instructions and sound installation practices to insure reliable system operation and longevity.
- The maximum recommended interconnecting refrigerant line lengths is 75 ft. and the vertical elevation difference between the indoor and outdoor sections should not exceed 20 ft.

COPPER WIRE SIZE — AWG (1% Voltage Drop)				
Supply Wire Length-Feet				Supply Circuit Ampacity
200	150	100	50	
6	8	10	14	15
4	6	8	12	20
4	6	8	10	25
4	4	6	10	30
3	4	6	8	35
3	4	6	8	40
2	3	4	6	45
2	3	4	6	50
2	3	4	6	55
1	2	3	4	60

Wire Size based on N.E.C. for 60° type copper conductors.

Table 1. Copper Wire Size

- To maintain the unit's warranty, it is required that a filter drier be installed when the system is open to the atmosphere. This includes, but is not limited to, replacing the evaporator and/or condenser of a system. The filter drier must be installed in strict accordance with the manufacturer's installation instructions.
- Optional equipment such as liquid line solenoid valves, low ambient, etc., should be installed in strict accordance with the manufacturer's installation instructions.

ELECTRICAL WIRING

WARNING:

To avoid risk of electrical shock, personal injury, or death, disconnect all electrical power to the unit before performing any maintenance or service. The unit may have more than one electrical supply.

Label all wires prior to disconnection when servicing the unit. Wiring errors can cause improper and dangerous operation.

- All electrical connections must be in compliance with all applicable local codes and ordinances, and with the current revision of the National Electric Code (ANSI/NFPA 70).
- For Canadian installations the electrical connections and grounding shall comply with the current Canadian Electrical Code (CSA C22.1 and/or local codes).

Pre-Electrical Checklist

- ✓ Verify that the voltage, frequency, and phase of the supply source match the specifications on the unit rating plate. See Table 18 (page 24).
- ✓ Verify that the service provided by the utility is sufficient to handle the additional load imposed by this equipment. Refer to the unit wiring label for proper voltage wiring.
- ✓ Verify factory wiring is in accordance with the unit wiring diagram or Figure 12 (page 22). Inspect for loose connections.

Line Voltage

- A wiring diagram is located on the inside cover of the electrical box of the outdoor unit. The installer should become familiar with the wiring diagram before making any electrical connections to the outdoor unit.
- **An electrical disconnect must be located within sight of and readily accessible to the unit.** This switch shall be capable of electrically de-energizing the outdoor unit.
- Line voltage to the unit should be supplied from a dedicated branch circuit containing the correct fuse or circuit breaker for the unit. Incoming field wiring and minimum size of electrical conductors and circuit

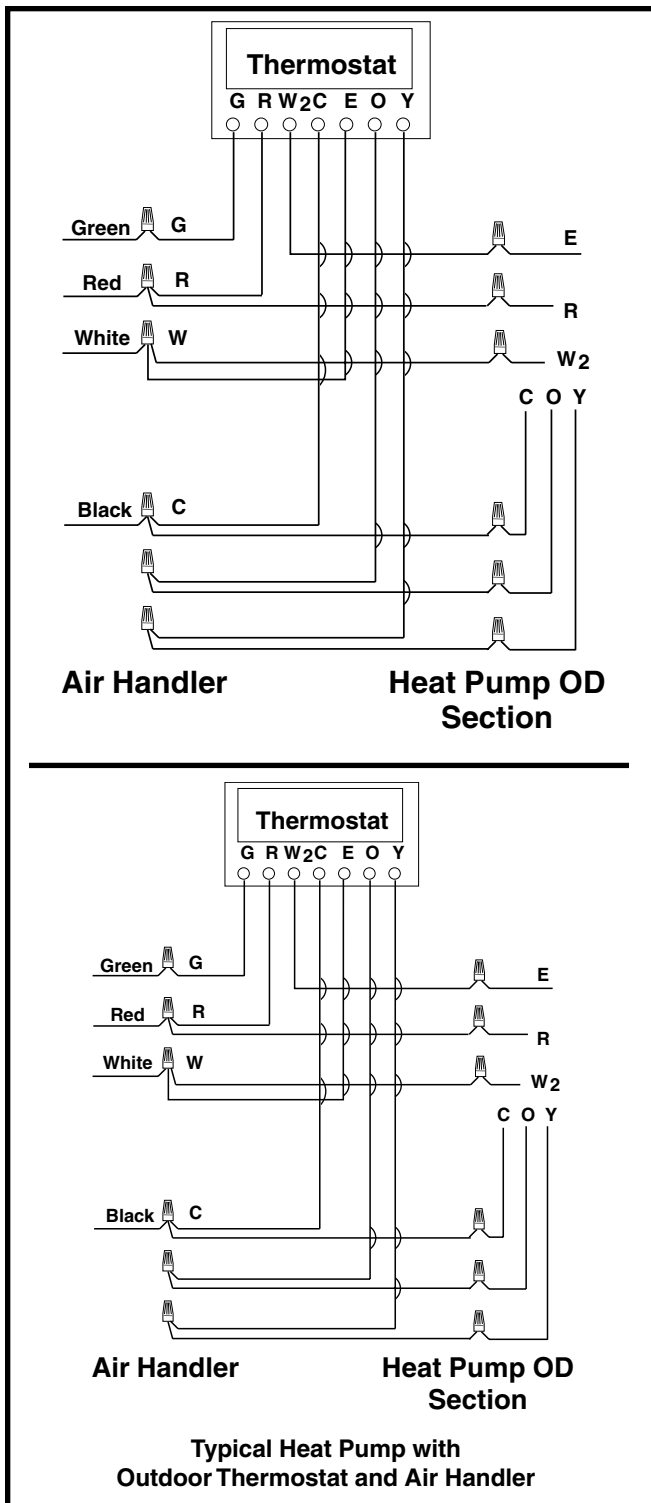


Figure 3. Typical Thermostat Connections

protection must be in compliance with information listed on the outdoor unit data label. Any other wiring methods must be acceptable to authority having jurisdiction.

- The outdoor unit requires both power and control circuit electrical connections. Refer to the wiring diagram / schematic for identification and location of outdoor unit field wiring interfaces Figure 12 (page 22). Make all electrical connections in accordance with all applicable codes and ordinances.
- Overcurrent protection must be provided at the branch circuit distribution panel and sized as shown on the unit rating label and according to applicable local codes. See the unit rating plate for minimum circuit ampacity and maximum overcurrent protection limits.
- Provide power supply for the unit in accordance with the unit wiring diagram, and the unit rating plate. Connect the line-voltage leads to the terminals on the contactor inside the control compartment.
- Use only copper wire for the line voltage power supply to this unit as listed in Table 1 (page 6). Use proper code agency listed conduit and a conduit connector for connecting the supply wires to the unit. Use of rain tight conduit is recommended.
- 208/230 Volt units are shipped from the factory wired for 230 volt operation. For 208V operation, remove the lead from the transformer terminal marked 240V and connect it to the terminal marked 208V.
- Optional equipment requiring connection to the power or control circuits must be wired in strict accordance of the NEC (ANSI/NFPA 70), applicable local codes, and the instructions provided with the equipment.

Grounding

⚠ WARNING:

The unit cabinet must have an uninterrupted or unbroken electrical ground to minimize personal injury if an electrical fault should occur. Do not use gas piping as an electrical ground!

This unit must be electrically grounded in accordance with local codes or, in the absence of local codes, with the National Electrical Code (ANSI/NFPA 70) or the CSA C22.1 Electrical Code. Use the grounding lug provided in the control box for grounding the unit.

Thermostat Connections

- Thermostat connections should be made in accordance with the instructions supplied with the thermostat and the indoor equipment.
- The outdoor unit is designed to operate from a 24 VAC Class II control circuit. The control circuit wiring must comply with the current provisions of the NEC (ANSI/NFPA 70) and with applicable local codes having jurisdiction.
- The low voltage wires must be properly connected to the units low voltage terminal block (Figure 3).

Recommended wire gauge and wire lengths for typical thermostat connections are listed in Table 2.

- The thermostat should be mounted about 5 feet above the floor on an inside wall. DO NOT install the thermostat on an outside wall or any other location where its operation may be adversely affected by radiant heat from fireplaces, sunlight, or lighting fixtures, and convective heat from warm air registers or electrical appliances. Refer to the thermostat manufacturer's instruction sheet for detailed mounting and installation information.

Thermostat Wire Gauge	Recommended T-Stat Wire Unit to T-Stat (Length in FT)	
	2-Wire (Heating)	5-Wire (Heating/Cooling)
24	55	25
22	90	45
20	140	70
18	225	110

Table 2. Thermostat Wire Gauge

START UP & ADJUSTMENTS

Pre-Start Check List

- ✓ Verify the indoor unit is level and allows proper condensate drainage.
- ✓ Verify the outdoor coil and top of the unit are free from obstructions and debris, and all equipment access/control panels are in place.
- ✓ Verify air filters are cleaned and properly installed.
- ✓ Verify duct work is sealed to prevent air leakage.
- ✓ Verify line voltage power leads are securely connected and the unit is properly grounded.
- ✓ Verify low voltage wires are securely connected to the correct leads on the low voltage terminal strip.
- ✓ Verify power supply branch circuit overcurrent protection is sized properly.
- ✓ Verify the thermostat is wired correctly.

Start-Up Procedures

The thermostat's function mode should be set to OFF and the fan mode should be set to AUTO. Close all electrical disconnects to energize the system.

Air Circulation - Indoor Blower

1. Set the thermostat system mode on OFF and the fan mode to ON.
2. Verify the blower runs continuously. Check the air delivery at the supply registers and adjust register openings for balanced air distribution. If insufficient air is detected, examine ductwork for leaks or obstructions.
3. Set the thermostat fan mode to AUTO and verify the blower stops running.

System Cooling

1. Set the thermostat's system mode to COOL and the fan mode to AUTO. Gradually lower the thermostat

temperature setpoint below room temperature and verify the outdoor unit and indoor blower energize.

2. Verify blower wheel is spinning in direction indicated by arrow. Feel the air being circulated by the indoor blower and verify that it is cooler than ambient temperature. Listen for any unusual noises. If unusual sounds occur, determine the source of the noise and correct as necessary.
3. Verify HI and LO refrigerant pressures.
4. Allow the system to operate for several minutes and then set the temperature selector above room temperature. Verify the fan and compressor cycle off with the thermostat. **NOTE:** The blower should also stop unless fan mode is set to the ON position.

System Heating (optional)

1. Set the thermostat's system mode to HEAT and the temperature mode above room temperature.
2. Verify the optional heating equipment (furnace or electric heat) and indoor blower energize. Feel the air being circulated by the indoor blower and verify that it is warmer than ambient temperature. Listen for any unusual noises. If unusual sounds occur, determine the source of the noise and correct as necessary.

Refrigerant Charging

WARNING:

This split system heat pump left the factory with a nitrogen holding charge. DO NOT operate any unit while it contains a Nitrogen holding charge. Doing so may damage the units compressor. Follow these charging instructions for maximum unit performance and efficiency. Some local codes require licensed installation/service personnel to service this type of equipment. Refrigerant charging must be done by qualified personnel familiar with safe and environmentally responsible refrigerant handling procedures. Under no circumstances should the owner attempt to install and/or service this equipment. Failure to comply with this warning could result in property damage, personal injury, or death.

To properly charge these units:

1. Read all Installation Instructions first.
2. Complete any brazing operations. (e.g. Split system line-sets)
3. Leak check and evacuate the whole system using proper methods.
4. Purge the nitrogen holding charge.
5. Evacuate the unit to 350-500 microns.
6. Allow the unit to remain under vacuum for at least 30 min.

7. Weigh-In the proper amount of new (or reclaimed) R-22 refrigerant. Refer to Table 3 below or the units rating label to determine the correct amount of charge.
- Refrigerant charging charts are applicable only to matched assemblies of this equipment and listed airflows for the indoor coil. Refer to Figures 5 - 11 (pages 10 - 13) and Tables 4 - 10 (pages 14 - 17) for correct system charging.
 - Outdoor units with indoor coils not listed are not recommended. Deviations from rated airflows or non-listed combinations may require modification to the expansion device and refrigerant charging procedures for proper and efficient system operation.
 - The refrigerant charge can be checked and adjusted through the service ports provided external to the outdoor unit. Use only gage line sets which have a "Schrader" depression device present to actuate the valve.

Charging an R-22 system in AC mode at outdoor temperatures above 55° F for optimized sub-cooling of 10° F - 12° F.

1. With the system operating at steady-state, measure the liquid refrigerant pressure (in psig) at the outdoor unit service valve.
2. Measure the liquid refrigerant temperature (in Fahrenheit) at the service valve.
3. Determine the required liquid refrigerant pressure. Refer to Tables 11 - 17 (pages 18 - 21) for correct system charging.
 - If the pressure measured in Step 1 is greater than the required liquid refrigerant pressure determined in Step 3, then there is too much charge in the system. Remove refrigerant and repeat Steps 1 through 3 until the system is correctly charged.
 - If the pressure measured in Step 1 is less than the required liquid refrigerant pressure determined in Step 3, there is too little charge in the system. Add refrigerant and repeat Steps 1 through 3 until the system is correctly charged.

Unit Size (Ton)	Restrictor Bore Size (inches)		System Charge R2 (oz.)
	Indoor	Outdoor	
1.5 Ton	0.053	0.041	93
2 Ton	0.061	0.047	96
2.5 Ton	0.069	0.049	144
3 Ton	0.078	0.057	155
3.5 Ton	0.083	0.059	248
4 Ton	0.090	0.065	248
5 Ton	0.101	0.071	268

Table 3. 13 SEER Split System Heat Pump Orifice

HEAT PUMP MAINTENANCE

WARNING:

To prevent electrical shock, personal injury, or death, disconnect all electrical power to the unit before performing any maintenance or service. The unit may have more than one electrical supply.

Proper maintenance is important to achieve optimum performance from the Heat Pump. The ability to properly perform maintenance on this equipment requires certain mechanical skills and tools. If you do not possess these skills, contact your dealer for maintenance. Consult your local dealer about the availability of maintenance contracts. Routine maintenance should include the following:

- Inspect and clean or replace air filters at the beginning of each heating and cooling season, or more frequently if required.
- Inspect the condensate drain and outdoor coil at the beginning of each cooling season. Remove any debris. Clean the outdoor coil and louvers as necessary using a mild detergent and water. Rinse thoroughly with water.
- Inspect the electrical connections for tightness at the beginning of each heating and cooling season. Service as necessary.

CAUTION:

The unit should never be operated without a filter in the return air system. Replace disposable filters with the same type and size.

- Do not attempt to add additional oil to motors unequipped with oil tubes. The compressor is hermetically sealed at the factory and does not require lubrication.

REPLACEMENT PARTS

Replacement parts are available through your distributor. Please have the complete model and serial number of the unit when ordering replacement parts.

ELECTRICAL:

- | | |
|-------------------|----------------------------|
| Capacitors | Temperature Limit Switches |
| Compressors | Thermostats |
| Contactors | Time Delay Relays |
| Pressure Switches | Transformers |
| Relays | |

MOTORS:

- | | |
|--------------|-----------|
| Blower Motor | Fan Motor |
|--------------|-----------|

COMPONENTS:

- | | |
|------------------|---------------|
| Blower Assembly | Fan Grille |
| Cabinet Panels | Filter/Driers |
| Expansion Valves | |

FIGURES & TABLES

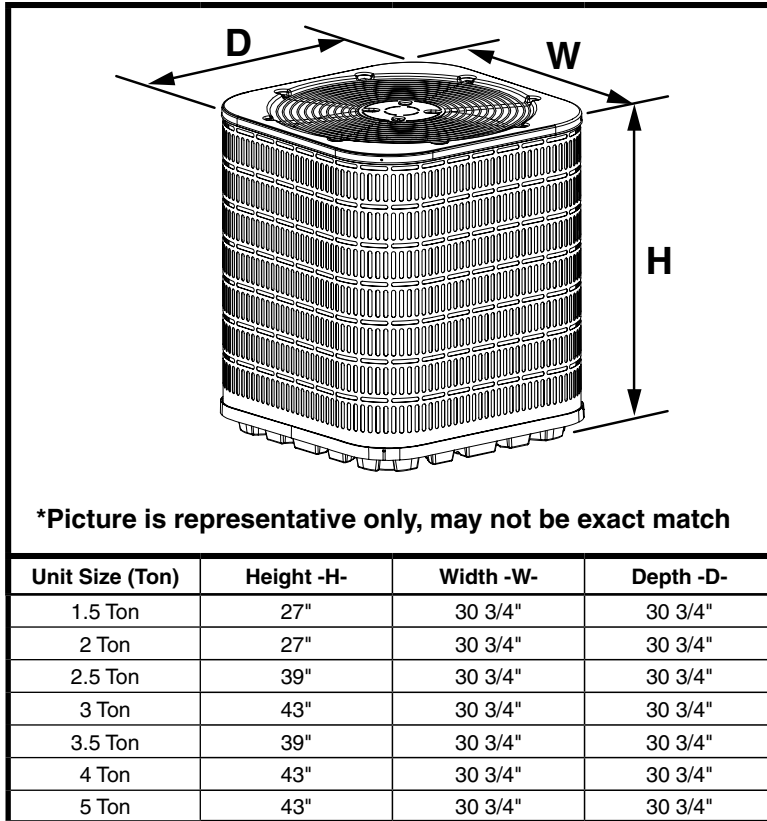


Figure 4. Unit Dimensions

REFFRIGERANT CHARGING CHARTS

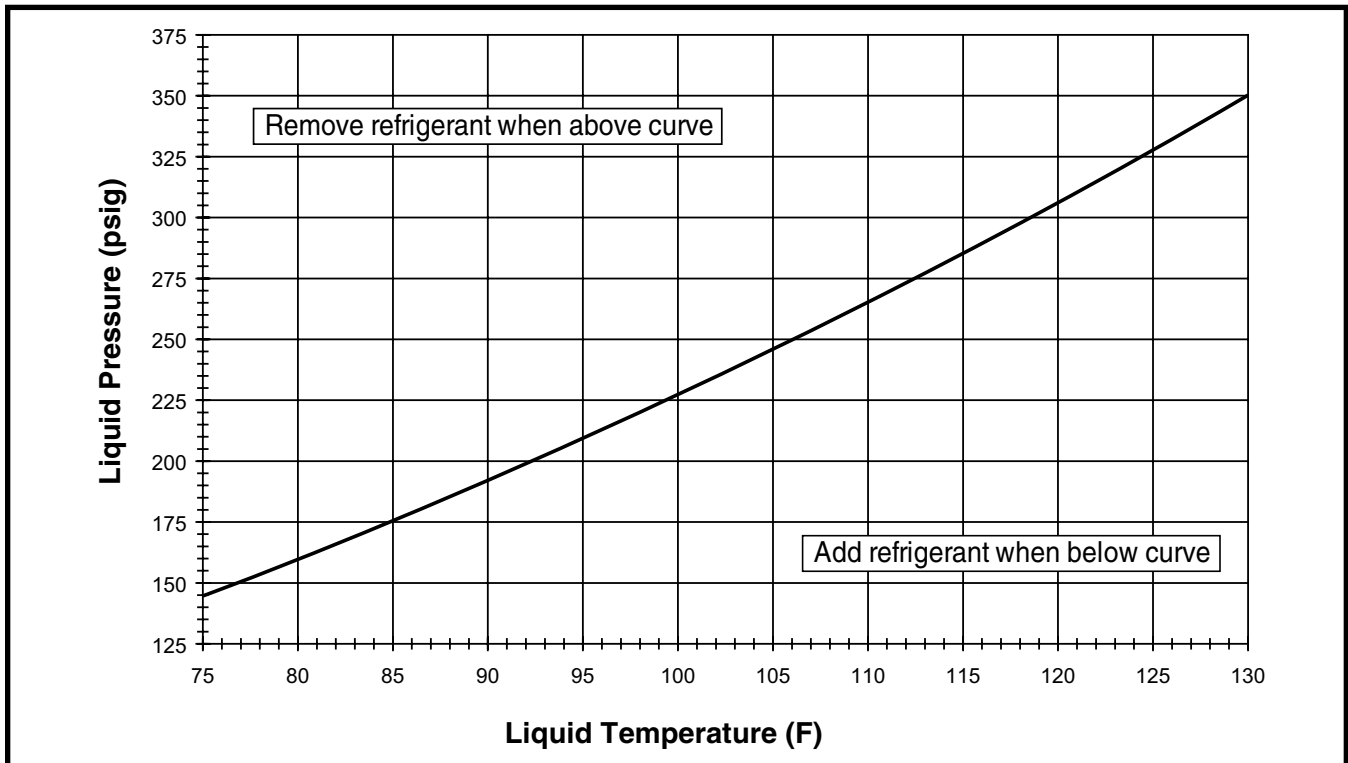


Figure 5. Charging Chart for 1.5 Ton Units

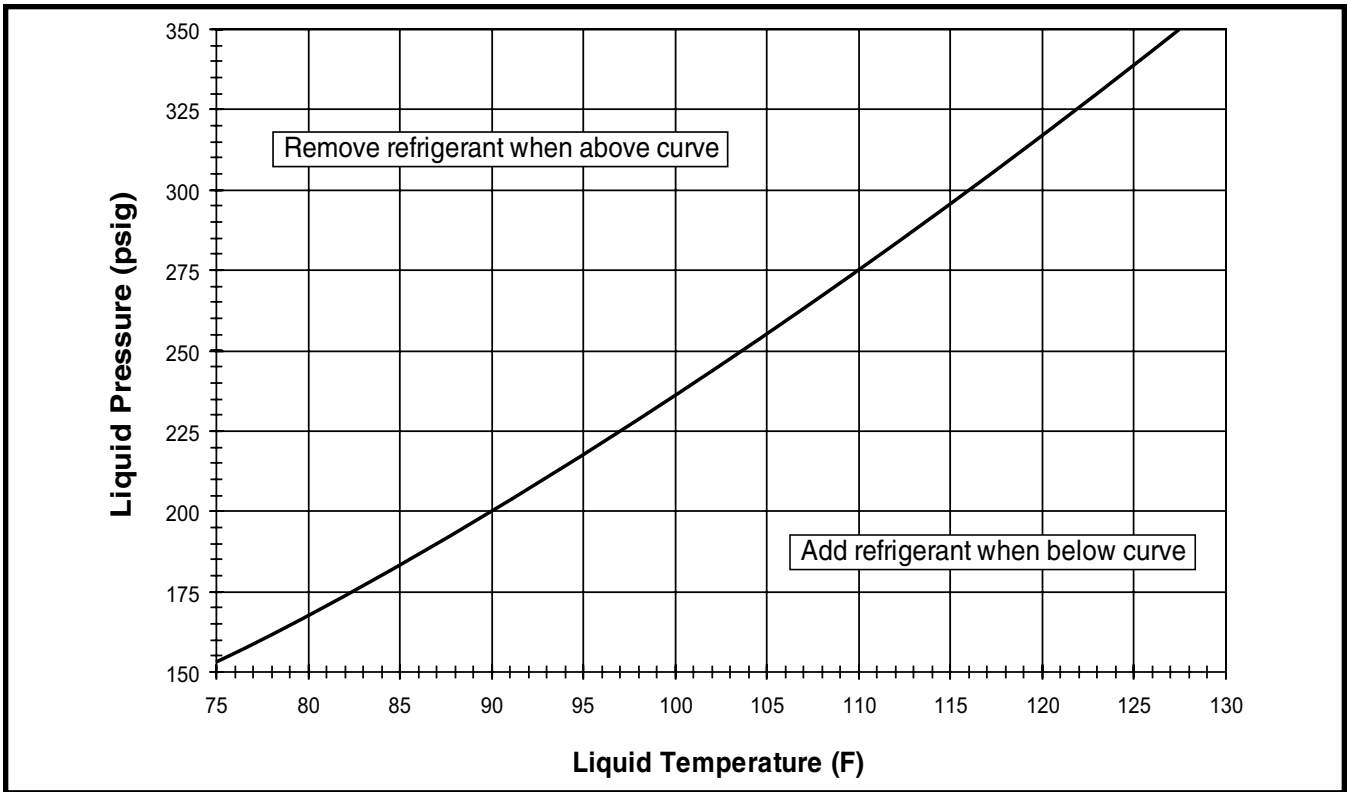


Figure 6. Charging Chart for 2 Ton Units

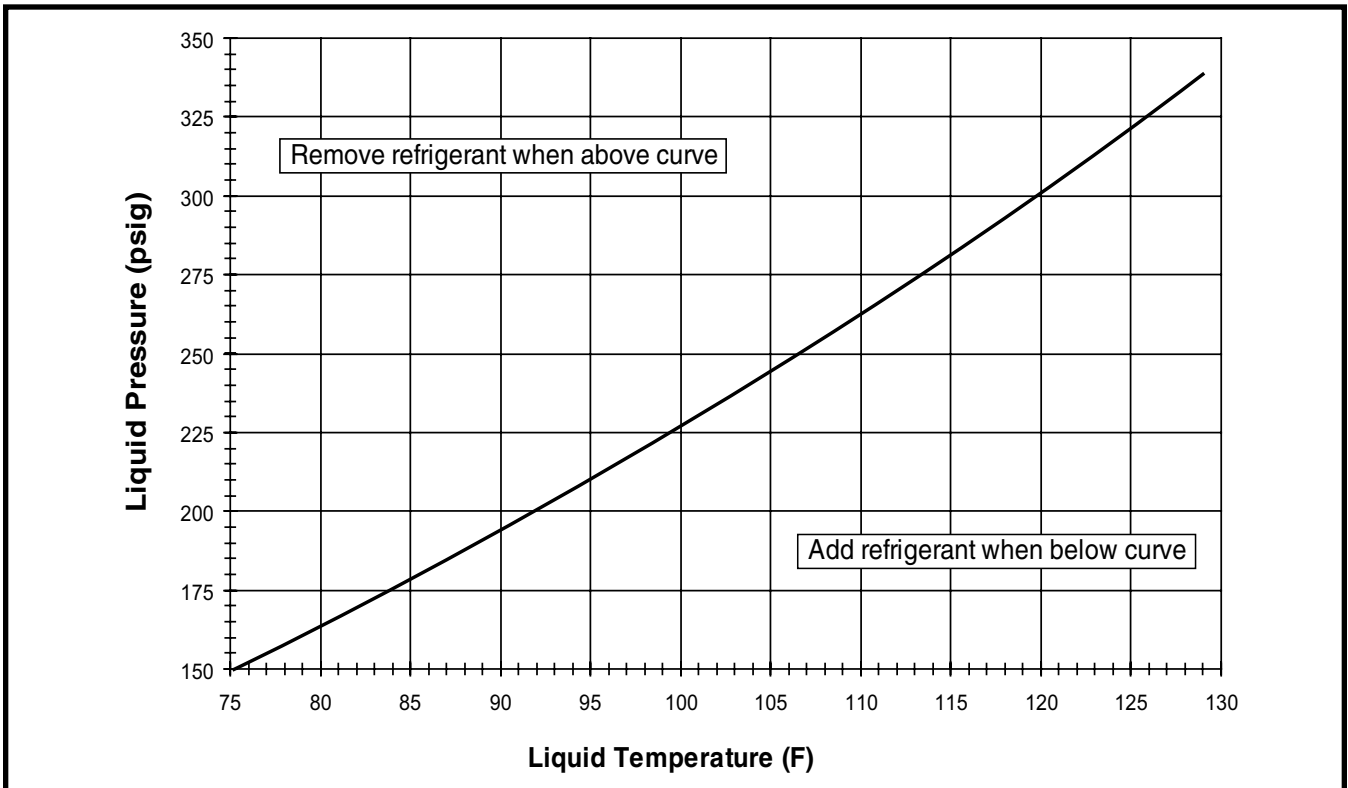


Figure 7. Charging Chart for 2.5 Ton Units

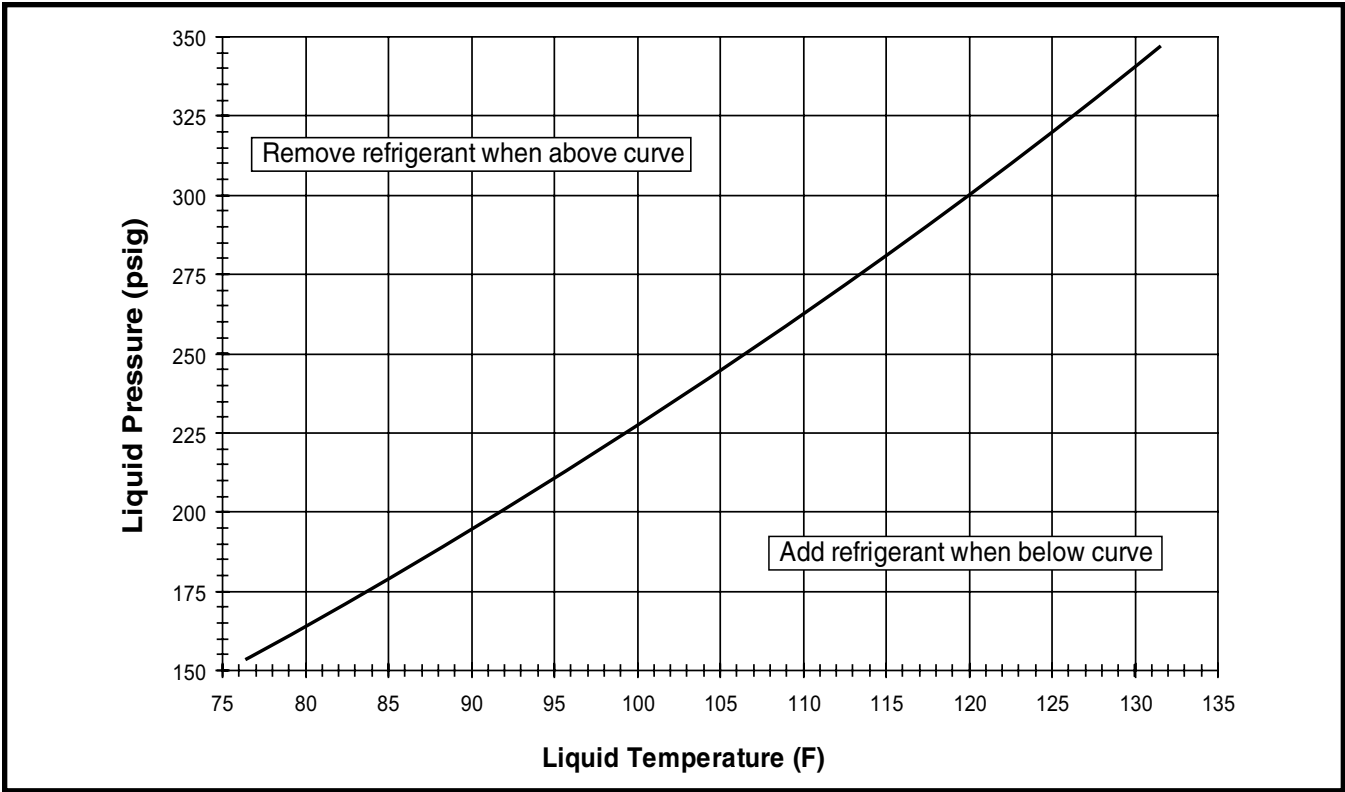


Figure 8. Charging Chart for 3 Ton Units

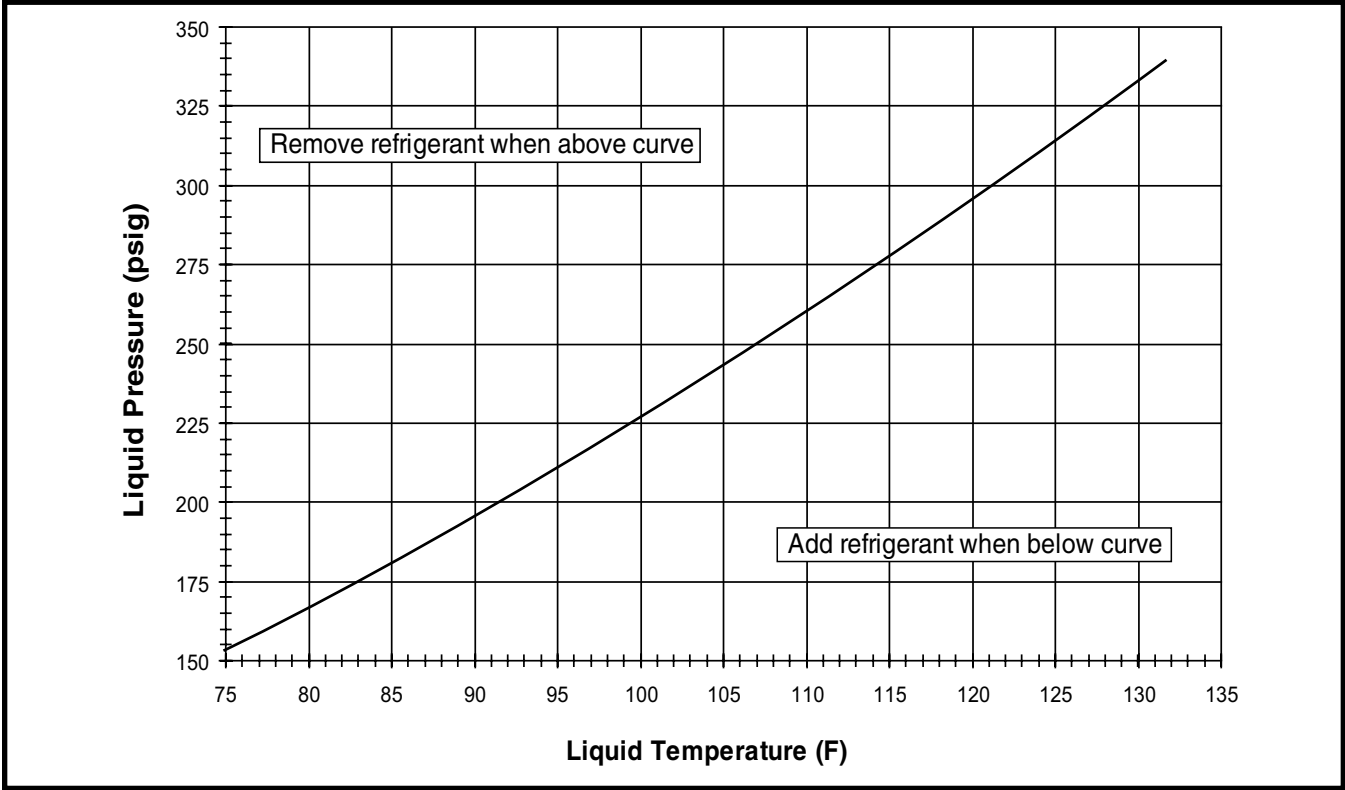


Figure 9. Charging Chart for 3.5 Ton Units

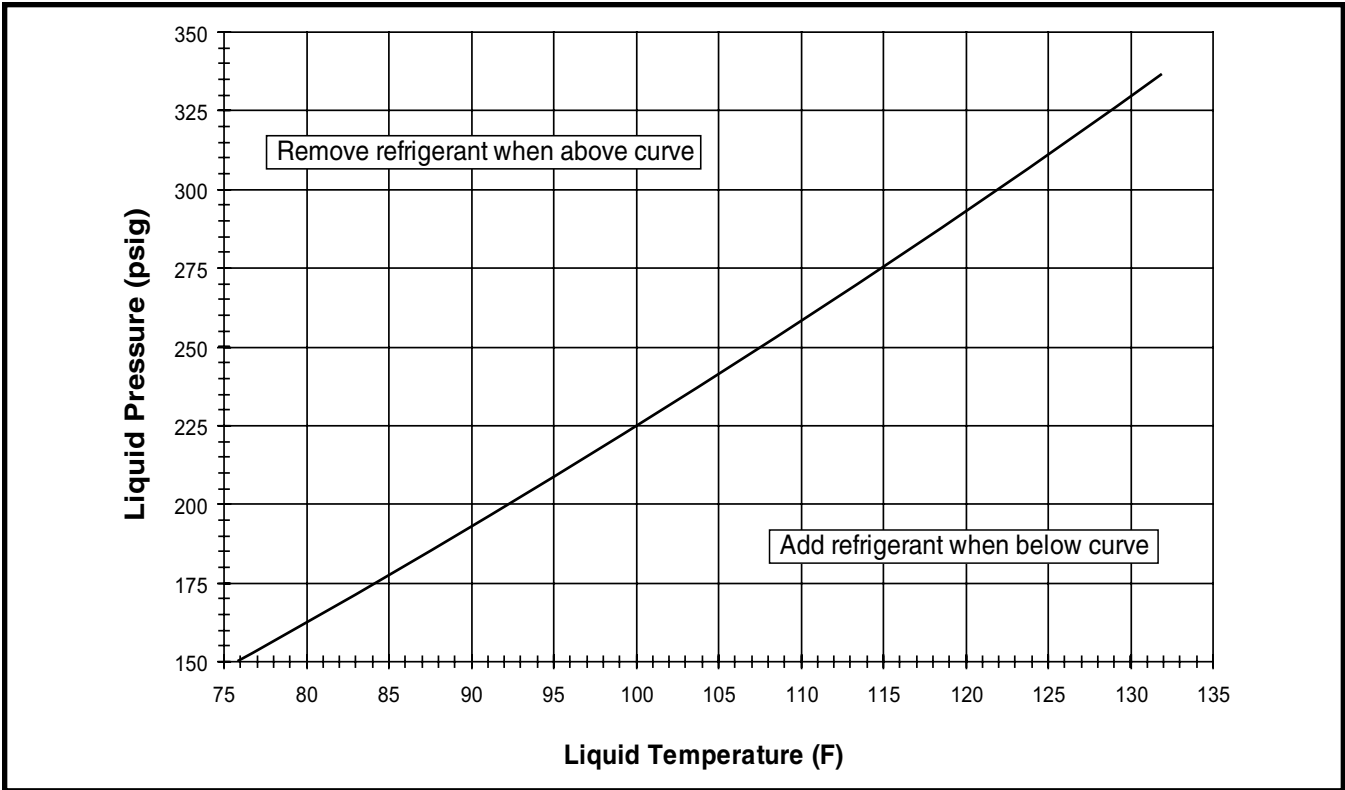


Figure 10. Charging Chart for 4 Ton Units

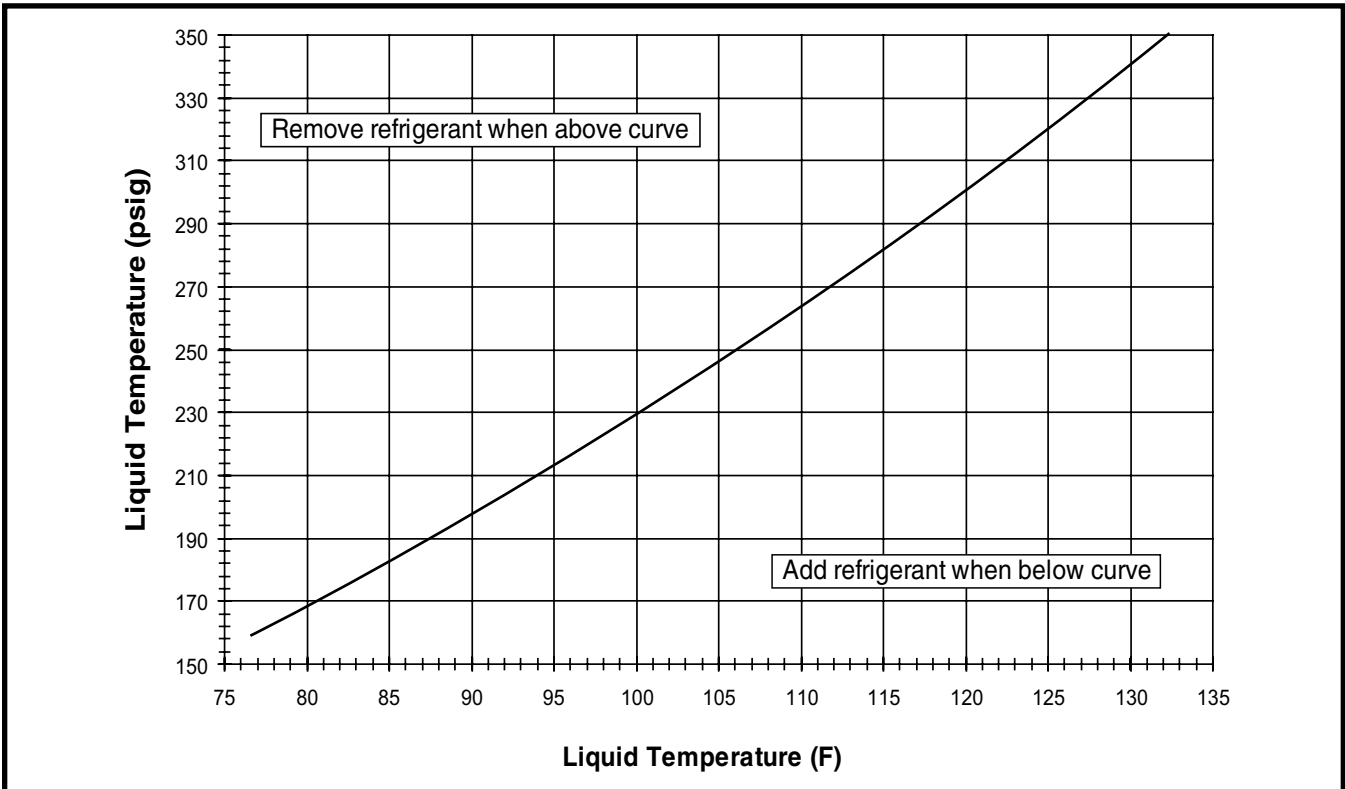



Figure 11. Charging Chart for 5 Ton Units

REFRIGERANT CHARGING TABLES - COOLING MODE

 Shaded boxes indicate flooded conditions.

 Rated design values. The suction pressure will vary from design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

1. All pressures are listed in psig and all temperatures in ° F
2. Discharge temperatures greater than charted values indicate an undercharged system.
3. In Cooling Mode suction pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.
4. In Heating Mode, charge should be weighed in. It is strongly recommended to verify charge in Cooling Mode at ambient above 70°F.

Suct. Press.	OUTDOOR TEMPERATURE (° F)															
	70		75		80		85		90		95		100		105	
	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.
73	140	135														
75	143	140	155	137												
77	145	146	157	143	170	140										
79	147	150	160	148	172	145	185	142								
81	151	153	162	152	175	150	187	147	200	144						
83			166	155	177	154	189	151	202	149	215	147				
85					181	157	192	155	204	153	217	151	230	149		
87							196	159	207	157	219	155	232	153	244	151
89							199	163	211	161	222	159	234	157	246	154
91									214	165	226	163	237	161	248	158
93											229	167	241	165	252	163
95													244	169	256	167
97															259	172
99																

Table 4. Cooling Mode Charging Table for 1.5 Ton Units

Suct. Press.	OUTDOOR TEMPERATURE (° F)															
	70		75		80		85		90		95		100		105	
	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.
71	149	137														
73	151	143	164	141												
75	154	148	166	146	176	145										
77	156	153	169	151	181	150	194	149								
79	160	155	171	156	184	155	196	153	209	152						
81			175	159	186	159	198	158	211	157	224	156				
83					190	162	202	162	213	161	226	160	239	160		
85							205	166	217	165	228	164	241	164	254	163
87							208	169	220	169	232	168	243	168	256	167
89									224	173	235	173	247	172	258	171
91											239	177	250	176	262	175
93													254	180	265	180
95															269	184
97																

Table 5. Cooling Mode Charging Table for 2 Ton Units

REFRIGERANT CHARGING TABLES - COOLING MODE

■ Shaded boxes indicate flooded conditions.

□ Rated design values. The suction pressure will vary from design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

1. All pressures are listed in psig and all temperatures in ° F
2. Discharge temperatures greater than charted values indicate an undercharged system.
3. In Cooling Mode suction pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.
4. In Heating Mode, charge should be weighed in. It is strongly recommended to verify charge in Cooling Mode at ambient above 70°F.

Suct. Press.	OUTDOOR TEMPERATURE (° F)															
	70		75		80		85		90		95		100		105	
	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.
70	143	136														
72	145	141	158	139												
74	147	147	160	144	173	142										
76	150	152	162	149	175	147	188	145								
78	153	155	165	154	177	152	190	149	202	147						
80			168	157	180	156	192	154	204	152	217	150				
82					183	159	195	158	207	156	219	154	232	152		
84							198	161	210	160	221	158	234	156	247	154
86							202	165	213	164	225	162	236	160	249	158
88									217	168	228	166	240	164	251	162
90											232	170	243	169	255	167
92													247	173	258	171
94															261	176
96																


Table 6. Cooling Mode Charging Table for 2.5 Ton Units

Suct. Press.	OUTDOOR TEMPERATURE (° F)															
	70		75		80		85		90		95		100		105	
	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.
71	148	144														
73	150	149	164	147												
75	152	155	166	152	179	149										
77	155	158	168	157	181	154	195	152								
79	159	161	171	161	183	159	197	156	210	154						
81			174	164	187	163	199	161	212	158	226	156				
83					190	166	202	165	214	163	228	161	241	159		
85							206	168	218	167	230	165	243	163	257	161
87							209	172	221	171	233	169	245	167	259	165
89									225	174	237	173	249	171	261	169
91											240	177	252	175	264	173
93													256	180	268	178
95															271	182
97																

Table 7. Cooling Mode Charging Table for 3 Ton Units

REFRIGERANT CHARGING TABLES - COOLING MODE

 Shaded boxes indicate flooded conditions.

 Rated design values. The suction pressure will vary from design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

1. All pressures are listed in psig and all temperatures in ° F
2. Discharge temperatures greater than charted values indicate an undercharged system.
3. In Cooling Mode suction pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.
4. In Heating Mode, charge should be weighed in. It is strongly recommended to verify charge in Cooling Mode at ambient above 70°F.

Suct. Press.	OUTDOOR TEMPERATURE (° F)															
	70		75		80		85		90		95		100		105	
	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.
71	144	150														
73	146	155	159	152												
75	148	161	161	157	175	153										
77	152	163	164	162	177	158	191	154								
79	155	165	167	164	179	163	193	159	206	156						
81			171	167	183	166	195	164	208	160	222	157				
83					186	169	198	167	210	165	224	162	237	159		
85							202	171	214	169	226	166	239	163	253	160
87							205	174	217	172	229	170	241	167	255	164
89									221	176	233	174	245	171	257	168
91											236	178	248	175	260	172
93													252	180	264	177
95															267	181
97																

Table 8. Cooling Mode Charging Table for 3.5 Ton Units

Suct. Press.	OUTDOOR TEMPERATURE (° F)															
	70		75		80		85		90		95		100		105	
	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.
69	132	130														
71	134	136	149	135												
73	136	141	151	140	166	140										
75	137	149	153	145	168	145	183	145								
77	140	152	154	152	170	150	185	149	200	149						
79			158	155	172	155	188	154	203	153	218	153				
81					176	158	190	158	205	158	220	157	235	157		
83							193	162	207	162	222	162	237	161	252	161
85							197	166	211	166	225	166	239	165	254	165
87									214	170	229	170	243	170	256	169
89											232	174	246	174	260	174
91													250	178	264	178
93															267	183
95																

Table 9. Cooling Mode Charging Table for 4 Ton Units

REFRIGERANT CHARGING TABLES - COOLING MODE

■ ■ Shaded boxes indicate flooded conditions.

□ Rated design values. The suction pressure will vary from design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

1. All pressures are listed in psig and all temperatures in ° F
2. Discharge temperatures greater than charted values indicate an undercharged system.
3. In Cooling Mode suction pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.
4. In Heating Mode, charge should be weighed in. It is strongly recommended to verify charge in Cooling Mode at ambient above 70°F.

Suct. Press.	OUTDOOR TEMPERATURE (° F)															
	70		75		80		85		90		95		100		105	
	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.	Liq. Press.	Dis. Temp.
66	143	146														
68	145	152	159	149												
70	147	157	161	154	175	152										
72	148	164	163	159	178	157	192	155								
74	152	167	165	165	180	162	194	159	208	157						
76			169	168	182	167	196	164	210	161	224	159				
78					185	170	198	168	212	166	226	164	240	161		
80							202	172	215	170	228	168	242	165	256	163
82							205	175	218	174	232	172	244	169	258	167
84									222	178	235	176	248	174	260	171
86											238	180	252	178	265	176
88													255	182	268	180
90															271	185
92																

Table 10. Cooling Mode Charging Table for 5 Ton Units

REFRIGERANT CHARGING TABLES - HEATING MODE

Shaded boxes indicate flooded conditions.

Rated design values. Suction pressure will vary from design value if outdoor air flow, entering dry bulb, or entering wet bulb temperatures vary.

1. All pressures are listed psig and all temperatures in °F

2. Discharge temperatures greater than charted values indicate an undercharged system.

OUTDOOR TEMPERATURE (° F)																				
0		10			20			30			40			50			60			
		Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.		
13	111	113	23	132	120	32	152	127	41	173	134	51	181	149	61	201	172	70	221	195
14	118	111	24	138	118	33	157	125	42	176	132	52	188	146	62	208	167	71	228	188
15	125	109	25	144	116	34	162	123	43	180	130	53	195	143	63	215	163	72	235	182
16	132	107	26	149	114	35	167	121	44	184	128	54	202	140	64	222	158	73	242	176
17	139	105	27	155	112	36	171	119	45	187	126	55	209	138	65	229	154	74	249	170
18	146	103	28	161	110	37	176	117	46	191	124	56	216	135	66	236	149	75	256	164
19	153	101	29	167	108	38	181	115	47	195	122	57	223	132	67	243	145	76	263	158


Table 11. Heating Mode Charging Table for 1.5 Ton Units

OUTDOOR TEMPERATURE (° F)																				
0		10			20			30			40			50			60			
		Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.		
12	120	107	21	135	119	29	150	131	37	165	142	46	169	158	56	184	177	66	200	196
13	127	105	22	141	117	30	155	129	38	169	140	47	176	155	57	191	172	67	207	189
14	134	103	23	147	115	31	160	127	39	173	138	48	183	152	58	198	168	68	214	183
15	141	101	24	153	113	32	165	125	40	176	136	49	190	149	59	205	163	69	221	177
16	148	99	25	159	111	33	169	123	41	180	134	50	197	146	60	212	159	70	228	171
17	155	97	26	165	109	34	174	121	42	184	132	51	204	144	61	219	154	71	235	165
18	162	95	27	171	107	35	179	119	43	187	130	52	211	141	62	226	150	72	242	159

Table 12. Heating Mode Charging Table for 2 Ton Units

REFRIGERANT CHARGING TABLES - HEATING MODE

 Shaded boxes indicate flooded conditions.

 Rated design values. Suction pressure will vary from design value if outdoor air flow, entering dry bulb, or entering wet bulb temperatures vary.

1. All pressures are listed psig and all temperatures in °F

2. Discharge temperatures greater than charted values indicate an undercharged system.

OUTDOOR TEMPERATURE (° F)																				
0		10			20			30			40			50			60			
Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.
13	115	110	22	137	119	30	159	129	39	181	138	48	191	153	56	211	174	65	230	196
14	122	108	23	143	117	31	164	127	40	185	136	49	198	150	57	218	170	66	237	190
15	129	106	24	149	115	32	169	125	41	189	134	50	205	147	58	225	165	67	244	183
16	136	104	25	155	113	33	174	123	42	192	132	51	212	145	59	232	161	68	251	177
17	143	102	26	161	111	34	179	121	43	196	130	52	219	142	60	239	157	69	258	171
18	150	100	27	167	109	35	183	119	44	200	128	53	226	139	61	246	152	70	265	165
19	157	98	28	173	107	36	188	117	45	203	126	54	233	136	62	253	148	71	272	159


Table 13. Heating Mode Charging Table for 2.5 Ton Units

OUTDOOR TEMPERATURE (° F)																				
0		10			20			30			40			50			60			
Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.
13	116	120	22	136	125	31	156	130	40	176	136	49	183	151	59	201	175	68	218	199
14	123	118	23	142	123	32	161	128	41	180	134	50	190	148	60	208	170	69	225	193
15	130	116	24	148	121	33	166	126	42	183	132	51	197	145	61	215	166	70	232	187
16	137	114	25	154	119	34	171	124	43	187	130	52	204	142	62	222	161	71	239	181
17	144	112	26	160	117	35	175	122	44	191	128	53	211	139	63	229	157	72	246	174
18	151	110	27	166	115	36	180	120	45	194	126	54	218	136	64	236	152	73	253	168
19	158	108	28	172	113	37	185	118	46	198	124	55	225	134	65	243	148	74	260	162

Table 14. Heating Mode Charging Table 3 Ton Units

REFRIGERANT CHARGING TABLES - HEATING MODE

 Shaded boxes indicate flooded conditions.

 Rated design values. Suction pressure will vary from design value if outdoor air flow, entering dry bulb, or entering wet bulb temperatures vary.

1. All pressures are listed psig and all temperatures in °F

2. Discharge temperatures greater than charted values indicate an undercharged system.

OUTDOOR TEMPERATURE (° F)																				
0			10			20			30			40			50			60		
Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.
23	129	118	27	140	124	31	151	130	35	162	136	44	173	149	58	206	168	72	239	187
24	136	116	28	146	122	32	156	128	36	166	134	45	180	146	59	213	163	73	246	181
25	143	114	29	152	120	33	161	126	37	169	132	46	187	143	60	220	159	74	253	175
26	150	112	30	158	118	34	165	124	38	173	130	47	194	140	61	227	154	75	260	168
27	157	110	31	163	116	35	170	122	39	177	128	48	201	137	62	234	150	76	267	162
28	164	108	32	169	114	36	175	120	40	180	126	49	208	134	63	241	145	77	274	156
29	171	106	33	175	112	37	180	118	41	184	124	50	215	132	64	248	141	78	281	150


Table 15. Heating Mode Charging Table for 3.5 Ton Units

OUTDOOR TEMPERATURE (° F)																				
0			10			20			30			40			50			60		
Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.	Suc. Press.	Liquid Press.	Disch. Temp.
13	114	115	21	132	121	30	150	127	38	168	133	47	175	150	57	194	178	66	213	205
14	121	113	22	138	119	31	155	125	39	172	131	48	182	147	58	201	173	67	220	199
15	128	111	23	144	117	32	160	123	40	175	129	49	189	144	59	208	169	68	227	193
16	135	109	24	150	115	33	165	121	41	179	127	50	196	142	60	215	164	69	234	187
17	142	107	25	156	113	34	169	119	42	183	125	51	203	139	61	222	160	70	241	180
18	149	105	26	162	111	35	174	117	43	186	123	52	210	136	62	229	155	71	248	174
19	156	103	27	168	109	36	179	115	44	190	121	53	217	133	63	236	151	72	255	168

Table 16. Heating Mode Charging Table for 4 Ton Units

REFRIGERANT CHARGING TABLES - HEATING MODE

 Shaded boxes indicate flooded conditions.

 Rated design values. Suction pressure will vary from design value if outdoor air flow, entering dry bulb, or entering wet bulb temperatures vary.

1. All pressures are listed psig and all temperatures in °F

2. Discharge temperatures greater than charted values indicate an undercharged system.

		OUTDOOR TEMPERATURE (° F)																							
		0			10			20			30			40			50			60					
Suc. Press.	Disch. Temp.	Liquid Press.	Suc. Press.	Disch. Temp.	Liquid Press.	Suc. Press.	Disch. Temp.	Liquid Press.	Suc. Press.	Disch. Temp.	Liquid Press.	Suc. Press.	Disch. Temp.	Liquid Press.	Suc. Press.	Disch. Temp.	Liquid Press.	Suc. Press.	Disch. Temp.	Liquid Press.	Suc. Press.	Disch. Temp.			
		12	141	114	20	141	145	28	168	149	36	195	153	45	209	166	55	236	189	65	262	212	236	189	65
13	139	121	21	147	143	29	173	147	37	198	151	46	216	163	56	243	184	66	269	206	243	184	66	269	206
14	137	128	22	153	141	30	177	145	38	202	149	47	223	160	57	250	180	67	276	200	250	180	67	276	200
15	135	135	23	159	139	31	182	143	39	206	147	48	230	158	58	257	175	68	283	193	257	175	68	283	193
16	133	142	24	165	137	32	187	141	40	209	145	49	237	155	59	264	171	69	290	187	264	171	69	290	187
17	131	149	25	171	135	33	192	139	41	213	143	50	244	152	60	271	166	70	297	181	271	166	70	297	181
18	129	156	26	176	133	34	196	137	42	217	141	51	251	149	61	278	162	71	304	175	278	162	71	304	175

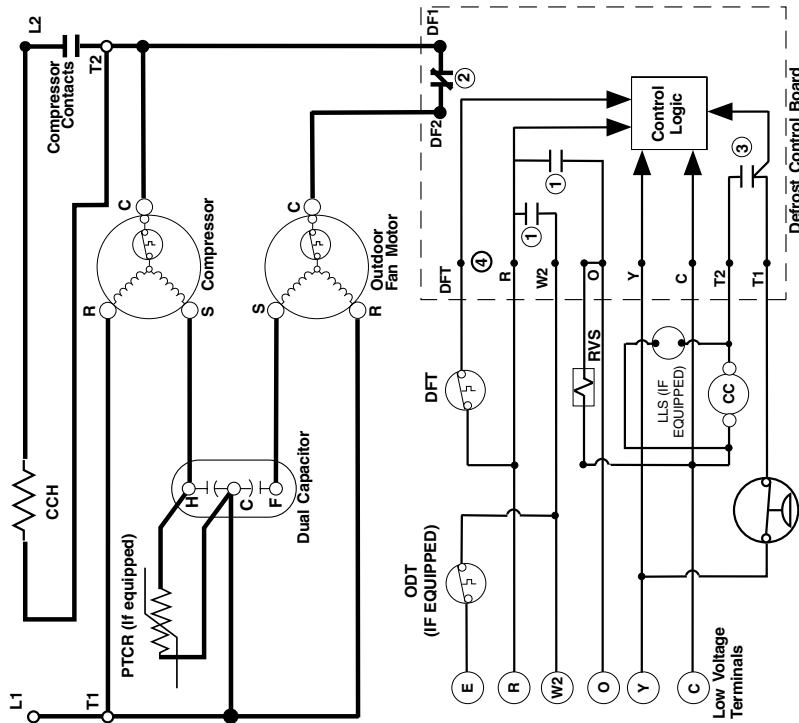
Table 17. Heating Mode Charging Table for 5 Ton Units

WIRING DIAGRAM

Split System Heat Pump (Outdoor Section)

NOTES:

1. Disconnect all power before servicing.
2. For supply connections use copper conductors only.
3. Not suitable on systems that exceed 150 volts to ground.
4. For replacement wires use conductors suitable for 105 C.
5. For ampacities and overcurrent protection, see unit rating plate.
6. Connect to 24 vac/40va/class 2 circuit. See furnace/air handler instructions for control circuit and optional relay/transformer kits.
7. DO NOT install a Hard Start Kit on a model with a PTCR installed.



Defrost Board Operation:

- ① Closing during defrost. Rating: 1 Amp. Max.
- ② Opens during defrost. Rating: 2 HP at 230V ac. Max.
- ③ Closes when "Y" is on. Opens when "Y" is off.
- ④ Provides "off" delay time of 5 min. when "Y" opens.

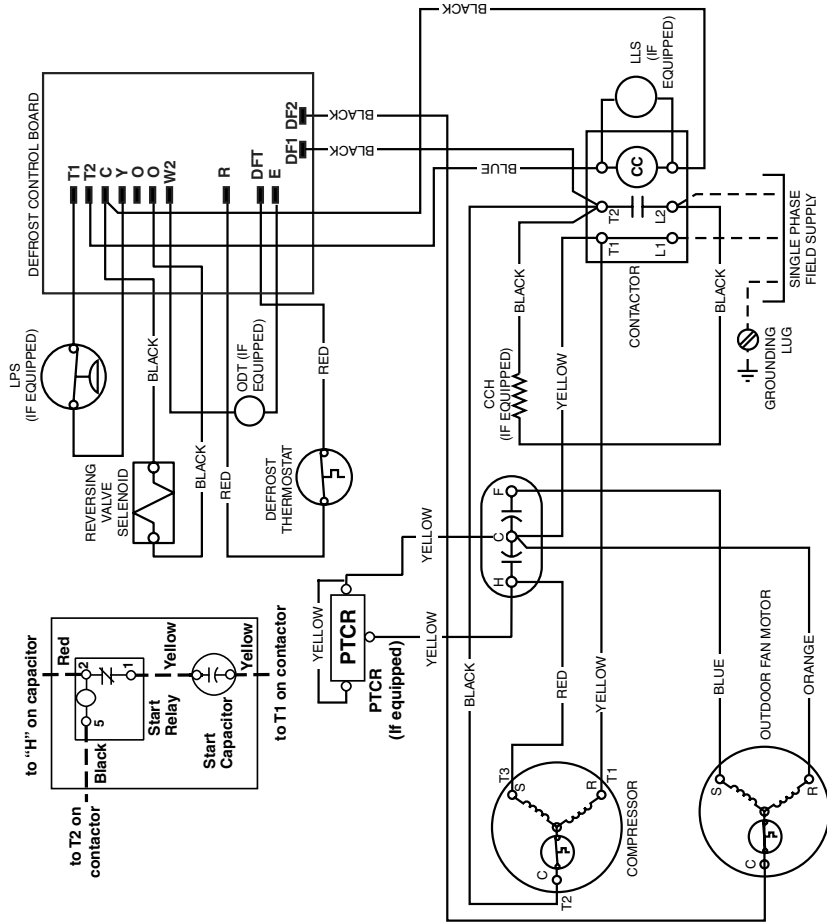
With DFT closed and "Y" closed, compressor run time is accumulated. Opening of DFT during defrost or internal period resets the interval to 0.

PTCR - Positive Temperature Coefficient Resistor

Single Phase

1. Couper le courant avant de faire leretien.
2. Employez uniquement des conducteurs en cuivre.
3. Ne convient pas aux installations de plus de 150 volt a la terre.

OPTIONAL HARD START KIT



Legend

Field Wiring	---
Factory Wiring	---
Low Voltage	---
High Voltage	---

CC - Contactor Coil
 CCH - Crankcase Heater (if Equipped)
 DFT - Defrost Thermostat
 LLS - Liquid Line Solenoid (if Equipped)
 RVS - Reversing Valve Solenoid
 ODT - Outdoor Thermostat (if Equipped)
 LPS - Low Pressure Switch (if Equipped)



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Figure 12. Wiring Diagram

UNIT SIZE (TON)		1 TON	2 TON	2.5 TON	3 TON	3.5 TON	4 TON	5 TON	
Electrical Data	Volts-Cycles-Phase (1)	208/230-60-1							
	Total Amps	9.9	11.8	14.6	15.7	17.5	19.7	26.4	
	Delay Fuse Max. (2)	20	25	30	30	35	40	50	
	Min. Circuit Ampacity	12.1	14.5	18.0	19.4	21.6	24.3	32.6	
Component Data	Coil	Area	15.17	15.17	22.88	25.42	22.88	25.42	25.42
		Rows-FPI	1 - 18	1 - 18	1 - 20	1 - 20	2 - 16	2 - 16	2 - 16
		Tube Dia	3/8" O.D.						
	Fan Motor	Type	PSC						
		Amps	0.91	0.91	1.00	1.00	1.00	1.4	1.4
		HP	1/8	1/8	1/4	1/4	1/4	1/4	1/4
	Fan Blade	Dia-# Blades	24" - 3						
		SCFM	2370	2370	3000	3000	3000	4000	4000
	Compressor Data	RLA	8.3	10.8	13.4	15.3	19.2	19.8	25.3
		LRA	40.3	56	68	87	112	105	146
Refrigerant suction line: Length/O. Liquid Line: All Lengths - 3/8" O.D.	0-24 ft.	3/4"	3/4"	3/4"	3/4"	7/8"	7/8"	7/8"	
	25-39 ft.	3/4"	3/4"	3/4"	7/8" (3)	7/8"	7/8"	1-1/8" (4)	
	40-75 ft.	3/4"	3/4"	7/8" (3)	7/8" (3)	7/8"	1-1/8" (4)	1-1/8" (4)	
R-22 Refrigerant charge (in ounces): (Outdoor unit, Indoor Unit 15' Line Set)		93	96	144	155	248	248	268	
Approximate Weight (lbs.)	Net	166	171	190	204	252	276	285	
	Ship	175	180	200	215	265	290	300	

- (1) Operating Voltage Range: 198v min. - 253v max.
(2) HACR type circuit breakers may be used.
(3) Requires 7/8" to 3/4" reducer from line to unit.
(4) Requires 1 1/8" to 7/8" reducer from line to unit.

Table 18. Electrical Specifications & Physical Data

INSTALLATION / PERFORMANCE CHECK LIST

INSTALLATION ADDRESS:		
CITY _____	STATE _____	
UNIT MODEL # _____		
UNIT SERIAL # _____		
Unit Installed Minimum clearances per Figure 1 (page 5)?	YES	NO
INSTALLER NAME:		
CITY _____	STATE _____	
Has the owner's information been reviewed with the customer?	YES	NO
Has the Literature Package been left with the unit?	YES	NO

REFRIGERATION SYSTEM		
Was unit given 24 hr warm up period for crankcase heaters?	YES	NO
Stage-1 Liquid Pressure (high side) _____		
Stage-1 Suction Pressure (low side) _____		

ELECTRICAL SYSTEM		
Electrical connections tight?	YES	NO
Line voltage polarity correct?	YES	NO
Rated Voltage: _____ VOLTS		
L1-L2 Volts: _____ VOLTS		
L1-L3 Volts: _____ VOLTS		
L2-L3 Volts: _____ VOLTS		
Avg. Volts: _____ VOLTS		
Max. deviation of voltage from avg. volts: _____ VOLTS		
% Volt imbalance: _____ VOLTS		
Blower Motor HP: _____ Sheave Setting _____ # Turns		
Has the thermostat been calibrated?	YES	NO
Is the thermostat level?	YES	NO
Is the heat anticipator setting correct? (If Applicable)	YES	NO



ATTENTION INSTALLERS:

It is your responsibility to know this product better than your customer. This includes being able to install the product according to strict safety guidelines and instructing the customer on how to operate and maintain the equipment for the life of the product. Safety should always be the deciding factor when installing this product and using common sense plays an important role as well. Pay attention to all safety warnings and any other special notes highlighted in the manual. Improper installation of the furnace or failure to follow safety warnings could result in serious injury, death, or property damage.

These instructions are primarily intended to assist qualified individuals experienced in the proper installation of this appliance. Some local codes require licensed installation/service personnel for this type of equipment. Please read all instructions carefully before starting the installation. Return these instructions to the customer's package for future reference.

HEAT CONTROLLER, INC.



Specifications & illustrations subject to change without notice or incurring obligations.
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