

5.0 SYSTEM START-UP

5.1 Start-Up Overview

Once the system hardware and wiring have been properly installed and the system has been properly evacuated, the next step is to weigh in the preliminary refrigerant charge and conduct a final leak check before applying electrical power and starting the system.

When the system is first started, indoor blower motor rotation, compressor rotation, and indoor air-flow, must be verified prior to the refrigerant charge being finalized using pressures and the charging chart attached to the inside of the control box cover.

To achieve optimum system reliability and comfort, it is important to follow the procedures in the following sections to assure the indoor air-flow and the refrigerant charge are correct.

⚠ CAUTION: R-454B is mildly flammable. Failure to exercise care may result in equipment damage or personal injury.

IMPORTANT: Both the outdoor and indoor units are shipped with a nitrogen holding charge. Starting the system prior to evacuating the system and adding refrigerant or while system is in a vacuum will result in damage to the compressor.

IMPORTANT: After the preliminary refrigerant charge has been weighed in, it is recommended that the electrical power be applied to the outdoor unit for 12 hours before the compressor is started to allow the crankcase heater to drive any liquid refrigerant from the compressor shell.

5.2 Preliminary Charging by Weight and Final Leak Check

Refer to the basic system charge from the unit data plate (or table below) and add to that the required weight of refrigerant for the line set length. Complete the final system charge using the sub-cooling method according to the charge charts and specified sub-cooling.

Follow the evacuation, leak testing, and charging instructions detailed in sections **4.7 Removal and Evacuation** and **4.8 Charging Procedure**.

A leak check must be completed before leaving the site.

BASIC SYSTEM CHARGE*

MODEL	FACTORY CHARGE OZ (g)	SYSTEM CHARGE OZ (g)
(-)ACY2078	0 (0)	338 (9,582)
(-)ACY2090	0 (0)	338 (9,582)
(-)ACY2119	0 (0)	338 (9,582)
(-)ACY2120	0 (0)	373.5 (10,643)
(-)ACY2150	0 (0)	381.5 (10,815)
(-)ACY2180	0 (0)	681.5 (19,320)
(-)ACY2240	0 (0)	537.5 (15,238)

*System with 0 Feet of Tubing

REQUIRED OZ. R-454B PER FT. OF TUBING

Tube Size O.D. In. [mm]	Liquid Tube		Vapor Tube		Total		Internal volume ft³/ft [m³/m]	
	oz _m /ft [g]	kg/m	oz _m /ft [g]	kg/m	oz _m /ft [g]	kg/m	ft³/ft	m³/m
3/8 [9.5]	0.5 [14.1]	0.05	0.0 [0.5]	0.00	0.5 [14.2]	0.05	5.55E-04	4.80E-05
1/2 [12.7]	1.0 [27.4]	0.09	0.0 [0.9]	0.00	1.0 [28.3]	0.09	1.08E-03	9.29E-05
5/8 [15.9]	1.5 [43.9]	0.14	0.1 [1.5]	0.00	1.6 [45.4]	0.15	1.73E-03	1.49E-04
3/4 [19.1]	2.2 [63.0]	0.21	0.1 [2.1]	0.01	2.3 [65.2]	0.21	2.48E-03	2.14E-04
7/8 [22.2]	3.1 [87.1]	0.29	0.1 [2.9]	0.01	3.2 [90.7]	0.30	3.43E-03	2.96E-04
1 [25.4]	4.0 [114.3]	0.37	0.1 [3.8]	0.01	4.2 [119.1]	0.39	4.50E-03	3.89E-04
1 1/8 [28.6]	5.2 [148.6]	0.49	0.2 [4.9]	0.02	5.4 [153.1]	0.50	5.85E-03	5.03E-04
1 1/4 [31.8]	6.5 [183.1]	0.60	0.2 [6.1]	0.02	6.7 [190.0]	0.62	7.21E-03	6.23E-04
1 3/8 [34.9]	7.3 [207.4]	0.68	0.2 [6.9]	0.02	7.6 [215.5]	0.70	8.17E-03	7.59E-04
1 1/2 [38.1]	9.4 [266.7]	0.87	0.3 [8.9]	0.03	9.7 [275.0]	0.90	1.05E-02	9.10E-04
1 5/8 [41.3]	11.2 [317.5]	1.04	0.4 [10.5]	0.03	11.6 [328.9]	1.08	1.25E-02	1.08E-03
2 1/8 [54.0]	19.5 [553.7]	1.82	0.6 [18.4]	0.06	20.2 [572.7]	1.88	2.18E-02	1.88E-03

Quantities based on 110°F liquid and 45°F vapor.

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5.3 Pre-Start Check

☐ YES	☐ NO	1. Is condensing unit properly located and level?
☐ YES	☐ NO	2. Is air free to travel to and from condensing unit?
☐ YES	☐ NO	3. Is the wiring correct and according to the unit wiring diagram?
☐ YES	☐ NO	4. Are wiring connections tight? (including those in unit and compressor electrical box.)
☐ YES	☐ NO	5. Is the unit properly grounded?
☐ YES	☐ NO	6. Is circulating air blower correctly wired?
☐ YES	☐ NO	7. Is condensing unit properly fused?
☐ YES	☐ NO	8. Is the thermostat level, correctly wired and in good location?
☐ YES	☐ NO	9. Is the ductwork correctly sized, run, taped and insulated?
☐ YES	☐ NO	10. Is refrigerant tubing neatly run and vapor line thoroughly insulated?
☐ YES	☐ NO	11. In condensate drain line properly sized, run, tapped and pitched?
☐ YES	☐ NO	12. Are refrigerant connections tight and leak tested?
☐ YES	☐ NO	13. Is filter clean and in place?
☐ YES	☐ NO	14. Does the condenser fan turn free without rubbing?
☐ YES	☐ NO	15. Is the fan tight in the fan shaft?
☐ YES	☐ NO	16. Are all covers and access panels in place to prevent air loss?

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5.4 Initial System Start-Up: Verifying Correct Indoor Blower Motor and Compressor Rotation

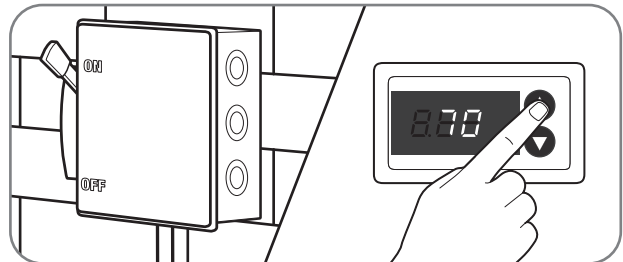
After the refrigerant charge is weighed in, it is recommended that electrical power be applied to both the indoor and outdoor units for a minimum of 12 hours with the thermostat turned to the OFF position to give the crankcase heater time to drive liquid refrigerant from the compressor shell. After 12 hours, the thermostat may be adjusted to call for the cooling mode. It is very important at this point to verify that the indoor blower motor rotation (3-phase air-handlers) and compressor rotation are both correct to prevent damage to the compressor.

- If the 3-phase indoor blower is turning backwards (blower turning, but no air-flow), shut the electrical power off to the indoor and outdoor units and reverse two incoming line voltage leads to the air-handler. Restore electrical power to the indoor and outdoor units and verify the indoor blower motor rotation is correct and air is flowing through the ductwork.
- Check to make sure the liquid pressure increases and the suction pressure decreases when the compressor first starts, indicating the compressor rotation is correct. If there is no pressure differential and the compressor is making a loud rattling sound, shut the electrical power off to the outdoor unit and reverse two of the incoming power leads at the outdoor unit contactor. Restore electrical power to the outdoor unit and confirm the liquid pressure increases the suction pressure decreases, and the compressor is operating at a normal sound level.

Note: The outdoor fan motor is a single phase motor and will therefore always have the correct rotation regardless of how the electrical power is connected to the contactor.

5.5 Verifying Indoor Air-Flow

Before final refrigerant charge adjustment, the indoor air-flow must be verified and adjusted if necessary. Adjust the thermostat set point so the indoor air-handler or furnace operates in the cooling air-flow mode. Some air-handlers and furnaces deliver a different air-flow level for continuous fan operation, so it is important to verify the indoor air-flow while the thermostat is set to operate in the cooling mode. Determine the rated indoor air-flow by referring to the AHRI Directory, manufacturer's specifications, or engineer's specification for the matched system. If this information is not available, 320 - 450 CFM per ton is a good rule of thumb. Refer to the air-handler or gas furnace installation and operation manual for air-flow tables and for adjusting the cooling mode indoor air-flow. External static pressure will need to be measured and used for this adjustment. For furnace/coil combinations, the coil pressure drop is considered part of the external static pressure to the furnace. An air velocity meter or air-flow hood can also give an accurate reading for indoor air-flow.

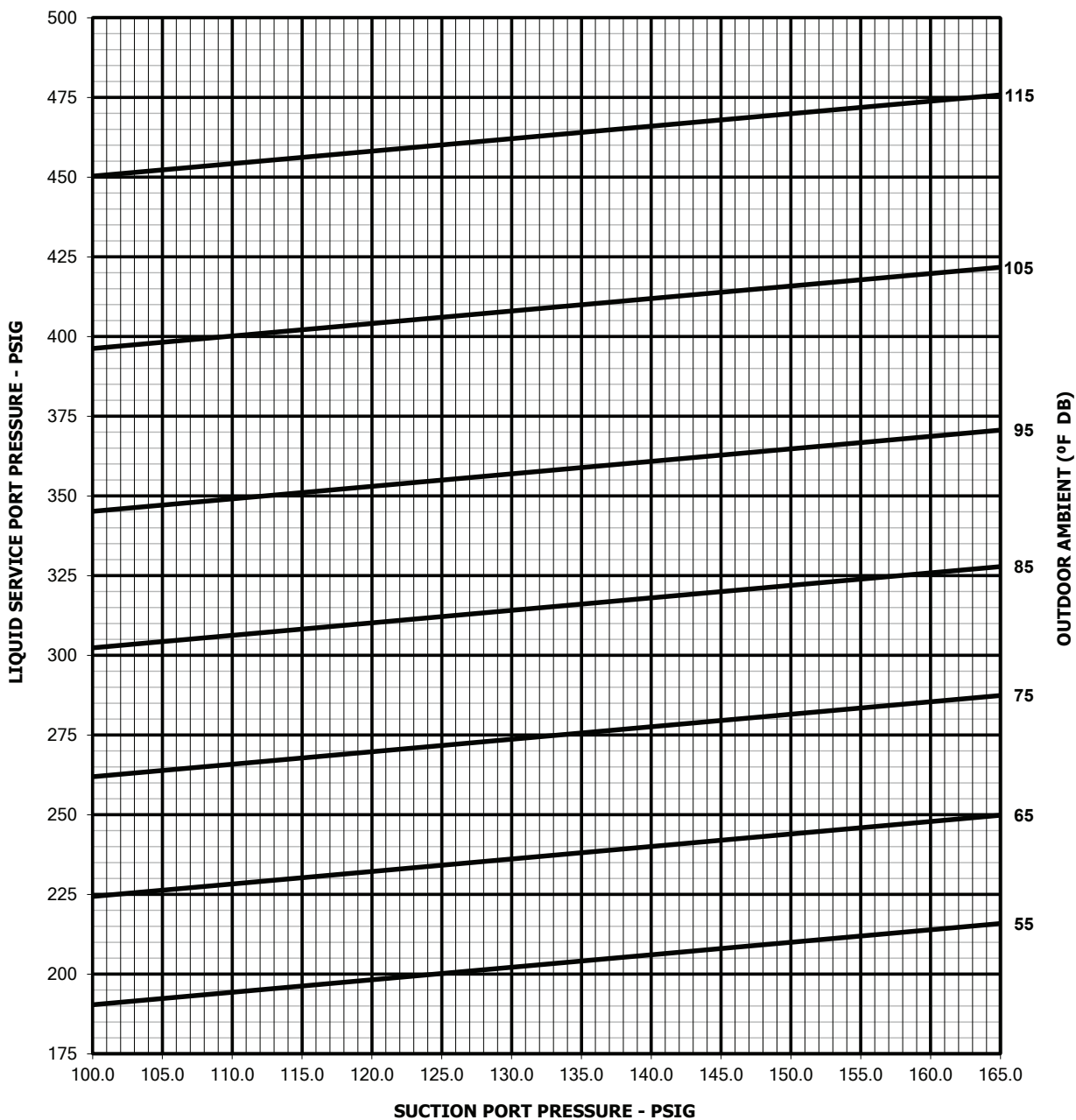


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5.6 Charging Charts

6.5 Ton Cooling Charging Chart

FINAL CHARGE VERIFICATION @ 80/67-95 (HIGH STAGE) SUB
COOLING REQUIREMENTS = 10.8° W/ TOLERANCE OF +/- 1.0°F

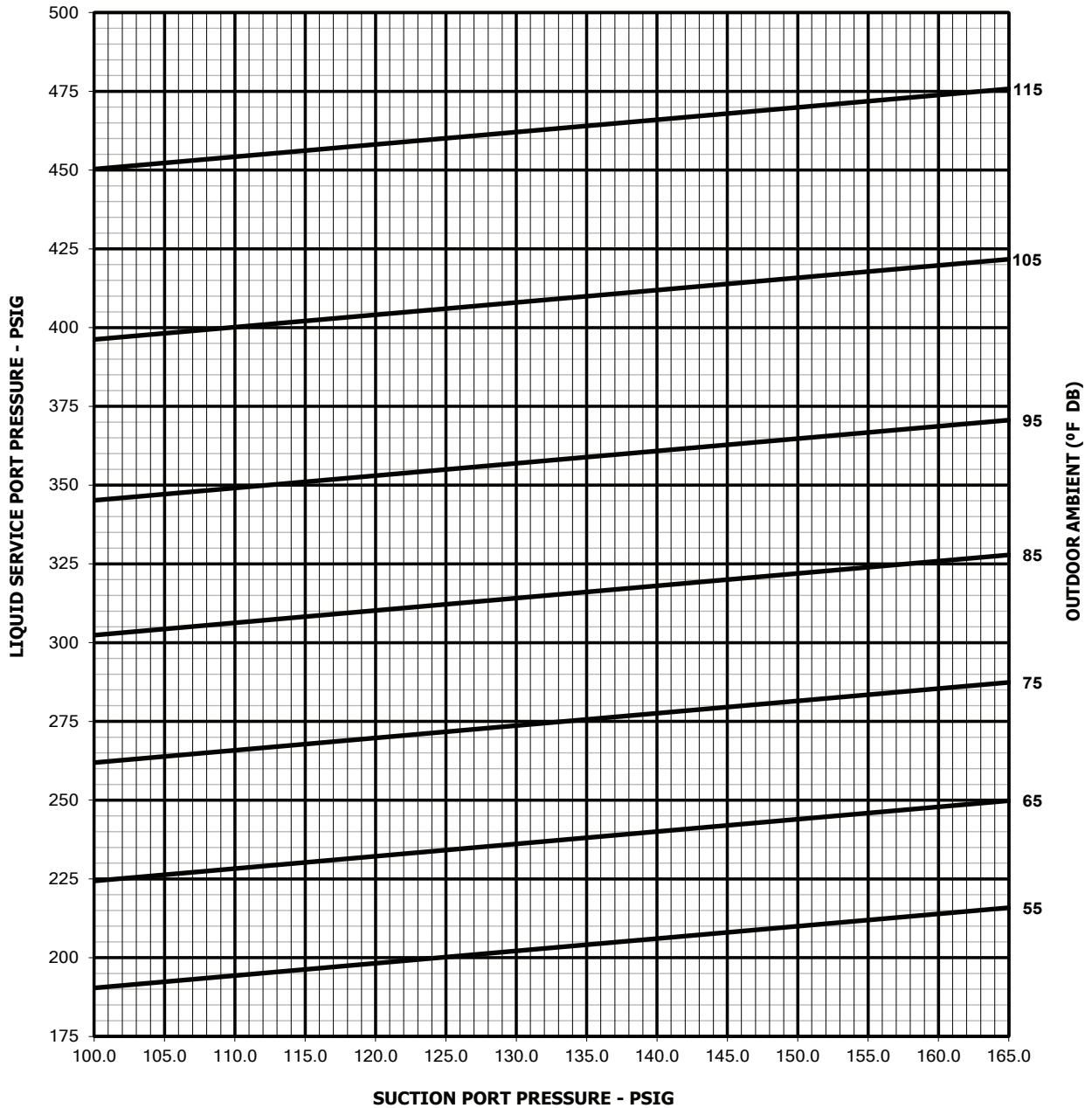


5.0 SYSTEM START-UP

5.6 Charging Charts

7.5 Ton Cooling Charging Chart

FINAL CHARGE VERIFICATION @ 80/67-95 (HIGH STAGE) SUB
COOLING REQUIREMENTS = 10.8° W/ TOLERANCE OF +/- 1.0°F

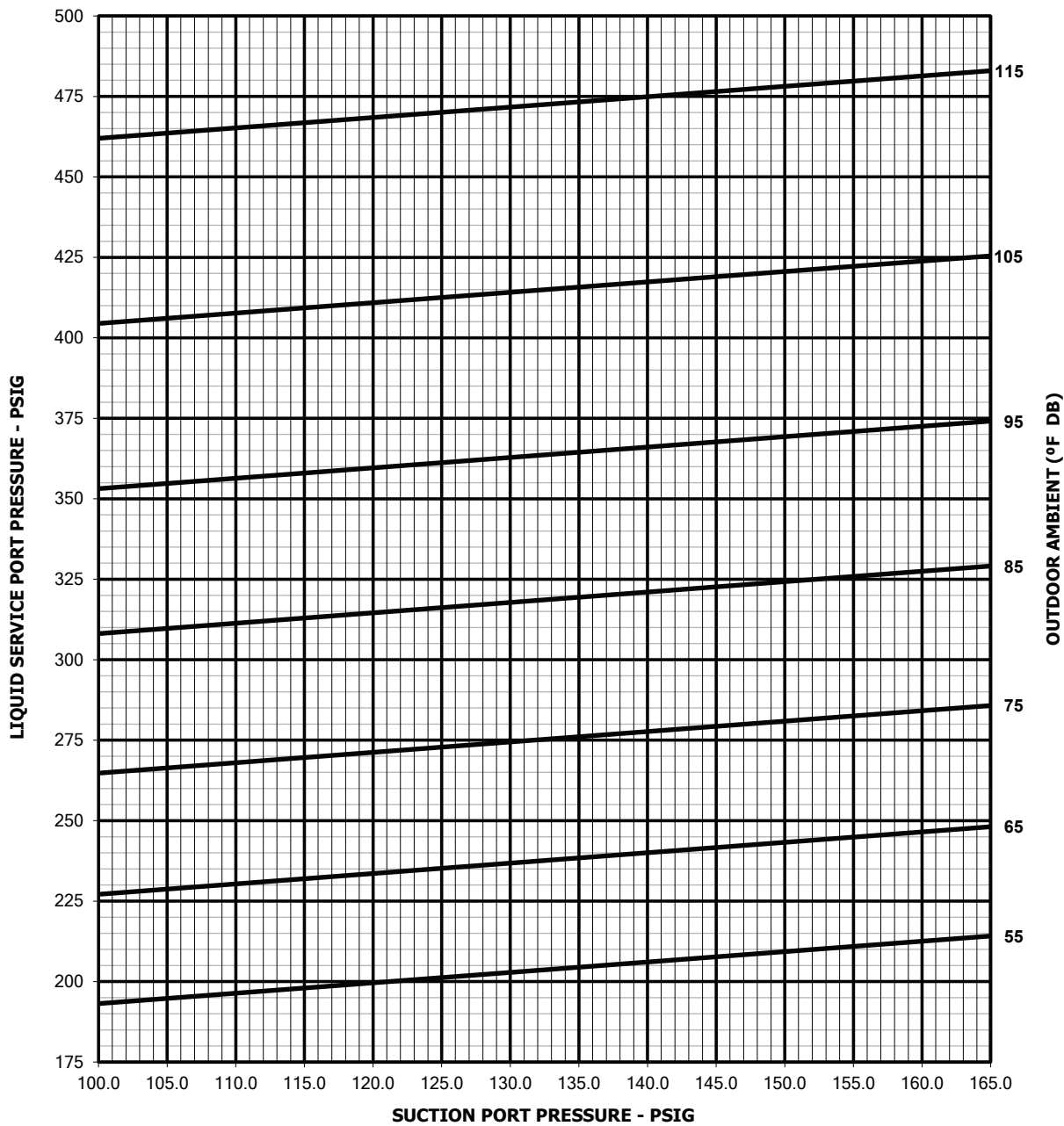


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5.6 Charging Charts (-)ACY2119

10 Ton Cooling Charging Chart

FINAL CHARGE VERIFICATION @ 80/67-95 (HIGH STAGE) SUB
COOLING REQUIREMENTS = 9.6° W/ TOLERANCE OF +/- 1.0°F

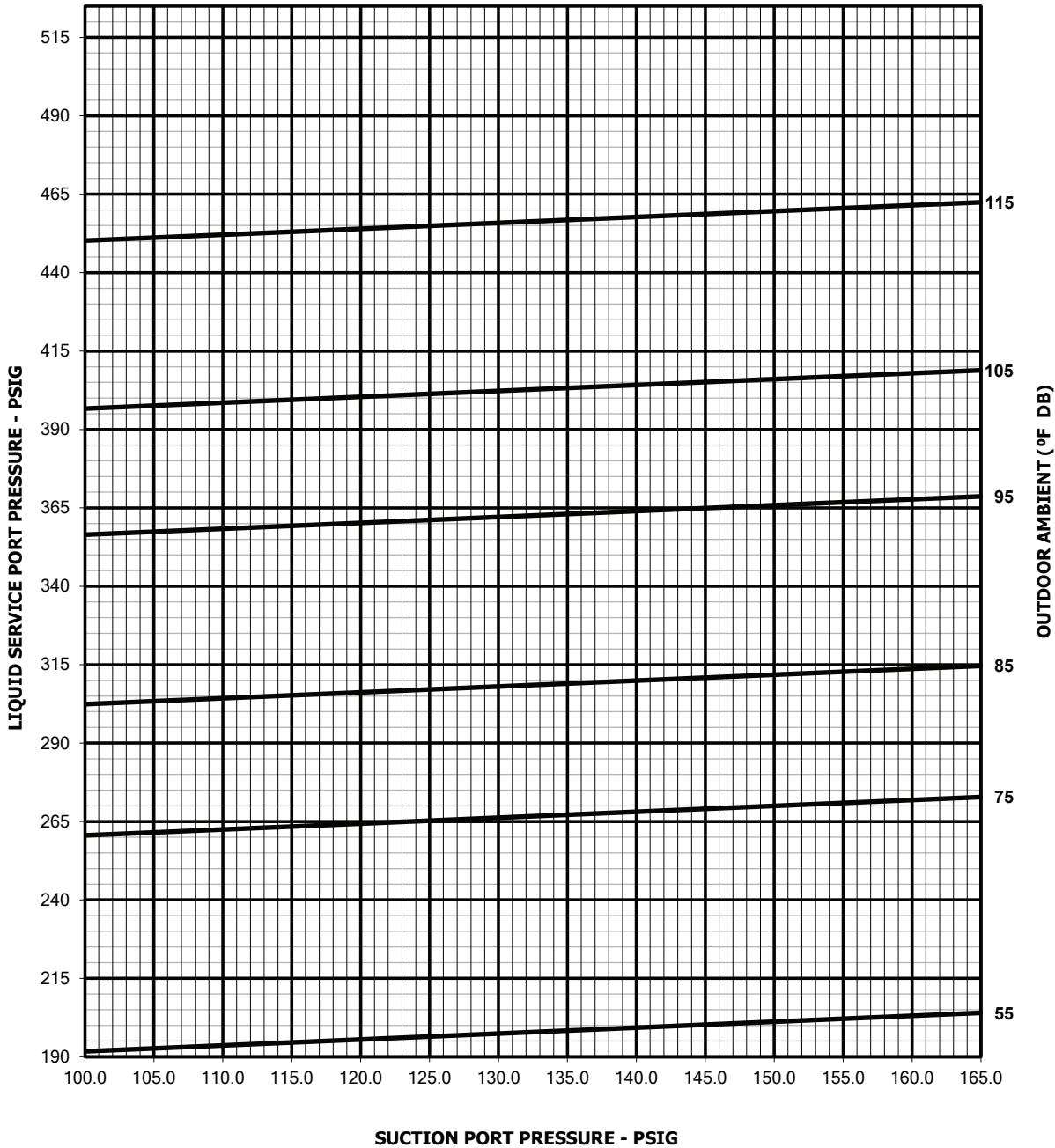


5.0 SYSTEM START-UP

5.6 Charging Charts (-)ACY2120

10 Ton Cooling Charging Chart

FINAL CHARGE VERIFICATION @ 80/67-95 (HIGH STAGE) SUB
COOLING REQUIREMENTS = 14.7° W/ TOLERANCE OF +/- 1.0°F

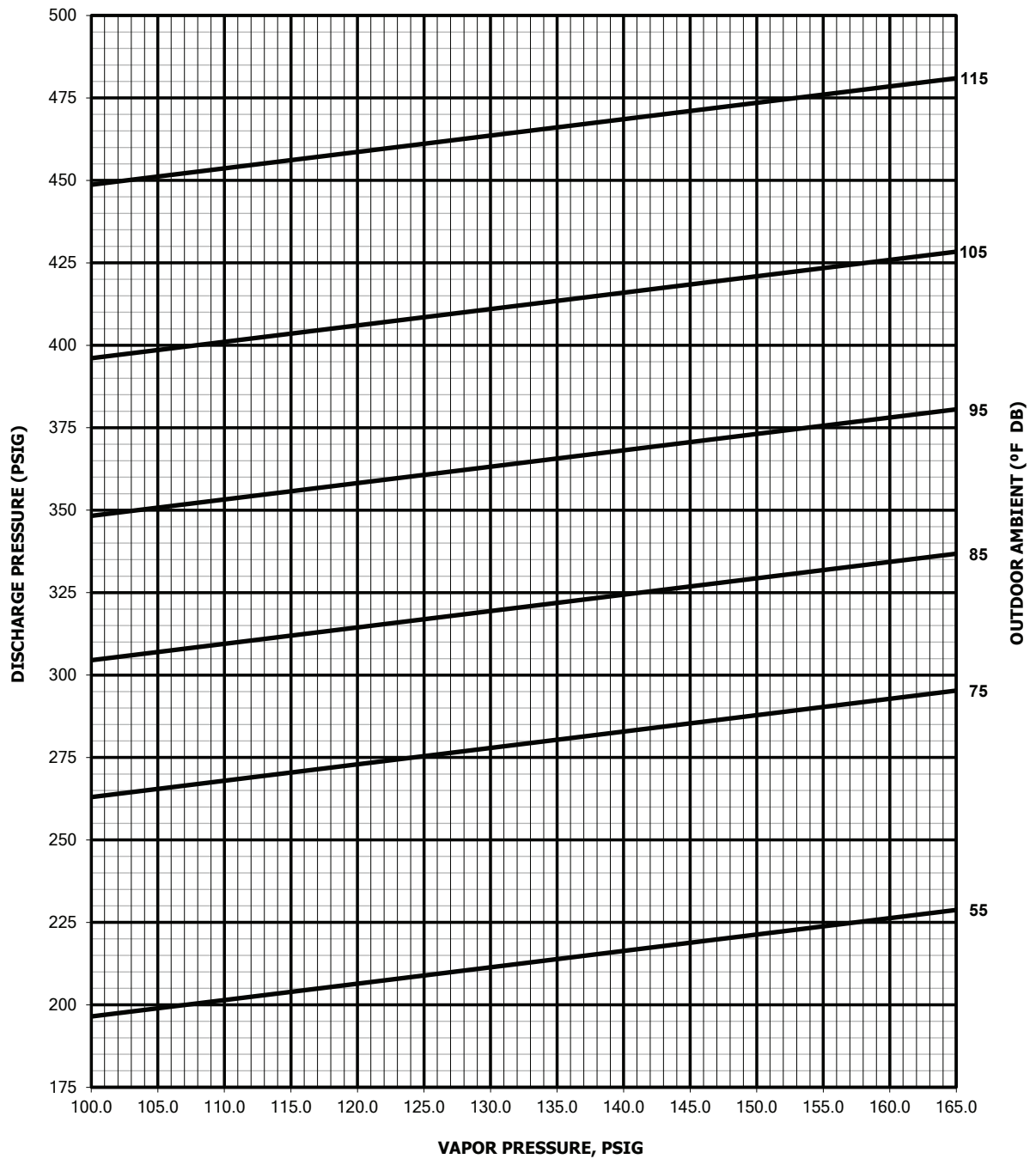


5.0 SYSTEM START-UP

5.6 Charging Charts

12.5 Ton Cooling Charging Chart

FINAL CHARGE VERIFICATION @ 80/67-95 (HIGH STAGE) SUB
COOLING REQUIREMENTS = 14.3° W/ TOLERANCE OF +/- 1.0°F

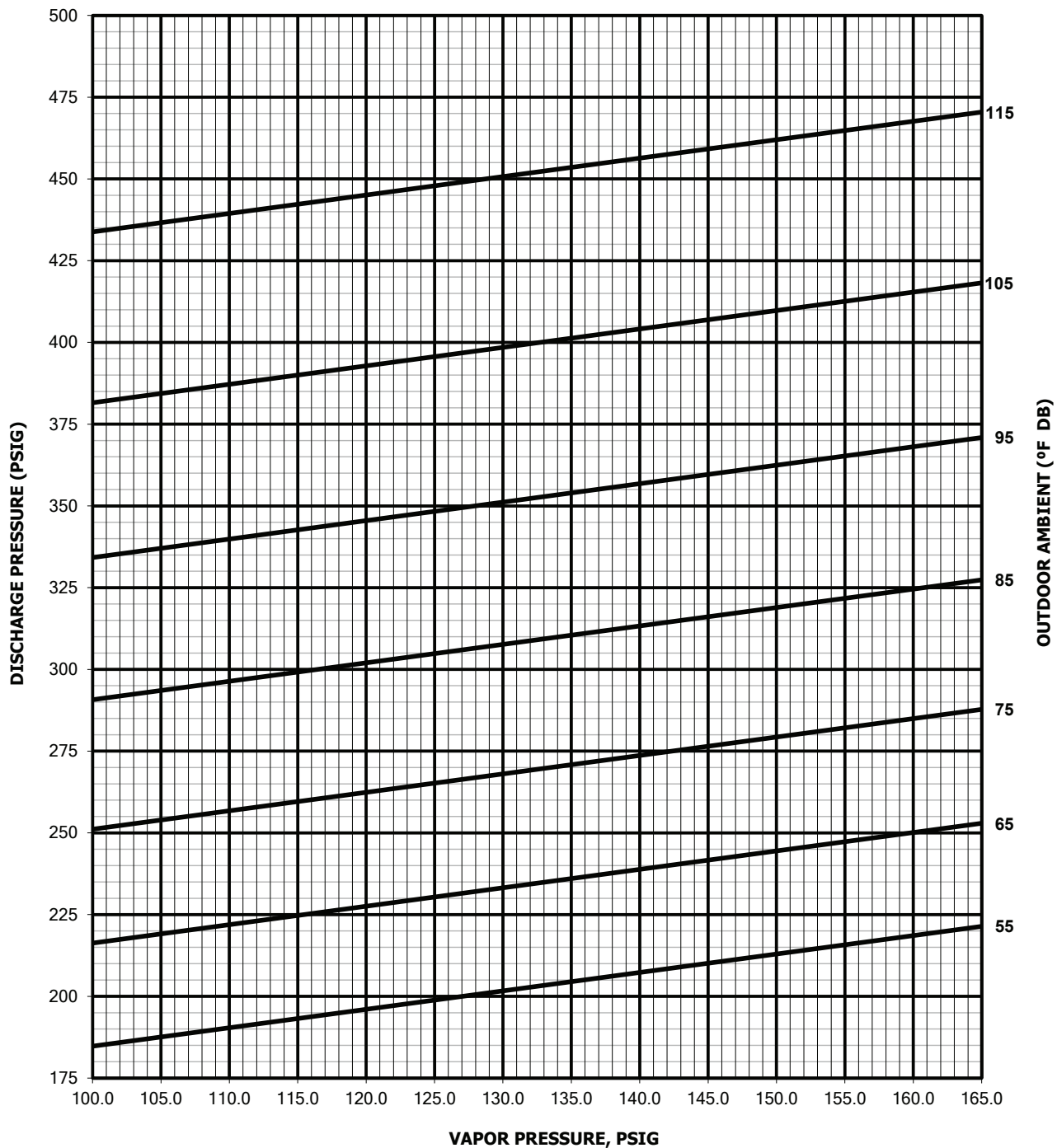


5.0 SYSTEM START-UP

5.6 Charging Charts

15 Ton Cooling Charging Chart

FINAL CHARGE VERIFICATION @ 80/67-95 (HIGH STAGE) SUB
COOLING REQUIREMENTS = 14.1° W/ TOLERANCE OF +/- 1.0°F

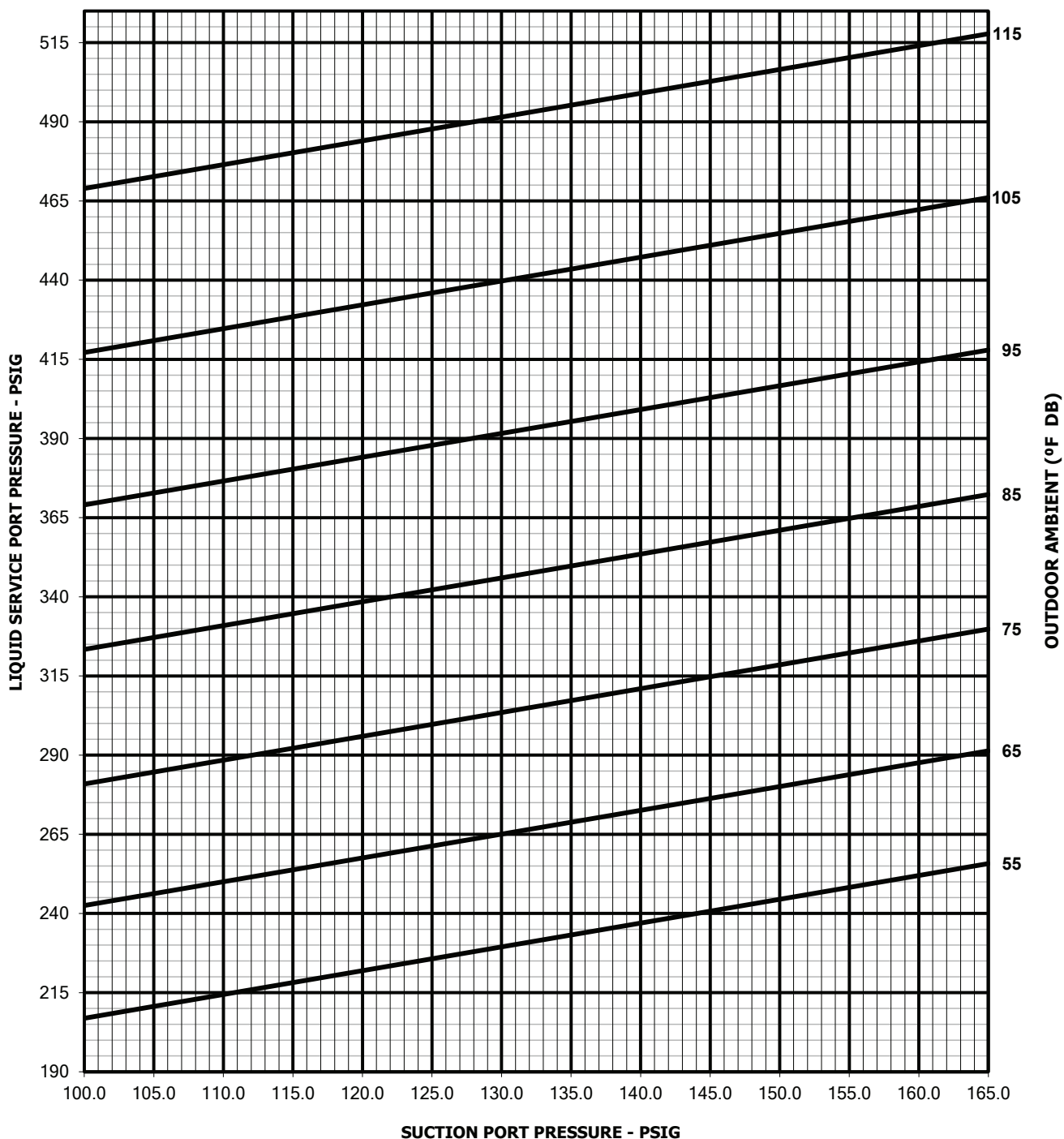


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5.6 Charging Charts

20 Ton Cooling Charging Chart

FINAL CHARGE VERIFICATION @ 80/67-95 (HIGH STAGE) SUB
COOLING REQUIREMENTS = 12.1° W/ TOLERANCE OF +/- 1.0°F



5.0 SYSTEM START-UP

5.7 Completing Installation

- Disconnect the hoses from the pressure ports. Replace the pressure port caps and tighten adequately to seal caps. **Do not overtighten.**
- Replace the service valve top caps finger-tight and then tighten with a wrench to adequately seal caps. **Do not overtighten.**
- Replace control box cover and service panel and install screws to secure panels.
- Restore power to unit at disconnect if required.
- Configure thermostat per the thermostat installation instructions and set to desired mode and temperature.
- Check that internal and external unit wiring will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges, or any other adverse environmental effects, taking into account the effects of aging or continual vibration from sources such as compressors or fans.

5.8 Safety Checks

At all times the manufacturer's maintenance and service guidelines must be followed. If in doubt, contact the manufacturer's technical support for assistance.

Before leaving the installation site the following safety checks must be completed:

- Ensure all electrical components in this system are approved by the manufacturer.
- Confirm the actual refrigerant charge complies with the minimum room size requirements outlined in **3.2 A2L Refrigerant Installation Safety Data**
- Ensure that the ventilation machinery and outlets are operating correctly and are not obstructed.
- If an indirect refrigerant circuit is being used, the secondary circuit must be checked for the presence of refrigerant.
- Ensure that all the equipment labels and markings are visible and legible. Markings, labels, and signs that are illegible must be corrected.
- Confirm that any refrigerating pipe or components are installed in a position where they are unlikely to be exposed to corrosion, unless the refrigerant-containing components are constructed of corrosion-resistant materials or are protected from corrosion.

6.0 SEQUENCE OF OPERATION

6.1 Sequence of Operation for Two-Stage Compressors

1. When the room thermostat is set on “Cool”, “Fan Auto”, and the temperature is higher than the thermostat setting, the thermostat “Y1” circuit closes and energizes the first speed of the compressor contactor (CC). Power to the crankcase heater (CCH) will be de-energized by the auxiliary contacts (AUX).
2. Simultaneously, the “G” circuit provides power to the indoor blower motor circuit and starts indoor air circulation through the evaporator coil.
3. When the discharge pressure increases to 450 psig, the contacts on the low ambient control (LAC) (if installed) will allow supply power to start the outdoor fan motors (OFM) which begins to pull air through the condenser coils. The system is now in the first-stage cooling, operating at near 60 percent of full load capacity.
4. If the temperature at the thermostat continues to increase, the thermostat “Y2” circuit closes and energizes both speeds of the compressor which is now full load capacity.
5. The system will continue cooling at maximum capacity, as long as the room thermostat is demanding full load and all safety device contacts are closed. The low ambient control (LAC) (if installed) will open and close, allowing the outdoor fans to maintain discharge pressure between 250 and 450 psig.
6. As the temperature at the thermostat drops enough to satisfy “Y2”, the circuit will open and de-energize the second compressor speed and continues operating on the first speed of the compressor.
7. When continued cooling satisfies the “Y1” circuit, it will open and de-energize the compressor contactor (CC), stopping compressor operation and closing the auxiliary contacts (AUX), which energizes the crankcase heater (CCH).
8. The thermostat “G” circuit will stop blower operation.

6.2 Sequence of Operation for Tandem Compressors

1. When the room thermostat is set on “Cool”, “Fan Auto”, and the temperature is higher than the thermostat setting, the thermostat “Y1” circuit closes and energizes the number one compressor contactor (CC1) through the closed cooling relay (RL) contacts. Power to the crankcase heater (CCH1) will be de-energized by the auxiliary contacts (AUX1).
2. Simultaneously, the “G” circuit provides power to the indoor blower motor circuit and starts indoor air circulation through the evaporator coil.
3. When the discharge pressure increases to 450 psig, the contacts on the low ambient control (LAC) (if installed) will allow supply power to start the outdoor fan motors (OFM) which begin to pull air through the condenser coils. The system is now in first stage cooling, operating at near fifty percent of full load capacity.
4. If the temperature at the thermostat continues to increase, the thermostat “Y2” circuit closes and after a full 30 second delay, power passes through the time delay control (TDC) and energizes the number two compressor contactor (CC2) through the second set of closed cooling relay (RL) contacts. Power to the crankcase heater (CCH2) will be de-energized by the auxiliary contacts (AUX2).
5. The system will continue cooling at maximum capacity, as long as the room thermostat is demanding full load and all safety device contacts are closed. The low ambient control (LAC) (if installed) will open and close, allowing the outdoor fans to maintain discharge pressure between 250 and 450 psig.
6. As the temperature at the thermostat drops enough to satisfy “Y2”, the circuit will open and de-energize the compressor contactor (CC2), stopping compressor operation and closing the auxiliary contacts (AUX2), which energizes the crankcase heater (CCH2).
7. When continued cooling satisfies the “Y1” circuit, it will open and de-energize the compressor contactor (CC1), stopping compressor operation and closing the auxiliary contacts (AUX1), which energizes the crankcase heater (CCH1).
8. The thermostat “G” circuit will stop blower operation.

7.0 COMPONENTS & CONTROLS

7.1 Compressor

A single 2-stage 3-phase scroll compressor is used in 6.5, 7.5, & 10 ton models. Tandem 3-phase scroll compressors are used in 12.5-20 ton models.

7.2 Fan Motor

All models utilize ECM or PSC motors.

7.3 Outdoor Fan

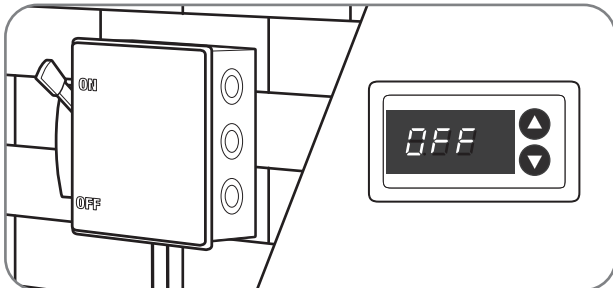
All models use 'paddle-style' four-blade fans.

7.4 Compressor Contactor

All models utilize either one (6.5, 7.5, & 10 ton) or two (12.5-20 ton) 3-pole contactors to power the compressors and fan motors. Field power is connected directly to the terminal lugs on the line side of the contactor on the (-)ACY2120.

7.5 Compressor Crankcase Heater (CCH)

Each compressor is equipped with a belly-band style crankcase heater that is energized anytime electrical power is supplied to the unit. 12.5-20 ton models with tandem compressors have a crankcase heater on each compressor. Crankcase heater wattages for each model are shown in the following table.



MODEL	CRANKCASE HEATER(S)
(-)ACY2078 & (-)ACY2090	(1) 70W
(-)ACY2119 & (-)ACY2120	(1) 70W
(-)ACY2150 & (-)ACY2180	(2) 70W
(-)ACY2240	(2) 70W

All heaters are located on the lower half of the compressor shell. Its purpose is to drive refrigerant from the compressor shell during long off cycles, thus preventing damage to the compressor during start-up.

At initial start-up or after extended shutdown periods, make sure the heater is energized for at least 12 hours before the compressor is started. (Disconnect switch is on and wall thermostat is off.)

7.6 Compressor Time Delay

A compressor time delay is factory installed on 12.5 – 20 ton models that have tandem compressors to provide a delay between stages to minimize inrush current in case both stages are energized simultaneously.

7.7 High- and Low-Pressure Controls

High and low pressure controls are standard on all models.

The high-pressure control (HPC) is an automatic-reset which opens near 610 PSIG [4206 kPa] and closes near 420 PSIG [2896 kPa].

The low-pressure control (LPC) is an automatic-reset which opens near 50 PSIG [345 kPa] and closes near 95 PSIG [655 kPa].

⚠ CAUTION: The compressor has an internal overload protector. Under some conditions, it can take up to 2 hours for this overload to reset. Make sure overload has had time to reset before condemning the compressor.

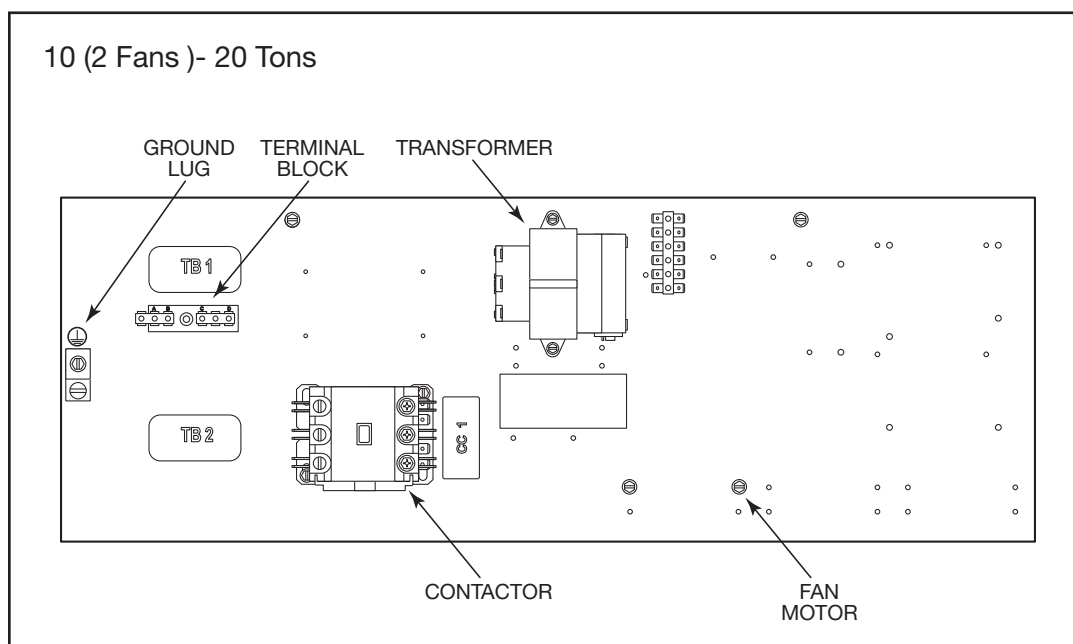
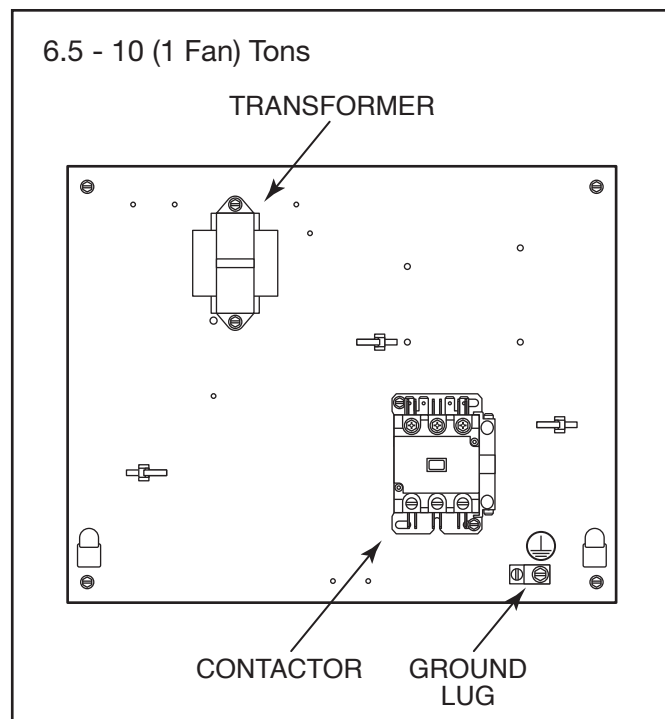
7.0 COMPONENTS & CONTROLS

7.8 Line Voltage Terminal Block for Field Connections

12.5 – 20 ton models have a terminal block inside the control box for connecting line voltage supply wiring. Line voltage supply wiring is connected to the compressor contactor lugs on 6.5-10 ton models.

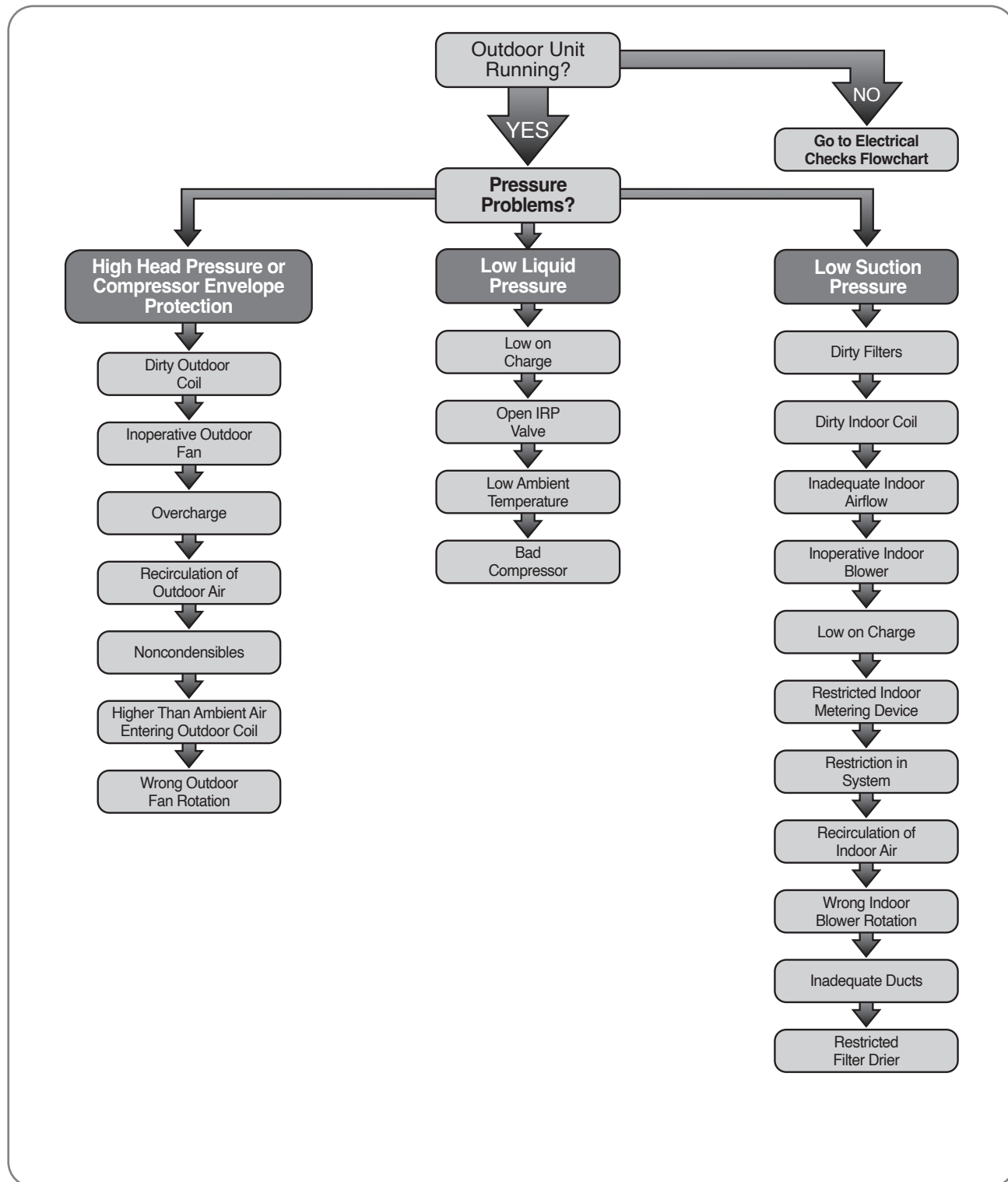
7.9 Transformer

A 75VA (6.5-12.5 ton) or 100VA (15-20 ton) transformer is provided inside the unit control box for supplying 24V AC for both the outdoor and indoor unit control system. 208V applications require the transformer to be reconfigured upon installation. **See Section 4.11.**



8.0 DIAGNOSTICS & TROUBLESHOOTING

8.1 Cooling Mechanical Checks Flowchart



8.0 DIAGNOSTICS & TROUBLESHOOTING

8.2 General Troubleshooting Guide

⚠️WARNING: Disconnect all power to unit before servicing. Contactor may break only one side. Failure to shut off power can cause electrical shock resulting in personal injury or death.

SYMPTOM	POSSIBLE CAUSE	REMEDY
Unit will not run	- Power off or loose electrical connection - Thermostat out of calibration – set too low or high - Blown fuses/tripped breaker - Transformer defective - High-pressure control open - Low pressure control open - Miswiring of thermostat - Refrigerant leak detected	- Check for correct voltage at line voltage connections in condensing unit. - Adjust thermostat. - Replace fuses/reset breaker. - Check wiring. Replace transformer. - See high head pressure remedy. - See low suction pressure remedy. - Check thermostat wiring. 1) Unit will reset in 5 minutes. 2) Repair the leak.
Outdoor fan runs, compressor doesn't	- Loose connection - Compressor stuck, grounded or open motor winding, open internal overload.	- Check for correct voltage at compressor. Check and tighten all connections. - Wait at least 3 hours for overload to reset. If still open, replace the compressor.
Insufficient cooling	- Improperly sized unit - Improper indoor airflow - Incorrect refrigerant charge - Air, noncondensibles, or moisture in system - Restricted refrigerant circuit	- Recalculate building load. - Check. Should be approximately 350-400 CFM [165-189 L/s] per ton. - Charge per procedure attached to unit service panel. - Recover refrigerant. Evacuate and recharge. - Locate restriction and clear. Add or replace filter drier.
Compressor short cycles	- Incorrect voltage - Defective overload protector - Refrigerant undercharge or overcharge (HPC or LPC cycling)	- At compressor terminals, voltage must be $\pm 10\%$ of nameplate marking when unit is operating. - Replace compressor. Check for correct voltage. - Adjust charge per charging chart.
Registers sweat	Low indoor airflow	Increase speed of blower or reduce restriction. Replace air filter.
High head, low suction pressures	- Restriction in liquid line, expansion device, or filter drier - Bad TXV	- Remove or replace defective component. - Replace TXV.
High head, high or normal suction pressure	- Dirty outdoor coil - Refrigerant overcharge - Outdoor fan not running - Air or noncondensibles in system	- Clean coil. - Correct system charge. - Repair or replace. - Recover refrigerant. Evacuate and recharge.
Low head, high vapor pressures	- Bad TXV - Bad compressor	- Replace TXV. - Replace compressor.
Low suction pressure, iced indoor coil	- Low indoor airflow - Operating below 65°F [18°C] outdoors - Moisture in system - Low refrigerant charge	- Increase speed of blower or reduce restriction. Replace air filter. - Add Low Ambient Kit. - Recover refrigerant. Evacuate and recharge. Add filter drier. - Check refrigerant charge and check for leaks.
High suction pressure	- Excessive load - Defective compressor	- Recheck load calculation. - Replace.
Fluctuating head and suction pressures	- TXV hunting - Air or noncondensibles in system	- Check TXV bulb clamp. Check air distribution on coil. Replace TXV. - Recover refrigerant. Evacuate and recharge.
Gurgle or pulsing noise at expansion device or liquid line	- Air or noncondensibles in system - Undercharged system	- Recover refrigerant. Evacuate and recharge. - Adjust charge per charging chart.

8.0 DIAGNOSTICS & TROUBLESHOOTING

8.3 Service Analyzer Charts

COMPRESSOR OVERHEATING		
SYMPTOM	POSSIBLE CAUSE	CHECK/REMEDY
High superheat (greater than 15°F [8.3°C] at coil)	Low charge	Check system charge.
	Faulty metering device	Restricted cap tube, TXV
		Power element superheat out of adjustment internally
		Foreign matter stopping flow
	High internal load	Hot air (attic) entering return
		Heat source on; miswired or faulty control
	Restriction in liquid line	Drier plugged.
		Line kinked.
	Low head pressure	Low charge
		Operating in low ambient temperatures
	Suction or liquid line subjected to high heat source	Hot attic
		Hot water line
Low line voltage	Loose wire connections	Check wiring.
	Power company problem, transformer	Report Problem.
	Undersized wire feeding unit	Correct and complete diagnosis.
High line voltage	Power company problem	Report problem.
High head pressure	Overcharge	Check system charge.
	Dirty outdoor coil	Clean coil.
	Faulty or wrong size outdoor fan motor	Replace fan motor.
	Faulty fan blade or wrong rotation	Replace fan blade.
		Replace with correct rotation motor.
	Recirculation of air	Correct installation.
	Additional heat source	Check for dryer vent near unit.
		Check for recirculation from other equipment.
	Noncondensibles	Recover refrigerant. Evacuate and recharge system.
	Equipment not matched	Correct mismatch.
Short cycling of compressor	Cycling or faulty pressure control	Check pressure and address cause of high or low pressure. Replace pressure control if faulty.
	Loose wiring	Check unit wiring.
	Thermostat	Located in supply air stream
		Differential setting too close
		Customer misuse
	Indoor coil TXV / Distributor Restriction	Internal foreign matter
		Power element failure
		TXV too small
		Equilizer tube plugged
	Indoor coil distributor tube restricted	Restricted with foreign matter
		Kinked
		Inside diameter reduced from previous compressor failure

8.0 DIAGNOSTICS & TROUBLESHOOTING

8.3 Service Analyzer Charts (Cont.)

COMPRESSOR OVERHEATING (Cont.)		
SYMPTOM	POSSIBLE CAUSE	CHECK OR REMEDIES
Short cycling of compressor (Cont.)	Low charge	Check system charge.
	Low evaporator airflow	Dirty coil
		Dirty filter
		Duct too small or restricted
	Faulty run capacitor	Replace.
	Faulty internal overload	Replace compressor.
Faulty Compressor Valves or scrolls	Fast equalization/Low pressure difference	Replace compressor and examine system to locate reason.
ELECTRICAL		
SYMPTOM	POSSIBLE CAUSE	CHECK OR REMEDIES
Voltage present on load side of compressor contactor and compressor won't run	Internal overload	Allow time to reset.
	Compressor windings	Check for correct ohms.
Voltage present on line side of compressor contactor only	Thermostat	Check for control voltage to contactor coil.
	Compressor control circuit	High-pressure switch
		Low-pressure switch
		Ambient thermostat
		Solid-state protection control or internal thermal sensors
		Compressor timed off/on control or interlock
No voltage on line side of compressor contactor	Blown fuses or tripped circuit breaker	Check for short in wiring or unit.
	Improper wiring	Recheck wiring diagram.
Improper voltage	High voltage	Wrong unit
		Power supply problem
	Low voltage	Wrong unit
		Power supply problem
		Wiring undersized
		Loose connections
	Single Phasing (3 phase)	Check incoming power and fusing.
FLOODED STARTS		
SYMPTOM	POSSIBLE CAUSE	CHECK OR REMEDIES
Liquid in the compressor shell	Faulty or missing crankcase heater	Replace crankcase heater.
Too much liquid in system	Incorrect piping	Check piping guidelines.
	Overcharge	Check and adjust charge.

8.0 DIAGNOSTICS & TROUBLESHOOTING

8.3 Service Analyzer Charts (Cont.)

CONTAMINATION		
SYMPTOM	POSSIBLE CAUSE	REMEDY
Moisture	Poor evacuation on installation or during service	In each case, the cure is the same. Recover refrigerant. Add filter drier, evacuate, and recharge.
High head pressure	Noncondensibles air	
Unusual head and suction readings	Wrong refrigerant or mixed refrigerants	
Foreign matter – copper filings	Copper tubing cuttings	
Copper oxide	Dirty copper piping or nitrogen not used when brazing	
Welding scale	Nitrogen not used during brazing	
Soldering flux	Adding flux before seating copper partway	
Excess soft solder	Wrong solder material	
LOSS OF LUBRICATION		
SYMPTOM	POSSIBLE CAUSE	REMEDY
Compressor failures	Vapor line tubing too large	Reduce pipe size to improve oil return.
Low suction pressure	Low charge	Check system charge.
	Refrigerant leaks	Repair and recharge.
Cold, noisy compressor – Slugging	Dilution of oil with refrigerant	Observe piping guidelines.
Noisy compressor	Refrigerant migration in off-cycle	Check or add crankcase heater.
Cold, sweating compressor	Flooding	Check system charge.
Low load	Reduced indoor airflow	Dirty filter
		Dirty indoor coil
		Wrong duct size
		Restricted duct
	Thermostat setting	Advise customer.
Short cycling of compressor	Cycling or faulty high- or low-pressure control	Check pressure and address cause of high or low pressure. Replace pressure control if faulty.
	Loose wiring	Check all control wires.
	Thermostat	In supply air stream, out of calibration
		Customer misuse
SLUGGING		
SYMPTOM	POSSIBLE CAUSE	REMEDY
On start-up	Incorrect piping	Review pipe size guidelines.
TXV hunting when running	Faulty indoor TXV	Replace TXV.

8.0 DIAGNOSTICS & TROUBLESHOOTING

8.3 Service Analyzer Charts (Cont.)

FLOODING		
SYMPTOM	POSSIBLE CAUSE	REMEDY
Poor system control using a TXV	Loose sensing bulb	Secure the bulb and insulate.
	Bulb in wrong location	Relocate bulb.
	Wrong size TXV	Use correct replacement.
	Improper superheat setting (less than 5°F [2.8°C])	Replace TXV.
THERMOSTATIC EXPANSION VALVE (TXV)		
SYMPTOM	POSSIBLE CAUSE	REMEDY
High Superheat, Low Suction Pressure (superheat over 15°F [8.3°C])	Moisture freezing and blocking valve	Recover charge, install filter-drier, evacuate system, recharge.
	Dirt or foreign material blocking valve	Recover charge, install filter-drier, evacuate system, recharge.
	Low refrigerant charge	Correct the charge.
	Vapor bubbles in liquid line	Remove restriction in liquid line. Correct the refrigerant charge.
		Remove noncondensable gases.
		Size liquid line correctly.
	Misapplication of internally equalized valve	Use correct TXV.
	Plugged external equalizer line	Remove external equalizer line restriction.
	Undersized TXV	Replace with correct valve.
	Loss of charge from power head sensing bulb	Replace power head or complete TXV.
	Charge migration from sensing bulb to power head (Warm power head with warm, wet cloth. Does valve operate correctly now?)	Ensure TXV is warmer than sensing bulb.
Valve feeds too much refrigerant, with low superheat and higher than normal suction pressure	Moisture causing valve to stick open.	Recover refrigerant, replace filter-drier, evacuate system, and recharge.
	Dirt or foreign material causing valve to stick open	Recover refrigerant, replace filter drier, evacuate system, and recharge.
	TXV seat leak (a gurgling or hissing sound is heard AT THE TXV during the off cycle, if this is the cause). NOT APPLICABLE TO BLEED PORT VALVES.	Replace the TXV.
	Oversized TXV	Install correct TXV.
	Incorrect sensing bulb location	Install bulb with two mounting straps, in 2:00 or 4:00 position on suction line, with insulation.
	Low superheat adjustment	Replace TXV.
	Incorrectly installed, or restricted external equalizer line	Remove restriction, or relocate external equalizer.

8.0 DIAGNOSTICS & TROUBLESHOOTING

8.3 Service Analyzer Charts (Cont.)

THERMOSTATIC EXPANSION VALVES (Cont.)		
SYMPTOM	POSSIBLE CAUSE	REMEDY
Compressor flood back upon start-up	Refrigerant drainage from flooded evaporator	Install trap riser to the top of the evaporator coil.
	Inoperable crankcase heater or crankcase heater needed	Replace or add crankcase heater.
Superheat is low to normal with low suction pressure	Unequal evaporator circuit loading	Ensure airflow is equally distributed through evaporator.
		Check for blocked distributor tubes.
	Low load or airflow entering evaporator coil	Ensure blower is moving proper air-flow.
		Remove/Correct any airflow restriction.
Superheat and suction pressure fluctuate (valve is hunting)	TXV is oversized	Install correct TXV.
	Sensing bulb is affected by liquid refrigerant or refrigerant oil flowing through suction line	Relocate sensing bulb in another position around the circumference of the suction line.
	Unequal refrigerant flow through evaporator circuits	Ensure sensing bulb is located properly.
		Check for blocked distributor tubes.
Valve does not regulate at all	Moisture freezing and partially blocking TXV	Recover refrigerant, change filter-drier, evacuate system, and recharge.
	External equalizer line not connected or line plugged	Connect equalizer line in proper location, or remove any blockage.
	Sensing bulb lost its operating charge	Replace TXV.
	Valve body damaged during soldering or by improper installation	Replace TXV.

8.0 DIAGNOSTICS & TROUBLESHOOTING

8.4 Troubleshooting Tips

COOLING MODE TROUBLESHOOTING TIPS					
SYSTEM PROBLEM	INDICATORS				
	DISCHARGE PRESSURE	SUCTION PRESSURE	SUPERHEAT Normal: 5°–15°F [2.8° – 8.3°C]	SUBCOOLING Normal: See Charging Chart	COMPRESSOR AMPS
Overcharge	High	High	Low	High	High
Undercharge	Low	Low	High	Low	Low
Liquid Restriction (Filter Drier)	Low	Low	High	High	Low
Low Indoor Airflow	Low	Low	Low	Low	Low
Dirty Outdoor Coil	High	High	Low	Low	High
Low Outdoor Ambient Temperature	Low	Low	High	High	Low
Inefficient Compressor	Low	High	High	High	Low
Indoor TXV Sensing Bulb Charge Lost	Low	Low	High	High	Low
Poorly Insulated Indoor Sensing Bulb	High	High	Low	Low	High

9.0 DECOMMISSIONING

9.1 Before Beginning Decommissioning

Before carrying out decommissioning, the technician performing decommissioning must be familiar with the equipment and its safety procedures, and ensure electrical power is available to the unit. See Section **4.1.2 Working Personnel** for more information.

Before recovering the refrigerant, an oil and refrigerant sample must be taken if the technician intends to reuse the recovered refrigerant to have a record.

Before beginning any work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. See **4.1.6 No Ignition Sources**.

Before beginning any work on the system or conducting any hot work, ensure that the area is in the open or that it is adequately ventilated. Ventilation must continue while the unit is being worked on. Ventilation is required to safely disperse any released refrigerant into the atmosphere.

Work shall be undertaken under a controlled procedure so as to minimize the risk of flammable gas or vapor being present while work is being performed. See **2.2 Importance of a Quality Installation**.

All maintenance staff and others working in the local area shall be instructed on the nature of the work being performed. Work in confined spaces shall be avoided.

The area shall be checked with an appropriate refrigerant detector before and during work to ensure the technician is aware of potentially toxic or flammable atmospheres.

9.2 Decommissioning Procedure

Follow the decommissioning procedure outlined below:

READ ALL STEPS BEFORE BEGINNING.

1. Become familiar with the equipment, its operation, and its safety procedures.
2. Isolate the system electrically.
3. Ensure that mechanical handling equipment for the refrigerant cylinders is at hand, if required.
4. Ensure personal, protective equipment is being used correctly.

5. A competent supervisor must be present during the refrigerant recovery process. Ensure such a person is available on site.
6. Confirm that the recovery equipment and cylinders are correct for the equipment and its refrigerant.
7. Follow the steps outlines in Section **4.6 Leak Testing** and Section **4.7 Removal and Evacuation**.
8. If possible, pump down the refrigerant system.
9. If a vacuum is not possible, make a manifold so that the refrigerant can be removed from various parts of the system.
10. Make sure that the recovery cylinder is situated on the scale before recovery begins.
11. Start the recovery machine and operate it in accordance with its instructions.
12. Do not overflow the cylinders. No more than 80% volume liquid charge is allowed.
13. Do not exceed the maximum working pressure of the cylinder, even temporarily.
14. When the cylinders have been filled correctly and the process is complete, make sure that the cylinders and the recovery equipment are removed from the site promptly.
15. Verify all isolation valves on the unit are closed (off).
16. Recovered refrigerant shall not be charged into another unit unless a sample was taken prior to recovering the refrigerant and its been cleaned and checked.

When performing any maintenance or troubleshooting on the refrigerating equipment or associated parts, a dry powder or CO2 fire extinguisher shall be nearby for emergency use. Equipment must be labelled stating that it has been decommissioned and emptied of refrigerant. The label must be dated and signed. Ensure that there are label(s) on the unit stating that this equipment contains **flammable refrigerant**.

10.0 INFORMATION FOR THE OWNER

10.1 Outdoor Coil Cleaning

The outdoor fan draws air across the coil during operation which results in contaminants collecting on and between the aluminum fins. These contaminants restrict the air-flow through the coil resulting in reduced capacity and efficiency and increases the temperature of the components that can reduce their life. Therefore, it is recommended that the outdoor coil be cleaned at least annually by a qualified service technician using a non-corrosive coil cleaner and low pressure water hose sprayer. Care must be taken not to damage or flatten out the fins by spraying the fins from an angle. Washing from the top of the coil down from the inside out is the most effective method of cleaning the coil. The exterior louver panels and unit top are easily removable to facilitate the coil cleaning task.

WARNING: Disconnect electrical power to the unit before removing the top panel or any electrical panel as the fan motor could start at any time and live electrical connections will be exposed.

10.2 Cabinet Cleaning and Care

Annual cleaning of the exterior cabinet is recommended using a mild detergent, water, and cloth/sponge to remove dust, mold, and potentially corrosive contaminants that have collected on the cabinet. Do not apply wax to the cabinet since the painted surface is textured which will result in a white wax build-up.

10.3 Motor Lubrication

The bearings in the outdoor motor are pre-lubricated by the motor manufacturer and do not have oiling ports. The motor will run for an indefinite period of time without additional lubrication.

10.4 Replacement Parts

Any replacement part used to replace parts originally supplied on equipment must be the same as or an approved alternate to the original part supplied. The manufacturer will not be responsible for replacement parts not designed to physically fit or operate within the design parameters the original parts were selected for.

10.5 Checking Electrical Components

Repair and maintenance of electrical components must include safety checks and component inspections.

If a fault exists that could compromise safety, then no electrical supply can be connected to the unit until the error causing the fault is repaired. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution must be used. The temporary solution must be communicated to the owner.

Initial safety checks include:

- Confirming that the capacitors are discharged. This must be done safely to avoid the possibility of sparking.
- Ensure that no live electrical components or wiring are exposed while charging, recovering, or purging the system.
- Confirm that the unit grounding is constant

10.6 Refrigerant Recovery

When removing refrigerant from a unit, either for service or decommissioning, the following practices are required to safely remove the refrigerant.

When transferring the refrigerant into cylinders, ensure that only the appropriate recovery cylinders are employed.

- Ensure that the correct number of recovery cylinders are available to hold the total system charge.
- All cylinders used must be designed for recovering R-454B refrigerant.
- Cylinders shall be complete with a pressure relief valve and shut-off valves, all in working order.
- Empty recovery cylinders must be evacuated and cooled before refrigerant recovery occurs.
- The following equipment is required to be on site and in good working condition prior to and during refrigerant recovery:
 - The technician's recovery equipment
 - The recovery equipment's instructions that details the proper recovery of flammable refrigerant.
 - A set of calibrated weighing scales
 - Hoses, which must be complete with leak free disconnect couplings.

10.0 INFORMATION FOR THE OWNER

10.6 Refrigerant Recovery (Cont.)

If in doubt, contact the manufacturer about recovering flammable refrigerant.

The recovered refrigerant must be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. **DO NOT MIX REFRIGERANTS IN RECOVERY UNITS OR RECOVERY CYLINDERS.**

If compressors or compressor oils are to be removed, ensure that they have been evacuated to make certain that the flammable refrigerant, R-454B, does not remain within the lubricant. The compressor body must not be heated by an open flame or other ignition sourced to accelerate this process. When oil is drained from a system, it shall be carried out safely.

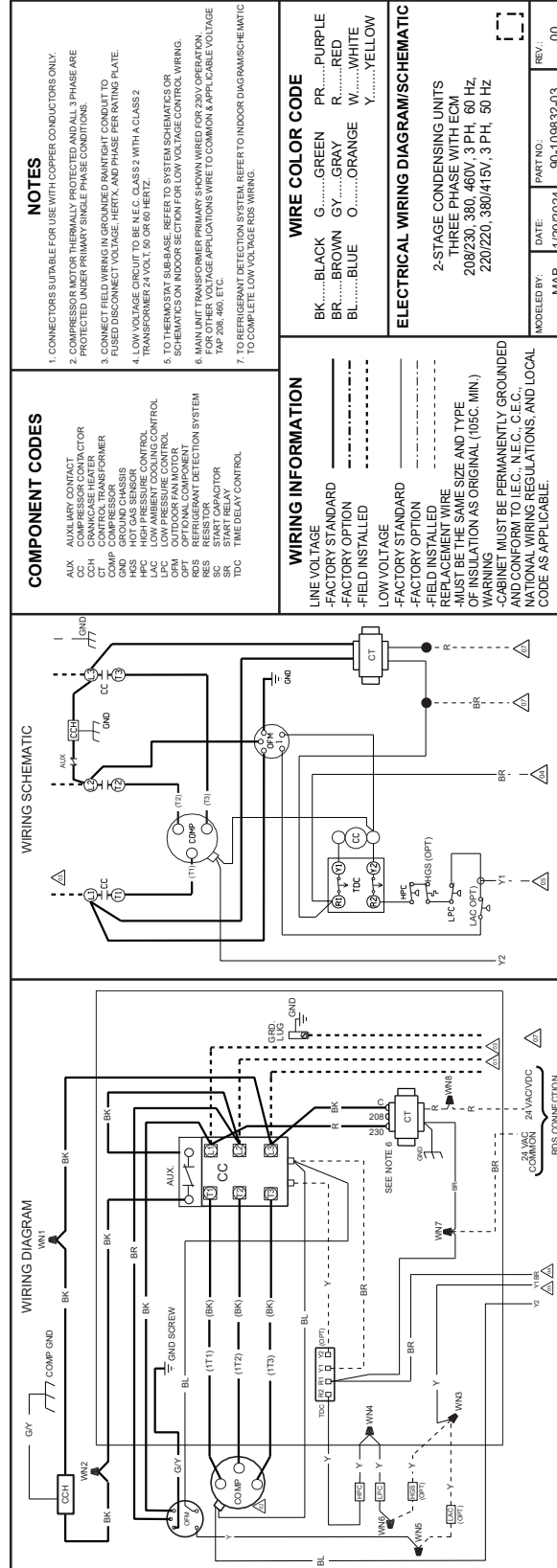
10.7 Warranty Information

For more information on this unit's factory warranty, see the warranty card shipped with the unit. The warranty card is also provided on the manufacturer's website.

11.0 WIRING DIAGRAMS

11.1 Wiring Diagram/Schematic

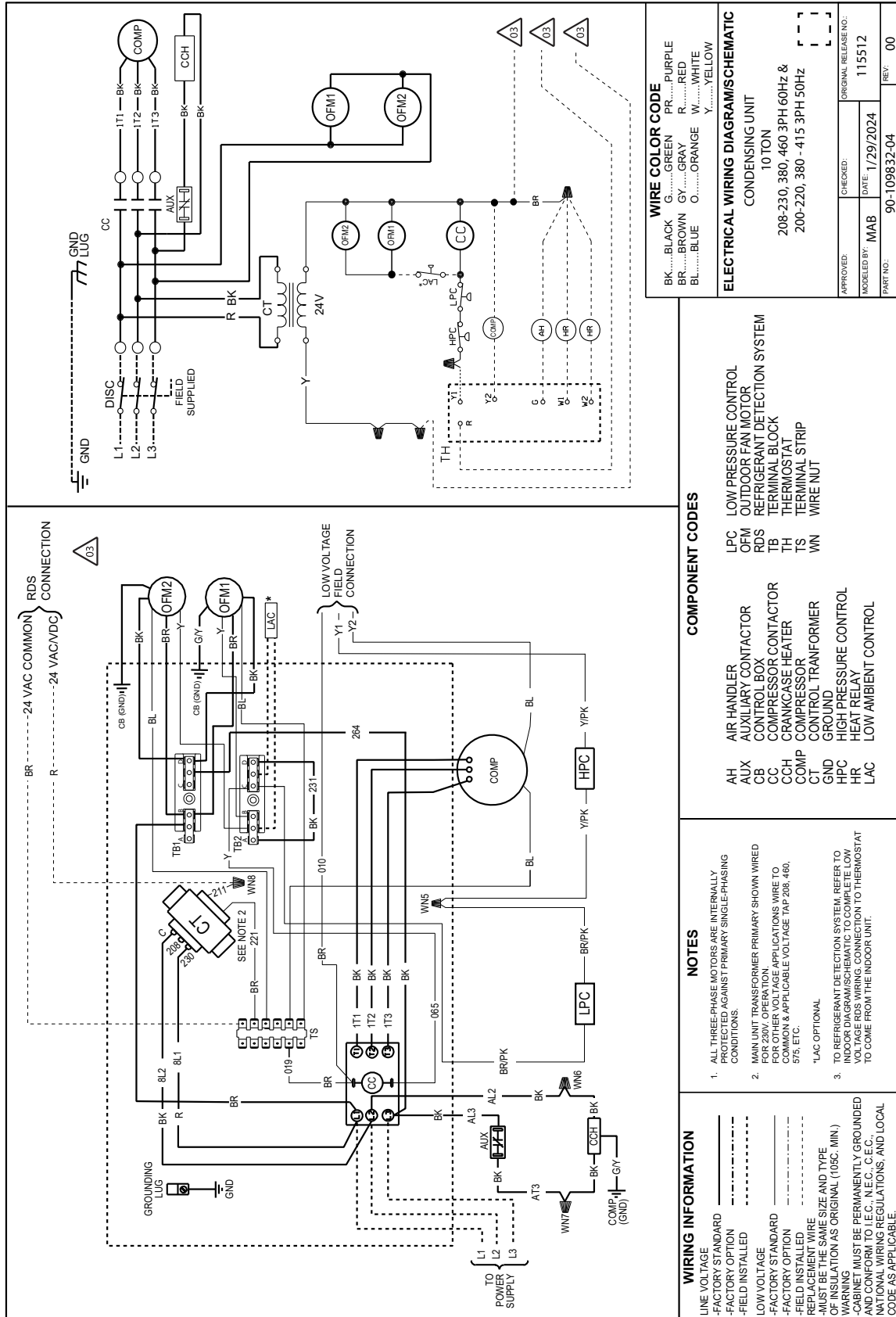
(-)-ACY2078, (-)-ACY2090, (-)-ACY2119 WIRING DIAGRAM
(6.5, 7.5 & 10 TON)



11.0 WIRING DIAGRAMS

11.1 Wiring Diagram/Schematic

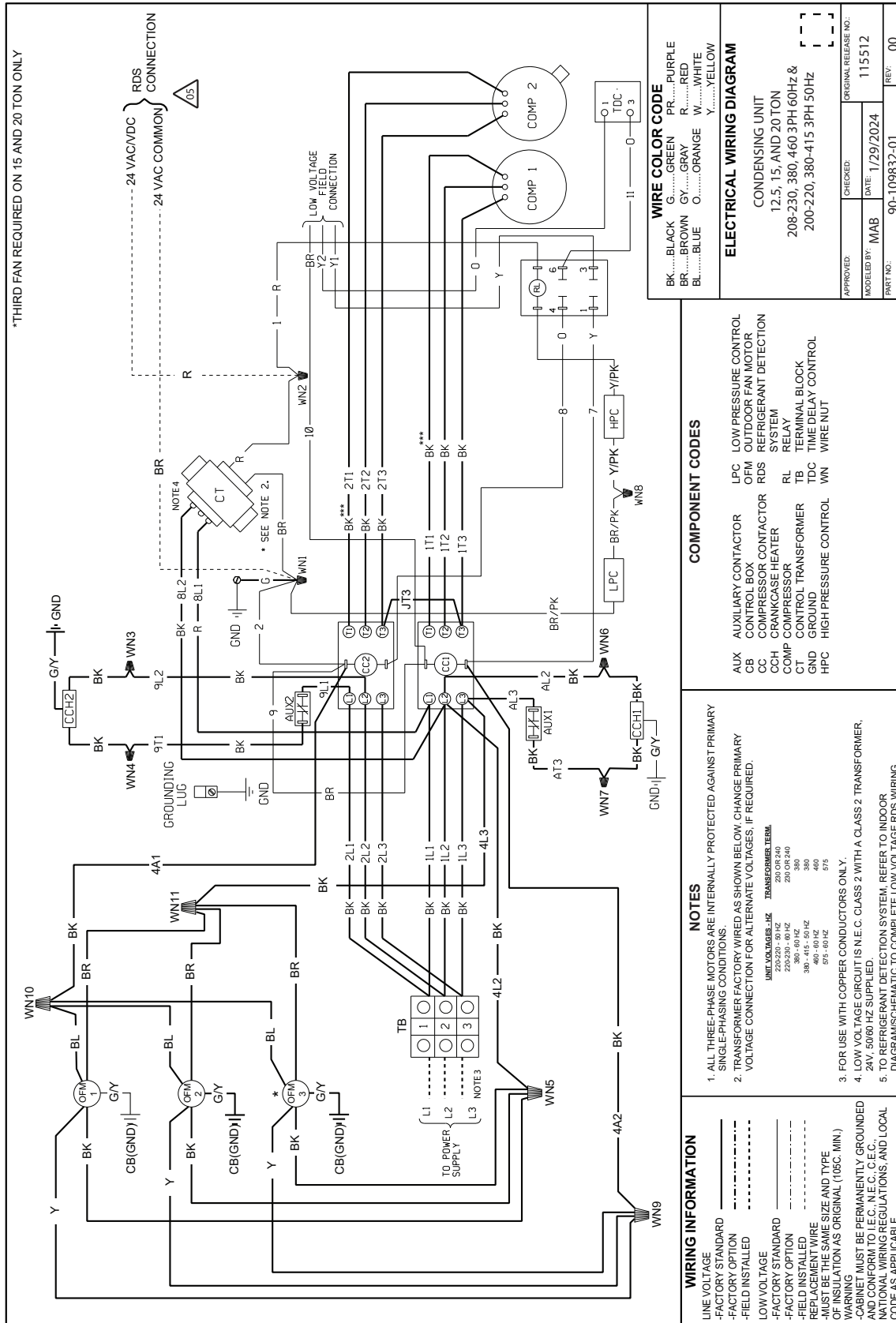
(-)ACY2120 WIRING DIAGRAM
(10 TON)



11.0 WIRING DIAGRAMS

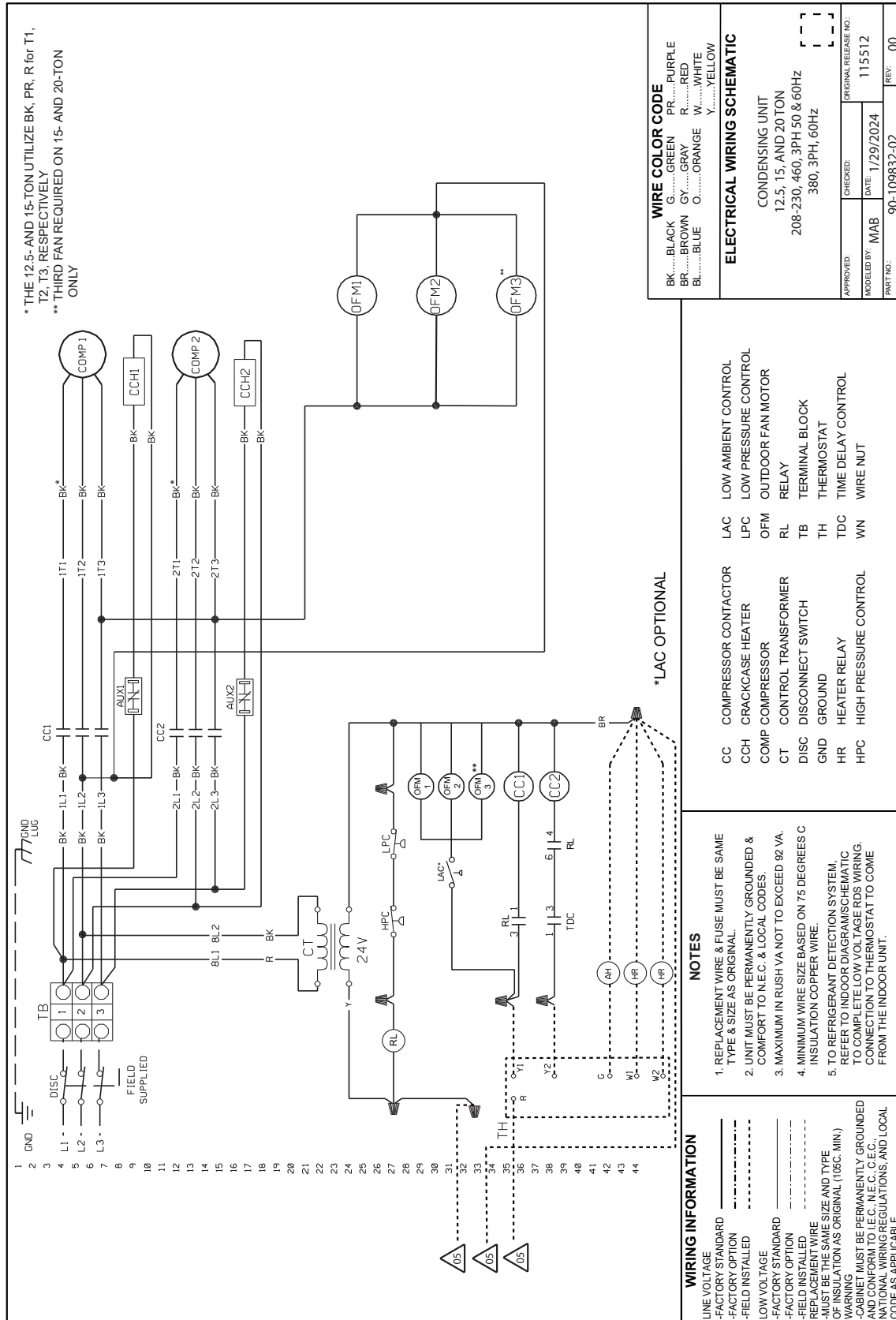
11.1 Wiring Diagram/Schematic

(-)ACY2150, (-)ACY2180, (-)ACY2240 WIRING DIAGRAM
(12.5, 15 & 20 TON)



11.1 Wiring Diagram/Schematic

(-)ACY2150, (-)ACY2180, (-)ACY2240 WIRING DIAGRAM
(12.5, 15 & 20 TON)



12.0 COOLING DATA

COOLING PERFORMANCE DATA - (-JACY2078 & (-JACY2090												
Entering Indoor Air @ 80°F [26.7°C] dbE												
w/E	CFM [L/s]	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			DR	
		3475 [1640]	2400 [1133]	.09	3475 [1640]	2400 [1133]	.09	3475 [1640]	2400 [1133]	.09		
75°F [23.9°C]	Total BTUH [kW] Sens BTUH [kW] Power	110.1[32.3] 66.3[19.4] 6.2	101.8[30.8] 54.9[16.1] 5.9	102.8[30.1] 56.2[16.5] 6	99.3[29.1] 77.4[22.7] 5.9	91.3[26.9] 64[18.8] 5.7	92.7[27.2] 65.6[19.2] 5.7	93.3[27.3] 86.3[25.3] 6	86.2[25.3] 71.4[20.9] 5.8	87[25.5] 73.1[21.4] 5.8	.12	2525 [1192]
80°F [26.7°C]	Total BTUH [kW] Sens BTUH [kW] Power	110.6[32.4] 67.5[19.8] 6.7	102.3[30] 55.8[16.4] 6.4	103.2[30.2] 57.2[16.8] 6.4	99.8[29.2] 78.6[23] 6.5	92.2[27] 65[19.1] 6.2	93.1[27.3] 66.6[19.5] 6.2	93.7[27.5] 87.5[25.6] 6.5	86.7[25.4] 72.4[21.2] 6.3	87.5[25.6] 74.1[21.7] 6.3	.12	2525 [1192]
85°F [29.4°C]	Total BTUH [kW] Sens BTUH [kW] Power	111[32.5] 68.4[20] 7.2	102.6[30.1] 56.6[16.6] 6.9	103.6[30.4] 57.9[17] 6.9	100.1[29.3] 79.5[23.3] 7	92.8[27.1] 65.7[19.3] 6.7	93.5[27.4] 67.3[19.7] 6.7	94.1[27.6] 88.4[25.9] 7	87[25.5] 73.1[21.4] 6.8	87.8[25.7] 74.9[22] 6.8	.12	2525 [1192]
90°F [32.2°C]	Total BTUH [kW] Sens BTUH [kW] Power	111.2[32.6] 69[20.2] 7.7	102.8[30.1] 57.1[16.7] 7.4	103.8[30.4] 58.5[17.1] 7.4	100.4[29.4] 80.1[23.5] 7.5	92.8[27.2] 66.3[19.4] 7.2	93.7[27.5] 67.9[19.9] 7.2	94.3[27.6] 89.1[26.1] 7.5	87.2[25.6] 73.7[21.6] 7.3	88.1[25.8] 75.4[22.1] 7.3	.12	2525 [1192]
95°F [35.0°C]	Total BTUH [kW] Sens BTUH [kW] Power	111.3[32.6] 69.4[20.3] 8.2	103[30.2] 57.4[16.8] 7.9	103.9[30.5] 58.8[17.2] 7.9	100.5[29.5] 80.5[23.6] 8	92.9[27.2] 66.6[19.5] 7.7	93.8[27.5] 68.2[20] 7.7	94.5[27.7] 89.4[26.2] 8.1	87.4[25.6] 74[21.7] 7.7	88.2[25.8] 75.8[22.2] 7.8	.12	2525 [1192]
100°F [37.8°C]	Total BTUH [kW] Sens BTUH [kW] Power	111.3[32.6] 69.6[20.4] 8.7	103[30.2] 57.5[16.9] 8.4	103.9[30.5] 58.9[17.3] 8.4	100.5[29.5] 80.7[23.7] 8.5	92.9[27.2] 66.7[19.5] 8.1	93.8[27.5] 68.3[20] 8.2	94.5[27.7] 89.6[26.3] 8.6	87.4[25.6] 74.1[21.7] 8.2	88.2[25.8] 75.9[22.2] 8.3	.12	2525 [1192]
105°F [40.6°C]	Total BTUH [kW] Sens BTUH [kW] Power	111.2[32.6] 69.5[20.4] 9.2	102.9[30.2] 57.5[16.9] 8.8	103.8[30.4] 58.9[17.3] 8.9	100.4[29.4] 80.6[23.6] 9	92.8[27.2] 66.6[19.5] 8.6	93.7[27.5] 68.3[20] 8.7	94.4[27.7] 89.5[26.2] 9.1	87.3[25.6] 74[21.7] 8.7	88.1[25.8] 75.8[22.2] 8.8	.12	2525 [1192]
110°F [43.3°C]	Total BTUH [kW] Sens BTUH [kW] Power	111[32.5] 69.1[20.3] 9.7	102.6[30.1] 57.2[16.8] 9.3	103.6[30.4] 58.5[17.1] 9.4	100.1[29.3] 80.2[23.5] 9.5	92.6[27.1] 66.3[19.4] 9.1	93.5[27.4] 67.9[19.9] 9.2	94.1[27.6] 89.1[26.1] 9.6	87[25.5] 73.7[21.6] 9.2	87.9[25.8] 75.5[22.1] 9.2	.12	2525 [1192]
115°F [46.1°C]	Total BTUH [kW] Sens BTUH [kW] Power	110.6[32.4] 68.5[20.1] 10.2	102.3[30] 56.6[16.6] 9.8	103.3[30.3] 58[17] 9.9	99.8[29.2] 79.6[23.3] 10	92.3[27.1] 65.8[19.3] 9.6	93.1[27.3] 67.4[19.8] 9.7	93.8[27.5] 88.5[25.9] 10.1	86.7[25.4] 73.2[21.5] 9.7	87.5[25.6] 75[22] 9.7	.12	2525 [1192]
120°F [48.9°C]	Total BTUH [kW] Sens BTUH [kW] Power	110.2[32.3] 67.6[19.8] 10.7	101.9[29.9] 55.9[16.4] 10.3	102.8[30.1] 57.3[16.8] 10.4	99.3[29.1] 78.7[23.1] 10.5	91.8[26.9] 65.1[19.1] 10.1	92.7[27.2] 66.7[19.5] 10.1	93.3[27.3] 87.6[25.7] 10.6	86.3[25.3] 72.5[21.2] 10.2	87.1[25.5] 74.2[21.7] 10.2	.12	2525 [1192]
125°F [51.7°C]	Total BTUH [kW] Sens BTUH [kW] Power	109.6[32.1] 66.5[19.5] 11.2	101.3[29.7] 55[16.1] 10.8	102.3[30] 56.3[16.5] 10.8	98.7[28.9] 77.6[22.7] 11	91.3[26.8] 64.2[18.8] 10.6	92.1[27] 65.7[19.3] 10.6	92.7[27.2] 86.5[25.4] 11.1	85.7[25.1] 71.5[21] 10.7	86.5[25.4] 73.3[21.5] 10.7	.12	2525 [1192]

Outdoor Dry Bulb Temperature

12.0 COOLING DATA

COOLING PERFORMANCE DATA - (-) ACV2119									
Entering Indoor Air @ 80°F [26.7°C] dbE									
wBE	CFM [L/s]	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]	
		4250 [2006]	3900 [1841]	3075 [1451]	4250 [2006]	3900 [1841]	3075 [1451]	4250 [2006]	3900 [1841]
DR		.05	.09	.12	.05	.09	.12	.05	.09
75°F [23.9°C]	Total BTUH [kW]	123.9[36.3]	121.9[35.7]	117.2[34.3]	115.7[33.9]	113.8[33.4]	109.4[32.1]	111.1[32.6]	109.3[32]
	Sens BTUH [kW] Power	76.4[22.4] 7.4	73.3[21.5] 7.4	66.1[19.4] 7.2	87.4[25.6] 7.3	83.9[24.6] 7.2	75.6[22.2] 7.1	102.1[29.9] 7.2	98[28.7] 7.1
80°F [26.7°C]	Total BTUH [kW]	124.8[36.6]	122.8[36]	118[34.6]	116.5[34.1]	114.7[33.6]	110.3[32.3]	112[32.8]	110.2[32.3]
	Sens BTUH [kW] Power	77.5[22.7] 8	74.4[21.8] 8	67.1[19.7] 7.8	88.5[25.9] 7.9	85[24.9] 7.9	76.6[22.5] 7.7	103.3[30.3] 7.8	99.1[29] 7.7
85°F [29.4°C]	Total BTUH [kW]	125[36.6]	123[36]	118.3[34.7]	116.8[34.2]	114.9[33.7]	110.5[32.4]	112.2[32.9]	110.4[32.4]
	Sens BTUH [kW] Power	78[22.9] 8.7	74.9[22] 8.6	67.5[19.8] 8.5	89.1[26.1] 8.6	85.5[25.1] 8.5	77[22.6] 8.3	103.8[30.4] 8.4	99.6[29.2] 8.4
90°F [32.2°C]	Total BTUH [kW]	124.6[36.5]	122.6[35.9]	117.9[34.6]	116.4[34.1]	114.5[33.6]	110.1[32.3]	111.8[32.8]	110[32.2]
	Sens BTUH [kW] Power	77.9[22.8] 9.4	74.8[21.9] 9.3	67.4[19.8] 9.1	88.9[26.1] 9.2	85.3[25] 9.2	76.9[22.5] 9	103.7[30.4] 9.1	99.5[29.2] 9
95°F [35.0°C]	Total BTUH [kW]	123.6[36.2]	121.6[35.6]	116.9[34.3]	115.4[33.8]	113.5[33.3]	109.1[32]	110.8[32.5]	109[31.9]
	Sens BTUH [kW] Power	77.1[22.6] 10	74[21.7] 10	66.7[19.5] 9.8	88.1[25.8] 9.9	84.6[24.8] 9.8	76.2[22.3] 9.6	102.9[30.2] 9.8	98.8[29] 9.7
100°F [37.8°C]	Total BTUH [kW]	121.9[35.7]	120[35.2]	115.4[33.8]	113.7[33.3]	111.9[32.8]	107.6[31.5]	109.1[32]	107.4[31.5]
	Sens BTUH [kW] Power	75.7[22.2] 10.7	72.7[21.3] 10.6	65.5[19.2] 10.4	86.7[25.4] 10.6	83.2[24.4] 10.5	75[22] 10.3	101.5[29.7] 10.5	97.4[28.5] 10.4
105°F [40.6°C]	Total BTUH [kW]	119.6[35.1]	117.7[34.5]	113.2[33.2]	111.4[32.6]	109.6[32.1]	105.4[30.9]	106.8[31.3]	105.1[30.8]
	Sens BTUH [kW] Power	73.6[21.6] 11.4	70.7[20.7] 11.3	63.7[18.7] 11.1	84.6[24.8] 11.3	81.2[23.8] 11.2	73.2[21.5] 11	99.4[29.1] 11.2	95.4[28] 11.1
110°F [43.3°C]	Total BTUH [kW]	116.7[34.2]	114.8[33.6]	110.4[32.4]	108.5[31.8]	106.8[31.3]	102.7[30.1]	103.9[30.5]	102.3[30]
	Sens BTUH [kW] Power	70.9[20.8] 12.1	68.1[20] 12	61.3[18] 11.8	81.9[24] 12	78.6[23] 11.9	70.9[20.8] 11.7	96.7[28.3] 11.9	92.8[27.2] 11.8
115°F [46.1°C]	Total BTUH [kW]	113.2[33.2]	111.4[32.6]	107.1[31.4]	105[30.8]	103.3[30.3]	99.3[29.1]	100.4[29.4]	98.8[29]
	Sens BTUH [kW] Power	67.6[19.8] 12.8	64.8[19] 12.7	58.4[17.1] 12.5	78.6[23] 12.7	75.4[22.1] 12.6	68[19.9] 12.4	93.3[27.3] 12.6	89.6[26.3] 12.5
120°F [48.9°C]	Total BTUH [kW]	109[31.9]	107.2[31.4]	103.1[30.2]	100.8[29.5]	99.2[29.1]	95.3[27.9]	96.2[28.2]	94.7[27.8]
	Sens BTUH [kW] Power	63.5[18.6] 13.6	61[17.9] 13.5	55[16.1] 13.2	74.6[21.9] 13.5	71.6[21] 13.3	64.5[18.9] 13.1	89.3[26.2] 13.3	85.7[25.1] 13.2
125°F [51.7°C]	Total BTUH [kW]	104.2[30.5]	102.5[30]	98.6[28.9]	96[28.1]	94.4[27.7]	90.8[26.6]	91.4[26.8]	89.9[26.3]
	Sens BTUH [kW] Power	58.9[17.3] 14.3	56.5[16.6] 14.2	50.9[14.9] 13.9	69.9[20.5] 14.2	67.1[19.7] 14.1	60.5[17.7] 13.8	84.7[24.8] 14.1	81.3[23.8] 14

Outdoor Dry Bulb Temperature

12.0 COOLING DATA

COOLING PERFORMANCE DATA - (-) A/CY2120												
Entering Indoor Air @ 80°F [26.7°C] dbE												
wDE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]					
	CFM [L/s]	4400 [2077]	3900 [1841]	3175 [1498]	4400 [2077]	3900 [1841]	3175 [1498]	4400 [2077]	3900 [1841]	3175 [1498]		
DR		.05	.09	.12	.05	.09	.12	.05	.09	.12		
75°F [23.9°C]	Total BTUH [kW]	130[38.1]	127[37.2]	122.7[36]	119.3[35]	116.6[34.2]	112.7[33]	112.1[32.9]	109.6[32.1]	105.9[31]		
	Sens BTUH [kW]	77.7[22.8]	73.3[21.5]	67[19.6]	84.7[24.8]	73.9[23.4]	73[21.4]	95.2[27.9]	89.9[26.3]	82.1[24.1]	7.6	7.6
80°F [26.7°C]	Total BTUH [kW]	131.4[38.5]	128.4[37.6]	124.1[36.4]	120.7[35.4]	118[34.6]	114[33.4]	113.5[33.3]	110.9[32.5]	107.3[31.4]		
	Sens BTUH [kW]	80.3[23.5]	75.8[22.2]	69.2[20.3]	87.3[25.6]	82.4[24.2]	75.2[22]	97.9[28.7]	92.3[27.1]	84.3[24.7]	8.2	8.2
85°F [29.4°C]	Total BTUH [kW]	132[38.7]	129[37.8]	124.6[36.5]	121.3[35.6]	118.6[34.8]	114.6[33.6]	114.1[33.4]	111.5[32.7]	107.8[31.6]		
	Sens BTUH [kW]	82.2[24.1]	77.6[22.7]	70.8[20.8]	89.2[26.1]	84.1[24.6]	76.8[22.5]	99.7[29.2]	94.1[27.6]	85.9[25.2]	9.5	9.5
90°F [32.2°C]	Total BTUH [kW]	131.9[38.7]	128.9[37.8]	124.5[36.5]	121.2[35.5]	118.5[34.7]	114.4[33.5]	114[33.4]	111.4[32.6]	107.7[31.6]		
	Sens BTUH [kW]	83.3[24.4]	78.6[23]	71.8[21]	90.2[26.4]	85.1[24.9]	77.8[22.8]	100.8[29.5]	95.1[27.9]	86.9[25.5]	10.1	10.1
95°F [35.0°C]	Total BTUH [kW]	131[38.4]	128[37.5]	123.7[36.3]	120.3[35.3]	117.6[34.5]	113.6[33.3]	113.1[33.1]	110.5[32.4]	106.8[31.3]		
	Sens BTUH [kW]	83.6[24.5]	78.8[23.1]	72[21.1]	90.5[26.5]	85.4[25]	78[22.9]	101.1[29.6]	95.4[28]	87.1[25.5]	9.6	9.6
100°F [37.8°C]	Total BTUH [kW]	129.3[37.9]	126.4[37]	122.1[35.8]	118.7[34.8]	116[34]	112.1[32.9]	111.5[32.7]	108.9[31.9]	105.3[30.9]		
	Sens BTUH [kW]	83.1[24.4]	78.4[23]	71.6[21]	90[26.4]	84.9[24.9]	77.8[22.7]	100.6[29.5]	94.9[27.8]	86.7[25.4]	10.7	10.7
105°F [40.6°C]	Total BTUH [kW]	126.9[37.2]	124.1[36.4]	119.9[35.1]	116.3[34.1]	113.6[33.3]	109.8[32.2]	109.1[32]	106.6[31.2]	103[30.2]		
	Sens BTUH [kW]	81.8[24]	77.2[22.6]	70.5[20.7]	88.7[26]	83.7[24.5]	76.5[22.4]	99.3[29.1]	93.7[27.5]	85.6[25.1]	11.2	11.2
110°F [43.3°C]	Total BTUH [kW]	123.8[36.3]	121[35.5]	116.9[34.3]	113.1[33.1]	110.5[32.4]	106.8[31.3]	105.9[31]	103.5[30.3]	100[29.3]		
	Sens BTUH [kW]	79.7[23.4]	75.2[22]	68.7[20.1]	86.7[25.4]	81.8[24]	74.7[21.9]	97.2[28.5]	91.7[26.9]	83.8[24.6]	11.8	11.8
115°F [46.1°C]	Total BTUH [kW]	119.9[35.1]	117.1[34.3]	113.2[33.2]	109.2[32]	106.7[31.3]	103.1[30.2]	102[29.9]	99.7[29.2]	96.3[28.2]		
	Sens BTUH [kW]	76.9[22.5]	72.5[21.2]	66.2[19.4]	83.8[24.6]	79.1[23.2]	72.2[21.2]	94.4[27.7]	89.1[26.1]	81.3[23.8]	12.3	12.3
120°F [48.9°C]	Total BTUH [kW]	115.2[33.8]	112.6[33]	108.8[31.9]	104.5[30.6]	102.1[29.9]	98.7[28.9]	97.3[28.5]	95.1[27.9]	91.9[26.9]		
	Sens BTUH [kW]	73.2[21.5]	69.1[20.3]	63.1[18.5]	80.2[23.5]	75.7[22.2]	69.1[20.3]	90.7[26.6]	85.6[25.1]	78.2[22.9]	12.8	12.8
125°F [51.7°C]	Total BTUH [kW]	109.8[32.2]	107.3[31.4]	103.6[30.4]	99.1[29]	96.8[28.4]	93.6[27.4]	91.9[26.9]	89.8[26.3]	86.8[25.4]		
	Sens BTUH [kW]	68.8[20.2]	64.9[19]	59.3[17.4]	75.8[22.2]	71.5[21]	65.3[19.1]	86.3[25.3]	81.5[23.9]	74.4[21.8]	13.3	13.3

Outdoor Dry Bulb Temperature

12.0 COOLING DATA

COOLING PERFORMANCE DATA - (-)AC2150												
Entering Indoor Air @ 80°F [26.7°C] dbE												
wBE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			63°F [17.2°C]		
	CFM [L/s]	DR	53/75 [25/37]	43/50 [20/53]	38/75 [18/29]	53/75 [25/37]	43/50 [20/53]	38/75 [18/29]	53/75 [25/37]	43/50 [20/53]	38/75 [18/29]	53/75 [25/37]
75°F [23.9°C]			.05	.09	.12	.05	.09	.12	.05	.09	.12	.12
Total BTUH [kW]	141.4 [41.4]			135.9 [39.7]	132.9 [39]	136.1 [39.9]	130.5 [38.2]	127.9 [37.5]	130.7 [38.3]	125.4 [36.8]	122.9 [36]	122.9 [36]
Sens BTUH [kW]	85.7 [25.1]			77.2 [22.6]	73.3 [21.5]	101.5 [29.7]	91.5 [26.8]	86.8 [25.4]	117.3 [34.4]	105.7 [31]	100.3 [29.4]	100.3 [29.4]
Power	8.7			8.5	8.4	8.5	8.3	8.2	8.5	8.3	8.2	8.2
80°F [26.7°C]												
Total BTUH [kW]	144.7 [42.4]			138.8 [40.7]	136.9 [39.9]	139.4 [40.9]	133.7 [39.2]	131.3 [38.4]	134.1 [39.3]	128.6 [37.7]	126.3 [36.9]	126.3 [36.9]
Sens BTUH [kW]	88 [25.8]			79.3 [23.2]	75.3 [22.1]	103.8 [30.4]	93.6 [27.4]	88.8 [26]	119.6 [35.1]	107.8 [31.6]	102.3 [30]	102.3 [30]
Power	9.7			9.5	9.4	9.4	9.3	9.2	9.5	9.3	9.2	9.2
85°F [29.4°C]												
Total BTUH [kW]	148.1 [43.4]			142.1 [41.6]	139.2 [40.8]	142.8 [41.9]	136.9 [40.1]	134.2 [39.3]	137.4 [40.3]	131.8 [38.6]	129.2 [37.9]	129.2 [37.9]
Sens BTUH [kW]	90.4 [26.5]			81.4 [23.9]	77.3 [22.7]	106.2 [31.1]	95.6 [28]	90.8 [26.6]	121.9 [35.7]	109.9 [32.2]	104.3 [30.6]	104.3 [30.6]
Power	10.7			10.5	10.3	10.4	10.2	10.1	10.5	10.3	10.2	10.2
90°F [32.2°C]												
Total BTUH [kW]	151.4 [44.4]			145.2 [42.6]	142.3 [41.7]	146.1 [42.8]	140.1 [41.1]	137.3 [40.2]	140.8 [41.3]	135.9 [39.6]	132.3 [38.8]	132.3 [38.8]
Sens BTUH [kW]	92.7 [27.2]			83.5 [24.5]	79.2 [23.2]	108.5 [31.8]	97.7 [28.6]	92.7 [27.2]	124.3 [36.4]	111.9 [32.8]	106.2 [31.1]	106.2 [31.1]
Power	11.7			11.4	11.3	11.4	11.2	11.1	11.5	11.2	11.1	11.1
95°F [35.0°C]												
Total BTUH [kW]	154.8 [45.4]			148.4 [43.5]	145.5 [42.6]	149.5 [43.8]	143.3 [42]	140.5 [41.2]	144.1 [42.2]	138.2 [40.5]	135.5 [39.7]	135.5 [39.7]
Sens BTUH [kW]	95 [27.8]			85.6 [25.1]	81.2 [23.8]	110.8 [32.5]	99.8 [29.2]	94.7 [27.8]	126.6 [37.1]	114 [33.4]	108.2 [31.7]	108.2 [31.7]
Power	12.7			12.4	12.3	12.4	12.2	12.1	12.5	12.2	12.1	12.1
100°F [37.8°C]												
Total BTUH [kW]	158.1 [46.3]			151.7 [44.5]	148.6 [43.6]	152.8 [44.8]	146.5 [42.9]	143.6 [42.1]	147.5 [43.2]	141.4 [41.4]	138.6 [40.6]	138.6 [40.6]
Sens BTUH [kW]	97.3 [28.5]			87.7 [25.7]	83.2 [24.4]	113.1 [33.1]	101.9 [29.9]	96.7 [28.3]	128.9 [37.8]	116.1 [34]	110.2 [32.3]	110.2 [32.3]
Power	13.7			13.4	13.2	13.4	13.2	13	13.5	13.2	13.1	13.1
105°F [40.6°C]												
Total BTUH [kW]	161.5 [47.3]			154.9 [45.4]	151.8 [44.5]	156.2 [45.8]	149.8 [43.9]	146.8 [43]	150.9 [44.2]	144.7 [42.4]	141.8 [41.6]	141.8 [41.6]
Sens BTUH [kW]	99.6 [29.2]			89.7 [26.3]	85.2 [25]	115.4 [33.8]	104 [30.5]	98.7 [28.9]	131.2 [38.5]	118.2 [34.6]	112.2 [32.9]	112.2 [32.9]
Power	14.7			14.4	14.2	14.4	14.1	14	14.5	14.2	14	14
110°F [43.3°C]												
Total BTUH [kW]	164.9 [48.3]			158.1 [46.3]	154.9 [45.4]	159.5 [46.7]	153 [44.8]	149.9 [43.9]	154.2 [45.2]	147.9 [43.3]	144.9 [42.5]	144.9 [42.5]
Sens BTUH [kW]	101.9 [29.9]			91.8 [26.9]	87.1 [25.5]	117.7 [34.5]	106.1 [31.1]	100.6 [29.5]	133.5 [39.1]	120.3 [35.3]	114.1 [33.4]	114.1 [33.4]
Power	15.6			15.3	15.2	15.4	15.1	15	15.4	15.1	15	15
115°F [46.1°C]												
Total BTUH [kW]	168.2 [49.3]			161.3 [47.3]	158.1 [46.3]	162.9 [47.7]	156.2 [45.8]	153.1 [44.9]	157.6 [46.2]	151.1 [44.3]	148.1 [43.4]	148.1 [43.4]
Sens BTUH [kW]	104.2 [30.5]			93.9 [27.5]	89.1 [25.5]	120 [35.2]	108.1 [31.7]	102.6 [30.1]	135.8 [39.8]	122.4 [35.9]	116.1 [34]	116.1 [34]
Power	16.6			16.3	16.1	16.4	16.1	15.9	16.4	16.1	16	16
120°F [48.9°C]												
Total BTUH [kW]	171.6 [50.3]			164.5 [48.2]	161.3 [47.3]	166.2 [48.7]	159.4 [46.7]	156.3 [45.8]	160.9 [47.2]	154.3 [45.2]	151.2 [44.3]	151.2 [44.3]
Sens BTUH [kW]	106.5 [31.2]			96 [28.1]	91.1 [26.7]	122.3 [35.8]	110.2 [32.3]	104.6 [30.7]	138.1 [40.5]	124.4 [36.5]	118.1 [34.6]	118.1 [34.6]
Power	17.6			17.3	17.1	17.4	17.1	16.9	17.4	17.1	16.9	16.9
125°F [51.7°C]												
Total BTUH [kW]	174.9 [51.3]			167.7 [49.2]	164.4 [48.2]	169.6 [49.7]	162.6 [47.7]	159.4 [46.7]	164.3 [48.2]	157.5 [46.2]	154.4 [45.3]	154.4 [45.3]
Sens BTUH [kW]	108.9 [31.9]			98.1 [28.8]	93.1 [27.3]	124.7 [36.5]	112.3 [32.9]	106.6 [31.2]	140.4 [41.1]	126.5 [37.1]	120.1 [35.2]	120.1 [35.2]
Power	18.6			18.3	18.1	18.4	18	17.9	18.4	18.1	17.9	17.9

Outdoor Dry Bulb Temperature

12.0 COOLING DATA

COOLING PERFORMANCE DATA - (CAJY2180)														
Entering Indoor Air @ 80°F [26.7°C] dBE														
75°F [23.9°C]	w/E		71°F [21.7°C]				67°F [19.4°C]				63°F [17.2°C]			
	CFM [L/s]		5200 [2454]		6775 [3197]		5200 [2454]		6775 [3197]		5200 [2454]		6775 [3197]	
	DR		.05	.09	.12	.05	.09	.12	.05	.09	.12	.05	.09	.12
75°F [23.9°C]	Total BTUH [kW]	200.9[58.9]	190.4[55.8]	188.4[55.2]	186.5[54.7]	186.5[54.7]	176.8[51.8]	174.9[51.3]	176.8[51.8]	174.9[51.3]	167.4[48.9]	165.2[48.4]	167.4[48.9]	165.2[48.4]
	Sens BTUH [kW]	119.2[34.9]	104.5[30.6]	101.6[29.8]	104.5[30.6]	104.5[30.6]	122.7[36]	119.3[35]	122.7[36]	119.3[35]	144.7[42.4]	140.8[41.3]	144.7[42.4]	140.8[41.3]
	Power	10.6	10.3	10.3	10.4	10.4	10.2	10.1	10.2	10.1	10	9.9	10	9.9
80°F [26.7°C]	Total BTUH [kW]	203.8[59.7]	193.2[56.6]	191.2[56]	189.4[55.5]	189.4[55.5]	179.5[52.6]	177.7[52.1]	179.5[52.6]	177.7[52.1]	169.8[49.8]	168.7[49.2]	169.8[49.8]	168.7[49.2]
	Sens BTUH [kW]	122.7[36]	107.5[31.5]	104.7[30.7]	143.9[42.1]	143.9[42.1]	125.7[36.8]	122.4[35.9]	125.7[36.8]	122.4[35.9]	147.8[43.3]	143.9[42.2]	147.8[43.3]	143.9[42.2]
	Power	11.6	11.3	11.2	11.4	11.4	11.1	11	11.2	11	10.9	10.9	10.9	10.9
85°F [29.4°C]	Total BTUH [kW]	205.5[60.2]	194.8[57.1]	192.7[56.5]	191.1[56]	191.1[56]	181.1[53.1]	179.2[52.5]	181.1[53.1]	179.2[52.5]	171.3[50.2]	169.5[49.7]	171.3[50.2]	169.5[49.7]
	Sens BTUH [kW]	124.9[36.6]	109.4[32.1]	106.5[31.2]	145.7[42.7]	145.7[42.7]	127.6[37.4]	124.2[36.4]	127.6[37.4]	124.2[36.4]	149.7[43.9]	145.7[42.7]	149.7[43.9]	145.7[42.7]
	Power	12.6	12.3	12.2	12.4	12.4	12.1	12	12.2	12	11.9	11.9	11.9	11.9
90°F [32.2°C]	Total BTUH [kW]	205.9[60.3]	195.1[57.2]	193.1[56.6]	191.5[56.1]	191.5[56.1]	181.5[53.2]	179.6[52.6]	181.5[53.2]	179.6[52.6]	171.7[50.3]	169.9[49.8]	171.7[50.3]	169.9[49.8]
	Sens BTUH [kW]	125.7[36.8]	110.1[32.3]	107.2[31.4]	146.5[42.9]	146.5[42.9]	128.3[37.6]	124.9[36.6]	128.3[37.6]	124.9[36.6]	150.4[44.1]	146.4[42.9]	150.4[44.1]	146.4[42.9]
	Power	13.7	13.4	13.3	13.5	13.5	13.2	13.1	13.2	13.1	13	13	13	13
95°F [35.0°C]	Total BTUH [kW]	205[60.1]	194.3[56.9]	192.3[56.4]	190.6[55.9]	190.6[55.9]	180.7[53]	178.8[52.4]	180.7[53]	178.8[52.4]	170.9[50.1]	169.1[49.6]	170.9[50.1]	169.1[49.6]
	Sens BTUH [kW]	125.1[36.7]	109.6[32.1]	106.6[31.2]	145.9[42.8]	145.9[42.8]	127.8[37.5]	124.3[36.4]	127.8[37.5]	124.3[36.4]	149.9[43.9]	145.8[42.7]	149.9[43.9]	145.8[42.7]
	Power	14.9	14.5	14.5	14.8	14.8	14.4	14.3	14.4	14.3	14.2	14.1	14.2	14.1
100°F [37.8°C]	Total BTUH [kW]	202.9[59.5]	192.3[56.4]	190.3[55.8]	188.4[55.2]	188.4[55.2]	178.6[52.3]	176.7[51.8]	178.6[52.3]	176.7[51.8]	168.8[49.5]	167.1[48]	168.8[49.5]	167.1[48]
	Sens BTUH [kW]	123.1[36.1]	107.9[31.6]	105.0[30.8]	143.9[42.2]	143.9[42.2]	126.1[37]	122.7[36]	126.1[37]	122.7[36]	148.1[43.4]	144.2[42.3]	148.1[43.4]	144.2[42.3]
	Power	16.2	15.8	15.7	16	16	15.6	15.6	15.6	15.6	15.5	15.4	15.5	15.4
105°F [40.6°C]	Total BTUH [kW]	199.4[58.4]	189[55.4]	187[54.8]	185[54.2]	185[54.2]	175.4[51.4]	173.5[50.8]	175.4[51.4]	173.5[50.8]	165.6[48.5]	163.9[48]	165.6[48.5]	163.9[48]
	Sens BTUH [kW]	119.7[35.1]	104.9[30.7]	102.1[29.9]	140.5[41.2]	140.5[41.2]	123.1[36.1]	119.8[35.1]	123.1[36.1]	119.8[35.1]	145.2[42.6]	141.3[41.4]	145.2[42.6]	141.3[41.4]
	Power	17.6	17.1	17.1	17.4	17.4	17	16.9	17.2	16.8	16.8	16.7	16.8	16.7
110°F [43.3°C]	Total BTUH [kW]	194.7[57.1]	184.6[54.1]	182.6[53.5]	180.3[52.8]	180.3[52.8]	170.9[50.1]	169.1[49.6]	170.9[50.1]	169.1[49.6]	161.1[47.2]	159.4[46.7]	161.1[47.2]	159.4[46.7]
	Sens BTUH [kW]	115[33.7]	100.8[29.5]	98.1[28.8]	135.8[39.8]	135.8[39.8]	119[34.9]	115.8[33.9]	119[34.9]	115.8[33.9]	141.1[41.4]	137.3[40.2]	141.1[41.4]	137.3[40.2]
	Power	19.1	18.6	18.5	18.9	18.9	18.4	18.3	18.7	18.2	18.2	18.1	18.2	18.1
115°F [46.1°C]	Total BTUH [kW]	188.8[55.3]	178.9[52.4]	177[51.9]	174.3[51.1]	174.3[51.1]	165.2[48.4]	163.5[47.9]	165.2[48.4]	163.5[47.9]	155.5[45.6]	153.8[45.1]	155.5[45.6]	153.8[45.1]
	Sens BTUH [kW]	108.9[31.9]	95.4[28]	92.8[27.2]	129.7[38]	129.7[38]	113.6[33.3]	110.6[32.4]	113.6[33.3]	110.6[32.4]	135.7[39.8]	132[38.7]	135.7[39.8]	132[38.7]
	Power	20.6	20.1	20	20.4	20.4	19.9	19.8	20.2	19.7	19.7	19.6	19.7	19.6
120°F [48.9°C]	Total BTUH [kW]	181.5[53.2]	172[50.4]	170.2[49.9]	167.1[49]	167.1[49]	158.4[46.4]	156.7[45.9]	158.4[46.4]	156.7[45.9]	148.6[43.6]	147[43.1]	148.6[43.6]	147[43.1]
	Sens BTUH [kW]	101.4[29.7]	88.8[26]	86.5[25.4]	122.2[35.8]	122.2[35.8]	107[31.4]	104.2[30.5]	107[31.4]	104.2[30.5]	129.1[37.8]	125.7[36.8]	129.1[37.8]	125.7[36.8]
	Power	22.2	21.6	21.5	22	22	21.5	21.4	21.9	21.3	21.3	21.2	21.9	21.2
125°F [51.7°C]	Total BTUH [kW]	173[50.7]	163.9[48]	162.2[47.5]	158.6[46.5]	158.6[46.5]	150.3[44.1]	148.7[43.6]	150.3[44.1]	148.7[43.6]	140.5[41.2]	139[40.7]	140.5[41.2]	139[40.7]
	Sens BTUH [kW]	92.5[27.1]	81.1[23.8]	78.9[23.1]	113.3[33.2]	113.3[33.2]	99.3[29.1]	96.6[28.3]	99.3[29.1]	96.6[28.3]	121.4[35.6]	118.1[34.6]	121.4[35.6]	118.1[34.6]
	Power	23.9	23.3	23.2	23.8	23.8	23.1	23	23.6	23	23	22.8	23.6	22.8

Outdoor Dry Bulb Temperature

12.0 COOLING DATA

COOLING PERFORMANCE DATA - (PAC)2240												
Entering Indoor Air @ 80°F [26.7°C] dBE												
w/E	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]					
	CFM [L/s]	67°F [31.97]	5200 [2454]	4900 [2313]	67°F [31.97]	5200 [2454]	4900 [2313]	67°F [31.97]	5200 [2454]	4900 [2313]		
DR		.05	.09	.12	.05	.09	.12	.05	.09	.12		
75°F [23.9°C]	Total BTUH [kW]	281.3[82.4]	260.3[76.3]	262.3[76.9]	261.4[76.6]	241.8[70.9]	243.7[71.4]	241.4[70.8]	223.3[65.4]	225.1[66]		
	Sens BTUH [kW]	166.8[48.9]	138.1[40.5]	140.9[41.3]	189.9[55.7]	157.2[46.1]	160.4[47]	213[62.4]	176.4[51.7]	179.9[52.7]	16.8	
Power												
80°F [26.7°C]	Total BTUH [kW]	282.7[82.9]	261.5[76.6]	263.6[77.3]	282.7[77]	243.1[71.2]	245[71.8]	242.8[71.2]	224.6[65.8]	226.3[66.3]		
	Sens BTUH [kW]	170.1[49.9]	140.8[41.3]	143.7[42.1]	193.2[56.6]	160[46.9]	163.2[47.8]	216.4[63.4]	179.1[52.5]	182.7[53.5]	18.6	
Power												
85°F [29.4°C]	Total BTUH [kW]	284.1[83.3]	262.8[77]	264.9[77.6]	264.1[77.4]	244.3[71.6]	246.3[72.2]	244.2[71.6]	225.9[66.2]	227.6[66.7]		
	Sens BTUH [kW]	173.5[50.8]	143.6[42.1]	146.5[42.9]	196.6[57.6]	162.8[47.7]	166[48.7]	219.7[64.4]	181.9[53.3]	185.6[54.4]	20.3	
Power												
90°F [32.2°C]	Total BTUH [kW]	285.5[83.7]	264.1[77.4]	266.2[78]	265.5[77.8]	245.6[72]	247.5[72.5]	245.5[72]	227.1[66.6]	228.9[67.1]		
	Sens BTUH [kW]	176.8[51.8]	146.4[42.9]	149.3[43.8]	199.9[58.6]	165.5[48.5]	168.8[49.5]	223[66.4]	184.7[54.1]	188.4[55.2]	22.1	
Power												
95°F [35.0°C]	Total BTUH [kW]	286.9[84.1]	265.4[77.8]	267.4[78.4]	266.9[78.2]	246.9[72.4]	248.8[72.9]	246.9[72.4]	228.4[66.9]	230.2[67.5]		
	Sens BTUH [kW]	180.1[52.8]	149.1[43.7]	152.1[44.6]	203.3[59.6]	168.3[49.3]	171.7[50.3]	226.4[66.4]	187.4[54.9]	191.2[56]	23.9	
Power												
100°F [37.8°C]	Total BTUH [kW]	288.2[84.5]	266.6[78.1]	268.7[78.8]	268.3[78.6]	248.2[72.7]	250.1[73.3]	248.3[72.8]	229.7[67.3]	231.5[67.8]		
	Sens BTUH [kW]	183.5[53.8]	151.9[44.5]	154.9[45.4]	206.6[60.6]	171[50.1]	174.5[51.1]	229.7[67.3]	190.2[55.7]	194[56.9]	25.6	
Power												
105°F [40.6°C]	Total BTUH [kW]	289.6[84.9]	267.9[78.5]	270[79.1]	269.6[79]	249.4[73.1]	251.4[73.7]	249.7[73.2]	231[67.7]	232.8[68.2]		
	Sens BTUH [kW]	186.8[54.7]	154.7[45.3]	157.8[46.2]	209.9[61.5]	173.8[50.9]	177.3[52]	233.1[68.3]	193[56.6]	196.8[57.7]	27.4	
Power												
110°F [43.3°C]	Total BTUH [kW]	291[85.3]	269.2[78.9]	271.3[79.5]	271[79.4]	250.7[73.5]	252.7[74.1]	251.1[73.6]	232.3[68.1]	234.1[68.6]		
	Sens BTUH [kW]	190.1[55.7]	157.4[46.1]	160.6[47.1]	213.3[62.5]	176.6[51.8]	180.1[52.8]	236.4[69.3]	195.7[57.4]	199.6[58.5]	29.1	
Power												
115°F [46.1°C]	Total BTUH [kW]	292.4[85.7]	270.5[79.3]	272.6[79.9]	272.4[79.8]	252[73.9]	254[74.4]	252.4[74]	233.5[68.4]	235.4[69]		
	Sens BTUH [kW]	193.5[56.7]	160.2[47]	163.4[47.9]	216.6[63.5]	179.3[52.5]	182.9[53.6]	239.7[70.3]	198.5[58.2]	202.5[59.3]	30.9	
Power												
120°F [48.9°C]	Total BTUH [kW]	293.7[86.1]	271.7[79.6]	273.9[80.3]	273.8[80.2]	253.3[74.2]	255.3[74.8]	253.8[74.4]	234.8[68.8]	236.6[69.3]		
	Sens BTUH [kW]	196.8[57.7]	163[47.8]	166.2[48.7]	219.9[64.4]	182.1[53.4]	185.8[54.5]	243.1[71.2]	201.2[59]	205.3[60.2]	32.7	
Power												
125°F [51.7°C]	Total BTUH [kW]	295.1[86.5]	273[80]	275.2[80.7]	275.2[80.7]	254.6[74.6]	256.5[75.2]	255.2[74.8]	236.1[69.2]	237.9[69.7]		
	Sens BTUH [kW]	200.2[58.7]	165.7[48.6]	169[49.5]	223.3[65.4]	184.9[54.2]	188.6[55.3]	246.4[72.2]	204[59.8]	208.1[61]	34.4	
Power												
Outdoor Dry Bulb Temperature												





