4-5 TON SERIES - FOR EXPORT ONLY

10 SEER

USER'S MANUAL / INSTALLATION INSTRUCTIONS

SPLIT SYSTEM AIR CONDITIONER - SINGLE & 3 PHASE, R-22

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 your 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

WARRANTY INFORMATION

A warranty certificate with full details is included with the air conditioner. 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 air conditioner.
- Resetting circuit breakers or other switches.
- Adjusting or calibrating of thermostat.

INSTALLER INFORMATION

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.

OPERATING INSTRUCTIONS

NOTE: Thermostat styles vary. Some models may not include the AUTO mode and others will have the AUTO in place of the HEAT and COOL. Others may include all three. 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 optional heating equipment (furnace or electric heat) will cycle on & off to maintain the indoor temperature at the desired heating level.

Operating the AC for Automatic Cooling & Heating

1. Set the thermostat system mode to AUTO and the thermostat fan mode to AUTO. See Figure 1.
2. Set the thermostat temperature selector to the desired temperature level. The thermostat will maintain the desired temperature level by switching between either the outdoor cooling unit or the indoor heating unit (furnace or electric heat) automatically.

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 Air conditioner 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.

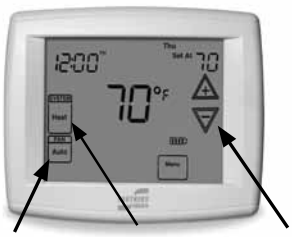


Figure 1. Digital Thermostat

AIR CONDITIONER MAINTENANCE

Proper maintenance is most important to achieve the best performance from the appliance and should be performed frequently at the beginning of each air conditioning season.

⚠ WARNING:

This air conditioner contains liquid and gaseous refrigerant under pressure. Installation and servicing should only be attempted by qualified, trained personnel thoroughly familiar with the equipment and safe responsible refrigerant handling procedures. Failure to comply with this warning could result in equipment damage, personal injury, or death.

- Keep the outdoor unit clean. Hose off periodically and keep unit fins clear of leaves and grass clippings.
- Keep the outdoor unit clear of obstructions. DO NOT obstruct airflow with tall plants or shrubs. DO NOT store gasoline or other flammable materials on or near the outdoor unit.
- Never operate the appliance without a filter installed in the return air duct. Inspect filters frequently and replace when necessary with filter of same dimensional size.

TROUBLESHOOTING

- Check the thermostat setting. Make sure the system mode and temperature settings are correct.
- Check the electrical panel for tripped circuit breakers.
- Check the filters for dust accumulation.
- Check the outdoor unit and make sure it is clean and not covered with grass or leaves.

INSTALLER INFORMATION

IMPORTANT SAFETY INFORMATION

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 installation, service, adjustment, or maintenance may cause explosion, fire, electrical shock or other hazardous conditions which may result in personal injury or property damage.

⚠ WARNING:

Split system air conditioners leave 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 for special installation requirements.
- All electrical wiring must be completed in accordance with local, state and national codes and regulations that take precedence.
- 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 of equipment.
- Fully annealed, refrigerant grade copper tubing should be used when installing the system. Refrigerant suction line tubing should be fully insulated.
- This unit is designed for outdoor installations only and should be located in a position as shown 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.
- Refrigerant and electrical line should be routed through suitably waterproofed openings to prevent water from leaking into the structure.

AIR CONDITIONER INSTALLATION

General Information

This 4-5 ton air conditioner is designed only for outdoor rooftop or ground level installations. The unit has been tested and certified by AHRI for capacity and efficiency 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.

√ Always install a unit disconnect switch within sight of the unit or in accordance with local codes.

√ 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. Claims for damage 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 Air Conditioner

- Survey the job site to determine the best location for mounting the outdoor unit.
- 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.
- See Figure 3 & Table 2 (page 10) for unit dimensions.

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 (Figure 2) must be provided and be separate from the building foundation. The pad must be level and strong enough to support the unit's weight. The slab height must be a minimum of 2" (5 cm) above grade and with adequate drainage.

Rooftop

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

- Units may be installed on Class A, B, or C roof covering material.
- Secure optional mounting pad or frame to roof using acceptable mechanical methods per local codes.
- 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. The support must be built to raise the unit 6" above the roof, must be made of weather resistant materials, and installed prior to unit installation.

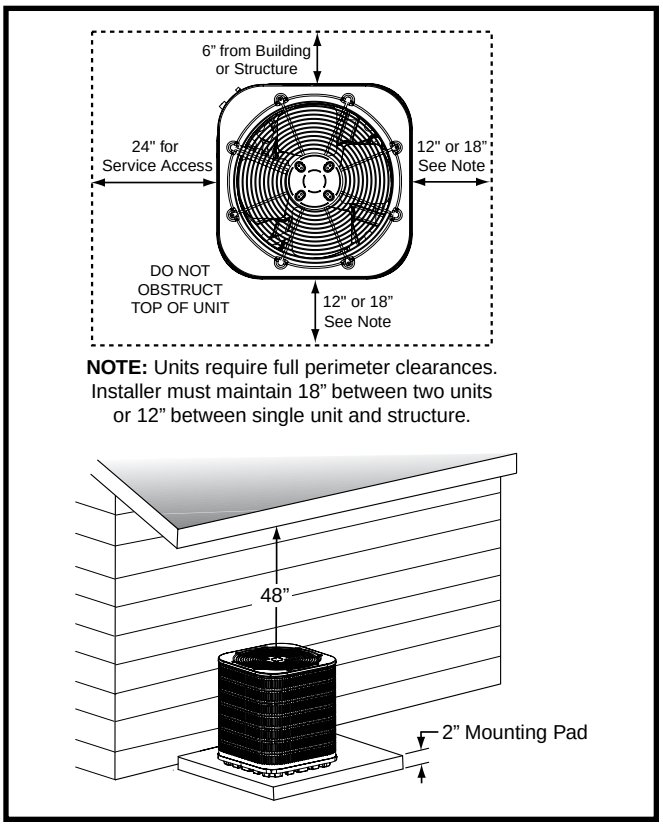


Figure 2. Clearance Requirements

Connecting Refrigerant Tubing Between the Indoor & Outdoor Unit

⚠ CAUTION:

This system uses R-22 refrigerant with mineral 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.

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. This will prevent internal oxidation and scaling from occurring.
- Refrigerant tubing should be routed in a manner that minimizes the length of tubing and the number of bends in the tubing.
- 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.
- Recommended maximum length of the interconnecting refrigerant line is 75 feet (4 Ton) and 90 feet (5 Ton). And the maximum vertical elevation difference between the indoor and outdoor sections should not exceed 20 feet.
- 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.
- Optional equipment such as liquid line solenoid valves, start assist kit, low suction pressure cutout switch kit, high pressure cutout switch kit, 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 state, national, or local codes and ordinances that take precedence.

Pre-Electrical Check List

√ Verify that the voltage, frequency, and phase of the supply source match the specifications on the unit rating plate.

√ 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 high and low voltage wiring.

√ Verify factory wiring is in accordance with the unit wiring diagram (Figures 4, 5, 6 & 7, pages 11-14). Inspect for loose connections.

√ Phase balance on 3 phase units must always be checked. See Unbalanced 3-Phase Supply Voltage section (page 7).

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 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. See Figures 4, 5, 6, & 7 (pages 11-14). 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. 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 with the 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 all applicable state, national, or local codes that take precedence. 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.
- Single stage or two-stage thermostats can be used with this equipment depending on optional accessories (i.e. economizer) installed with the unit. Select a thermostat that operates in conjunction with the installed accessories.
- The outdoor unit is designed to operate from a 24 VAC Class II control circuit. The control circuit wiring must comply with applicable local codes having jurisdiction.
- The low voltage wires must be properly connected to the unit's low voltage terminal block. Recommended wire gauges and wire lengths for typical thermostat connections are listed in Table 1 (page 8).
- The thermostat should be mounted about 5 feet (1.52m) 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.

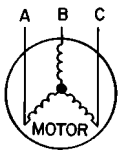
Unbalanced 3-Phase Supply Voltage

Voltage unbalance occurs when the voltages of all phases of a 3-phase power supply are no longer equal. This unbalance reduces motor efficiency and performance. Some underlying causes of voltage unbalance may include: Lack of symmetry in transmission lines, large single-phase loads, and unbalanced or overloaded transformers. A motor should never be operated when a phase imbalance in supply is greater than 2%.

Perform the following steps to determine the percentage of voltage imbalance:

1. Measure the line voltages of your 3 phase power supply where it enters the building and at a location that will only be dedicated to the unit installation (at the units circuit protection or disconnect).

Example:



AB = 226V
BC = 230V
AC = 227V

2. Determine the average voltage in the power supply.

In this example, the measured line voltages were 226, 230, and 227. The average would be 228 volts (226 + 230 + 227 = 683 / 3 = 228).

3. Determine the maximum deviation:

Example:
From the values given in step 1, the BC voltage (230V) is the greatest difference in value from the average:

230 - 228 = 2 ← Highest Value
228 - 226 = 2
228 - 227 = 1

4. Determine percent of voltage imbalance by using the results from steps 2 & 3 in the following equation.

Example:

$$100 \times \frac{2}{228} = 0.88\%$$

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

The amount of phase imbalance (0.88%) is satisfactory since the amount is lower than the maximum allowable 2%. Please contact your local electric utility company if your voltage imbalance is more than 2%.

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

Table 1. Thermostat Wire Gauge

Optional Electric Heater Kits

Optional field-installed electric heater kits may be available in multiple heating capabilities up to a maximum of 36kw. Split System Air Conditioners are designed to allow optional auxiliary electric heat to be field installed as required by the building's particular heating load. The options available for each unit are shown in the heater kit installation instructions or the air handler's Technical Service Literature.

Install the heater kits as directed by the instructions supplied with the heater kit. Follow all cautions and warnings as directed.

STARTUP & ADJUSTMENTS

Pre-Start Check List

√ 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 that the refrigerant tubing is properly connected and leak checked.

√ Verify that the unit is properly charged with the refrigerant listed on the rating label.

√ Verify that the line voltage power leads are securely connected and the unit is properly grounded.

√ Verify that the low voltage wires are securely connected to the correct leads on the low voltage terminal strip.

√ Verify that the power supply branch circuit overcurrent protection is sized properly.

√ Verify that the thermostat is wired correctly.

Start-up Procedures

⚠ WARNING:

If this unit is equipped with a crankcase heater, allow 24 hours prior to continuing the start-up procedures to allow for heating of the refrigerant compressor crankcase. Failure to comply may result in damage and could cause premature failure of the system. This warning should be followed at initial start-up and any time the power has been removed for 12 hours or longer.

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.

   NOTE: On 3 phase air handler models only - If blower is spinning opposite of arrow direction, shut off the main power to the unit and switch any two field wires at the disconnect. **DO NOT alter unit wiring.**

Anti-Short Cycle Timer Protection

1. Set the thermostat system mode to COOL. Note the temperature setting of the thermostat and gradually raise the set-point temperature until the unit de-energizes.
2. Immediately lower the set-point temperature of the thermostat to its original setting and verify that the indoor blower is energized and outdoor unit remains de-energized.
3. After approximately 5 minutes, verify the compressor and fan energize and the temperature of the discharge air is cooler than the room temperature. **NOTE:** 3 phase air conditioners DO NOT have short cycle protection.

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.
   NOTE: If refrigerant pressures are abnormal and the compressor is rotating backwards, shut off main power to the unit and switch any two field wires at the disconnect. **DO NOT alter unit wiring.**
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:

4-5 Ton Split System Air Conditioners leave the factory with a nitrogen holding charge. 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.

After refrigerant line connections are completed, it is required that you leak check and evacuate the indoor section and all line connections (using proper methods) before finalizing the full system refrigerant charge.

- To achieve rated capacity and efficiency the compressor must be exposed to refrigerant for at least 24 hours prior to running and then the compressor must be run for a minimum of 12 hours.
- Tables 3 & 4 (page 15) are applicable only to matched assemblies of NORDYNE equipment and listed airflows for the indoor coil. Outdoor units with indoor coils not listed are not recommended and 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 linesets which have a “Schrader” depression device present to actuate the valve.
- 4 Ton units should use 0.079 orifice in the liquid line and should be charged with 67 oz. of R-22 refrigerant as specified in the supplied addendum (7091540). 5 Ton units should use 0.093 orifice in the liquid line and should be charged with 82 oz. of R-22 refrigerant as specified in the supplied addendum (7091540).

Charging Units in AC mode when Outdoor Temperature is above 55° F (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 from Table 3 & Table 4 (page 15).
   - 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.

AIR CONDITIONER 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 air conditioner. 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 un-equipped with oil tubes. The compressor is hermetically sealed at the factory and does not require lubrication.

FIGURES & TABLES

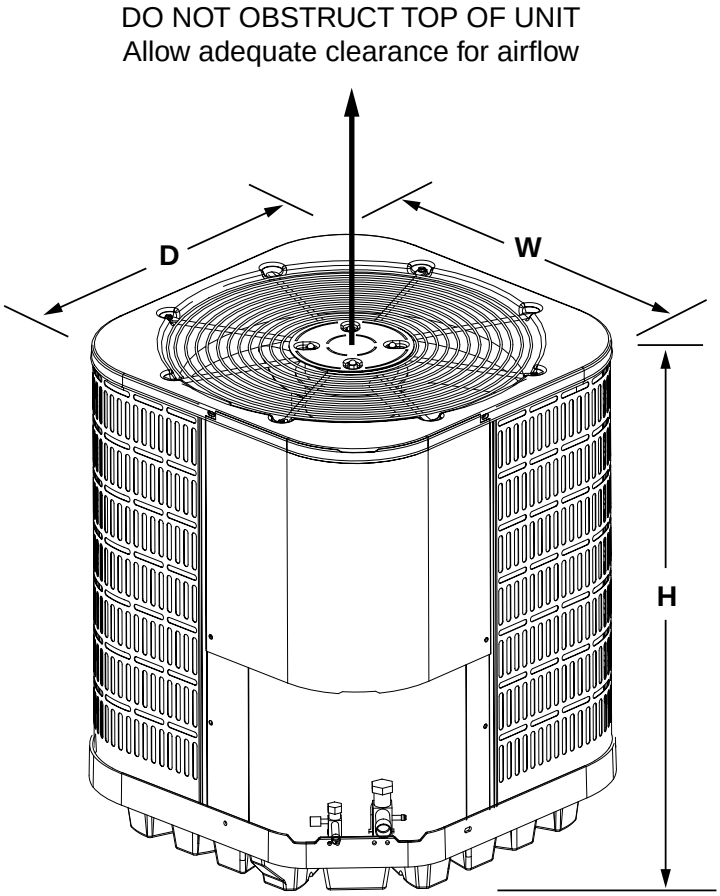


Figure 3. Unit Dimensions

S5BA-	048KA/CA	060KB/CD
H	27	27
W	22-3/4	30-3/4
D	22-3/4	30-3/4

Table 2. Unit Dimensional Data

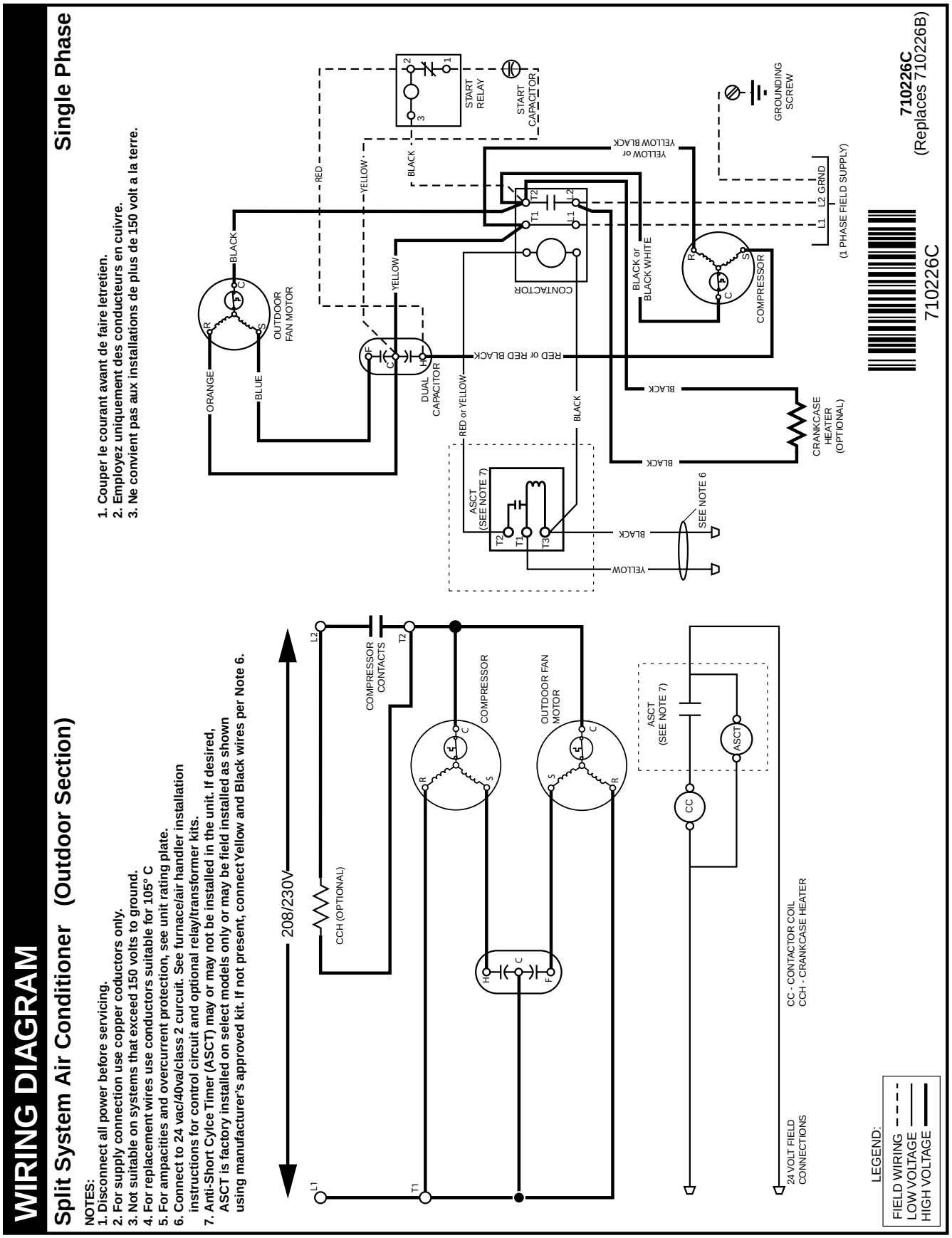


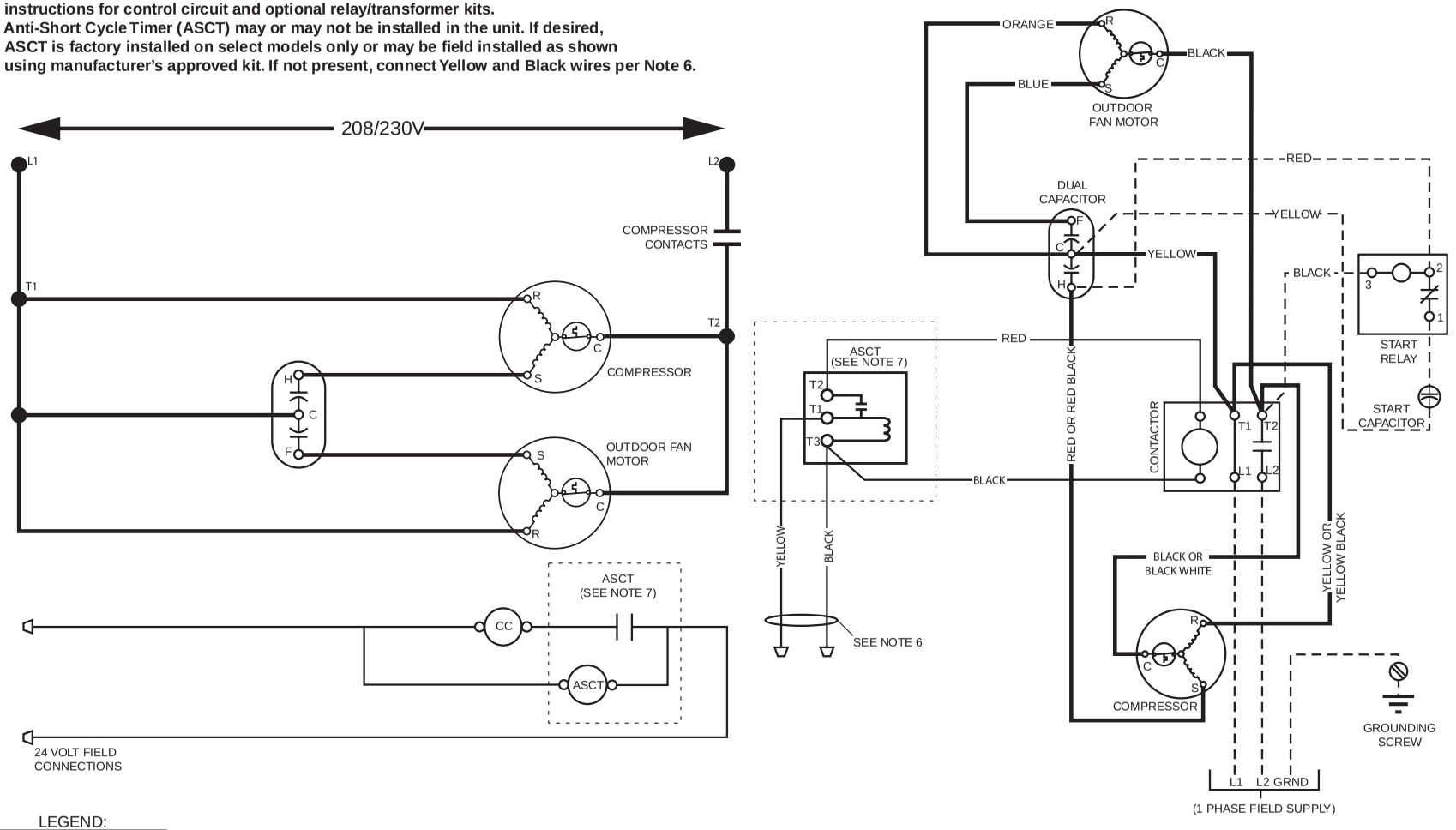
Figure 4. Wiring Diagram for Single Phase Units (4 Ton)

WIRING DIAGRAM

Split System Air Conditioner (Outdoor Section) Single Phase

NOTES:
1. Disconnect all power before servicing.
2. For supply connection 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 installation instructions for control circuit and optional relay/transformer kits.
7. Anti-Short Cycle Timer (ASCT) may or may not be installed in the unit. If desired, ASCT is factory installed on select models only or may be field installed as shown using manufacturer's approved kit. If not present, connect Yellow and Black wires per Note 6.

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



LEGEND:

FIELD WIRING	CC - CONTACTOR COIL
LOW VOLTAGE	
HIGH VOLTAGE	

711108B
(Replaces 711108A)
0211

Figure 5. Wiring Diagram for Single Phase Units (5 Ton)

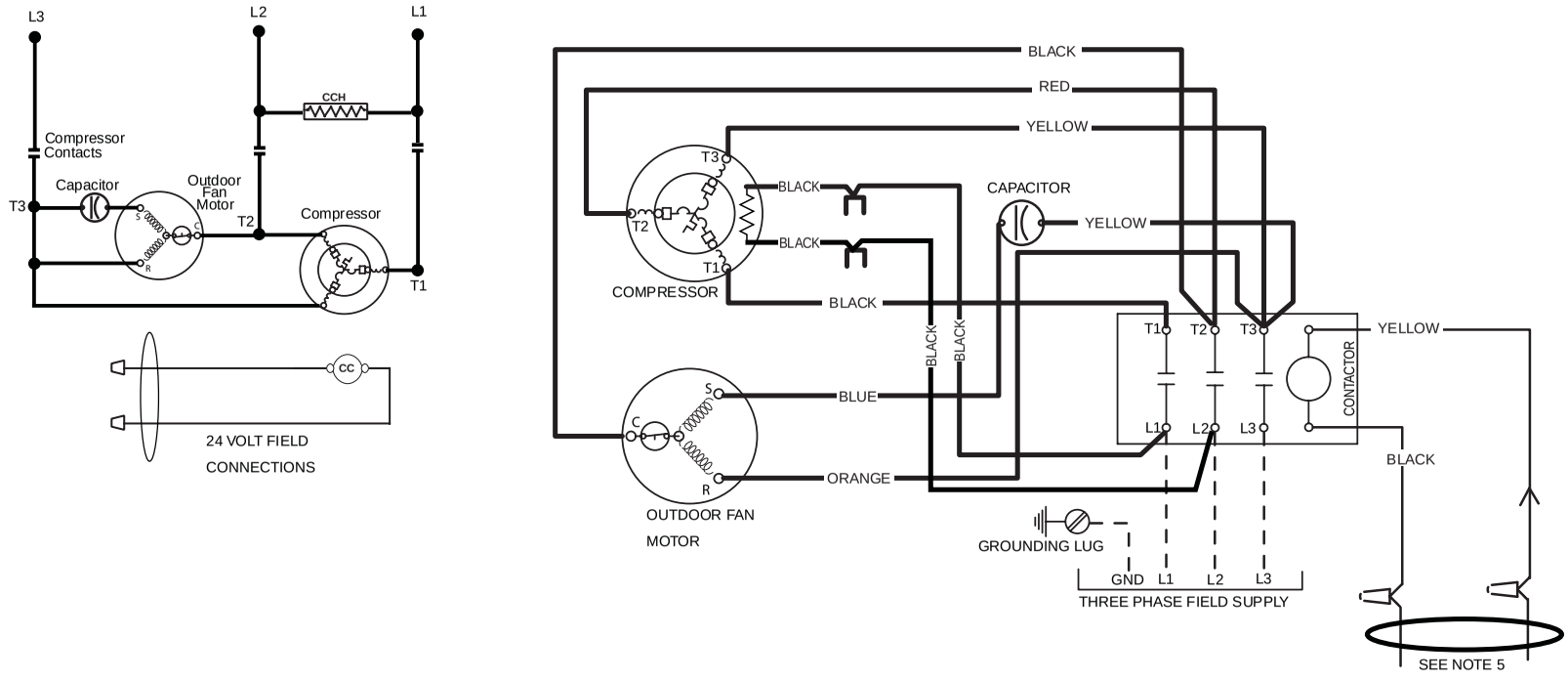
WIRING DIAGRAM

Split System Air Conditioner (Outdoor Section) Three Phase

NOTES:

1. Disconnect all power before servicing.
2. For supply connections use copper cundoctors only.
3. For replacement wires use conductors suitable for 105 deg. C.
4. For supply wire ampacities and overcurrent protection, see unit rating plate.
5. Connect to 24 vac/40 va/class 2 circuit. See furnace/air handler installation instructions for control circuit and optional relay/transformer kits.

1. Couper le courant avant de faire letretien.
2. Employez uniquement des conducteurs en cuivre.



LEGEND:

FIELD WIRING	CC - CONTACTOR COIL
LOW VOLTAGE	CCH - CRANKCASE HEATER
HIGH VOLTAGE	

7108650
(Replaces 703608E)
1208

Figure 6. Wiring Diagram for 3 Phase Units (4 Ton)

WIRING DIAGRAM

Split System Air Conditioner (Outdoor Section) Three Phase

NOTES:

1. **Disconnect all power before servicing.**
2. **For supply connections use copper conductors only.**
3. **For replacement wires use conductors suitable for 105° C.**
4. **For supply wire ampacities and overcurrent protection, see unit rating plate.**
5. **Connect to 24 vac/40 va/class 2 circuit. See furnace/air handler installation instructions for control circuit and optional relay/transformer kits.**

1. **Couper le courant avant de faire letretien.**
2. **Employez uniquement des conducteurs en cuivre.**

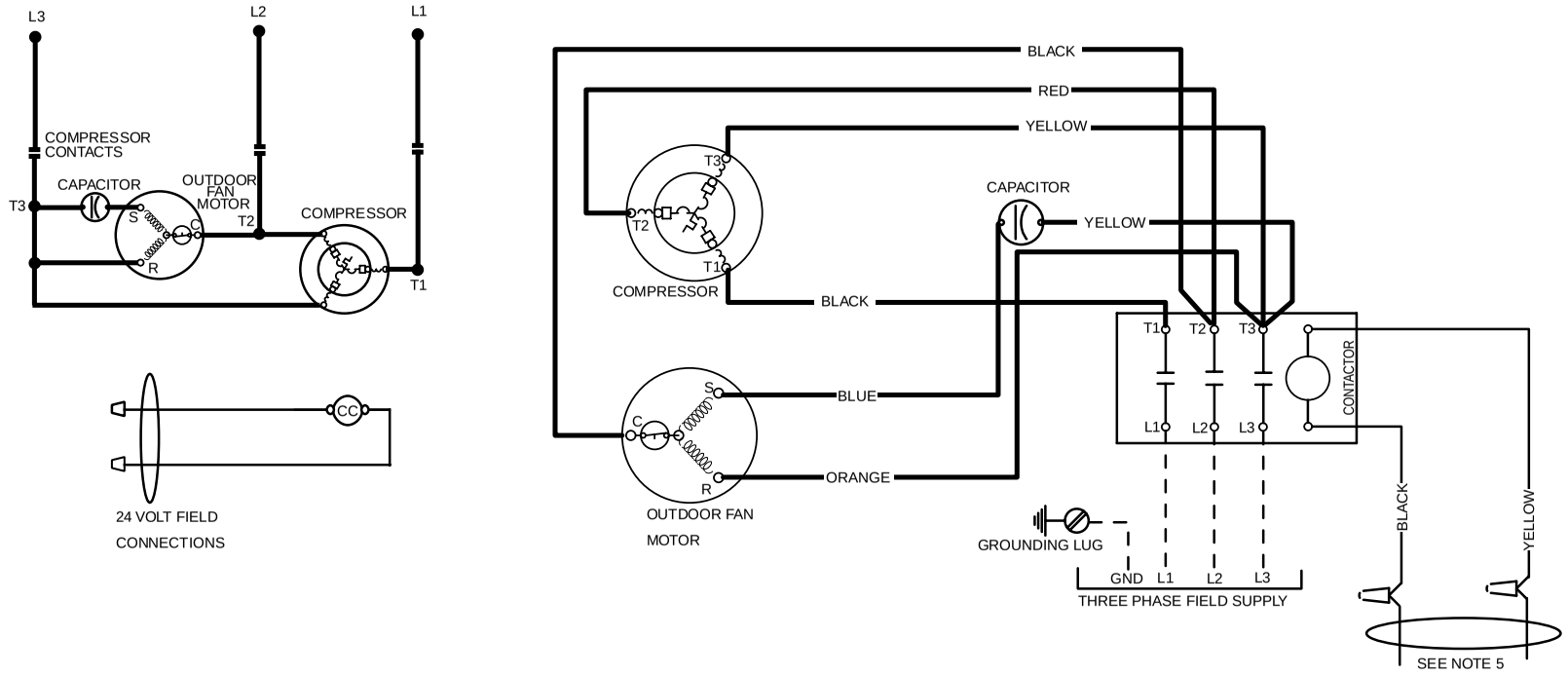


Figure 7. Wiring Diagram for 3 Phase Units (5 Ton)

LEGEND:

FIELD WIRING	- - - -
LOW VOLTAGE	———
HIGH VOLTAGE	═══

CC - CONTACTOR COIL

711109B
(Replaces 711109A)
0211

REFRIGERANT CHARGING TABLES FOR COOLING MODE OF OPERATION

LEGEND

Shaded boxes indicate flooded conditions and should not be relied on to determine system charge.

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

NOTES:

1. All pressures are listed psig and all temperatures in °F
2. Discharge temperatures GREATER than charted values indicate an UNDERCHARGED system.
3. Discharge temperatures LESS than charted values indicate an OVERCHARGED system.

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	177	153														
68	179	158	193	157												
70	181	163	196	162	210	161										
72	184	168	198	167	212	166	227	165								
74	187	171	200	172	214	171	229	170	243	169						
76			204	175	217	175	231	174	245	174	260	173				
78					221	178	234	178	247	178	262	177	276	177		
80							237	182	251	182	264	182	278	181	293	181
82							241	186	254	186	267	186	280	185	295	185
84									257	190	271	190	284	189	297	188
86											274	194	287	194	301	193
88													291	198	304	198
90															307	202
92																

Table 3. Charging Table for 4 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.
58	165	159														
60	167	164	182	163												
62	169	169	185	168	200	168										
64	171	176	187	174	202	173	218	172								
66	174	178	189	179	204	178	220	177	235	176						
68			192	182	207	182	222	181	238	181	253	180				
70					210	185	225	186	240	185	255	185	271	184		
72							228	189	243	189	257	189	273	188	288	188
74							232	193	246	193	261	193	275	192	290	192
76									250	197	264	197	279	197	292	196
78											267	201	282	201	296	201
80													285	205	300	205
82															303	209
84																

Table 4. Charging Table for 5 Ton Units

INSTALLATION / PERFORMANCE CHECK LIST

INSTALLATION ADDRESS:		
CITY _____	STATE _____	
UNIT MODEL # _____		
UNIT SERIAL # _____		
Unit Installed Minimum Clearances per Figure 2 (page 5)?	YES	NO
INSTALLER NAME:		
CITY _____	STATE _____	

REFRIGERATION SYSTEM

Was unit given 24 hr warm up period for crankcase heaters (if applicable)?	YES	NO
Stage-1 Liquid Pressure (high side) _____		
Stage-1 Liquid Temperature _____ °F		
Stage-1 Suction Pressure (low side) _____		
Final Unit Charge _____		
Has the owner's information been reviewed with the customer?	YES	NO
Has the Literature Package been left with the unit?	YES	NO

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

REPLACEMENT PARTS

Replacement parts are available through all Nordyne distributors. 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	

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