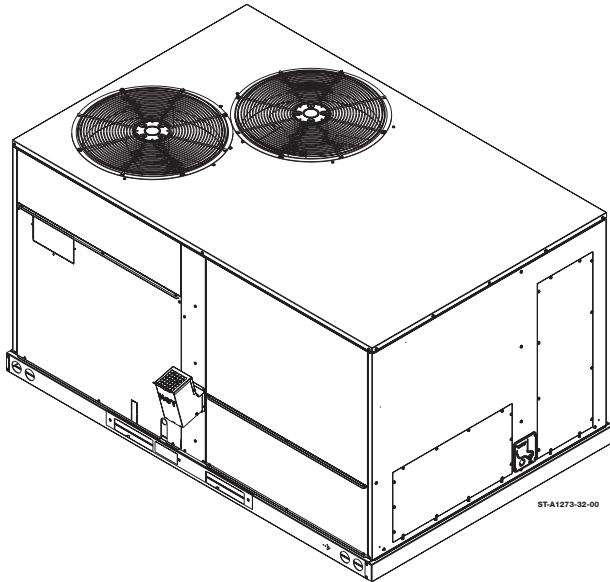


INSTALLATION INSTRUCTIONS

FOR PACKAGE GAS ELECTRIC UNITS

RGED SERIES 7.5, 8.5, 10.0 & 12.5 TON [26.4, 29.9, 35.2 & 44.0 KW]

60 HZ MODELS



**Featuring New Industry
Standard R-410A**



RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

⚠ WARNING

IF THE INFORMATION IN THESE INSTRUCTIONS IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT, CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

⚠ WARNING

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED SERVICE PERSONNEL FOR PROPER INSTALLATION, ADJUSTMENT AND OPERATION OF THIS UNIT. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION OR OPERATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN IMPROPER INSTALLATION, ADJUSTMENT, SERVICE OR MAINTENANCE, POSSIBLY RESULTING IN FIRE, ELECTRICAL SHOCK, CARBON MONOXIDE POISONING, EXPLOSION, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

⚠ WARNING

PROPOSITION 65 WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

⚠ WARNING

- Do not store or use gasoline or other flammable vapors and liquids, or other combustible materials in the vicinity of this or any other appliance.
- WHAT TO DO IF YOU SMELL GAS
 - Do not try to light any appliance.
 - Do not touch any electrical switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
 - Do not return to your home until authorized by the gas supplier or fire department.
- DO NOT RELY ON SMELL ALONE TO DETECT LEAKS. DUE TO VARIOUS FACTORS, YOU MAY NOT BE ABLE TO SMELL FUEL GASES.
 - U.L. recognized fuel gas and CO detectors are recommended in all applications, and their installation should be in accordance with the manufacturer's recommendations and/or local laws, rules, regulations, or customs.
- Improper installation, adjustment, alteration, service or maintenance can cause injury, property damage or death. Refer to this manual. Installation and service must be performed by a qualified installer, service agency or the gas supplier. In the commonwealth of Massachusetts, installation must be performed by a licensed plumber or gas fitter for appropriate fuel.

DO NOT DESTROY THIS MANUAL. PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN.



▲ NOTICE

BREAK-IN PERIOD

PRIOR TO AGENCY TESTING, RUN THE COMPRESSOR FOR 16 HOURS AT 115°F OUTDOOR AMBIENT TEMPERATURE AND 80° DRY BULB/75° WET BULB INDOOR AMBIENT TEMPERATURE.

▲ NOTICE

EFFICIENCY TESTING NOTICE

FOR PURPOSES OF VERIFYING OR TESTING EFFICIENCY RATINGS, THE TEST PROCEDURE IN TITLE 10 PART 431 APPENDIX A TO SUBPART F (UNIFORM TEST METHOD FOR MEASURING THE ENERGY CONSUMPTION OF SMALL, LARGE, AND VERY LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT), AND THE CLARIFYING PROVISIONS PROVIDED IN THE AHRI OPERATIONS FOR UNITARY LARGE EQUIPMENT 340/360, 365 THAT WERE APPLICABLE AT THE DATE OF MANUFACTURE SHOULD BE USED FOR TEST SET UP AND PERFORMANCE.

INTRODUCTION

▲ WARNING

THE MANUFACTURER'S WARRANTY DOES NOT COVER ANY DAMAGE OR DEFECT TO THE AIR CONDITIONER CAUSED BY THE ATTACHMENT OR USE OF ANY COMPONENTS, ACCESSORIES OR DEVICES

(OTHER THAN THOSE AUTHORIZED BY THE MANUFACTURER) INTO, ONTO OR IN CONJUNCTION WITH THE AIR CONDITIONER. YOU SHOULD BE AWARE THAT THE USE OF UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES MAY ADVERSELY AFFECT THE OPERATION OF THE AIR CONDITIONER AND MAY ALSO ENDANGER LIFE AND PROPERTY. THE MANUFACTURER DISCLAIMS ANY RESPONSIBILITY FOR SUCH LOSS OR INJURY RESULTING FROM THE USE OF SUCH UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES.

This booklet contains the installation and operating instructions for your combination gas heating/electric cooling unit. There are some precautions that should be taken to derive maximum satisfaction from it. Improper installation can result in unsatisfactory operation or dangerous conditions.

Read this booklet and any instructions packaged with separate equipment required to make up the system prior to installation. Give this booklet to the owner and explain its provisions. The owner should retain this booklet for future reference.

CHECKING PRODUCT RECEIVED

Upon receiving the unit, inspect it for any damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company. **IMPORTANT:** Check the unit model number, heating size, electrical characteristics, and accessories to determine if they are correct.

I. SPECIFICATIONS

A. GENERAL

The Combination Gas Heating/Electric Cooling Rooftop is available in 150,000, 205,000 and 225,000 BTUH heating input. Cooling capacity is 7.5, 8.5, 10, 12.5 nominal tons. Units are convertible from bottom supply and return to side supply and return by relocation of supply and return air cover panels. See cover installation detail.

The units are weatherized for mounting outside of the building.

▲ WARNING

UNITS ARE NOT DESIGN CERTIFIED TO BE INSTALLED INSIDE THE STRUCTURE. DOING SO CAN CAUSE INADEQUATE UNIT PERFORMANCE AS WELL AS PROPERTY DAMAGE AND CARBON MONOXIDE POISONING RESULTING IN PERSONAL INJURY OR DEATH.

The information on the rating plate is in compliance with the FTC and DOE rating for single phase units. The following information is for three phase units which **are not** covered under the DOE certification program.

1. The energy consumption of the ignition system used with this unit is 175 watts.
2. The efficiency rating of this unit is a product thermal efficiency rating determined under continuous operating conditions independent of any installed system.

B. MAJOR COMPONENTS

The unit includes a hermetically-sealed refrigerating system consisting of a scroll compressor, condenser coil, evaporator coil with TXV, a circulation air blower, a condenser fan, a heat exchanger assembly, gas burner and control assembly, combustion air motor and fan, and all necessary internal electrical wiring. The cooling system of these units is factory-evacuated, charged and performance tested. Refrigerant amount and type are indicated on rating plate.

C. R-410A REFRIGERANT

All units are factory charged with R-410A refrigerant.

1. Specifications of R-410A:

Application: R-410A is not a drop-in replacement for R-22; equipment designs must accommodate its higher pressures. It cannot be retrofitted into R-22 units.

Pressure: The pressure of R-410A is approximately 60% (1.6 times) greater than R-22.

Recovery and recycle equipment, pumps, hoses, and the like need to have design pressure ratings appropriate for R-410A. *Manifold sets need to range up*

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to 800 psig high-side and 250 psig low-side with a 550 psig low-side retard. Hoses need to have a service pressure rating of 800 psig. Recovery cylinders need to have a 400 psig service pressure rating. DOT 4BA400 or DOT BW400.

Combustibility: At pressures above 1 atmosphere, mixture of R-410A and air can become combustible. **R-410A and air should never be mixed in tanks or supply lines, or be allowed to accumulate in storage tanks. Leak checking should never be done with a mixture of R-410A and air.** Leak checking can be performed safely with nitrogen or a mixture of R-410A and nitrogen.

2. Quick Reference Guide For R-410A

- R-410A refrigerant operates at approximately 60% higher pressure (1.6 times) than R-22. Ensure that servicing equipment is designed to operate with R-410A.
- R-410A refrigerant cylinders are pink.

- R-410A, as with other HFC's is only compatible with POE oils.
- Vacuum pumps will not remove moisture from POE oil.
- R-410A systems are to be charged with liquid refrigerants. Prior to March 1999, R-410A refrigerant cylinders had a dip tube. These cylinders should be kept upright for equipment charging. Post March 1999 cylinders do not have a dip tube and should be inverted to ensure liquid charging of the equipment.
- Do not install a suction line filter drier in the liquid line.
- A liquid line filter drier is standard on every unit.
- Desiccant (drying agent) must be compatible for POE oils and R-410A.

3. Evaporator Coil/ TXV

The thermostatic expansion valve is specifically designed to operate with R-410A. **DO NOT use an R-22 TXV.** The

existing evaporator must be replaced with the factory specified TXV evaporator specifically designed for R-410A.

4. Tools Required For Installing & Servicing R-410A Models

Manifold Sets:

- Up to 800 PSIG High Side
- Up to 250 PSIG Low Side
- 550 PSIG Low Side Retard

Manifold Hoses:

- Service Pressure Rating of 800 PSIG

Recovery Cylinders:

- 400 PSIG Pressure Rating
- Dept. of Transportation 4BA400 or BW400

▲ CAUTION

R-410A SYSTEMS OPERATE AT HIGHER PRESSURE THAN R-22 SYSTEMS. DO NOT USE R-22 SERVICE EQUIPMENT OR COMPONENTS ON R-410A EQUIPMENT.

SAFETY INFORMATION

▲ WARNING

USE ONLY WITH TYPE OF GAS APPROVED FOR THIS UNIT. REFER TO THE UNIT RATING PLATE.

▲ WARNING

INSTALL THIS UNIT ONLY IN A LOCATION AND POSITION AS SPECIFIED IN THE LOCATION REQUIREMENTS AND CONSIDERATIONS SECTION OF THESE INSTRUCTIONS. PROVIDE ADEQUATE COMBUSTION AND VENTILATION AIR TO THE UNIT SPACE AS SPECIFIED IN THE VENTING SECTION OF THESE INSTRUCTIONS.

▲ WARNING

PROVIDE ADEQUATE COMBUSTION AND VENTILATION AIR TO THE UNIT SPACE AS SPECIFIED IN THE COMBUSTION AND VENTILATION AIR SECTION OF THESE INSTRUCTIONS.

▲ WARNING

COMBUSTION PRODUCTS MUST BE DISCHARGED OUTDOORS. CONNECT THE FACTORY SUPPLIED EXHAUST AND COMBUSTION AIR INLET HOODS ONLY, AS SPECIFIED IN THE EXHAUST AND COMBUSTION AIR INLET HOODS INSTALLATION SECTION OF THESE INSTRUCTIONS.

▲ WARNING

NEVER TEST FOR GAS LEAKS WITH AN OPEN FLAME. USE A COMMERCIALY AVAILABLE SOAP SOLUTION MADE SPECIFICALLY FOR THE DETECTION OF LEAKS TO CHECK ALL CONNECTIONS, AS SPECIFIED IN GAS SUPPLY AND PIPING SECTION OF THESE INSTRUCTIONS.

▲ WARNING

ALWAYS INSTALL UNIT TO OPERATE WITHIN THE UNIT'S INTENDED TEMPERATURE-RISE RANGE WITH A DUCT SYSTEM WHICH HAS AN EXTERNAL STATIC PRESSURE WITHIN THE ALLOWABLE RANGE, AS SPECIFIED IN DUCTING SECTION OF THESE INSTRUCTIONS. SEE

▲ WARNING

ALSO UNIT RATING PLATE. WHEN A UNIT IS INSTALLED SO THAT SUPPLY DUCTS CARRY AIR CIRCULATED BY THE UNIT TO AREAS OUTSIDE THE SPACE CONTAINING THE UNIT, THE RETURN AIR SHALL ALSO BE HANDLED BY DUCT(S) SEALED TO THE UNIT CASING AND TERMINATING OUTSIDE THE SPACE CONTAINING THE UNIT.

▲ WARNING

THIS UNIT MAY BE USED TO HEAT THE BUILDING OR STRUCTURE DURING CONSTRUCTION IF THE FOLLOWING INSTALLATION REQUIREMENTS ARE MET. INSTALLATION MUST COMPLY WITH ALL INSTALLATION INSTRUCTIONS INCLUDING:

- PROPER VENT INSTALLATION;
- FURNACE OPERATING UNDER THERMOSTATIC CONTROL;
- RETURN AIR DUCT SEALED TO THE FURNACE;
- AIR FILTERS IN PLACE;
- SET FURNACE INPUT RATE AND TEMPERATURE RISE PER RATING PLATE MARKING;
- RETURN AIR TEMPERATURE MAINTAINED BETWEEN 55°F (13°C) AND 80°F (27°C); AND
- INSTALLATION OF EXHAUST AND COMBUSTION AIR INLET HOODS COMPLETED;
- CLEAN FURNACE, DUCT WORK AND COMPONENTS UPON SUBSTANTIAL COMPLETION OF THE CONSTRUCTION PROCESS, AND VERIFY FURNACE OPERATING CONDITIONS INCLUDING IGNITION INPUT RATE, TEMPERATURE RISE AND VENTING, ACCORDING TO THE INSTRUCTIONS.

Unit Dimensions

IMPORTANT: THIS UNIT MUST BE MOUNTED LEVEL IN BOTH DIRECTIONS TO ALLOW WATER TO DRAIN FROM THE CONDENSER SECTION AND CONDENSATE PAN.

FIGURE 1
FRONT VIEW

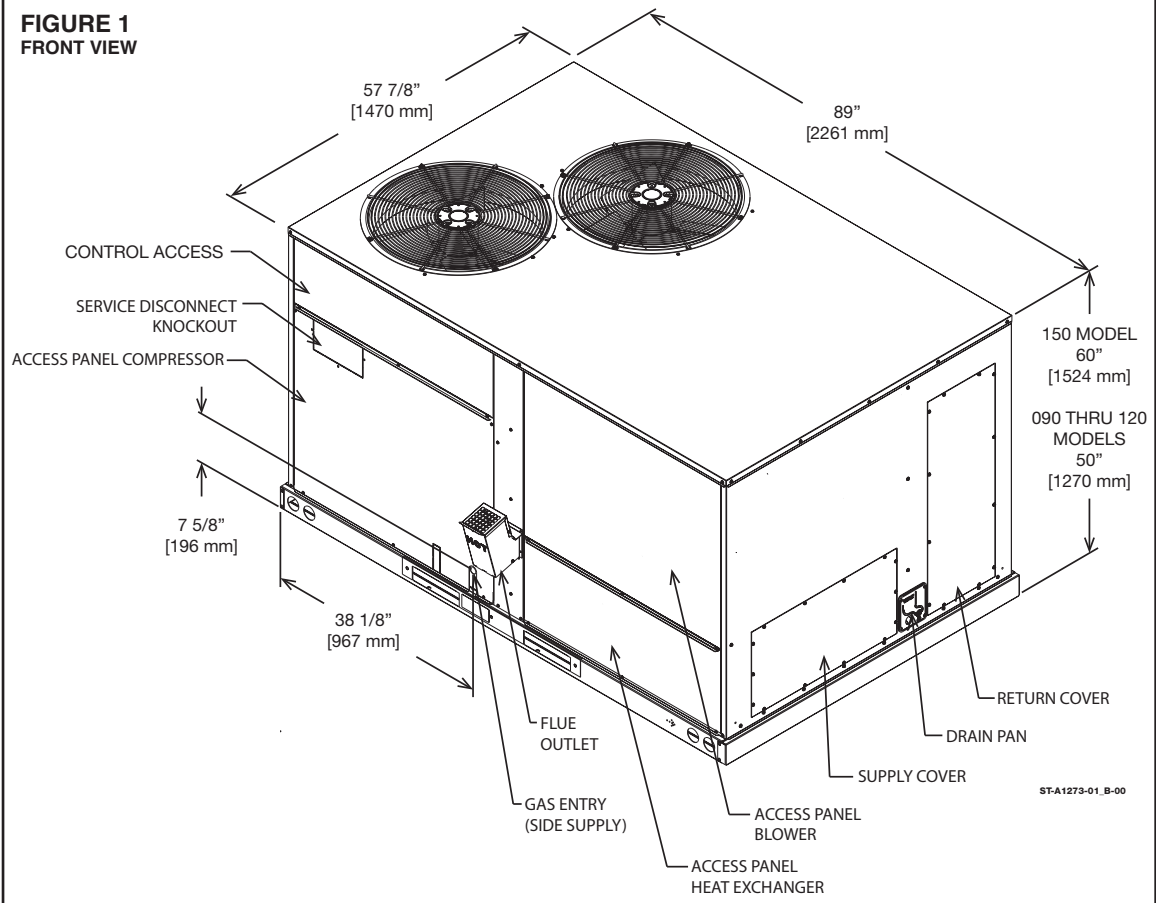


FIGURE 2
REAR VIEW

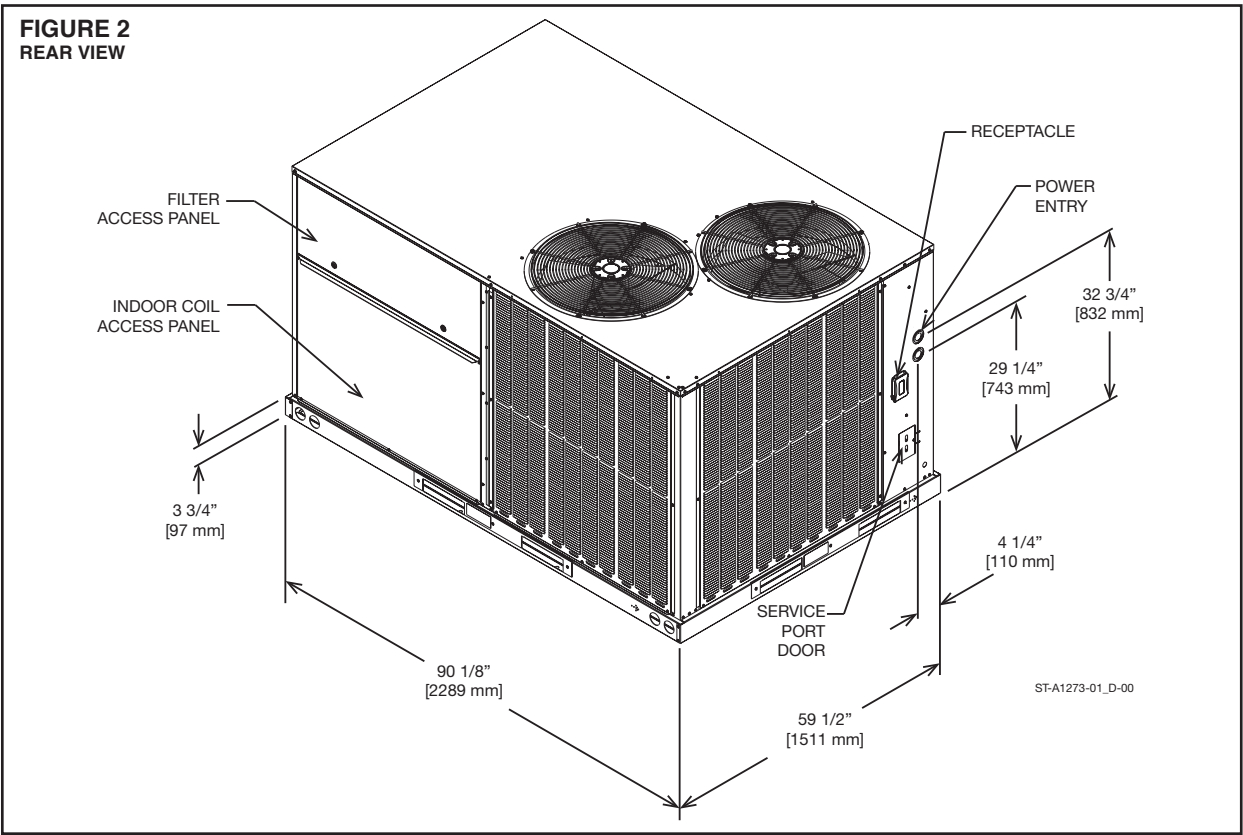


FIGURE 3
SUPPLY AND RETURN DIMENSIONS FOR DOWNFLOW APPLICATIONS

(VIEW FROM BOTTOM LOOKING UP)

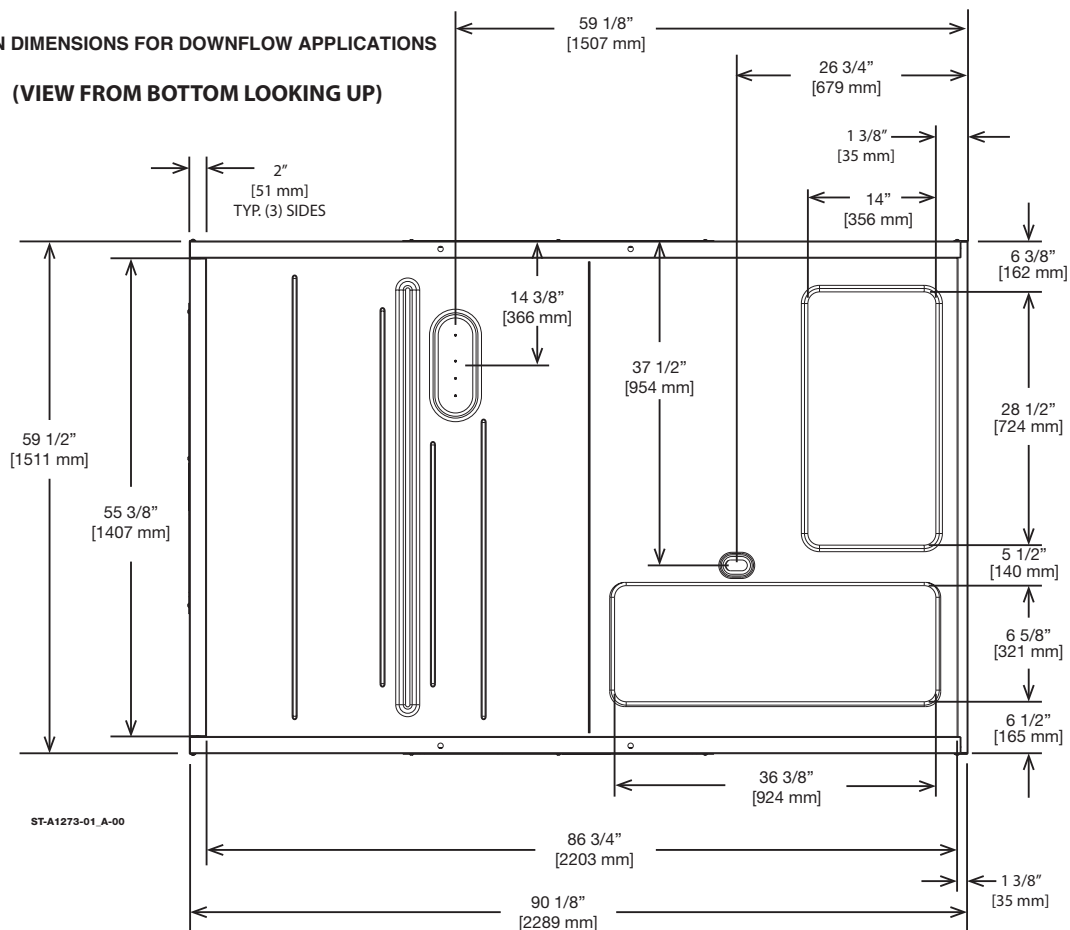


FIGURE 4
SUPPLY AND RETURN DIMENSIONS FOR HORIZONTAL APPLICATIONS

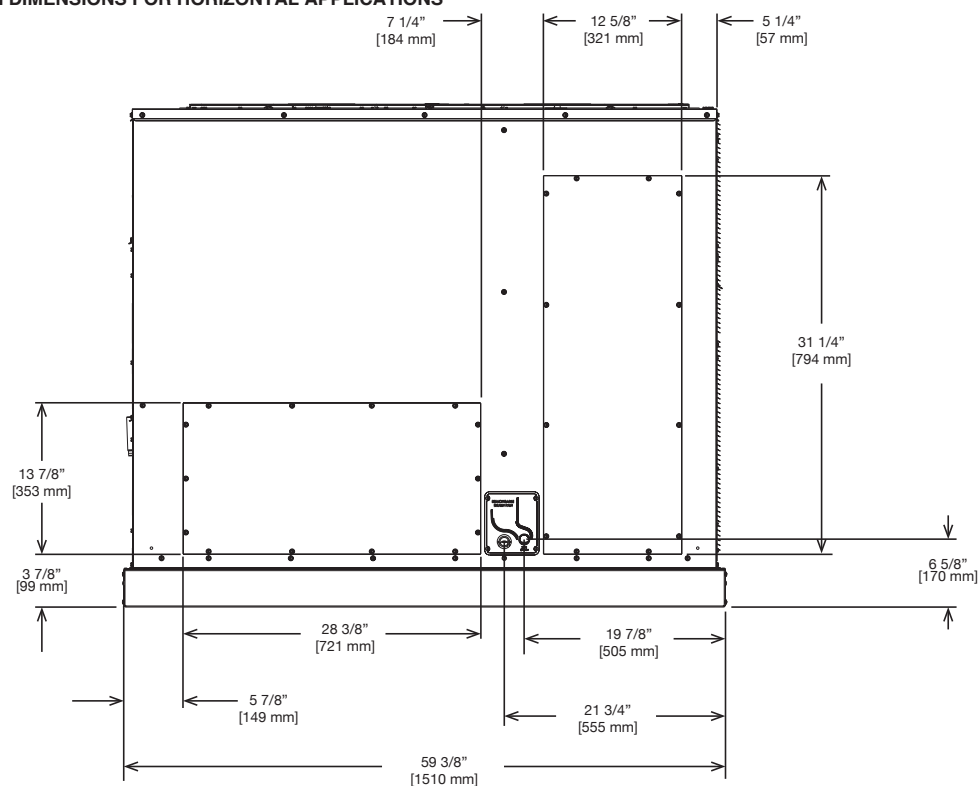
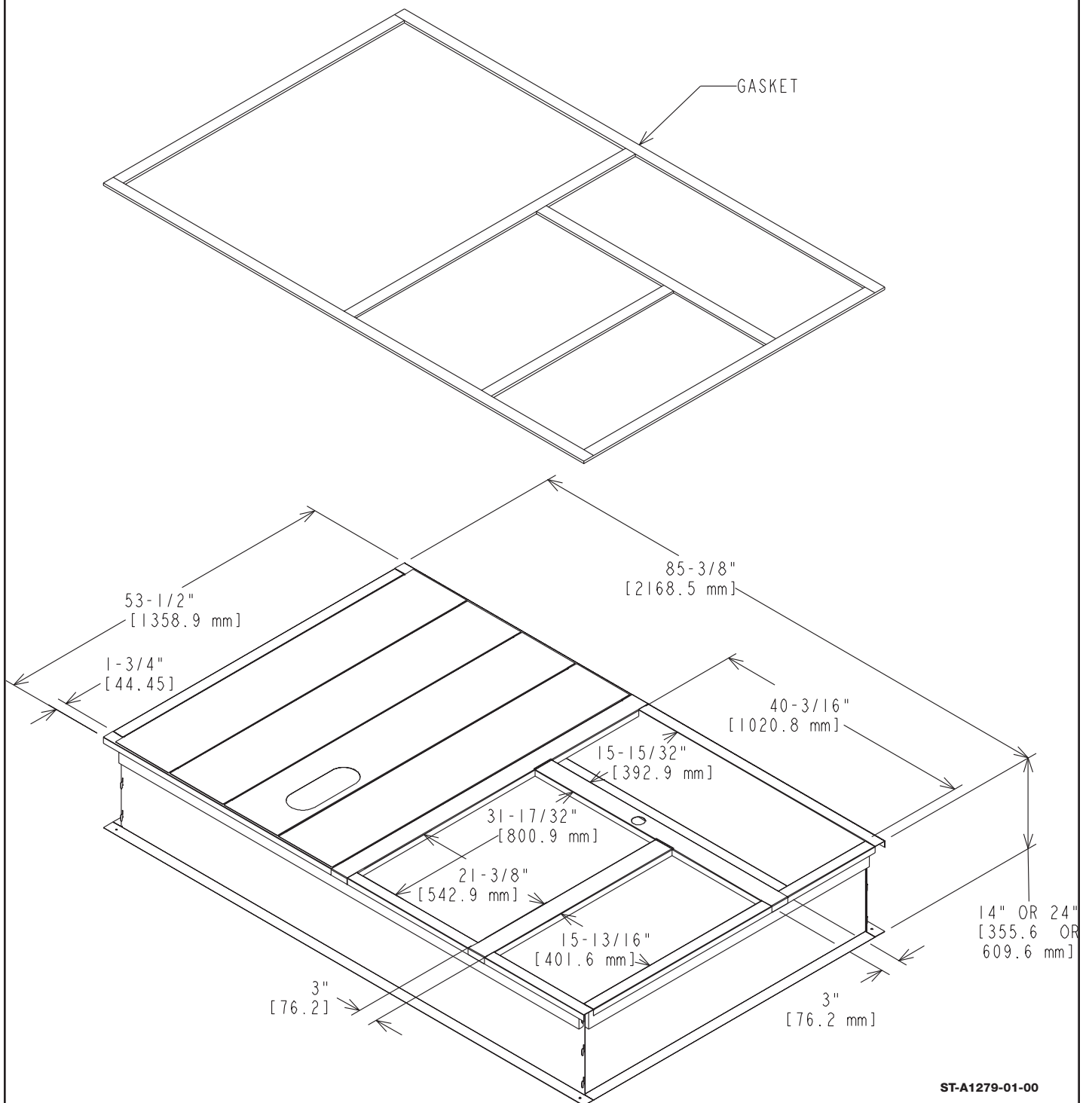


FIGURE 5 ROOFCURB INSTALLATION



GENERAL DATA - GEDZR MODELS

7.5-12.5 TON [26.4 - 44.0 kW]

Model RGEDZR Series	ZR090A*****A	ZR102A*****A	ZR120A*****A
	ZR series	ZR series	ZR series
Cooling Performance¹			
Gross Cooling Capacity Btu [kW]	88,000 [25.78]	99,000 [29.01]	118,000 [34.57]
EER/SEER ²	11/NA	11/NA	11/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/3175 [1416/1498]	3400/3200 [1604/1510]	4000/3480 [1888/1642]
AHRI Net Cooling Capacity Btu [kW]	85,000 [24.9]	96,000 [28.13]	114,000 [33.4]
Net Sensible Capacity Btu [kW]	62,700 [18.37]	68,300 [20.01]	80,600 [23.62]
Net Latent Capacity Btu [kW]	22,300 [6.53]	27,700 [8.12]	33,400 [9.79]
IEER ³	12.7	12.7	12.7
Net System Power kW	7.53	8.51	9.86
Compressor			
No./Type	1/Scroll	1/Scroll	1/Scroll
No. Stages	1	1	1
Outdoor Sound Rating (dB)⁵	88	88	88
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.81 [20.6]	1 [25.4]
Face Area sq. ft. [sq. m]	25.4 [2.36]	25.6 [2.38]	25.6 [2.38]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	11 [1.02]	10.9 [1.01]	10.9 [1.01]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8500 [4011]
No. Motors/HP	2 at 1/5 HP	2 at 1/5 HP	2 at 1/3 HP
Motor RPM	820	820	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Single	Single	Single
No. Motors	1	1	1
Motor RPM	1725	1725	1725
Motor Frame Size	56	56	56
Filter - Type	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x20x20 [51x508x508]	(4)2x20x20 [51x508x508]	(4)2x20x20 [51x508x508]
Refrigerant Charge Oz. [g]	100 [2835]	117 [3317]	136 [3856]
Weights			
Net Weight lbs. [kg]	839 [381]	868 [394]	896 [406]
Ship Weight lbs. [kg]	878 [398]	907 [411]	935 [424]

GENERAL DATA - GEDZS MODELS

7.5-12.5 TON [26.4 - 44.0 kW]

Model RGEDZS Series	ZS090A*****A	ZS102A*****A	ZS120A*****A	ZS150A*****A
	ZS series	ZS series	ZS series	ZS series
Cooling Performance¹				
Gross Cooling Capacity Btu [kW]	88,000 [25.78]	99,000 [29.01]	118,000 [34.57]	148,000 [43.36]
EER/SEER ²	11/NA	11/NA	11/NA	10.8/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/3175 [1416/1498]	3400/3225 [1604/1522]	4000/3480 [1888/1642]	5000/3750 [2360/1770]
AHRI Net Cooling Capacity Btu [kW]	85,000 [24.9]	96,000 [28.13]	114,000 [33.4]	142,000 [41.61]
Net Sensible Capacity Btu [kW]	62,700 [18.37]	68,300 [20.01]	79,600 [23.32]	98,600 [28.89]
Net Latent Capacity Btu [kW]	22,300 [6.53]	27,700 [8.12]	34,400 [10.08]	43,400 [12.72]
IEER ³	12.7	12.7	12.7	12.2
Net System Power kW	7.35	7.35	9.83	13.69
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	2/Tandem Scroll
No. Stages	2	2	2	2
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.81 [20.6]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	25.4 [2.36]	25.6 [2.38]	25.6 [2.38]	31.5 [2.93]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1.26 [32]	1.26 [32]	1 [25.4]
Face Area sq. ft. [sq. m]	11 [1.02]	10.9 [1.01]	10.9 [1.01]	13.8 [1.28]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.5 [12.7]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8500 [4011]	9000 [4247]
No. Motors/HP	2 at 1/5 HP	2 at 1/5 HP	2 at 1/3 HP	2 at 3/4 HP
Motor RPM	820	820	1075	1100
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Single	Single	Single	Single
No. Motors	1	1	1	1
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x20x20 [51x508x508]	(4)2x20x20 [51x508x508]	(4)2x20x20 [51x508x508]	(4)2x20x25 [51x508x635]
Refrigerant Charge Oz. [g]	100 [2835]	122 [3458]	136 [3856]	186 [5273]
Weights				
Net Weight lbs. [kg]	839 [381]	868 [394]	896 [406]	1094 [496]
Ship Weight lbs. [kg]	878 [398]	907 [411]	935 [424]	1133 [514]

GENERAL DATA - GEDZT MODELS

7.5-12.5 TON [26.4 - 44.0 kW]

Model RGEDZT Series	ZT090A*****A	ZT102A*****A	ZT120A*****A	ZT150A*****A
	ZT series	ZT series	ZT series	ZT series
Cooling Performance¹				
Gross Cooling Capacity Btu [kW]	88,000 [25.78]	99,000 [29.01]	118,000 [34.57]	148,000 [43.36]
EER/SEER ²	11/NA	11/NA	11/NA	10.8/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/3175 [1416/1498]	3400/3225 [1604/1522]	4000/3480 [1888/1642]	5000/3750 [2360/1770]
AHRI Net Cooling Capacity Btu [kW]	85,000 [24.9]	96,000 [28.13]	114,000 [33.4]	142,000 [41.61]
Net Sensible Capacity Btu [kW]	62,700 [18.37]	68,300 [20.01]	79,600 [23.32]	98,600 [28.89]
Net Latent Capacity Btu [kW]	22,300 [6.53]	27,700 [8.12]	34,400 [10.08]	43,400 [12.72]
IEER ³	14.6	14.6	14.6	14
Net System Power kW	7.35	7.35	9.83	13.69
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	2/Tandem Scroll
No. Stages	2	2	2	2
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.81 [20.6]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	25.4 [2.36]	25.6 [2.38]	25.6 [2.38]	31.5 [2.93]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1.26 [32]	1.26 [32]	1 [25.4]
Face Area sq. ft. [sq. m]	11 [1.02]	10.9 [1.01]	10.9 [1.01]	13.8 [1.28]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.5 [12.7]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8500 [4011]	9000 [4247]
No. Motors/HP	2 at 1/5 HP	2 at 1/5 HP	2 at 1/3 HP	2 at 3/4 HP
Motor RPM	820	820	1075	1100
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Single	Single	Single	Single
No. Motors	1	1	1	1
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	184
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x20x20 [51x508x508]	(4)2x20x20 [51x508x508]	(4)2x20x20 [51x508x508]	(4)2x20x25 [51x508x635]
Refrigerant Charge Oz. [g]	100 [2835]	122 [3458]	136 [3856]	186 [5273]
Weights				
Net Weight lbs. [kg]	839 [381]	868 [394]	896 [406]	1094 [496]
Ship Weight lbs. [kg]	878 [398]	907 [411]	935 [424]	1133 [514]

HEATING PERFORMANCE - GED MODELS

7.5-12.5 TON [26.4 - 44.0 kW]

Model RGED**	Heating Input BTU [kW] (1 st Stage / 2 nd Stage)	Heating Output Btu [kW] (1 st Stage / 2 nd Stage)	Temperature Rise Range °F [°C] (1 st Stage / 2 nd Stage)	Steady State Efficiency (%)	No. Burners	No. Stages	Gas Connection Pipe Size in. [mm]
090A**15**A	105,000/150,000 [30.76/43.95]	85,050/121,500 [24.92/35.6]	10-40 [5.6-22.2] / 25-55 [13.9-30.6]	81	6	2	0.75 [19]
090A**20**A	143,500 / 205,000 [42.06/60.08]	116,200 / 166,000 [34.07/48.66]	20-50 [11.1-27.8] / 35-65 [19.4-36.1]	81	9	2	0.75 [19]
102A**15**A	105,000/150,000 [30.76/43.95]	85,050/121,500 [24.92/35.6]	5-35 [2.8-19.4] / 15-45 [8.3-25]	81	6	2	0.75 [19]
102A**22**A	157,500 / 225,000 [46.16/64.94]	127,500 / 182,250 [37.39/53.41]	15-45 [8.3-25] / 35-65 [19.4-36.1]	81	9	2	0.75 [19]
120A**15**A	105,000/150,000 [30.76/43.95]	85,050/121,500 [24.92/35.6]	10-40 [5.6-22.2] / 20-50 [11.1-27.8]	81	6	2	0.75 [19]
120A**22**A	157,500 / 225,000 [46.16/64.94]	127,500 / 182,250 [37.39/53.41]	15-45 [8.3-25] / 35-65 [19.4-36.1]	81	9	2	0.75 [19]
150A**15**A	105,000/150,000 [30.76/43.95]	85,050 / 121,500 [24.92/35.6]	5-35 [2.8-19.4] / 15-45 [8.3-25]	81	6	2	0.75 [19]
150A**22**A	157,500 / 225,000 [46.16/64.94]	127,500 / 182,250 [37.39/53.41]	10-40 [5.6-22.2] / 25-55 [13.9-30.6]	81	9	2	0.75 [19]

ELECTRICAL DATA - GEDZR MODELS

ELECTRICAL DATA - -GEDZR SERIES							
		090ACA15 090ACA20	090ACB15 090ACC15 090ACC20 090ACB20	090ADA15 090ADA20	090ADB15 090ADB20 090ADC15 090ADC20	090AYA15 090AYA20	090AYB15 090AYB20 090AYC15 090AYC20
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	517-633	517-633
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	41	43	21	23	16	17
	Minimum Overcurrent Protection Device Size	50	50	25	30	20	20
	Maximum Overcurrent Protection Device Size	60	60	30	35	25	25
Compressor Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	7	7	7	7	7	7
	Amps (RLA), Comp. 1	25	25	12.8	12.8	9.6	9.6
	Amps (LRA), Comp. 1	164	164	100	100	78	78
	HP, Compressor 2						
	Amps (RLA), Comp. 2						
	Amps (LRA), Comp. 2						
Condenser Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	460	460	575	575
	Phase	1	1	1	1	1	1
	HP	1/5	1/5	1/5	1/5	1/5	1/5
	Amps (FLA, each)	1.2	1.2	0.8	0.8	0.6	0.6
	Amps (LRA, each)	2.3	2.3	1.4	1.4	1.1	1.1
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	HP	2	3	2	3	2	2
	Amps (FLA, each)	6.6	9.1	3.3	4.6	2.5	3.5
	Amps (LRA, each)	47	74.5	22.5	38.1	19	20

ELECTRICAL DATA - GEDZR MODELS

ELECTRICAL DATA - -GEDZR SERIES									
		102ACA15 102ACA22	102ACB15 102ACB22	102ACC15 102ACC22	102ADA15 102ADA22	102ADB15 102ADB22	102ADC15 102ADC22	102AYA15 102AYA22	102AYB15 102AYB22 102AYC15 102AYC22
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	414-506	414-506	414-506	517-633	517-633
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	3	3	3	3	3	3	3	3
	Hz	60	60	60	60	60	60	60	60
	Minimum Circuit Ampacity	44	46	49	22	23	24	16	17
	Minimum Overcurrent Protection Device Size	60	60	60	25	30	30	20	20
	Maximum Overcurrent Protection Device Size	70	70	70	30	35	35	25	25
Compressor Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (RLA), Comp. 1	27.6	27.6	27.6	12.8	12.8	12.8	9.6	9.6
	Amps (LRA), Comp. 1	191	191	191	100	100	100	78	78
	HP, Compressor 2								
	Amps (RLA), Comp. 2								
	Amps (LRA), Comp. 2								
Condenser Motor	No.	2	2	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	1	1	1	1	1	1	1	1
	HP	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/5
	Amps (FLA, each)	1.2	1.2	1.2	0.8	0.8	0.8	0.6	0.6
	Amps (LRA, each)	2.3	2.3	2.3	1.4	1.4	1.4	1.1	1.1
Evaporator Fan	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	3	3	3	3	3	3	3	3
	HP	2	3	3	2	3	3	2	3
	Amps (FLA, each)	7.1	9.1	12.0	3.5	4.6	6	2.5	3.5
	Amps (LRA, each)	45	74.5	74.5	22.5	38.1	38.1	19	20

ELECTRICAL DATA - GEDZR MODELS

ELECTRICAL DATA - -GEDZR SERIES									
		120ACA15 120ACA22	120ACB15 120ACB22	120ACC15 120ACC22	120ADA15 120ADA22	120ADB15 120ADB22	120ADC15 120ADC22	120AYA15 120AYA22	120AYB15 120AYB22 120AYC15 120AYC22
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	414-506	414-506	414-506	517-633	517-633
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	3	3	3	3	3	3	3	3
	Hz	60	60	60	60	60	60	60	60
	Minimum Circuit Ampacity	48	51	53	26	27	28	19	20
	Minimum Overcurrent Protection Device Size	60	60	60	30	30	35	25	25
	Maximum Overcurrent Protection Device Size	70	70	80	35	40	40	25	30
Compressor Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	10	10	10	10	10	10	10	10
	Amps (RLA), Comp. 1	28.2	28.2	28.2	14.7	14.7	14.7	11.3	11.3
	Amps (LRA), Comp. 1	239	239	239	130	130	130	93.7	93.7
	HP, Compressor 2								
	Amps (RLA), Comp. 2								
	Amps (LRA), Comp. 2								
Condenser Motor	No.	2	2	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	2.4	2.4	2.4	1.4	1.4	1.4	1	1
	Amps (LRA, each)	4.7	4.7	4.7	2.4	2.4	2.4	1.6	1.6
Evaporator Fan	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460	575	575
	Phase	3	3	3	3	3	3	3	3
	HP	2	2	2	2	3	3	2	3
	Amps (FLA, each)	7.9	10.1	12	3.9	5	6	2.5	3.5
	Amps (LRA, each)	45	74.5	74.5	22.5	38.1	38.1	19	20

ELECTRICAL DATA - GEDZS MODELS

ELECTRICAL DATA - -GEDZS SERIES							
		090ACA15 090ACA20	090ACB15 090ACB20 090ACC15 090ACC20	090ACF15 090ACF20	090ACG15 090ACG20 090ACH15 090ACH20	090ADA15 090ADF15 090ADF20 090ADA20	090ADB15 090ADB20 090ADC15 090ADC20 090ADG15 090ADG20 090ADH15 090ADH20
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	187-253	414-506	414-506
	Volts	208/230	208/230	208/230	208/230	460	460
	Phase	3	3	3	3	3	3
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	41	44	41	44	17	19
	Minimum Overcurrent Protection Device Size	50	50	50	50	20	25
	Maximum Overcurrent Protection Device Size	60	60	60	60	25	25
Compressor Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	460	460
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	7	7	7	7	7	7
	Amps (RLA), Comp. 1	25.3	25.3	25.3	25.3	9.6	9.6
	Amps (LRA), Comp. 1	184	184	184	184	84	84
	HP, Compressor 2						
	Amps (RLA), Comp. 2						
	Amps (LRA), Comp. 2						
Condenser Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	208/230	460	460
	Phase	1	1	1	1	1	1
	HP	1/5	1/5	1/5	1/5	1/5	1/5
	Amps (FLA, each)	1.2	1.2	1.2	1.2	0.8	0.8
	Amps (LRA, each)	2.3	2.3	2.3	2.3	1.4	1.4
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	460	460
	Phase	3	3	3	3	3	3
	HP	2	3	2	3	2	3
	Amps (FLA, each)	6.6	9.1	6.6	9.1	3.2	4.6
	Amps (LRA, each)	47	74.5	22.5	74.5	22.5	38.1

ELECTRICAL DATA - GEDZS MODELS

ELECTRICAL DATA --GEDZS SERIES							
		102ACA15 102ACF15 102ACF22 102ACA22	102ACB15 102ACB22 102ACG15 102ACG22	102ACC15 102ACC22 102ACH15 102ACH22	102ADA15 102ADA22 102ADF15 102ADF22	102ADB15 102ADB22 102ADG15 102ADG22	102ADC15 102ADC22 102ADH15 102ADH22
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	414-506	414-506	414-506
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	46	48	51	21	22	24
	Minimum Overcurrent Protection Device Size	60	60	60	25	25	30
	Maximum Overcurrent Protection Device Size	70	70	70	30	30	35
Compressor Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (RLA), Comp. 1	28.8	28.8	28.8	12.5	12.5	12.5
	Amps (LRA), Comp. 1	191	191	191	100	100	100
	HP, Compressor 2						
	Amps (RLA), Comp. 2						
	Amps (LRA), Comp. 2						
Condenser Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	460	460	460
	Phase	1	1	1	1	1	1
	HP	1/5	1/5	1/5	1/5	1/5	1/5
	Amps (FLA, each)	1.2	1.2	1.2	0.8	0.8	0.8
	Amps (LRA, each)	2.3	2.3	2.3	1.4	1.4	1.4
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	HP	2	3	3	2	3	3
	Amps (FLA, each)	7	9.1	12	3.5	4.6	6
	Amps (LRA, each)	45	74.5	74.5	22.5	38.1	38.1

ELECTRICAL DATA - GEDZS MODELS

ELECTRICAL DATA - -GEDZS SERIES							
		120ACA15 120ACA22 120ACF15 120ACF22	120ACB15 120ACB22 120ACG15 120ACG22	120ACC15 120ACC22 120ACH15 120ACH22	120ADA15 120ADA22 120ADF15 120ADF22	120ADB15 120ADB22 120ADG15 120ADG22	120ADC15 120ADC22 120ADH15 120ADH22
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	414-506	414-506	414-506
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	54	56	58	26	27	28
	Minimum Overcurrent Protection Device Size	70	70	70	30	40	40
	Maximum Overcurrent Protection Device Size	80	80	90	40	40	40
Compressor Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	10	10	10	10	10	10
	Amps (RLA), Comp. 1	32.6	32.6	32.6	14.8	14.8	14.8
	Amps (LRA), Comp. 1	240	240	240	130	130	130
	HP, Compressor 2						
	Amps (RLA), Comp. 2						
	Amps (LRA), Comp. 2						
Condenser Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	460	460	460
	Phase	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	2.4	2.4	2.4	1.4	1.4	1.4
	Amps (LRA, each)	4.7	4.7	4.7	2.4	2.4	2.4
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	HP	2	2	2	2	3	3
	Amps (FLA, each)	7.9	10.1	12	3.9	5.1	6
	Amps (LRA, each)	45	74.5	74.5	22.5	38.1	38.1

ELECTRICAL DATA - GEDZS MODELS

ELECTRICAL DATA - -GEDZS SERIES							
		150ACA15 150ACA22 150ACF15 150ACF22	150ACB15 150ACB22 150ACG15 150ACG22	150ADA15 150ADA22 150ADF15 150ADF22	150ADB15 150ADB22 150ADG15 150ADG22	150AYA15 150AYA22	150AYB15 150AYB22
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	517-633	517-633
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	70	75	34	37	25	27
	Minimum Overcurrent Protection Device Size	80	90	40	40	30	30
	Maximum Overcurrent Protection Device Size	90	90	40	45	30	30
Compressor Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	6	6	6	6	6	6
	Amps (RLA), Comp. 1	22.4	22.4	10.6	10.6	7.7	7.7
	Amps (LRA), Comp. 1	164	164	100	100	78	78
	HP, Compressor 2	6	6	6	6	6	6
	Amps (RLA), Comp. 2	22.4	22.4	10.6	10.6	7.7	7.7
	Amps (LRA), Comp. 2	164	164	100	100	78	78
Condenser Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	460	460	575	575
	Phase	1	1	1	1	1	1
	HP	3/4	3/4	3/4	3/4	3/4	3/4
	Amps (FLA, each)	4.2	4.2	2.3	2.3	1.6	1.6
	Amps (LRA, each)						
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	HP	3	5	3	5	3	5
	Amps (FLA, each)	10.4	16	5.2	8	4.4	5.9
	Amps (LRA, each)	74.5	82	38.1	41	20	38

ELECTRICAL DATA - GEDZT MODELS

ELECTRICAL DATA - -GEDZT SERIES					
		090ACF15 090ACF20	090ACG15 090ACG20 090ACH15 090ACH20	090ADF15 090ADF20	090ADG15 090ADG20 090ADH15 090ADH20
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	Hz	60	60	60	60
	Minimum Circuit Ampacity	41	44	17	19
	Minimum Overcurrent Protection Device Size	50	50	20	25
	Maximum Overcurrent Protection Device Size	60	60	25	25
Compressor Motor	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	RPM	3450	3450	3450	3450
	HP, Compressor 1	7	7	7	7
	Amps (RLA), Comp. 1	25.3	25.3	9.6	9.6
	Amps (LRA), Comp. 1	184	184	84	84
	HP, Compressor 2				
	Amps (RLA), Comp. 2				
	Amps (LRA), Comp. 2				
Condenser Motor	No.	2	2	2	2
	Volts	208/230	208/230	460	460
	Phase	1	1	1	1
	HP	1/5	1/5	1/5	1/5
	Amps (FLA, each)	1.2	1.2	0.8	0.8
	Amps (LRA, each)	2.3	2.3	1.4	1.4
Evaporator Fan	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	HP	2	3	2	3
	Amps (FLA, each)	6.6	9.1	3.2	4.6
	Amps (LRA, each)	22.5	74.5	22.5	38.1

ELECTRICAL DATA - GEDZT MODELS

ELECTRICAL DATA - -GEDZT SERIES							
		102ACF15 102ACF22	102ACG15 102ACG22	102ACH15 102ACH22	102ADF15 102ADF22	102ADG15 102ADG22	102ADH15 102ADH22
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	414-506	414-506	414-506
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	46	48	51	21	22	24
	Minimum Overcurrent Protection Device Size	60	60	60	25	25	30
	Maximum Overcurrent Protection Device Size	70	70	70	30	30	35
Compressor Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (RLA), Comp. 1	28.8	28.8	28.8	12.5	12.5	12.5
	Amps (LRA), Comp. 1	191	191	191	100	100	100
	HP, Compressor 2						
	Amps (RLA), Comp. 2						
	Amps (LRA), Comp. 2						
Condenser Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	460	460	460
	Phase	1	1	1	1	1	1
	HP	1/5	1/5	1/5	1/5	1/5	1/5
	Amps (FLA, each)	1.2	1.2	1.2	0.8	0.8	0.8
	Amps (LRA, each)	2.3	2.3	2.3	1.4	1.4	1.4
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	HP	2	3	3	2	3	3
	Amps (FLA, each)	7	9.1	12	3.5	4.6	6
	Amps (LRA, each)	45	74.5	74.5	22.5	38.1	38.1

ELECTRICAL DATA - GEDZT MODELS

ELECTRICAL DATA - -GEDZT SERIES							
		120ACF15 120ACF22	120ACG15 120ACG22	120ACH15 120ACH22	120ADF15 120ADF22	120ADG15 120ADG22	120ADH15 120ADH22
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	414-506	414-506	414-506
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	54	56	58	26	27	28
	Minimum Overcurrent Protection Device Size	70	70	70	30	35	35
	Maximum Overcurrent Protection Device Size	80	80	90	40	40	40
Compressor Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	10	10	10	10	10	10
	Amps (RLA), Comp. 1	32.6	32.6	32.6	14.8	14.8	14.8
	Amps (LRA), Comp. 1	240	240	240	130	130	130
	HP, Compressor 2						
	Amps (RLA), Comp. 2						
	Amps (LRA), Comp. 2						
Condenser Motor	No.	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	460	460	460
	Phase	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	2.4	2.4	2.4	1.4	1.4	1.4
	Amps (LRA, each)	4.7	4.7	4.7	2.4	2.4	2.4
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460
	Phase	3	3	3	3	3	3
	HP	2	2	2	2	3	3
	Amps (FLA, each)	7.9	10.1	12	3.9	5.1	6
	Amps (LRA, each)	45	74.5	74.5	22.5	38.1	38.1

ELECTRICAL DATA - GEDZT MODELS

ELECTRICAL DATA - -GEDZT SERIES					
		150ACF15 150ACF22	150ACG15 150ACG22	150ADF22 150ACG22	150ADG15 150ADG22
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	Hz	60	60	60	60
	Minimum Circuit Ampacity	70	75	34	37
	Minimum Overcurrent Protection Device Size	80	80	35	40
	Maximum Overcurrent Protection Device Size	90	90	40	45
Compressor Motor	No.	2	2	2	2
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	RPM	3450	3450	3450	3450
	HP, Compressor 1	6	6	6	6
	Amps (RLA), Comp. 1	22.4	22.4	10.6	10.6
	Amps (LRA), Comp. 1	164	164	100	100
	HP, Compressor 2	6	6	6	6
	Amps (RLA), Comp. 2	22.4	22.4	10.6	10.6
	Amps (LRA), Comp. 2	164	164	100	100
Condenser Motor	No.	2	2	2	2
	Volts	208/230	208/230	460	460
	Phase	1	1	1	1
	HP	3/4	3/4	3/4	3/4
	Amps (FLA, each)	4.2	4.2	2.3	2.3
	Amps (LRA, each)				
Evaporator Fan	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	HP	3	5	3	5
	Amps (FLA, each)	10.4	16	5.2	8
	Amps (LRA, each)	74.5	82	38.1	41

II. INSTALLATION

A. GENERAL

1. **INSTALLATION** — Install this unit in accordance with The American National Standard Z223.1-latest edition booklet entitled "National Fuel Gas Code," and the requirements or codes of the local utility or other authority having jurisdiction.

Additional helpful publications available from the "National Fire Protection Association" are: NFPA-90A - Installation of Air Conditioning and Ventilating Systems 1985 or latest edition. NFPA-90B - Warm Air Heating and Air Conditioning Systems 1984.

These publications are available from:

National Fire Protection
Association, Inc.
Batterymarch Park
Quincy, MA 02269

2. **PRE-INSTALLATION CHECK-POINTS** — Before attempting any installation, carefully consider the following points:

Structural strength of supporting members

(Rooftop Installation)

Clearances and provision for servicing

Power supply and wiring

Gas supply and piping

Air duct connections and sizing

Drain facilities and connections

Location for minimum noise and vibration - away from bedroom windows

LOCATION CONSIDERATIONS

The metal parts of this unit may be subject to rust or deterioration in adverse environmental conditions. This oxidation could shorten the equipment's useful life. Salt spray, fog or mist in seacoast areas, sulphur or chlorine from lawn watering systems, and various chemical contaminants from industries such as paper mills and petroleum refineries are especially corrosive.

If the unit is to be installed in an area where contaminants are likely to be a problem, give special attention to the equipment location and exposure.

1. Avoid having lawn sprinkler heads spray directly on the unit cabinet.
2. In coastal areas locate the unit on the side of the building away from the waterfront.
3. Shielding by a fence or shrubs may give some protection.

▲ WARNING

DISCONNECT ALL POWER TO UNIT BEFORE STARTING MAINTENANCE. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR DEATH. REGULAR MAINTENANCE WILL REDUCE THE BUILDUP OF CONTAMINANTS AND HELP TO PROTECT THE UNIT'S FINISH.

1. Frequent washing of the cabinet, fan blade and coil with fresh water will remove most of the salt or other contaminants that build up on the unit.
2. Regular cleaning and waxing of the cabinet with an automobile polish will provide some protection.
3. A liquid cleaner may be used several times a year to remove matter that will not wash off with water.

Several different types of protective coatings are offered in some areas. These coatings may provide some benefit, but the effectiveness of such coating materials cannot be verified by the equipment manufacturer.

The best protection is frequent cleaning, maintenance and minimal exposure to contaminants.

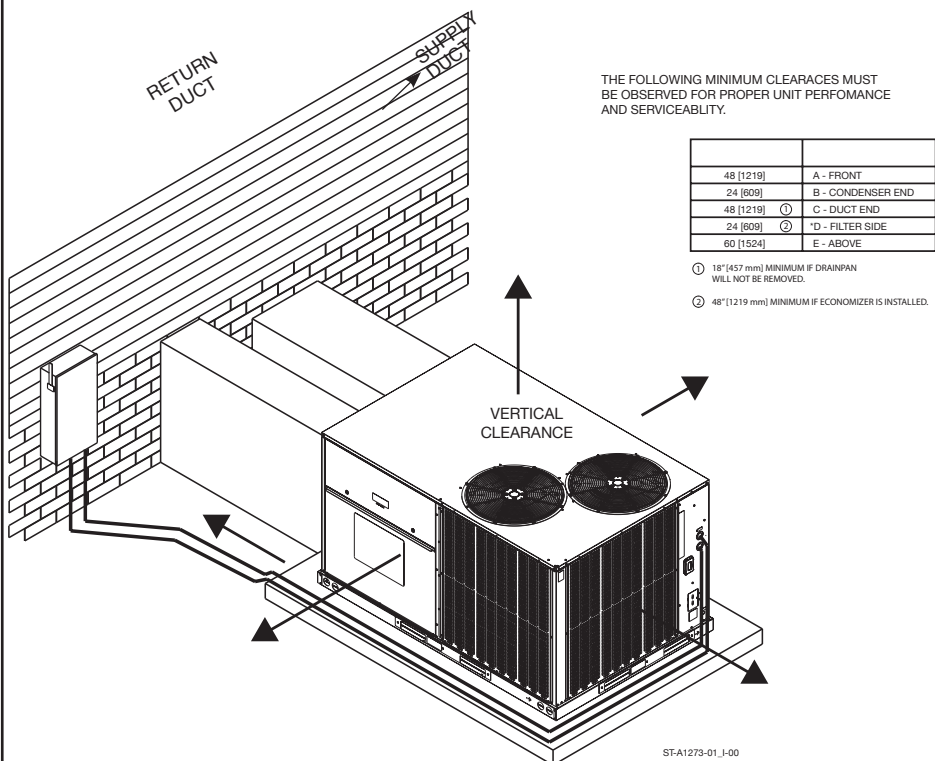
B. OUTSIDE INSTALLATION

▲ WARNING

THESE UNITS ARE DESIGNED CERTIFIED FOR OUTDOOR INSTALLATION ONLY. INSTALLATION INSIDE ANY PART OF A STRUCTURE CAN RESULT IN INADEQUATE UNIT PERFORMANCE AS WELL AS PROPERTY DAMAGE. INSTALLATION INSIDE CAN ALSO CAUSE RECIRCULATION OF FLUE PRODUCTS INTO THE CONDITIONED SPACE RESULTING IN PERSONAL INJURY OR DEATH.

(Typical outdoor slab installation is shown in Figure 7.)

FIGURE 7
OUTSIDE SLAB INSTALLATION. CLOSET DISTRIBUTION SYSTEM. SLAB FLOOR CONSTRUCTION.



1. Select a location where external water drainage cannot collect around unit.
2. Provide a level slab sufficiently high enough above grade to prevent surface water from entering the unit
3. Locate the unit to provide proper access for inspection and servicing as shown in Figure 10.
4. Locate unit where operating sounds will not disturb owner or neighbors.
5. Locate unit so roof runoff water does not pour directly on the unit. Provide gutter or other shielding at roof level. Do not locate unit in an area where excessive snow drifting may occur or accumulate.
6. Where snowfall is anticipated, the height of the unit above the ground level must be considered. Mount unit high enough to be above anticipated maximum area snowfall and to allow combustion air to enter the combustion air inlet.
7. Select an area which will keep the areas of the vent, air intake, and A/C condenser fins free and clear of obstructions such as weeds, shrubs, vines, snow, etc. Inform the user accordingly.

C. ATTACHING EXHAUST AND COMBUSTION AIR INLET HOODS

IMPORTANT: Do not operate this unit without the exhaust/combustion air inlet hood properly installed. This hood is shipped in a carton in the blower compartment inside the unit and must be attached when the unit is installed. See Figure 5.

To attach exhaust/combustion air inlet hood:

1. Remove screws securing blower access panel and remove access panel. For location of blower access panel, see Figure 5.
2. Remove exhaust/combustion air inlet hood from the carton, located inside the blower compartment.
3. Attach blower access panel.
4. Attach the combustion air inlet/exhaust hood with screws. Reference Figure 5 for proper location. Screws are in carton with the hood.
5. Vent the unit using the flue exhaust hood, as supplied from the factory, without alteration or addition. Consult your local utility or other authority having jurisdiction for accepted venting techniques.

D. COVER PANEL INSTALLATION/ CONVERSION PROCEDURE

DOWNFLOW TO HORIZONTAL

1. Remove the screws and covers from the outside of the supply and return sections. See Figure 2.
2. Install the covers over the bottom supply and return openings, painted side up, inserting the leading flange under the bracket provided. Place the back flange to top of the front bracket provided. See Figure 8.
3. Secure the return and supply cover to front bracket with one (1) screw.

E. FILTER REPLACEMENT

- Provided with 2" filters (see General Data for size).
- Unit is designed to use 2" or 4" filters. (See Figure 9)

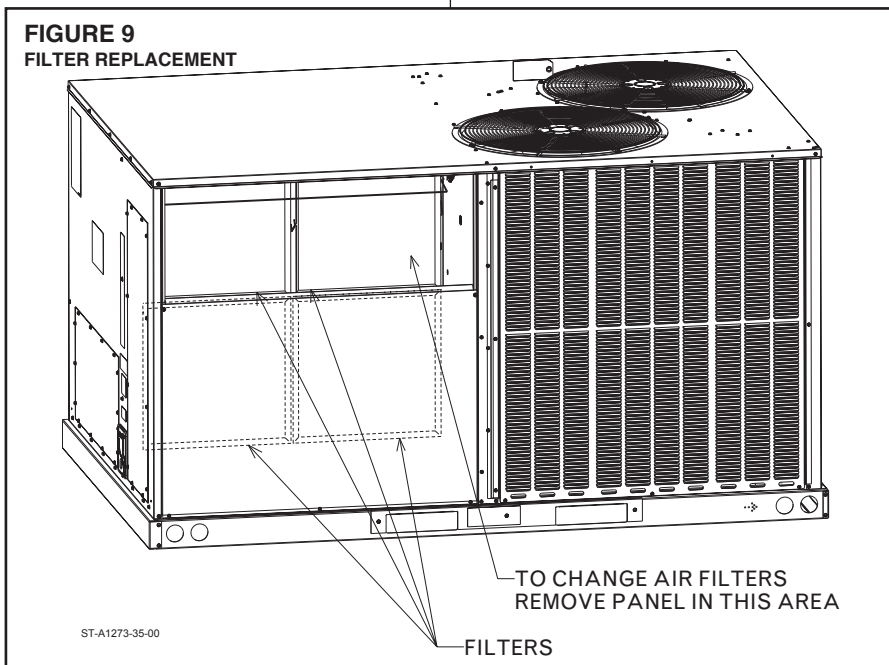
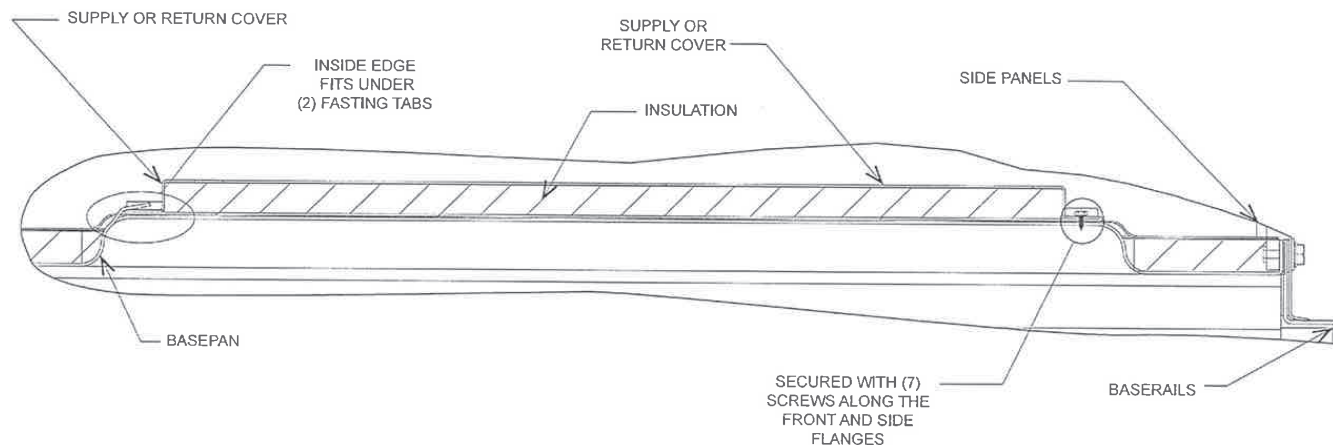
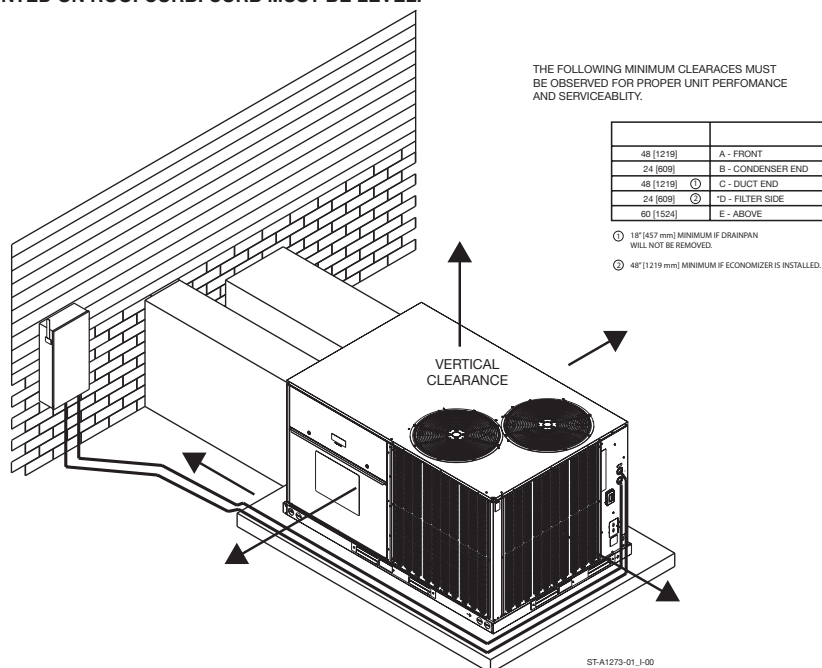


FIGURE 8
COVER GASKET DETAIL FOR UNITS SHIPPED FOR DOWNFLOW APPLICATION BEING CONVERTED TO HORIZONTAL



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FIGURE 10
FLAT ROOFTOP INSTALLATION, ATTIC OR DROP CEILING DISTRIBUTING SYSTEM.
MOUNTED ON ROOFCURB. CURB MUST BE LEVEL.



F. ROOFTOP INSTALLATION

1. Before locating the unit on the roof, make sure that the roof structure is adequate to support the weight involved. (See Electrical & Physical Tables in this manual.) **THIS IS VERY IMPORTANT AND THE INSTALLER'S RESPONSIBILITY.**
2. For rigging and roofcurb details, see Figures 12 and 13.
3. The location of the unit on the roof should be such as to provide proper access for inspection and servicing.

IMPORTANT: If unit will not be put into service immediately, block off supply and return air openings to prevent excessive condensation.

G. DUCTING

The installing contractor should fabricate ductwork in accordance with local codes. Use industry manuals as a guide when sizing and designing the duct system. Contact Air Conditioning Contractors of America, 1513 16th St. N.W., Washington, D.C. 20036.

⚠ WARNING

DO NOT, UNDER ANY CIRCUMSTANCES, CONNECT RETURN DUCTWORK TO ANY OTHER HEAT PRODUCING DEVICE SUCH AS FIREPLACE INSERT, STOVE, ETC. UNAUTHORIZED USE OF SUCH DEVICES MAY RESULT IN FIRE, CARBON MONOXIDE POISONING, EXPLOSION, PERSONAL INJURY, PROPERTY DAMAGE OR DEATH.

Place the unit as close to the conditioned space as possible allowing clearances as indicated. Run ducts as directly as possible to supply and return outlets. Use of non-flammable weatherproof flexible connectors on both supply and return connections at unit to reduce noise transmission is recommended.

On ductwork exposed to outside temperature and humidity, use a minimum of 2" of insulation and a vapor barrier. Distribution system in attic, furred space or crawl space should be insulated with at least 2" of insulation. Half-inch to 1" thick insulation is usually sufficient for ductwork inside the air conditioned space.

Provide balancing dampers for each branch duct in the supply system. Properly support ductwork from the structure.

IMPORTANT: In the event that the return air ducts must be run through an "unconfined" space containing other fuel burning equipment, it is imperative that the user/homeowner must be informed against future changes in construction which might change this to a "confined space." Also, caution the

user/homeowner against any future installation of additional equipment (such as power ventilators, clothes dryers, etc.), within the existing unconfined and/or confined space which might create a negative pressure within the vicinity of other solid, liquid, or gas fueled appliances.

RETURN AIR

▲ WARNING

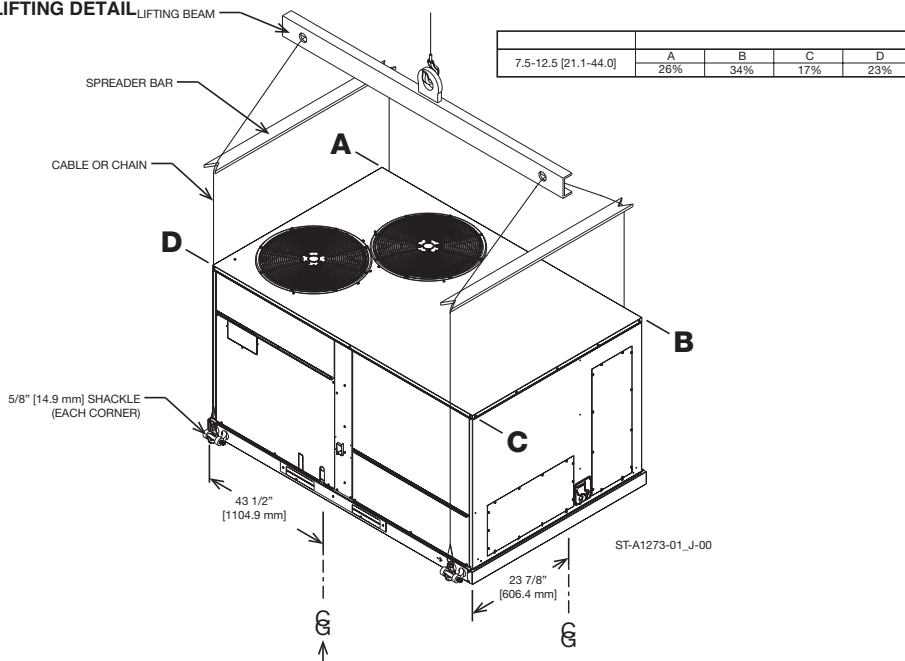
NEVER ALLOW PRODUCTS OF COMBUSTION OR THE FLUE PRODUCTS TO ENTER THE RETURN AIR DUCTWORK, OR THE CIRCULATING AIR SUPPLY. ALL RETURN DUCTWORK MUST BE ADEQUATELY SEALED AND SECURED TO THE FURNACE WITH SHEET METAL SCREWS,

AND JOINTS TAPED. ALL OTHER DUCT JOINTS MUST BE SECURED WITH APPROVED CONNECTIONS AND SEALED AIRTIGHT.

FAILURE TO PREVENT PRODUCTS OF COMBUSTION FROM BEING CIRCULATED INTO THE LIVING SPACE CAN CREATE POTENTIALLY HAZARDOUS CONDITIONS, INCLUDING CARBON MONOXIDE POISONING THAT COULD RESULT IN PERSONAL INJURY OR DEATH.

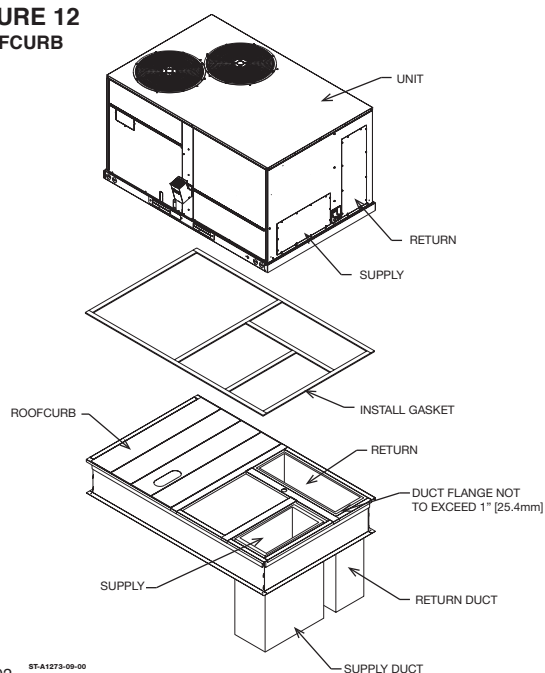
FIGURE 11

LIFTING DETAIL



I-744

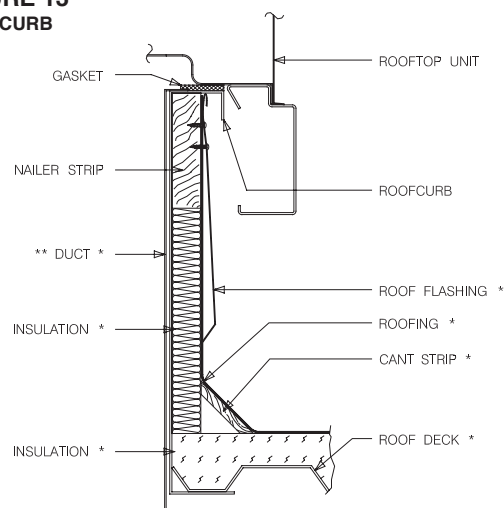
FIGURE 12
ROOFCURB



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FIGURE 13
ROOFCURB



* BY CONTRACTOR

** FOR INSTALLATION OF DUCT AS SHOWN, USE RECOMMENDED DUCT SIZES FROM ROOFCURB INSTALLATION INSTRUCTIONS. FOR DUCT FLANGE ATTACHMENT TO UNIT, SEE UNIT INSTALLATION INSTRUCTIONS FOR RECOMMENDED DUCT SIZES.

A074302

III. GAS SUPPLY, CONDENSATE DRAIN AND PIPING

A. GAS CONNECTION

IMPORTANT: Connect this unit only to gas supplied by a commercial utility.

1. Install gas piping in accordance with local codes and regulations of the local utility company. In the absence of local codes, the installation must conform to the specifications of the National Fuel Gas Code, ANSI Z223.1 - latest edition.

NOTE: The use of flexible gas connectors is not permitted.

2. Place backup wrench on valve, shown in Figures 14A and 14B.
3. Connect the gas line to the gas valve supplied with unit. Routing can be through the gas pipe opening shown in Figure 14C or through the base as shown in Figure 17.
4. Size the gas line to the furnace adequate enough to prevent undue pressure drop and never less than 3/4" pipe.
5. Install a drip leg or sediment trap in the gas supply line as close to the unit as possible.

6. Install an outside ground joint union to connect the gas supply to the control assembly at the burner tray.
7. Gas valves have been factory installed. Install a manual gas valve where local codes specify a shut-off valve outside the unit casing. (See Figure 14.)
8. Make sure piping is tight. **A pipe compound resistant to the action of liquefied petroleum gases must be used at all threaded pipe connections.**
9. **IMPORTANT:** any additions, changes or conversions required for the furnace to satisfactorily meet the application should be made by a qualified installer, service agency or the gas supplier, using factory-specified or approved parts. In the commonwealth of Massachusetts, installation must be performed by a licensed plumber or gas fitter for appropriate fuel.

IMPORTANT: Disconnect the furnace and its individual shutoff valve from the gas supply piping during any pressure testing of that system at test pressures in

excess of 1/2 pound per square inch gauge or isolate the system from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of this gas supply system at pressures equal to or less than 1/2 PSIG.

TO CHECK FOR GAS LEAKS, USE A SOAP AND WATER SOLUTION OR OTHER APPROVED METHOD. DO NOT USE AN OPEN FLAME.

▲ WARNING

DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS. THE USE OF AN OPEN FLAME CAN RESULT IN FIRE, EXPLOSION, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

IMPORTANT: Check the rating plate to make certain the appliance is equipped to burn the type of gas supplied. Care should be taken after installation of this equipment that the gas control valve not be subjected to high gas supply line pressure.

In making gas connections, avoid strains as they may cause noise and damage the controls. A backup wrench is required to be used on the valve to avoid damage.

FIGURE 14A
BACKUP WRENCH LOCATION
HONEYWELL GAS VALVE



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FIGURE 14B
BACKUP WRENCH LOCATION
WHITE RODGERS GAS VALVE



ST-A1273-38-00

The capacities of gas pipe of different diameters and lengths in cu. ft. per hr. with pressure drop of 0.3 in. and specific gravity of 0.60 (natural gas) are shown in Table 1.

After determining the pipe length, select the pipe size which will provide the minimum cubic feet per hour required for the gas input rating of the furnace. By formula:

$$\text{Cu. Ft. Per Hr. Required} = \frac{\text{Gas Input of Furnace (BTU/HR)}}{\text{Heating Value of Gas (BTU/FT}^3\text{)}}$$

The gas input of the furnace is marked on the furnace rating plate. The heating value of the gas (BTU/FT³) may be determined by consulting the local natural gas utility or the L.P. gas supplier.

FIGURE 14C
SUGGESTED GAS PIPING

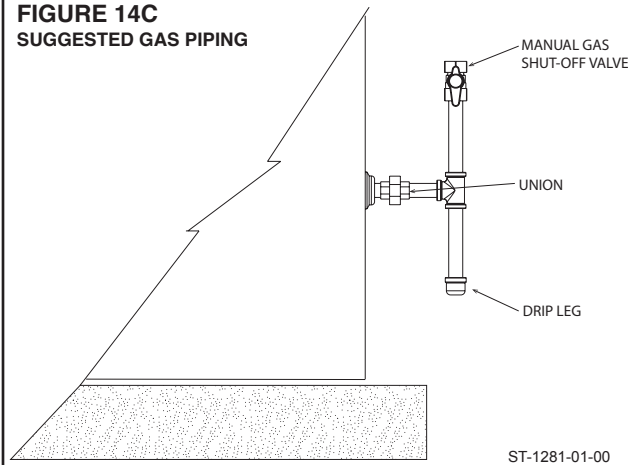


TABLE 1
GAS PIPE CAPACITY TABLE (CU. FT./HR.)

Nominal Iron Pipe Size, Inches	Equivalent Length of Pipe, Feet							
	10	20	30	40	50	60	70	80
1/2	132	92	73	63	56	50	46	43
3/4	278	190	152	130	115	105	96	90
1	520	350	285	245	215	195	180	170
1 1/4	1,050	730	590	500	440	400	370	350
1 1/2	1,600	1,100	890	760	670	610	560	530

TABLE 2
LP GAS PIPE CAPACITY TABLE (CU. FT./HR.)

Maximum capacity of pipe in thousands of BTU per hour of undiluted liquefied petroleum gases (at 11 inches water column inlet pressure).
(Based on a Pressure Drop of 0.5 Inch Water Column)

Nominal Iron Pipe Size, Inches	Length of Pipe, Feet											
	10	20	30	40	50	60	70	80	90	100	125	150
1/2	275	189	152	129	114	103	96	89	83	78	69	63
3/4	567	393	315	267	237	217	196	182	173	162	146	132
1	1,071	732	590	504	448	409	378	346	322	307	275	252
1-1/4	2,205	1,496	1,212	1,039	913	834	771	724	677	630	567	511
1-1/2	3,307	2,299	1,858	1,559	1,417	1,275	1,181	1,086	1,023	976	866	787
2	6,221	4,331	3,465	2,992	2,646	2,394	2,205	2,047	1,921	1,811	1,606	1,496

Example (LP): Input BTU requirement of unit, 150,000
Equivalent length of pipe, 60 ft. = 3/4" IPS required.

B. LP CONVERSION

▲ WARNING

THIS UNIT IS EQUIPPED AT THE FACTORY FOR USE ON NATURAL GAS ONLY. CONVERSION TO LP GAS REQUIRES A SPECIAL KIT SUPPLIED BY THE DISTRIBUTOR OR MANUFACTURER. MAILING ADDRESSES ARE LISTED ON THE FURNACE RATING PLATE, PARTS LIST AND WARRANTY. FAILURE TO USE THE PROPER CONVERSION KIT CAN CAUSE FIRE, CARBON MONOXIDE POISONING, EXPLOSION, PERSONAL INJURY, PROPERTY DAMAGE OR DEATH.

NOTE: The valve can be converted to use liquefied petroleum (LP) gas by replacing the pressure regulator spring with the conversion kit spring. This LP kit spring allows the regulator to maintain the proper manifold pressure for LP gas.

NOTE: Order the correct LP conversion kit from the furnace manufacturer.
See Conversion Kit Index shipped with unit for proper LP kit number.
Furnace conversion to LP gas must be performed by a qualified technician.

C. ADJUSTING OR CHECKING FURNACE INPUT

- Natural Gas Line Pressure 5" - 10.5" W.C.
- LP Gas Line Pressure 11" - 13" W.C.

Manifold pressure (in. W.C.)		
	High Fire	Low fire
Natural Gas	3.5	1.7
LP	10	4.9

Natural gas manifold pressure tolerance ± 0.3 .
LP gas manifold pressure tolerance ± 0.5 .

Supply and manifold pressure taps are located on the gas valve body 1/8" N.P.T. and on the manifold.

Use a properly calibrated manometer gauge for accurate gas pressure readings.

Only small variations in the gas flow should be made by means of the pressure regulator adjustment. Furnaces functioning on LP gas must be set by means of the tank or branch supply regulators. The furnace manifold pressure should be set at 10" W.C. at the gas control valve.

To adjust the pressure regulator, remove the regulator cap and turn the adjustment screw clockwise to increase pressure or counterclockwise to decrease pressure.
Then replace the regulator cap securely.

Any necessary major changes in the gas flow rate should be made by changing the size of the burner orifices. To change orifice spuds, shut off the manual main gas valve and remove the gas manifold.

For elevations up to 2,000 feet, rating plate input ratings apply. For high altitudes (elevations over 2,000 ft.), see conversion kit index 92-21519-72 for derating and orifice spud sizes.

Check of input is important to prevent over-firing of the furnace beyond its design-rated input. NEVER SET INPUT ABOVE THAT SHOWN ON THE RATING PLATE. Use the following table or formula to determine input rate.

TABLE 3

Meter Time in Minutes and Seconds for Normal Input Rating of Furnaces Equipped with Natural or LP Gas											
Input BTU/HR	Meter Size Cu. Ft.	Natural Gas (cu. Ft.)								LP (cu. Ft.)	
		900		1000		1050		1100		2500	
		MIN.	SEC.	MIN.	SEC.	MIN.	SEC.	MIN.	SEC.	MIN.	SEC.
150,000	ONE	0	21.6	0	24	0	25.2	0	26.4	1	0
	TEN	3	36	4	0	1	15.6	4	24	10	0
205,000	ONE	0	15.8	0	17.6	0	18.4	0	19.3	0	43.9
	TEN	2	38.0	2	55.6	0	55.3	3	13.2	7	19
225,000	ONE	0	14.4	0	16	0	16.8	0	17.6	0	40
	TEN	2	24	2	40	0	50.4	2	56	6	40

$$\text{Cu. Ft. Per Hr. Required} = \frac{\text{Heating Value of Gas (BTU/Cu. Ft.)} \times 3600}{\text{Time in Seconds (for 1 Cu. Ft.) of Gas}}$$

Start the furnace and measure the time required to burn one cubic foot of gas. Prior to checking the furnace input, make certain that all other gas appliances are shut off, with the exception of pilot burners. Time the meter with only the furnace in operation.

IMPORTANT NOTE FOR ALTITUDES ABOVE 2,000 FEET (610 METERS): The main burner orifices in your furnace and in these kits are sized for the nameplate input and intended for installations at elevations up to 2,000 feet in the USA or Canada, or for elevations of 2,000 - 4,500 feet (610 - 1,373 meters) in Canada if the unit has been derated at the factory. For elevations above 2,000 feet (610 meters) **IN THE USA ONLY** (see ANSI-Z223.1), the burner orifices must be sized to reduce the input 4% for each 1,000 feet (305 meters) above sea level.

NOTICE: DERATING OF THE HEATING INPUT FOR HIGH ALTITUDE IN THE FIELD IS UNLAWFUL IN CANADA (REFER TO CAN/CGA 2.17). UNITS INSTALLED IN ALTITUDES GREATER THAN 2,000 FEET (610 METERS) MUST BE SHIPPED FROM THE FACTORY OR FROM A FACTORY AUTHORIZED CONVERSION STATION WITH THE HEATING INPUT DERATED BY 10% SO AS TO OPERATE PROPERLY IN ALTITUDES FROM 2,000 - 4,500 FEET (610 - 1,373 METERS).

D. CONDENSATE DRAIN

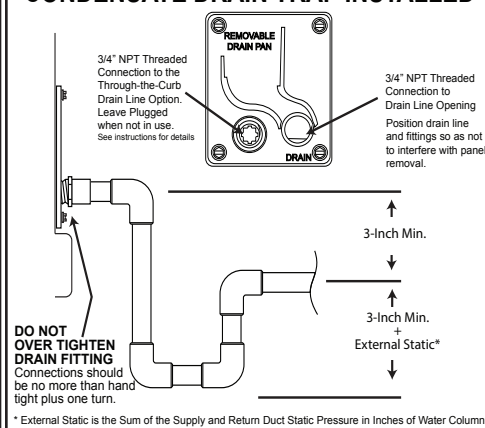
IMPORTANT: Install a condensate trap to ensure proper condensate drainage. See Figure 15.

Standard Drain

- The condensate drain pan has a threaded female 3/4" NPT (11.5 TPI) connection.
- To use the removable drain pan feature of this unit, some of the condensate line joints should be assembled for easy removal and cleaning.
- Use a thin layer of Teflon tape or paste on drain pan connections and install only hand tight.
- Drain line MUST NOT block service access panels.
- Drain line must be no smaller than the drain pan outlet and adequately sized to accommodate the condensate discharge from the unit.
- The center of the drain outlet of the drain line must be at least 3" below the inlet (outlet of pan). The trap should extend at least 3" below the outlet, and one additional inch for every inch of static pressure on the blower.
- Drain line must be routed to an acceptable drain or outdoors in accordance with local codes.
- Do not connect the condensate drain line to a closed sewer pipe.
- Drain line may need insulation or freeze protection in certain applications.

FIGURE 15
CONDENSATE DRAIN

DO NOT OPERATE UNIT WITHOUT CONDENSATE DRAIN TRAP INSTALLED

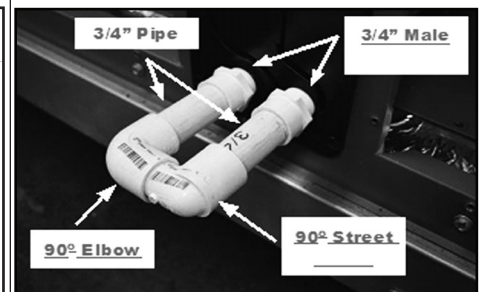


IMPORTANT: For installations that do not use the "through-the-curb" drain port, use a field supplied 3/4" plug to seal the unused connection. Failure to do so could allow rain water or moisture to enter the building.

Through the Curb Drain

To use the through the curb and base pan drain option the drain must be connected as follows:

- Using a 3/4 inch male NPT threaded fitting, connect to the threaded fitting underneath the unit, use Teflon tape and or pipe thread sealant on the threads. Tighten this fitting securely. Do not over-tighten as damage can occur. This fitting must not leak.
- Install a drain trap under the unit, the trap must be at least 3" in depth. Route the drain of the trap to an appropriate drain location as required by local code.
- On the outside of the unit, connect a 3/4" male PVC pipe fitting to the outlet of the drain pan, and connect a 3/4" male PVC pipe fitting to the through the curb drain fitting (Figure 8). Using appropriate pipe fittings, a 90 degree elbow and 90 degree street elbow, with two 3" lengths of PVC pipe, to connect these two fittings together. Do not glue the fittings connected to the male adapters so that the drain pan can be easily removed for service.



IV. WIRING

A. POWER SUPPLY

▲ WARNING

TURN OFF THE MAIN ELECTRICAL POWER AT THE BRANCH CIRCUIT DISCONNECT CLOSEST TO THE UNIT BEFORE ATTEMPTING ANY WIRING. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR DEATH.

1. **All wiring should be made in accordance with the National Electrical Code.** Consult the local power company to determine the availability of sufficient power to operate the unit. Check the voltage at power supply to make sure it corresponds to the unit's **RATED VOLTAGE REQUIREMENT**. Install a branch circuit disconnect near the rooftop, in accordance with the N.E.C., C.E.C. or local codes.
2. It is important that proper electrical power is available at the unit. Voltage should not vary more than 10% from that stamped on the unit nameplate. On three phase units, phases must be balanced within 3%.
3. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size for the length of run can be determined from Table 1 using the circuit ampacity found on the unit rating plate. Use the smallest wire size allowable in Table 4 from the unit disconnect to unit.

4. For through the base wiring entry reference **Figure 18**. All fittings and conduit are field supplied for this application. Reference the chart with **Figure 18** for proper hole and conduit size.

NOTES:

1. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size for the length of run can be determined from this table using the circuit ampacity found on the unit rating plate. From the unit disconnect to unit, the smallest wire size allowable in Table 1 may be used, as the disconnect must be in sight of the unit.
2. Wire size based on 75°C rated wire insulation for 1% voltage drop.
3. For more than 3 conductors in a raceway or cable, see the N.E.C. (C.E.C. in Canada) for derating the ampacity of each conductor.

IMPORTANT: THIS UNIT IS APPROVED FOR USE WITH COPPER CONDUCTORS ONLY CONNECTED TO UNIT CONTACTOR.

WARRANTY MAY BE JEOPARDIZED IF ALUMINUM WIRE IS CONNECTED TO UNIT CONTACTOR.

Special instructions apply for power wiring with aluminum conductors: Warranty is void if connections are not made per instructions.

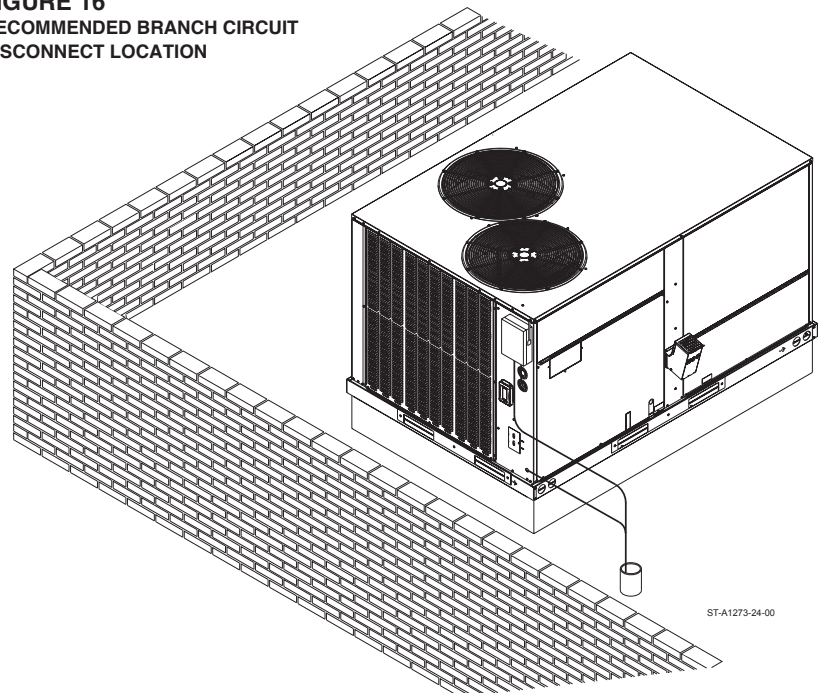
Attach a length (6" or more) of recommended size copper wire to the unit contactor terminals L1, L2 and L3 for three phase.

Select the equivalent aluminum wire size from the tabulation below:

Splice copper wire pigtails to aluminum wire with U.L. recognized connectors for copper-aluminum splices. Please exercise the following instructions very carefully to obtain a positive and lasting connection:

1. Strip insulation from aluminum conductor.
2. Coat the stripped end of the aluminum wire with the recommended inhibitor, and wire brush the aluminum surface through inhibitor. INHIBITORS: Brundy-Pentex "A"; Alcoa-No. 2EJC; T & B-KPOR Shield.
3. Clean and recoat aluminum conductor with inhibitor.
4. Make the splice using the above listed wire nuts or split bolt connectors.
5. Coat the entire connection with inhibitor and wrap with electrical insulating tape.

FIGURE 16
RECOMMENDED BRANCH CIRCUIT DISCONNECT LOCATION



ST-A1273-24-00

POWERED CONVENIENCE OUTLET INSTALLATION INSTRUCTIONS

1. REMOVE (2) SCREWS TO RELEASE OUTLET ASSEMBLY FROM PANEL.
2. REMOVE OUTLET COVER, INSTALLATION INSTRUCTIONS AND ENVELOPE WITH SCREWS.
3. REMOVE SCREWS FROM OUTLET AND PULL WIRED OUTLET AWAY FROM OUTLET BOX.
4. REMOVE OUTLET KNOCK-OUT FROM LEFT END PANEL.
5. TURN OUTLET BOX FACING INSIDE OF LEFT END PANEL AND SLIP THE WIRED OUTLET THROUGH OPENING IN PANEL.
6. USING MACHINE SCREWS FROM ENVELOPMENT, ATTACH OUTLET BOX TO LEFT END PANEL, ONE SCREW ON TOP CORNER AND ONE SCREW ON OPPOSITE LOWER CORNER. GASKET SHOULD BE BETWEEN BOX AND PANEL.
7. USING SHORT MACHINE SCREWS, RE-ATTACH THE OUTLET TO THE OUTLET BOX ON THE OUTSIDE OF THE PANEL.
8. USING THE LONG MACHINE SCREWS, RE-ATTACH THE OUTLET COVER TO THE OUTLET.

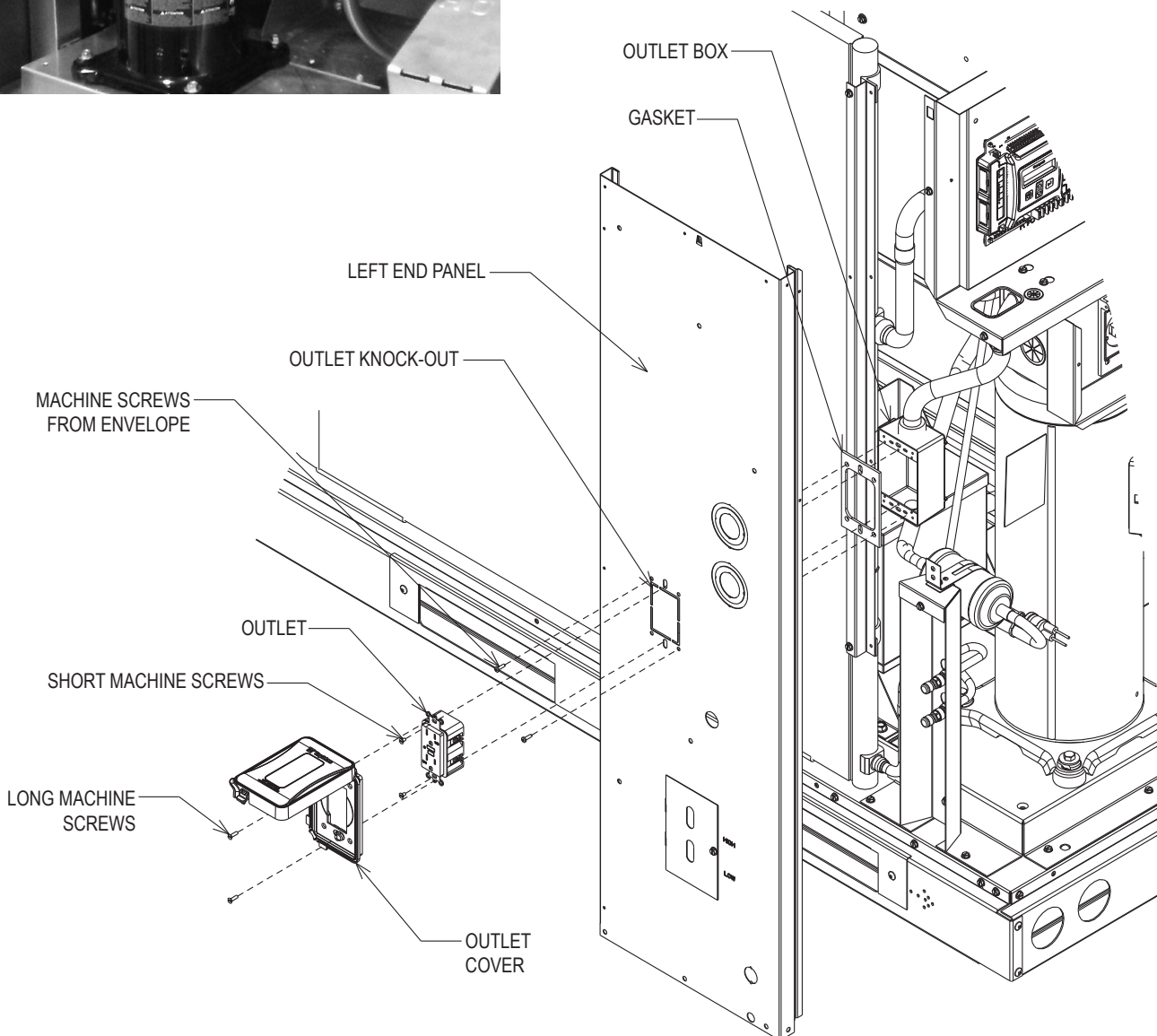
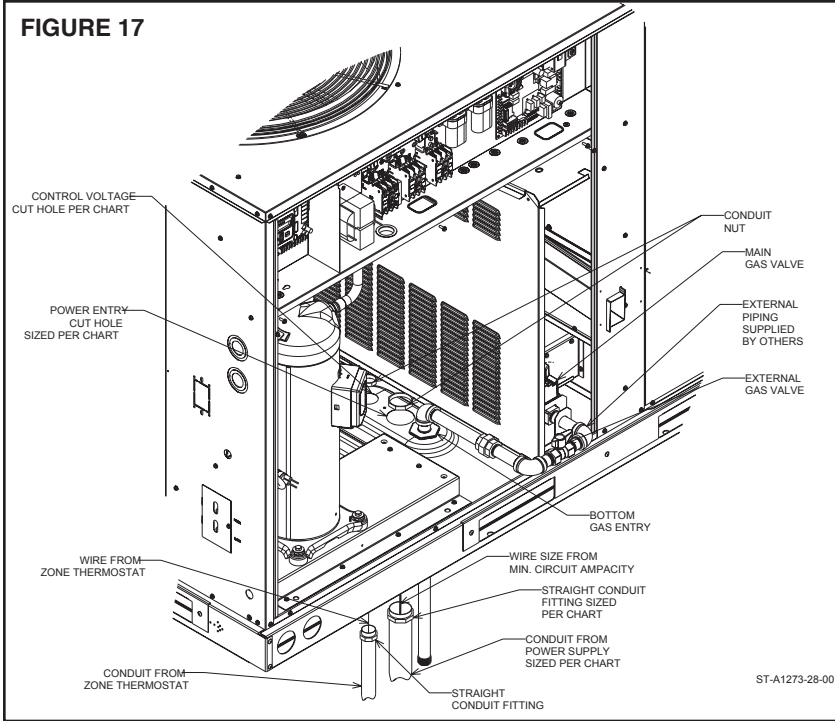
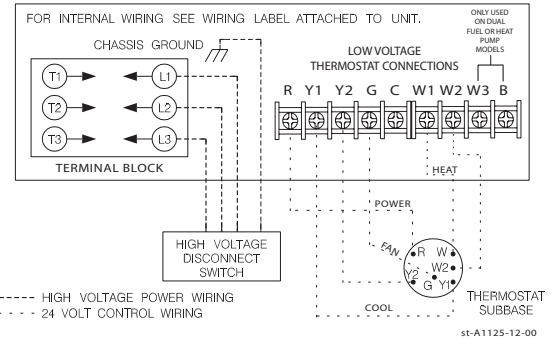


FIGURE 17



**FIGURE 18
TYPICAL THERMOSTAT WIRING**



	WIRE SIZE, AWG											
	14	12	10	8	6	4	3	2	1	0	00	000
CONDUIT SIZE	1/2"	1/2"	1/2"	3/4"	1"	1"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	2"
HOLE SIZE	7/8"	7/8"	7/8"	1-31/32"	1-23/64"	1-23/64"	1-23/32"	1-23/32"	1-31/32"	1-31/32"	2-15/32"	2-15/32"

- NOTES: 1. DETERMINE REQUIRED WIRE SIZE FROM MINIMUM CIRCUIT AMPACITY SHOWN IN INSTALLATION & OPERATING INSTRUCTION.
2. BOTTOM POWER ENTRY WILL NOT ACCOMMODATE WIRE LARGER THAN #2 AWG (SHADED AREA).

B. HOOK-UP

To wire unit, refer to the following hook-up diagram.

Refer to Figures 2 and 17 for location of wiring entrances.

Wiring to be done in the field between the unit and devices not attached to the unit, or between separate devices which are field installed and located, shall conform with the temperature limitation for Type T wire [63°F rise (35°C)] when installed in accordance with the manufacturer's instructions.

C. INTERNAL WIRING

A diagram of the internal wiring of this unit is located on the inside of control access panel and in this manual. If any of the original wire as supplied with the appliance must be replaced, the wire gauge and insulation must be same as original wiring.

Transformer is factory wired for 230 volts on 208/230 volt models and must be changed for 208 volt applications. See unit wiring diagram for 208 volt wiring.

D. THERMOSTAT

The room thermostat must be compatible with the spark ignition control on the unit. Generally, all thermostats that are not of the "current robbing" type are compatible with the integrated furnace control. The low voltage wiring should be sized as shown in Table 1.

Install the room thermostat in accordance with the instruction sheet packed in the box with the thermostat. Run the thermostat lead wires through control entry opening (Figure 2 or Figure 17) and connect to the low voltage thermostat connections (see wiring diagram). Never install the thermostat on an outside wall or where it will be influenced by drafts, concealed hot or cold water pipes or ducts, lighting fixtures, radiation from fireplace, sun rays,

lamps, televisions, radios or air streams from registers. Refer to instructions packed with the thermostat for "heater" selection or adjustment.

The following is a list of recommended thermostats to be used with or without an economizer:

TABLE 4

FIELD WIRE SIZE FOR 24 VOLT THERMOSTAT CIRCUITS						
Thermostat Load - Amps	SOLID COPPER WIRE - AWG.					
	3.0	16	14	12	10	10
	2.5	16	14	12	12	10
2.0	18	16	14	12	12	10
Length of Run - Feet (1)						
	50	100	150	200	250	300

(1) The total wire length is the distance from the furnace to the thermostat and back to the furnace.

NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

V. FURNACE SECTION CONTROLS AND IGNITION SYSTEM

NORMAL FURNACE OPERATING SEQUENCE

This unit is equipped with a two stage integrated direct spark ignition control.

NORMAL HEAT MODE

A. Call For First Stage (low fire) Only:

1. Zone thermostat contacts close, a call for first stage (low fire) heat is initiated.
2. Control runs self check.
3. Control checks the high-limit switch for normally closed contacts, the pressure switch for normally open contacts, and all flame rollout switches for continuity.
4. Control energizes the inducer.
5. Control checks the pressure switch for closure.
6. If the pressure switch is closed, the control starts a 30 second prepurge. If the pressure switch is still open after 180 seconds, the inducer will be energized until closure.
7. After prepurge timeout, control initiates spark for 2 seconds minimum, 7 second maximum ignition trial, initiates 45 second, second stage (high fire) warm up timing.
8. Control detects flame, de-energizes spark and initiates 45 second delay on blower timing.
9. After a fixed 45 seconds indoor blower delay on, the control energizes the indoor blower.
10. After the 45 second second stage warmup period control checks thermostat input. If only W1 is called for, W2 is de-energized.
11. Control enters normal operating loop where all inputs are continuously checked.

B. Call For Second Stage, After First Stage Established; Starting from A.11:

1. If a call for second stage (high fire) is initiated after a call for first stage heat is established, the control assures the pressure switch is closed and energizes the second stage of the gas valve.
2. Control enters normal operating loop where all inputs are continuously checked.

C. Second Stage Satisfied; First Stage Still Called For; Starting From B.2:

1. Once the call for second stage is satisfied, the control reduces the gas valve to first stage.
2. Control enters normal operating loop where all inputs are continuously checked.

D. First Stage Satisfied:

1. Zone thermostat is satisfied.
2. Control de-energizes gas valve.
3. Control senses loss of flame.
4. Control initiates 5 second inducer postpurge and 90 second indoor blower delay off.
5. Control de-energizes inducer blower.
6. Control de-energizes indoor blower.
7. Control in the stand by mode with

solid red LED.

E. First Stage and Second Stage Called Simultaneously:

1. Zone thermostat contacts close, a call for first stage (low fire) and second stage (high fire) heat is initiated.
2. Control runs self check.
3. Control checks the limit switch for normally closed contacts, the switch for normally open contacts, and the flame rollout switch for continuity.
4. Control energizes the inducer.
5. Control checks the pressure switch for closure.
6. If the pressure switch is closed, the control starts a 30 second prepurge. If the switch is still open after 180 seconds, the inducer will be energized until closure.
7. After prepurge timeout, control initiates spark for 2 seconds minimum, 7 second maximum ignition trial, and initiates 45 second second stage warm up timing.
8. Control detects flame, de-energizes spark and starts a 45 second indoor blower delay on timing.
9. After a fixed 45 seconds indoor blower delay on, the control energizes the indoor blower.
10. After the 45 seconds second stage warmup period control checks the thermostat input. If W1 and W2 is present control enters normal operating loop where all inputs are continuously checked.

F. First Stage and Second Stage Removed Simultaneously:

1. Upon a loss of W1 and W2 the gas valve is de-energized.
2. Upon a loss of flame, the inducer will complete a 5 second postpurge and the indoor blower will complete a 90 second delay off.
3. Control in the stand by mode with solid red LED.

The integrated control is a four-ignition system.

After a total of four cycles without sensing main burner flame, the system goes into a 100% lockout mode. After one hour, the ignition control repeats the prepurge and ignition cycles for 4 tries and then go into 100% lockout mode again. It continues this sequence of cycles and lockout each hour until ignition is successful or power is interrupted. During the lockout mode, neither the ignitor or gas valve will be energized until the system is reset by turning the thermostat to the "OFF" position or interrupting the electrical power to the unit for 3 seconds or longer. The induced draft blower and main burner will shut off when the thermostat is satisfied.

The circulating air blower will start and run on the heating speed if the thermostat fan switch is in the "ON" position.

All integrated furnace controls come standard with a 7 segment diagnostic display. During standby mode with no fault codes present, the display will read

"0" (zero). During normal thermostat heating, cooling or continuous fan operations a letter will be displayed to describe the mode of operation outlined in the Wiring Diagrams: Electrical Wiring Schematic: Alarm Codes.

OPERATING INSTRUCTIONS

This appliance is equipped with integrated furnace control. This device lights the main burners each time the room thermostat (closes) calls for heat. See operating instructions on the back of the furnace/controls access panel.

▲ WARNING

DO NOT ATTEMPT TO MANUALLY LIGHT THIS FURNACE WITH A MATCH OR ANY OPEN FLAME. ATTEMPTING TO DO SO CAN CAUSE AN EXPLOSION OR FIRE RESULTING IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

TO START THE FURNACE

1. Set the thermostat to its lowest setting.
2. Turn off all electric power to the appliance.
3. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
4. Remove control door.
5. Move control switch/knob on the gas valve to the "OFF" position.
6. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow B in the safety information on the Operating Instructions located on the back of the controls/access panel. If you don't smell gas, go to the next step.
7. Move the gas control switch/knob on the gas valve from "OFF" position to "ON" position. Operate this appliance with the gas control switch/knob on the gas valve in the "ON" position only.
8. Replace the control door.
9. Turn on all electric power to the appliance.
10. Set the thermostat to the desired setting.
11. If the appliance will not operate, follow the instructions below on how to shut down the furnace.

▲ WARNING

THE SPARK IGNITOR AND IGNITION LEAD FROM THE IGNITION CONTROL ARE HIGH VOLTAGE. KEEP HANDS OR TOOLS AWAY TO PREVENT ELECTRICAL SHOCK. SHUT OFF ELECTRICAL POWER BEFORE SERVICING ANY OF THE CONTROLS. FAILURE TO ADHERE TO THIS WARNING CAN RESULT IN PERSONAL INJURY OR DEATH.

The initial start-up on a new installation may require the control system to be energized for some time until air has bled through the system and fuel gas is available at the burners.

TO SHUT DOWN FURNACE

1. Set the thermostat to the lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Remove control door.
4. Move control switch/knob on the gas valve to the "OFF" position.
5. Replace control door.

▲ WARNING

SHOULD OVERHEATING OCCUR OR THE GAS SUPPLY FAIL TO SHUT OFF, SHUT OFF THE MANUAL GAS VALVE TO THE APPLIANCE BEFORE SHUTTING OFF THE ELECTRICAL SUPPLY. FAILURE TO DO SO CAN RESULT IN AN EXPLOSION OR FIRE CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH!

BURNERS

Burners for these units have been designed so that field adjustment is not required. Burners are tray-mounted and accessible for easy cleaning when required.

MANUAL RESET OVERTEMPERATURE CONTROL

Two manual reset overtemperature controls are located on the burner shield. These devices sense blockage in the heat exchanger or insufficient combustion air. This shuts off the main burners if excessive temperatures occur in the burner compartment.

Operation of this control indicates an abnormal condition. Therefore, the unit should be examined by a qualified installer, service agency, or the gas supplier before being placed back into operation.

▲ WARNING

Do not jumper this device! Do not reset the overtemperature control without taking corrective action to assure that an adequate supply of combustion air is maintained under all conditions of operation. Failure to do so can result in carbon monoxide poisoning or death. Replace this control only with the identical replacement part.

PRESSURE SWITCH

This furnace has two pressure switches for sensing a blocked exhaust or a failed induced draft blower. They are normally open and close when the induced draft blower starts, indicating air flow through the combustion chamber.

LIMIT CONTROL

The supply air high temperature limit cut-off is set at the factory and cannot be adjusted. It is calibrated to prevent the air temperature leaving the furnace from exceeding the maximum outlet air temperature.

▲ WARNING

DO NOT JUMPER THIS DEVICE! DOING SO CAN CAUSE A FIRE OR EXPLOSION RESULTING IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

IMPORTANT: Replace this control only with the identical replacement part.

VI. COOLING SECTION OPERATION

COOLING MODE

A. Call for first stage cooling

1. Zone thermostat contacts close and a call for cooling is initiated.
2. Inputs 'Y1' and 'G'. After 1 sec. delay, control energizes indoor blower and to the control are energized.
3. Control senses 'Y1' and 'G'. After 1 sec. delay, control energizes indoor blower and first stage compressor.
4. Control enters normal operating loop where all inputs are continuously checked.
5. Zone thermostat is satisfied.
6. Control de-energizes indoor blower relay after 80 second indoor blower delay off.
7. Control in the stand by mode with solid red LED.

B. Call for second stage cooling. After first stage cooling established: starting from A4.

1. If a call for second stage cooling is initiated after a call for first stage cooling is established, the control energizes Y2 and energizes the second stage compressor.

2. Control enters normal operating loop where all inputs are continuously checked.

C. Second stage satisfied: first stage still called for: starting from B2.

1. Y2 is de-energized and second stage compressor is de-energized.

D. First stage and second stage called simultaneously.

1. Zone thermostat contacts close, a call for first and second stage cooling is initiated.
2. Inputs Y1, Y2 and G to the control are energized.
3. Control senses Y1, Y2 and G, after 1 second delay, control energizes indoor blower, first and second stage compressor are energized.

E. First stage and second stage removed simultaneously.

1. Upon a loss of Y1 and Y2 each compressor is de-energized. Control de-energizes indoor blower relay after 80 second indoor blower delay off.
2. Control in the stand by mode with solid red LED.

CONTINUOUS FAN MODE

A 'G' input only indicates a zone thermostat call for continuous indoor blower operation.

BLOWER VFD (VFD equipped models only)

No adjustments of the VFD are required for installation or operation of this unit.

VFD Model

Schneider Altivar 212 (factory programmed).

Replacement

The VFD is horsepower and voltage specific therefore; replacement must be the same model as the existing. A preprogrammed VFD is recommended and available from ProStock. A non-programmed Schneider Altivar 212 may be used but must be programmed exactly per the included VFD I & O Manual (92-104334-01) programming guide for safe and proper function.

Operation

The purpose of the VFD is to allow low airflow in Fan Only (G) and First Stage Cooling (Y1) operation of a two stage unit. Unit air balancing should be performed at High Airflow (100% at RTU-C, 60Hz at VFD) by adjusting the blower motor sheave. High Airflow always occurs during

a W1, W2, or Y2 call. For air balancing, without heating or cooling, the fan only speed can be temporarily increased to 100% by adjustment through the RTU-C keypad. To meet ASHRAE 90.1-2010 and for best performance, First Stage Cool and Fan Only speeds are factory set at 50% airflow (30 Hz at VFD). Both of these speeds are independently

adjustable at the RTU-C. The VFD display will indicate an equivalent value in Hz (i.e. Low Cool adjusted to 60% at RTU-C will display as 36Hz at the VFD). A 20 second (adjustable at the VFD) ramp-up or ramp-down is used whenever the blower speed is increased or decreased. Low speed blower operation first ramps to 75%, to close fan proving

switch, before ramping to the desired speed. Since the VFD operates on 24VDC control voltage, a blower relay (with 24VAC across the coil) is used to turn the VFD on. Blower speeds are changed via Modbus communication from the RTU-C.

For more information, see VFD I & O Manual (92-104334-01).

VII. SYSTEM OPERATING INFORMATION

ADVISE THE CUSTOMER

1. Change the air filters regularly. The heating system operates better, more efficiently and more economically.
2. Arrange the furniture and drapes so that the supply air registers and the return air grilles are unobstructed.
3. Close doors and windows. This reduces the heating and cooling load on the system.
4. Avoid excessive use of exhaust fans.
5. Do not permit the heat generated by television, lamps or radios to influence the thermostat operation.
6. Except for the mounting platform, keep all combustible articles three feet from the unit and exhaust system.
7. **IMPORTANT:** Replace all blower doors and compartment cover after servicing the unit. Do not operate the unit without all panels and doors securely in place.
8. Do not allow snow or other debris to accumulate in the vicinity of the appliance.

FURNACE SECTION MAINTENANCE

The unit's furnace should operate for many years without excessive scale build-up in flue passageways; however, it is recommended that a qualified installer, service agency, or the gas supplier annually inspect the flue passageways, the exhaust system and the burners for continued safe operation, paying particular attention to deterioration from corrosion or other sources.

If during inspection the flue passageways and exhaust system are determined to require cleaning, the following procedures should be followed (by a qualified installer, service agency, or gas supplier):

1. Turn off the electrical power to the unit and set the thermostat to the lowest temperature.
2. Shut off the gas supply to the unit either at the meter or at manual valve in the supply piping.

▲ WARNING

LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION RESULTING IN FIRE, ELECTRICAL SHOCK, PROPERTY

DAMAGE, PERSONAL INJURY OR DEATH.

3. Remove the furnace controls access panel and the control box cover.
4. Disconnect the gas supply piping from the gas valve.
5. Disconnect the wiring to the induced draft blower motor, gas valve, flame sensor, and flame roll-out control, and ignitor cable. **Mark all wires disconnected for proper reconnection.**
6. Remove the screws (4) connecting the burner tray to the heat exchanger mounting panel.
7. Remove the burner tray and the manifold assembly from the unit.
8. Remove the screws (10) connecting the induced draft blower to the collector box and screws (12) connecting the inducer mounting plate to the heat exchanger center panel. Remove the induced draft blower and the collector box from the unit.
9. Remove the turbulators from inside the heat exchangers by inserting the blade of a screwdriver under the locking tabs. Pop the tabs out of the expanded grooves of the heat exchanger. Slide the turbulators out of the heat exchangers.
10. Direct a water hose into the outlet of the heat exchanger top. Flush the inside of each heat exchanger tube with water. Blow out each tube with air to remove excessive moisture.
11. Reassemble (steps 1 through 9 in reverse order). **Be careful not to strip out the screw holes used to mount the collector box and inducer blower. Replace inducer blower gasket and collector box gasket with factory replacements if damaged.**

▲ WARNING

HOLES IN THE EXHAUST TRANSITION OR HEAT EXCHANGER CAN CAUSE TOXIC FUMES TO ENTER THE HOME. THE EXHAUST TRANSITION OR HEAT EXCHANGER MUST BE REPLACED IF THEY HAVE HOLES OR CRACKS IN THEM. FAILURE TO DO SO CAN CAUSE CARBON MONOXIDE POISONING RESULTING IN PERSONAL INJURY OR DEATH.

The manufacturer recommends that a qualified installer, service agency or the gas supplier visually inspect the burner flames for the desired flame appearance at the beginning of the heating season

and approximately midway in heating season.

The manufacturer also recommends that a qualified installer, service agency or the gas supplier clean the flame sensor with steel wool at the beginning of the heating season.

▲ WARNING

DISCONNECT MAIN ELECTRICAL POWER TO THE UNIT BEFORE ATTEMPTING MAINTENANCE. FAILURE TO DO SO MAY RESULT IN ELECTRICAL SHOCK OR SEVERE PERSONAL INJURY OR DEATH.

LUBRICATION

IMPORTANT: DO NOT attempt to lubricate the bearings on the blower motor or the induced draft blower motor. Addition of lubricants can reduce the motor life and void the warranty.

The blower motor and induced draft blower motor are prelubricated by the manufacturer and do not require further attention.

A qualified installer, service agency or the gas supplier must periodically clean the motors to prevent the possibility of overheating due to an accumulation of dust and dirt on the windings or on the motor exterior. And, as suggested elsewhere in these instructions, the air filters should be kept clean because dirty filters can restrict air flow and the motor depends upon sufficient air flowing across and through it to prevent overheating.

COOLING SECTION MAINTENANCE

▲ WARNING

DISCONNECT MAIN ELECTRICAL POWER TO THE UNIT BEFORE ATTEMPTING MAINTENANCE. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN SEVERE PERSONAL INJURY OR DEATH.

It is recommended that at the beginning of each cooling season a qualified installer or service agency inspect and clean the cooling section of this unit. The following areas should be addressed: evaporator coil, condenser coil, condenser fan motor and venturi area.

To inspect the evaporator coil:

1. Open the filter access panel and remove filters. Also, remove blower access panel. In downflow applications remove the horizontal return to gain access.

▲ WARNING

LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING THE UNIT. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION RESULTING IN FIRE, ELECTRICAL SHOCK, PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

2. Shine a flashlight on the evaporator coil (both sides) and inspect for accumulation of lint, insulation, etc.
3. If coil requires cleaning, follow the steps shown below.

Cleaning Evaporator Coil

1. The coil should be cleaned when it is dry. If the coil is coated with dirt or lint, vacuum it with a soft brush attachment. Be careful not to bend the coil fins.
2. If the coil is coated with oil or grease, clean it with a mild detergent-and-water solution. Rinse the coil thoroughly with water. **IMPORTANT: Do not** use excessive water pressure. Excessive water pressure can bend the fins and tubing of the coil and lead to inadequate unit performance. Be careful not to splash water excessively into unit.
3. Inspect the drain pan and condensate drain at the same time the evaporator coil is checked. Clean the drain pan by flushing with water and removing any matters of obstructions which may be present.
4. Go to next section for cleaning the condenser coil.

Cleaning Condenser Coil, Condenser Fan, Circulation Air Blower and Venturi

1. Remove the compressor access panel. Disconnect the wires to the condenser fan motor in the control box (see wiring diagram).
2. The coil should be cleaned when it is dry. If the coil is coated with dirt or lint, vacuum it with a soft brush attachment. Be careful not to bend the coil fins.

3. If the coil is coated with oil or grease, clean it with a mild detergent-and-water solution. Rinse the coil thoroughly with water. **IMPORTANT: Do not** use excessive water pressure. Excessive water pressure can bend the fins and tubing of the coil and lead to inadequate unit performance. Be careful not to splash water excessively into unit.
4. The venturi should also be inspected for items of obstruction such as collections of grass, dirt or spider webs. Remove any that are present.
5. Inspect the circulating air blower wheel and motor for accumulation of lint, dirt or other obstruction and clean it necessary. Inspect the blower motor mounts and the blower housing for loose mounts or other damage. Repair or replace if necessary.

Re-assembly

1. Reconnect fan motor wires per the wiring diagram attached to the back of the cover.
2. Close the filter control and replace the blower/evaporator coil access panels.
3. Replace the control box cover.
4. Restore electrical power to the unit and check for proper operation, especially the condenser fan motor.

REPLACEMENT PARTS

Contact your local distributor for a complete parts list.

TROUBLESHOOTING

Refer to Figures 19 and 20 for determining cause of unit problems.

WIRING DIAGRAMS

Figures 21 through 52 are complete wiring diagrams for the unit and its power sources. Also located on back of compressor access panel.

CHARGING

See pages 47 through 53 for proper charging information.

AIRFLOW PERFORMANCE — RGEDZ*090*

AIRFLOW PERFORMANCE — 7.5 TON [26.4kW] — 60 Hz — DOWNFLOW

Air Flow CFM [L/s]		Model RGEDZ*090* Voltage 208/230, 460, 575 — 3 phase 60 Hz																																						
		External Static Pressure — Inches of Water [kPa]																																						
		0.1 [0.02]	0.2 [0.05]	0.3 [0.07]	0.4 [0.10]	0.5 [0.12]	0.6 [0.15]	0.7 [0.17]	0.8 [0.20]	0.9 [0.22]	1.0 [0.25]	1.1 [0.27]	1.2 [0.30]	1.3 [0.32]	1.4 [0.35]	1.5 [0.37]	1.6 [0.40]	1.7 [0.42]	1.8 [0.45]	1.9 [0.47]	2.0 [0.50]																			
RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W																	
2400 [1133]	—	—	551	782	585	814	619	848	652	885	684	926	717	969	748	1016	780	1065	810	1118	841	1174	870	1233	900	1294	929	1359	957	1427	985	1498	1012	1572	1039	1649	1065	1729	1091	1813
2500 [1180]	—	—	562	816	596	848	629	884	661	922	693	964	725	1009	756	1057	787	1108	817	1162	846	1219	876	1279	904	1343	933	1403	960	1478	987	1550	1014	1626	1040	1704	1066	1786	1092	1870
2600 [1227]	—	—	574	851	607	885	639	922	671	962	702	1006	733	1052	764	1101	794	1153	823	1209	852	1267	881	1329	909	1393	937	1461	964	1531	990	1605	1016	1682	1042	1762	1067	1844	1092	1930
2700 [1274]	553	857	585	889	618	925	650	963	681	1004	712	1049	742	1096	772	1147	801	1201	830	1258	858	1317	886	1380	914	1446	941	1515	967	1587	993	1662	1019	1740	1044	1821	1068	1905	1092	1993
2800 [1321]	565	896	597	930	629	966	660	1006	691	1049	721	1095	751	1144	780	1196	808	1257	837	1309	864	1370	892	1434	919	1501	945	1572	971	1645	996	1721	1021	1801	1045	1883	1069	1969	1093	2057
2900 [1368]	577	937	609	972	640	1010	670	1051	701	1096	730	1143	759	1193	788	1246	816	1303	843	1362	871	1425	897	1490	923	1559	949	1630	974	1705	999	1783	1023	1864	1047	1948	1070	2035	1093	2124
3000 [1416]	590	981	621	1017	651	1057	681	1099	710	1145	739	1193	768	1245	796	1300	823	1357	850	1418	877	1482	903	1549	928	1619	953	1682	978	1768	1002	1847	1026	1929	1049	2014	1072	2103	1094	2194
3100 [1463]	602	1027	633	1085	662	1149	692	1149	720	1196	749	1246	777	1299	804	1355	831	1414	857	1476	883	1541	908	1610	933	1681	958	1755	982	1833	1005	1913	1028	1997	1051	2083	1073	2173	1094	2266
3200 [1510]	615	1075	645	1114	674	1157	702	1202	731	1250	758	1301	785	1356	812	1413	838	1473	864	1537	889	1603	914	1673	938	1746	962	1821	986	1900	1008	1982	1031	2067	1053	2155	1074	2246	1095	2340
3300 [1557]	628	1126	657	1166	685	1210	713	1256	741	1306	768	1359	794	1414	820	1473	846	1535	871	1600	896	1668	920	1739	944	1813	967	1880	989	1970	1012	2053	1033	2139	1055	2229	1075	2321	1096	2416
3400 [1604]	640	1179	669	1221	697	1266	724	1314	751	1365	777	1419	803	1476	829	1536	854	1599	878	1665	902	1734	926	1807	949	1882	971	1960	993	2042	1015	2126	1036	2214	1057	2305	1077	2398	1097	2495
3500 [1652]	653	1235	681	1278	708	1324	735	1373	761	1425	787	1481	812	1539	837	1601	861	1665	885	1733	909	1803	932	1877	954	954	954	976	2024	997	2116	1018	2202	1039	2281	1059	2383	1078	2497	
3600 [1699]	666	1292	693	1337	720	1384	746	1435	771	1489	797	1545	821	1605	845	1668	869	1734	892	1803	915	1875	938	1950	959	959	981	2109	1001	2193	1022	2280	1042	2371	1061	2464	1080	2560		

NOTE: A/F-Drive left of bold line, B/G-Drive right of bold line, C/H-Drive right of double line.

Drive Package	A/F					B/G					C/H							
Motor H.P. [W]	2 [1491.4]					3 [2237.1]					3 [2237.1]							
Blower Sheave	AK84H					AK84H					AK84H							
Motor Sheave	1VL40*7/8					1VP50*7/8					1VP56*7/8							
Belt	A49					A50					A51							
Turns Open	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
RPM	767	721	678	635	590	548	992	949	908	866	823	782	1108	1067	1029	987	946	905

- NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
4. Drive data shown is for vertical airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

Airflow	AIRFLOW CORRECTION FACTORS *			COMPONENT AIRFLOW RESISTANCE		
CFM [L/s]	Sensible MBH		Power kW	Wet Coil	Vertical Economizer RA Damper Open	Concentric Diffuser RXRN-AEF2000 & Concentric Adapter RXMC-DD01 (Flush)
	Total MBH					
2400 [1133]	0.96	0.89	0.98	0.04 [0.01]	0.01 [0.00]	Concentric Diffuser RXRN-AED2000 & Concentric Adapter RXMC-DD01 (Drop)
2500 [1180]	0.96	0.90	0.99	0.05 [0.01]	0.02 [0.00]	
2600 [1227]	0.97	0.92	0.99	0.05 [0.01]	0.02 [0.01]	
2700 [1274]	0.97	0.93	0.99	0.05 [0.01]	0.03 [0.01]	
2800 [1321]	0.98	0.95	0.99	0.06 [0.01]	0.04 [0.01]	
2900 [1368]	0.98	0.96	1.00	0.06 [0.02]	0.04 [0.01]	
3000 [1416]	0.99	0.97	1.00	0.07 [0.02]	0.05 [0.01]	
3100 [1463]	1.00	0.99	1.00	0.07 [0.02]	0.06 [0.02]	
3200 [1510]	1.00	1.00	1.01	0.07 [0.02]	0.07 [0.02]	
3300 [1557]	1.01	1.02	1.01	0.08 [0.02]	0.08 [0.02]	
3400 [1604]	1.01	1.03	1.01	0.08 [0.02]	0.09 [0.02]	
3500 [1652]	1.02	1.05	1.01	0.09 [0.02]	0.10 [0.02]	
3600 [1699]	1.02	1.06	1.02	0.09 [0.02]	0.11 [0.03]	

* Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

AIRFLOW PERFORMANCE — RGEDZ*090*

AIRFLOW PERFORMANCE — 7.5 TON [26.4kW] — 60 Hz — SIDEFLOW

Model RGEDZ*090*		Voltage 208/230, 460, 575 — 3 phase 60 Hz																																								
		External Static Pressure — Inches of Water [kPa]																																								
Air Flow CFM [L/s]	0.1 [0.02]		0.2 [0.05]		0.3 [0.07]		0.4 [0.10]		0.5 [0.12]		0.6 [0.15]		0.7 [0.17]		0.8 [0.20]		0.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [0.50]			
	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W		
2400 [1133]	—	—	—	—	558	822	594	853	629	887	663	925	697	965	730	1009	763	1056	794	1106	826	1159	856	1216	886	1275	915	1338	943	1404	971	1474	998	1546	1025	1622	1051	1700	1076	1782	1085	2169
2500 [1180]	—	—	—	—	568	848	604	881	638	917	672	966	705	998	738	1044	769	1082	801	1144	831	1199	861	1268	890	1319	919	1384	947	1452	974	1523	1001	1597	1027	1674	1052	1755	1077	1838	1085	2169
2600 [1227]	—	—	543	846	579	877	613	912	647	950	683	981	713	1035	745	1082	777	1132	807	1186	837	1243	867	1303	895	1366	923	1433	951	1502	978	1575	1004	1651	1029	1730	1054	1812	1078	1888	1085	2169
2700 [1274]	—	—	554	877	589	910	623	946	657	986	689	1029	722	1074	753	1124	784	1176	814	1231	844	1290	872	1362	901	1417	928	1485	955	1556	981	1631	1007	1708	1032	1788	1056	1873	1079	1961	1085	2169
2800 [1321]	—	—	566	911	600	946	634	984	666	1026	699	1070	730	1118	761	1169	792	1223	821	1280	850	1340	878	1404	906	1470	933	1540	959	1613	985	1690	1010	1769	1034	1852	1058	1938	1081	2027	1085	2169
2900 [1368]	543	916	577	949	611	966	644	1026	676	1069	708	1115	739	1164	770	1217	799	1273	828	1332	857	1394	885	1459	912	1528	938	1588	944	1662	969	1738	994	1818	1017	1901	1041	1987	1063	2077	1085	2169
3000 [1416]	555	985	589	990	622	1029	655	1070	687	1115	718	1163	748	1214	778	1269	807	1326	836	1387	864	1451	891	1518	918	1588	944	1662	969	1738	994	1818	1017	1901	1041	1987	1063	2077	1085	2169		
3100 [1463]	568	998	601	1035	634	1075	666	1118	697	1165	728	1215	758	1288	787	1324	816	1383	844	1445	871	1511	898	1580	924	1652	949	1727	974	1806	998	1887	1022	1972	1044	2060	1066	2151	1088	2245	1085	2169
3200 [1510]	581	1044	614	1083	646	1125	677	1170	708	1218	738	1270	768	1324	796	1382	824	1443	852	1507	879	1575	905	1646	931	1719	955	1796	980	1876	1003	1960	1026	2046	1048	2136	1070	2229	1091	2325	1085	2169
3300 [1557]	594	1083	626	1134	658	1178	689	1225	719	1275	749	1328	778	1384	806	1444	833	1507	860	1573	887	1642	912	1714	937	1790	962	1869	985	1961	1008	2036	1031	2124	1052	2216	1073	2310	1094	2408	1085	2169
3400 [1604]	607	1146	639	1189	670	1234	701	1283	730	1335	759	1390	788	1448	815	1509	843	1574	869	1642	895	1713	920	1787	944	1864	968	1945	991	2028	1014	2115	1036	2205	1057	2296	1077	2395	1097	2494	1085	2169
3500 [1652]	621	1203	652	1247	683	1294	713	1344	742	1398	770	1455	798	1515	825	1578	852	1644	878	1714	903	1786	928	1862	952	1941	975	2024	997	2109	1019	2188	1041	2290	1061	2385	1081	2483	1101	2584	1085	2169
3600 [1699]	635	1262	666	1308	696	1357	725	1408	754	1465	782	1523	809	1585	836	1650	862	1718	887	1789	912	1864	936	1941	959	2022	982	2106	1004	2194	1025	2284	1046	2378	1066	2474	1086	2574	1104	2677	1085	2169

NOTE: A/F=Drive left of bold line, B/G=Drive right of bold line, C/H=Drive right of double line.

Drive Package	A/F					B/G					C/H							
Motor H.P. [W]	2 [1491.4]					3 [2237.1]					3 [2237.1]							
Blower Sheave	AK84H					AK84H					AK84H							
Motor Sheave	1VL40*7/8					1VP50*7/8					1VP56*7/8							
Belt	A49					A50					A51							
Turns Open	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
RPM	765	720	676	633	589	544	989	949	908	865	823	780	1108	1067	1029	987	946	905

- NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

Airflow	AIRFLOW CORRECTION FACTORS *				COMPONENT AIRFLOW RESISTANCE			
	CFM [L/s]	Total MBH	Sensible MBH	Power kW	Wet Coil	Horizontal Economizer RA Damper Open	Concentric Diffuser RXRN-AEF2000 & Concentric Adapter RXMC-DD01 (Flush)	Concentric Diffuser RXRN-AED2000 & Concentric Adapter RXMC-DD01 (Drop)
					Resistance — Inches of Water [kPa]			
	2400 [1133]	0.96	0.89	0.98	0.04 [0.01]	0.01 [0.00]	0.66 [0.16]	0.53 [0.13]
	2500 [1180]	0.96	0.90	0.99	0.05 [0.01]	0.02 [0.00]	0.71 [0.18]	0.57 [0.14]
	2600 [1227]	0.97	0.92	0.99	0.05 [0.01]	0.02 [0.00]	0.75 [0.19]	0.60 [0.15]
	2700 [1274]	0.97	0.93	0.99	0.05 [0.01]	0.03 [0.01]	0.80 [0.20]	0.65 [0.16]
	2800 [1321]	0.98	0.95	0.99	0.06 [0.01]	0.04 [0.01]	0.85 [0.21]	0.69 [0.17]
	2900 [1368]	0.98	0.96	1.00	0.06 [0.02]	0.04 [0.01]	0.91 [0.23]	0.74 [0.18]
	3000 [1416]	0.99	0.97	1.00	0.07 [0.02]	0.05 [0.01]	0.96 [0.24]	0.79 [0.20]
	3100 [1463]	1.00	0.99	1.00	0.07 [0.02]	0.06 [0.01]	1.02 [0.25]	0.86 [0.21]
	3200 [1510]	1.00	1.00	1.01	0.07 [0.02]	0.07 [0.02]	1.08 [0.27]	0.92 [0.23]
	3300 [1557]	1.01	1.02	1.01	0.08 [0.02]	0.08 [0.02]	1.15 [0.29]	0.99 [0.25]
	3400 [1604]	1.01	1.03	1.01	0.08 [0.02]	0.09 [0.02]	1.21 [0.30]	1.05 [0.26]
	3500 [1652]	1.02	1.05	1.01	0.09 [0.02]	0.10 [0.02]	1.29 [0.32]	1.09 [0.27]
	3600 [1699]	1.02	1.06	1.02	0.09 [0.02]	0.11 [0.03]	1.36 [0.34]	1.13 [0.28]

* Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

AIRFLOW PERFORMANCE — RGEDZ*102*

AIRFLOW PERFORMANCE — 8.5 TON [29.9kW] — 60 Hz — DOWNFLOW

Air Flow CFM [L/s]		Voltage 208/230, 460, 575 — 3 phase 60 Hz																								External Static Pressure — Inches of Water [kPa]															
		0.1 [0.2]		0.2 [0.5]		0.3 [0.7]		0.4 [1.0]		0.5 [1.2]		0.6 [1.5]		0.7 [1.7]		0.8 [2.0]		0.9 [2.2]		1.0 [2.5]		1.1 [2.7]		1.2 [3.0]		1.3 [3.2]		1.4 [3.5]		1.5 [3.7]		1.6 [4.0]		1.7 [4.2]		1.8 [4.5]		1.9 [4.7]		2.0 [5.0]	
		RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
2700 [1224]		—	—	561	894	596	934	631	975	665	1018	698	1062	730	1108	762	1155	793	1203	823	1253	853	1304	882	1357	910	1411	937	1467	964	1524	990	1583	1015	1643	1039	1704	1063	1767	1086	1832
2800 [1321]		—	—	573	927	608	969	642	1013	676	1058	708	1104	740	1152	771	1201	802	1252	832	1304	861	1358	889	1413	917	1470	943	1528	970	1587	995	1648	1020	1711	1044	1775	1067	1840	1090	1907
2900 [1368]		—	—	586	984	630	1008	654	1059	687	1101	719	1150	750	1200	781	1252	811	1305	840	1360	869	1416	897	1473	924	1532	950	1593	976	1654	1001	1718	1025	1782	1048	1848	1071	1916	1093	1985
3000 [1416]		564	959	599	1004	633	1051	666	1099	698	1149	730	1200	761	1253	791	1307	820	1362	849	1417	877	1476	904	1537	931	1598	957	1661	982	1725	1006	1791	1030	1858	1053	1926	1075	1986	1097	2067
3100 [1463]		578	1001	612	1048	645	1098	678	1148	710	1200	741	1254	771	1308	801	1365	830	1423	858	1482	886	1542	912	1605	939	1668	964	1733	989	1800	1012	1868	1036	1937	1058	2008	1080	2080	1101	2154
3200 [1510]		592	1046	625	1096	658	1148	690	1201	721	1255	752	1311	782	1363	811	1427	840	1497	867	1548	894	1611	921	1676	946	1742	971	1809	995	1878	1019	1948	1041	2020	1063	2093	1085	2188	1108	2244
3300 [1557]		605	1086	638	1141	671	1202	702	1257	733	1314	763	1372	793	1432	821	1493	849	1555	877	1619	903	1684	929	1751	954	1819	979	1889	1002	1960	1025	2033	1047	2107	1069	2182	1090	2289	1110	2337
3400 [1604]		619	1149	652	1204	684	1260	715	1317	745	1376	775	1437	804	1499	832	1562	860	1627	886	1693	912	1761	938	1830	962	1900	986	1972	1009	2046	1032	2121	1053	2197	1074	2275	1095	2354	1114	2435
3500 [1652]		634	1206	666	1263	697	1322	728	1382	758	1443	787	1506	815	1570	843	1635	870	1702	896	1771	922	1841	946	1912	970	1985	994	2060	1017	2135	1038	2213	1060	2291	1080	2371	1100	2453	1119	2536
3600 [1699]		648	1267	680	1326	711	1387	741	1449	770	1513	799	1578	827	1645	854	1713	880	1782	906	1853	931	1925	955	1999	979	2074	1002	2151	1024	2229	1045	2308	1066	2388	1086	2472	1105	2556	1124	2641
3700 [1746]		663	1332	694	1393	724	1456	754	1521	783	1587	813	1654	838	1723	865	1793	891	1938	941	2013	965	2089	988	2167	1010	2246	1032	2326	1053	2408	1073	2491	1092	2576	1111	2662	1129	2750		
3800 [1793]		678	1400	708	1464	738	1529	767	1596	795	1665	823	1734	850	1805	876	1878	902	1952	926	2028	951	2105	974	2183	996	2263	1018	2344	1039	2427	1060	2511	1080	2597	1099	2684	1117	2772	1134	2862
3900 [1840]		693	1472	723	1538	752	1606	781	1675	808	1746	836	1818	862	1892	888	1966	913	2043	937	2121	961	2200	983	2281	1005	2363	1027	2447	1048	2532	1067	2618	1087	2706	1105	2796	1123	2886	1140	2979
4000 [1888]		708	1548	737	1617	766	1687	794	1758	822	1831	848	1906	874	1981	900	2059	924	2137	948	2218	971	2299	993	2382	1015	2467	1036	2553	1056	2640	1075	2729	1094	2819	1112	2911	1129	3004	1146	3099
4100 [1935]		723	1628	752	1699	781	1771	808	1845	835	1920	861	1997	887	2075	911	2155	935	2236	959	2318	981	2402	1003	2488	1024	2574	1045	2663	1064	2752	1083	2844	1101	2936	1119	3030	1136	3126	1152	3223

NOTE: A/F-Drive left of bold line, B/G-Drive right of bold line, C/H-Drive right of double line.

Drive Package	A/F	B/G	C/H
Motor H.P. [W]	2 [1491.4]	3 [2237.1]	3 [2237.1]
Blower Sheave	AK79H	AK79H	AK79H
Motor Sheave	1V40*7/8	1VP50*7/8	1VP56*7/8
Belt	A49	A50	A51
Turns Open	0	1	2
RPM	804	758	710
		616	559
		4	3
		5	4
		6	5
		7	6
		8	7
		9	8
		10	9
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		214	213
		215	214

AIRFLOW PERFORMANCE — RGEDZ*102*

AIRFLOW PERFORMANCE — 8.5 TON [29.9kW] — 60 Hz — SIDEFLOW

Model RGEDZ*102*		Voltage 208/230, 460, 575 — 3 phase 60 Hz																							
Air Flow CFM [L/s]	RPM	External Static Pressure — Inches of Water [kPa]																							
		0.1 [02]	0.2 [05]	0.3 [07]	0.4 [10]	0.5 [12]	0.6 [15]	0.7 [17]	0.8 [20]	0.9 [22]	1.0 [25]	1.1 [27]	1.2 [30]	1.3 [32]	1.4 [35]	1.5 [37]	1.6 [40]	1.7 [42]	1.8 [45]	1.9 [47]	2.0 [50]				
		W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM
2700 [1274]	—	—	—	577	932	611	969	644	1009	677	1052	710	1086	742	1147	774	1199	806	1254	837	1312	868	1373	898	1437
2800 [1321]	—	—	556	926	589	962	622	1000	555	1042	687	1087	719	1134	751	1185	783	1239	814	1295	844	1355	875	1418	905
2900 [1368]	—	—	568	968	601	995	633	1036	666	1079	697	1125	729	1174	760	1227	791	1282	821	1340	851	1402	881	1466	911
3000 [1416]	—	—	580	984	613	1033	645	1074	676	1119	708	1167	738	1216	769	1272	799	1329	829	1389	859	1452	888	1518	917
3100 [1463]	561	986	595	1033	624	1073	656	1117	687	1163	718	1213	748	1265	778	1321	808	1379	837	1441	866	1506	895	1573	923
3200 [1510]	574	1037	605	1078	636	1116	667	1163	698	1211	728	1262	758	1316	787	1373	816	1434	845	1497	873	1563	902	1632	929
3300 [1557]	587	1082	618	1122	648	1166	679	1212	709	1262	738	1315	767	1371	796	1430	825	1491	853	1556	881	1624	908	1695	936
3400 [1604]	600	1130	630	1172	660	1217	690	1266	720	1317	749	1371	777	1429	806	1489	834	1553	861	1619	888	1689	915	1761	942
3500 [1652]	613	1182	643	1226	672	1273	702	1323	730	1376	759	1432	787	1491	815	1553	842	1618	869	1686	896	1757	922	1831	948
3600 [1699]	626	1238	656	1283	685	1332	713	1383	741	1438	769	1495	797	1556	824	1620	851	1687	877	1756	904	1829	929	1905	955
3700 [1746]	640	1297	668	1344	697	1394	725	1447	753	1504	780	1563	807	1625	833	1690	860	1759	886	1830	911	1905	937	1982	961
3800 [1793]	653	1360	681	1409	709	1460	737	1515	764	1573	790	1634	817	1696	843	1765	885	1835	894	1908	919	1984	944	2063	968
3900 [1840]	667	1426	694	1477	721	1530	748	1587	775	1646	801	1709	827	1774	852	1843	878	1914	902	1989	917	2067	951	2147	975
4000 [1888]	680	1496	707	1548	734	1604	760	1662	786	1723	812	1787	837	1854	862	1924	887	1988	911	2074	935	2153	958	2235	981
4100 [1935]	694	1570	720	1624	746	1681	772	1740	797	1803	822	1869	847	1938	872	2009	866	2064	919	2162	943	2243	965	2327	988

NOTE: A/F-Drive left of bold line, B/G-Drive right of bold line, C/H-Drive right of double line.

Drive Package	A/F	B/G	C/H
Motor H.P. [W]	2 [1491.4]	3 [2237.1]	3 [2237.1]
Blower Sheave	AK79H	AK79H	AK79H
Motor Sheave	1V140*7/8	1V50*7/8	1VP56*7/8
Belt	A49	A50	A51
Turns Open	0	1	2
RPM	802	754	707
		616	555
		1048	1005
		960	916
		870	827
		1170	1085
		1126	1044
		1085	1000
		956	956

- NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

Airflow	AIRFLOW CORRECTION FACTORS *			COMPONENT AIRFLOW RESISTANCE			
				Wet Coil	Horizontal Economizer RA Damper Open	Concentric Diffuser RXRN-AEF2000 & Concentric Adapter RXMC-DD01 (Flush)	Concentric Diffuser RXRN-AED2000 & Concentric Adapter RXMC-DD01 (Drop)
CFM [L/s]	Total MBH	Sensible MBH	Power kW	Resistance — Inches of Water [kPa]			
2700 [1274]	0.97	0.93	0.99	0.07 [02]	0.03 [01]	0.80 [20]	0.65 [16]
2800 [1321]	0.98	0.94	0.99	0.07 [02]	0.03 [01]	0.85 [21]	0.69 [17]
2900 [1368]	0.98	0.96	0.99	0.08 [02]	0.04 [01]	0.91 [23]	0.74 [18]
3000 [1416]	0.99	0.97	1.00	0.08 [02]	0.05 [01]	0.96 [24]	0.79 [20]
3100 [1463]	0.99	0.99	1.00	0.09 [02]	0.06 [01]	1.02 [25]	0.86 [21]
3200 [1510]	1.00	1.00	1.00	0.10 [02]	0.07 [02]	1.08 [27]	0.92 [23]
3300 [1557]	1.01	1.01	1.00	0.10 [03]	0.08 [02]	1.15 [29]	0.99 [25]
3400 [1604]	1.01	1.03	1.01	0.11 [03]	0.09 [02]	1.21 [30]	1.05 [26]
3500 [1652]	1.02	1.04	1.01	0.11 [03]	0.10 [02]	1.29 [32]	1.09 [27]
3600 [1699]	1.02	1.06	1.01	0.12 [03]	0.11 [03]	1.36 [34]	1.13 [28]
3700 [1746]	1.03	1.07	1.02	0.13 [03]	0.12 [03]	1.43 [36]	1.18 [29]
3800 [1793]	1.03	1.09	1.02	0.13 [03]	0.13 [03]	1.50 [37]	1.23 [31]
3900 [1840]	1.04	1.10	1.02	0.14 [04]	0.15 [04]	1.59 [40]	1.31 [33]
4000 [1888]	1.05	1.12	1.02	0.15 [04]	0.16 [04]	1.68 [42]	1.38 [34]
4100 [1935]	1.05	1.13	1.03	0.15 [04]	0.17 [04]	1.74 [43]	1.44 [36]

* Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

AIRFLOW PERFORMANCE — RGEDZ*120*

AIRFLOW PERFORMANCE — 10 TON [35.1kW] — 60 Hz — DOWNFLOW

Air Flow CFM [L/s]		External Static Pressure — Inches of Water [kPa]																																						
		Voltage 208/230, 460, 575 — 3 phase 60 Hz																																						
		0.1 [0.2]	0.2 [0.5]	0.3 [0.7]	0.4 [1.0]	0.5 [1.2]	0.6 [1.5]	0.7 [1.7]	0.8 [2.0]	0.9 [2.2]	1.0 [2.5]	1.1 [2.7]	1.2 [3.0]	1.3 [3.2]	1.4 [3.5]	1.5 [3.7]	1.6 [4.0]	1.7 [4.2]	1.8 [4.5]	1.9 [4.7]	2.0 [5.0]																			
RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W																			
3200 [1510]	597	1046	629	1092	661	1141	692	1191	723	1242	753	1296	782	1351	811	1409	839	1468	867	1526	893	1591	920	1655	945	1722	970	1790	994	1859	1018	1931	1041	2004	1064	2080	1085	2157	1107	2236
3300 [1557]	610	1082	642	1141	674	1182	705	1244	735	1299	764	1355	793	1413	822	1473	849	1535	876	1598	903	1664	928	1731	954	1800	978	1871	1002	1943	1025	2018	1048	2094	1070	2172	1091	2251	1112	2333
3400 [1604]	624	1142	655	1194	686	1247	717	1303	747	1360	776	1419	804	1480	832	1542	859	1607	886	1673	912	1741	937	1811	962	1883	986	1956	1010	2031	1032	2108	1055	2187	1076	2268	1097	2350	1117	2435
3500 [1652]	638	1196	669	1251	699	1307	729	1365	759	1425	787	1487	815	1550	843	1616	870	1683	896	1752	921	1823	946	1895	971	1969	994	2046	1017	2124	1040	2203	1061	2285	1083	2368	1103	2454	1123	2541
3600 [1699]	651	1255	682	1312	712	1371	742	1432	771	1484	799	1559	827	1625	854	1693	880	1763	896	1835	931	1908	955	1984	979	2061	1003	2140	1025	2220	1047	2303	1068	2387	1089	2473	1109	2561	1129	2651
3700 [1746]	665	1317	696	1377	725	1439	755	1502	783	1568	811	1638	838	1704	865	1775	891	1848	916	1922	941	1998	965	2076	998	2161	1011	2238	1033	2321	1055	2406	1075	2493	1096	2582	1115	2673	1134	2765
3800 [1793]	679	1385	709	1447	739	1512	767	1578	795	1646	823	1715	850	1788	876	1861	901	1937	926	2014	950	2093	974	2173	997	2256	1010	2340	1041	2426	1062	2514	1083	2604	1102	2696	1122	2789	1140	2884
3900 [1840]	693	1456	723	1521	752	1589	780	1658	808	1728	835	1801	861	1875	887	1962	912	2030	936	2110	960	2191	983	2275	1006	2360	1028	2447	1049	2536	1070	2627	1090	2719	1109	2813	1128	2909	1146	3007
4000 [1888]	708	1532	737	1600	765	1670	793	1741	820	1815	847	1880	873	1967	898	2046	923	2127	947	2210	970	2294	993	2380	1015	2468	1036	2558	1057	2650	1077	2743	1097	2838	1116	2935	1134	3034	1152	3135
4100 [1935]	722	1612	751	1682	779	1755	806	1830	833	1906	859	1984	884	2064	909	2145	933	2229	957	2314	980	2401	1002	2490	1024	2581	1045	2673	1065	2768	1085	2864	1104	2962	1123	3061	1141	3163	1158	3266
4200 [1982]	736	1696	765	1769	792	1845	819	1922	845	2001	871	2082	896	2164	921	2249	944	2335	958	2423	990	2513	1012	2604	1033	2698	1054	2793	1074	2890	1093	2989	1112	3090	1130	3192	1147	3296	1164	3402
4300 [2029]	751	1784	779	1861	806	1939	832	2019	858	2100	883	2184	908	2269	932	2356	955	2445	978	2536	1000	2629	1022	2723	1043	2819	1063	2917	1082	3017	1101	3118	1119	3222	1137	3327	1154	3434	—	—
4400 [2076]	765	1877	793	1956	823	2037	846	2120	871	2204	896	2290	920	2378	944	2468	967	2560	989	2655	1010	2749	1032	2846	1052	2945	1072	3045	1091	3148	1108	3252	1127	3358	1144	3466	1161	3576	—	—
4500 [2123]	780	1974	807	2056	833	2140	859	2225	884	2312	908	2401	932	2492	955	2584	978	2679	1000	2776	1021	2873	1041	2973	1061	3074	1081	3178	1099	3283	1117	3390	1135	3499	1152	3609	1168	3722	—	—
4600 [2171]	795	2076	821	2160	847	2246	872	2335	897	2424	921	2516	944	2610	967	2705	989	2892	1010	2901	1031	3002	1051	3104	1071	3208	1090	3314	1108	3422	1126	3532	1143	3644	1159	3757	—	—		
4700 [2218]	810	2181	836	2269	861	2356	886	2448	910	2541	934	2635	957	2732	979	2830	1000	2929	1021	3031	1042	3134	1062	3240	1081	3347	1099	3455	1117	3566	1134	3679	1151	3793	1167	3909	—	—		
4800 [2265]	825	2281	850	2381	875	2473	900	2567	923	2662	946	2759	969	2858	991	2959	1012	3061	1033	3165	1052	3272	1072	3380	1090	3488	1108	3601	1126	3714	1143	3829	1159	3946	—	—	—	—		

NOTE: A/F-Drive left of bold line, B/G-Drive right of bold line, C/H-Drive right of double line.

Drive Package	A/F	B/G	C/H
Motor H.P. [W]	2 [1491.4]	3 [2237.1]	3 [2237.1]
Blower Sheave	AK79H	AK79H	AK79H
Motor Sheave	1VL40*7/8	1VP50*7/8	1VP56*7/8
Belt	A49	A50	A51
Turns Open	0	1	2
RPM	802	758	710
		2	3
		4	5
		616	559
		999	911
		1040	888
		1	4
		0	5
		1040	824
		955	1155
		2	1120
		3	1080
		4	996
		5	953

- NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
4. Drive data shown is for vertical airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

Airflow	AIRFLOW CORRECTION FACTORS *			COMPONENT AIRFLOW RESISTANCE			
				Wet Coil	Vertical Economizer RA Damper Open	Concentric Diffuser RXRN-AEF3415 & Diffuser RXMC-DD02 (Flush)	Concentric Diffuser RXRN-AED3415 & Diffuser RXMC-DD02 (Drop)
	CFM [L/s]	Total MBH	Sensible MBH				
3200 [1510]	0.97		0.93	0.10 [0.2]	0.07 [0.2]	0.74 [1.8]	0.56 [1.4]
3300 [1557]	0.98		0.94	0.10 [0.3]	0.08 [0.2]	0.79 [2.0]	0.59 [1.5]
3400 [1604]	0.98		0.96	0.11 [0.3]	0.09 [0.2]	0.84 [2.1]	0.62 [1.5]
3500 [1652]	0.99		0.97	0.11 [0.3]	0.10 [0.2]	0.90 [2.2]	0.66 [1.6]
3600 [1699]	0.99		0.98	0.12 [0.3]	0.11 [0.3]	0.95 [2.4]	0.69 [1.7]
3700 [1746]	1.00		0.99	0.13 [0.3]	0.12 [0.3]	1.00 [2.5]	0.73 [1.8]
3800 [1793]	1.01		1.01	0.13 [0.3]	0.13 [0.3]	1.04 [2.6]	0.76 [1.9]
3900 [1840]	1.01		1.02	0.14 [0.4]	0.15 [0.4]	1.09 [2.7]	0.80 [2.0]
4000 [1888]	1.01		1.03	0.15 [0.4]	0.16 [0.4]	1.13 [2.8]	0.84 [2.1]
4100 [1935]	1.02		1.04	0.15 [0.4]	0.17 [0.4]	1.19 [3.0]	0.88 [2.2]
4200 [1982]	1.02		1.06	0.16 [0.4]	0.19 [0.5]	1.24 [3.1]	0.92 [2.3]
4300 [2029]	1.03		1.07	0.17 [0.4]	0.20 [0.5]	1.31 [3.3]	0.97 [2.4]
4400 [2076]	1.03		1.08	0.18 [0.4]	0.21 [0.5]	1.37 [3.4]	1.02 [2.5]
4500 [2123]	1.04		1.09	0.19 [0.5]	0.23 [0.6]	1.43 [3.5]	1.07 [2.7]
4600 [2171]	1.04		1.11	0.20 [0.5]	0.24 [0.6]	1.48 [3.7]	1.11 [2.8]
4700 [2218]	1.05		1.12	0.20 [0.5]	0.25 [0.6]	1.54 [3.8]	1.15 [2.9]
4800 [2265]	1.05		1.13	0.21 [0.5]	0.28 [0.7]	1.59 [4.0]	1.19 [3.0]

* Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

AIRFLOW PERFORMANCE — 10 TON [35.1kW] — 60 Hz — SIDEFLOW

Model	Voltage 208/230, 480, 575 — 3 phase 60 Hz										External Static Pressure — Inches of Water [kPa]										Air Flow																			
	CFM [L/s]																																							
	0.1 [0.02]	0.2 [0.05]	0.3 [0.07]	0.4 [0.10]	0.5 [0.12]	0.6 [0.15]	0.7 [0.17]	0.8 [0.20]	0.9 [0.23]	1.0 [0.25]	1.1 [0.27]	1.2 [0.30]	1.3 [0.32]	1.4 [0.35]	1.5 [0.37]	1.6 [0.40]	1.7 [0.42]	1.8 [0.45]	1.9 [0.47]	2.0 [0.50]																				
RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W																			
3200 [1510]	575	1018	607	1057	637	1149	667	1143	697	1217	727	1240	756	1283	785	1348	814	1406	842	1466	872	1529	907	1595	924	1664	951	1735	978	1809	1004	1865	1030	1965	1055	2047	1080	2116	1105	2206
3300 [1557]	588	1060	618	1101	649	1149	679	1192	708	1247	737	1294	766	1349	795	1482	824	1466	850	1529	878	1575	905	1663	932	1734	958	1804	984	1884	1004	1965	1030	2045	1055	2129	1085	2216	1105	2296
3400 [1604]	600	1106	630	1150	660	1196	690	1245	719	1297	748	1352	776	1409	804	1469	832	1531	859	1597	886	1664	913	1735	939	1808	965	1884	990	1963	1016	2044	1040	2128	1065	2215	1089	2305	1113	2397
3500 [1652]	613	1156	643	1202	672	1251	701	1302	730	1357	758	1413	786	1473	814	1535	841	1600	868	1668	894	1782	920	1811	946	1887	972	1966	997	2048	1022	2121	1046	2212	1070	2306	1094	2397	1117	2482
3600 [1699]	626	1210	655	1258	684	1312	711	1364	741	1420	769	1479	796	1547	823	1606	850	1673	877	1743	903	1816	929	1892	954	1970	979	2050	1004	2134	1028	2220	1052	2309	1076	2400	1099	2484	1122	2591
3700 [1746]	639	1268	668	1319	696	1374	724	1428	752	1486	779	1550	806	1614	833	1681	860	1751	886	1823	911	1898	937	1976	962	2056	986	2144	1011	2225	1035	2314	1058	2405	1081	2469	1104	2566	1127	2695
3800 [1793]	652	1330	680	1384	708	1440	736	1498	765	1536	790	1624	817	1680	843	1760	869	1832	895	1907	920	1984	945	2064	970	2147	994	2233	1018	2321	1041	2412	1064	2505	1087	2602	1110	2701	1132	2895
3900 [1840]	665	1397	693	1442	721	1511	748	1572	775	1636	801	1702	828	1771	854	1843	879	1917	904	1985	929	2075	954	2157	979	2242	1001	2330	1025	2421	1048	2514	1071	2610	1093	2709	1115	2810	1137	2914
4000 [1888]	678	1467	706	1525	733	1586	760	1650	787	1716	813	1785	839	1856	864	1930	889	2007	914	2087	938	2169	962	2254	986	2341	1009	2432	1032	2525	1055	2620	1077	2719	1099	2820	1121	2923	1142	3030
4100 [1935]	692	1542	719	1602	746	1666	772	1731	798	1800	824	1871	895	1945	875	2022	899	2101	923	2183	947	2267	971	2355	994	2445	1017	2537	1040	2633	1062	2731	1084	2831	1105	2935	1126	3041	1147	3150
4200 [1982]	706	1621	732	1684	759	1748	785	1817	810	1868	836	1862	861	1938	885	2117	899	2199	933	2283	957	2370	980	2460	1003	2552	1027	2647	1049	2745	1069	2845	1091	2948	1112	3054	1132	3163	1153	3274
4300 [2029]	720	1704	746	1769	772	1837	797	1907	823	1917	847	1907	872	2135	896	2217	920	2301	943	2387	966	2477	989	2569	1012	2664	1034	2761	1055	2861	1077	2964	1098	3069	1118	3178	1139	3298	1158	3402
4400 [2106]	734	1791	760	1858	785	1928	810	2001	835	2077	859	2155	883	2237	907	2320	931	2407	954	2496	976	2587	999	2682	1020	2779	1042	2879	1063	2981	1084	3087	1105	3195	1125	3305	1145	3418	—	—
4500 [2173]	748	1892	773	1952	798	2024	823	2100	847	2178	871	2259	895	2342	918	2428	941	2517	964	2608	986	2702	1008	2799	1030	2899	1051	3001	1071	3106	1092	3214	1112	3324	1132	3437	1151	3552	—	—
4600 [2171]	762	1977	787	2049	812	2124	836	2202	860	2283	884	2366	907	2451	930	2540	952	2631	974	2725	996	2822	1018	2921	1039	3023	1059	3127	1080	3235	1100	3345	1120	3457	1139	3573	1158	3691	—	—
4700 [2218]	777	2076	801	2151	826	2228	849	2309	873	2391	896	2477	919	2565	941	2656	965	2750	985	2846	1006	2945	1027	3046	1048	3151	1068	3258	1088	3367	1108	3480	1127	3595	1146	3712	—	—		
4800 [2265]	792	2180	816	2257	840	2337	869	2409	891	2486	915	2572	937	2663	953	2757	982	2991	1017	3072	1037	3176	1058	3283	1077	3392	1097	3504	1116	3619	1135	3736	1153	3866	—	—	—	—		

Drive Package	A/F	B/G	C/H
Motor H.P. [W]	2 [1491.4]	3 [2237.1]	3 [2237.1]
Blower Sheave	AK79H	AK79H	AK79H
Motor Sheave	1VL40*7/8	1VP50*7/8	1VP56*7/8
Belt	A49	A50	A51
Turns Open	0	1	2
RPM	798	998	1155
	753	1041	1119
	707	867	1037
	556	912	1078
	616	955	1078
	663	824	994
	707	824	951

- NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

Airflow	AIRFLOW CORRECTION FACTORS *				COMPONENT AIRFLOW RESISTANCE				
	CFM	[L/s]	Total MBH	Sensible MBH	Power kW	Wet Coil	Horizontal Economizer	Concentric Diffuser	Concentric Diffuser
							RA Damper Open	RXRN-AEF3415 & Diffuser RXMC-DD02 (Flush)	RXRN-AED3415 & Diffuser RXMC-DD02 (Drop)
3200	[15.10]	0.97	0.93	0.99	0.99	0.10 [0.02]	0.07 [0.02]	0.74 [0.18]	0.56 [0.14]
3300	[15.57]	0.98	0.94	0.99	0.99	0.10 [0.03]	0.08 [0.02]	0.79 [0.20]	0.59 [0.15]
3400	[16.04]	0.98	0.96	0.99	0.99	0.11 [0.03]	0.09 [0.02]	0.84 [0.21]	0.62 [0.15]
3500	[16.52]	0.99	0.97	1.00	1.00	0.11 [0.03]	0.10 [0.02]	0.90 [0.22]	0.66 [0.16]
3600	[16.99]	0.99	0.98	1.00	1.00	0.12 [0.03]	0.11 [0.03]	0.95 [0.24]	0.69 [0.17]
3700	[17.46]	1.00	0.99	1.00	1.00	0.12 [0.03]	0.12 [0.03]	1.00 [0.25]	0.73 [0.18]
3800	[17.93]	1.00	1.01	1.00	1.00	0.13 [0.03]	0.13 [0.03]	1.04 [0.26]	0.76 [0.19]
3900	[18.40]	1.01	1.02	1.00	1.00	0.14 [0.04]	0.15 [0.04]	1.09 [0.27]	0.80 [0.20]
4000	[18.88]	1.01	1.03	1.01	1.01	0.15 [0.04]	0.16 [0.04]	1.13 [0.28]	0.84 [0.21]
4100	[19.35]	1.02	1.04	1.01	1.01	0.15 [0.04]	0.17 [0.04]	1.19 [0.30]	0.88 [0.22]
4200	[19.82]	1.02	1.06	1.01	1.01	0.16 [0.04]	0.19 [0.05]	1.24 [0.31]	0.92 [0.23]
4300	[20.29]	1.03	1.07	1.01	1.01	0.17 [0.04]	0.20 [0.05]	1.31 [0.33]	0.97 [0.24]
4400	[20.76]	1.03	1.08	1.01	1.01	0.18 [0.04]	0.21 [0.05]	1.37 [0.34]	1.02 [0.25]
4500	[21.23]	1.04	1.09	1.02	1.02	0.19 [0.05]	0.23 [0.06]	1.43 [0.35]	1.07 [0.27]
4600	[21.71]	1.04	1.11	1.02	1.02	0.19 [0.05]	0.24 [0.06]	1.48 [0.37]	1.11 [0.28]
4700	[22.18]	1.05	1.12	1.02	1.02	0.20 [0.05]	0.26 [0.06]	1.54 [0.38]	1.15 [0.29]
4800	[22.65]	1.05	1.13	1.02	1.02	0.21 [0.05]	0.28 [0.07]	1.59 [0.40]	1.19 [0.30]

* Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

AIRFLOW PERFORMANCE — 12.5 TON [43.9kW] — 60 Hz — DOWNFLOW

Voltage 208/230. 460. 575 — 3 phase 60 Hz

Native Deeds

8

- NOTES: 1. Factory sheave settings are shown in bold type.

COMPONENT AIRFLOW RESISTANCE

[1 Designates Metric Conversions

AIRFLOW PERFORMANCE — 12.5 TON [43.9kW] — 60 Hz — SIDEFLOW

Air Flow CFM [L/s]		Voltage 200/230/460, 575 — 3 phase 60 Hz																			
		Model RGEDZ150°																			
		External Static Pressure — Inches of Water [kPa]																			
0.1 [0.02]	0.2 [0.05]	0.3 [0.07]	0.4 [0.10]	0.5 [0.12]	0.6 [0.15]	0.7 [0.17]	0.8 [0.20]	0.9 [0.22]	1.0 [0.25]	1.1 [0.27]	1.2 [0.30]	1.3 [0.32]	1.4 [0.35]	1.5 [0.37]	1.6 [0.40]	1.7 [0.42]	1.8 [0.45]	1.9 [0.47]	2.0 [0.50]		
RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W		
4000 [1888]	—	—	791	1757	3041	4316	5592	6867	8142	9417	10692	11967	13242	14517	15792	17067	18342	19617	20892		
4100 [1935]	782	1773	809	1841	3316	4891	6466	8041	9616	11191	12766	14341	15916	17491	19066	20641	22216	23791	25366		
4200 [1982]	811	1860	828	1952	3504	5079	6654	8229	9804	11379	12954	14529	16104	17679	19254	20829	22404	23979	25554		
4300 [2029]	819	1960	845	2028	3711	5286	6861	8436	10011	11586	13161	14736	16311	17886	19461	21036	22611	24186	25761		
4400 [2076]	837	2053	863	2129	3888	5463	7038	8613	10188	11763	13338	14913	16488	18063	19638	21213	22788	24363	25938		
4500 [2123]	855	2159	880	2237	4031	5606	7181	8756	10331	11906	13481	15056	16631	18206	19781	21356	22931	24506	26081		
4600 [2171]	873	2270	898	2358	4211	5786	7361	8936	10511	12086	13661	15236	16811	18386	19961	21536	23111	24686	26261		
4700 [2218]	891	2387	914	2473	4398	5973	7548	9123	10698	12273	13848	15423	17008	18583	20158	21733	23308	24883	26458		
4800 [2265]	908	2511	931	2597	4579	6154	7729	9304	10879	12454	14029	15604	17179	18754	20329	21904	23479	25054	26629		
4900 [2312]	925	2640	947	2726	4761	6336	7911	9486	11061	12636	14211	15786	17361	18936	20511	22086	23661	25236	26811		
5000 [2359]	942	2776	964	2862	4951	6526	8101	9676	11251	12826	14401	15976	17551	19126	20701	22276	23851	25426	27001		
5100 [2407]	958	2916	979	3010	5140	6715	8290	9865	11440	13015	14590	16165	17740	19315	20890	22465	24040	25615	27190		
5200 [2464]	971	3063	995	3160	5346	6921	8496	10071	11646	13221	14796	16371	17946	19521	21096	22671	24246	25821	27396		
5300 [2521]	991	3217	1015	3316	5548	7123	8698	10273	11848	13423	15008	16583	18158	19733	21308	22883	24458	26033	27608		
5400 [2548]	1006	3373	1026	3474	5759	7334	8909	10484	12059	13634	15209	16784	18359	19934	21509	23084	24659	26234	27809		
5500 [2595]	1022	3541	1040	3644	5964	7539	9114	10689	12264	13839	15414	16989	18564	20139	21714	23289	24864	26439	28014		
5600 [2643]	1037	3712	1055	3816	6169	7744	9319	10894	12469	14044	15619	17194	18769	20344	21919	23494	25069	26644	28219		
5700 [2690]	1052	3888	1069	3987	6375	7950	9525	11100	12675	14250	15825	17400	18975	20550	22125	23700	25275	26850	28425		
5800 [2737]	1067	4041	1083	4142	6581	8156	9731	11306	12881	14456	16031	17606	19181	20756	22331	23906	25481	27056	28631		
5900 [2784]	1081	4260	1097	4371	6801	8376	9951	11526	13101	14676	16251	17826	19401	20976	22551	24126	25701	27276	28851		
6000 [2831]	1095	4465	1111	4571	7026	8601	10176	11751	13326	14901	16476	18051	19626	21201	22776	24351	25926	27501	29076		

NOTE: A/F-Drive left of bold line, B/G-Drive right of bold line.

	A				B							
Drive Package												
Motor H.P. [W]	3 [2237.1]				5 [3728.5]							
Blower Sheave	AK71H				AK79H							
Motor Sheave	1VL44*7/8				1VPG60*1x1/2							
Belt	A48				A52							
Turns Open	0	1	2	3	4	5	0	1	2	3	4	5
RPM	1002	955	909	862	813	765	1208	1171	1127	1084	1038	995

- NOTES:
1. Factory sheave settings are shown in bold type.
 2. Do not set motor sheave below minimum or maximum turns open shown.
 3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
 4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

Airflow	AIRFLOW CORRECTION FACTORS *			COMPONENT AIRFLOW RESISTANCE			
	CFM [L/s]	Sensible MBH	Power kW	Wet Coil	Horizontal Economizer RA Damper Open	Concentric Diffuser RXRN-AEF3618 & Concentric Adapter RXMC-DD03 (Flush)	Concentric Diffuser RXRN-AED3618 & Concentric Adapter RXMC-DD03 (Drop)
	4000 [1888]	1.01	1.03	0.15 [0.04]	0.16 [0.04]	0.76 [0.19]	0.68 [0.17]
	4100 [1915]	1.02	1.04	0.16 [0.04]	0.17 [0.04]	0.79 [0.20]	0.72 [0.18]
	4200 [1942]	1.02	1.06	0.17 [0.04]	0.19 [0.05]	0.82 [0.20]	0.75 [0.19]
	4300 [1969]	1.03	1.07	0.17 [0.04]	0.20 [0.05]	0.86 [0.21]	0.79 [0.20]
	4400 [2006]	1.03	1.08	0.18 [0.05]	0.21 [0.05]	0.90 [0.22]	0.83 [0.21]
	4500 [2123]	1.04	1.09	0.19 [0.05]	0.23 [0.06]	0.94 [0.23]	0.86 [0.21]
	4600 [2171]	1.04	1.11	0.20 [0.05]	0.24 [0.06]	0.98 [0.24]	0.89 [0.22]
	4700 [2218]	1.05	1.12	0.21 [0.05]	0.26 [0.06]	1.02 [0.25]	0.94 [0.23]
	4800 [2265]	1.05	1.13	0.21 [0.05]	0.28 [0.07]	1.06 [0.26]	0.98 [0.24]
	4900 [2312]	1.06	1.14	0.22 [0.06]	0.29 [0.07]	1.10 [0.27]	1.01 [0.25]
	5000 [2359]	1.06	1.16	0.23 [0.06]	0.31 [0.08]	1.14 [0.28]	1.04 [0.26]
	5100 [2407]	1.07	1.17	0.24 [0.06]	0.33 [0.08]	1.18 [0.29]	1.07 [0.27]
	5200 [2454]	1.07	1.18	0.25 [0.06]	0.35 [0.09]	1.22 [0.30]	1.10 [0.27]
	5300 [2501]	1.08	1.19	0.26 [0.06]	0.36 [0.09]	1.27 [0.32]	1.15 [0.29]
	5400 [2548]	1.08	1.21	0.27 [0.07]	0.38 [0.09]	1.33 [0.33]	1.20 [0.30]
	5500 [2595]	1.09	1.22	0.28 [0.07]	0.40 [0.10]	1.37 [0.34]	1.25 [0.31]
5600 [2643]	1.09	1.23	0.29 [0.07]	0.42 [0.10]	1.42 [0.35]	1.30 [0.32]	
5700 [2690]	1.10	1.24	0.30 [0.07]	0.44 [0.11]	1.47 [0.37]	1.34 [0.33]	
5800 [2737]	1.10	1.26	0.31 [0.08]	0.46 [0.11]	1.52 [0.38]	1.38 [0.34]	
5900 [2784]	1.10	1.27	0.32 [0.08]	0.48 [0.12]	1.56 [0.39]	1.42 [0.35]	
6000 [2831]	1.11	1.28	0.33 [0.08]	0.51 [0.13]	1.60 [0.40]	1.45 [0.36]	

* Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[1 Designates Metric Conversions

FIGURE 19

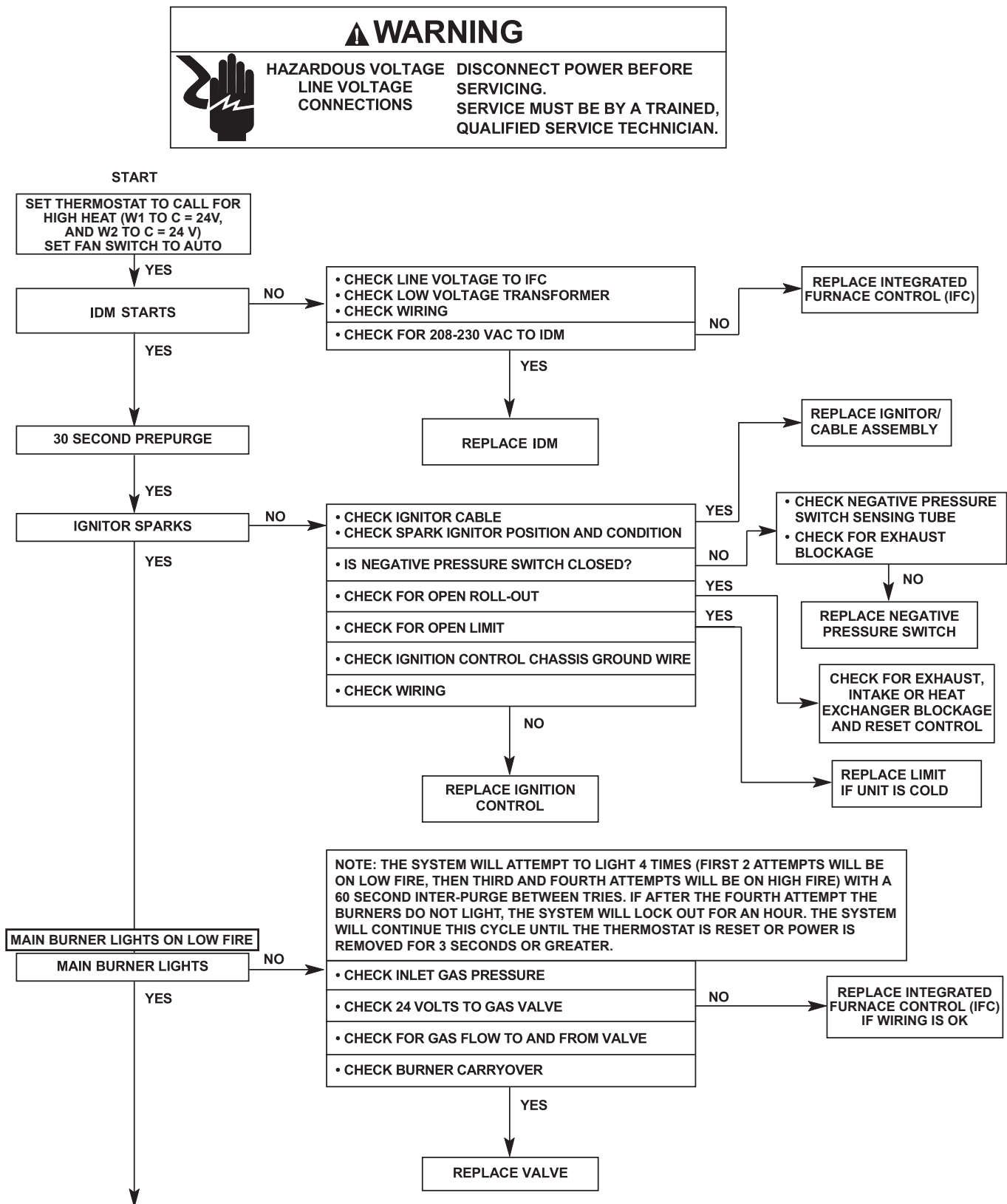
COOLING TROUBLESHOOTING CHART

▲ 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.

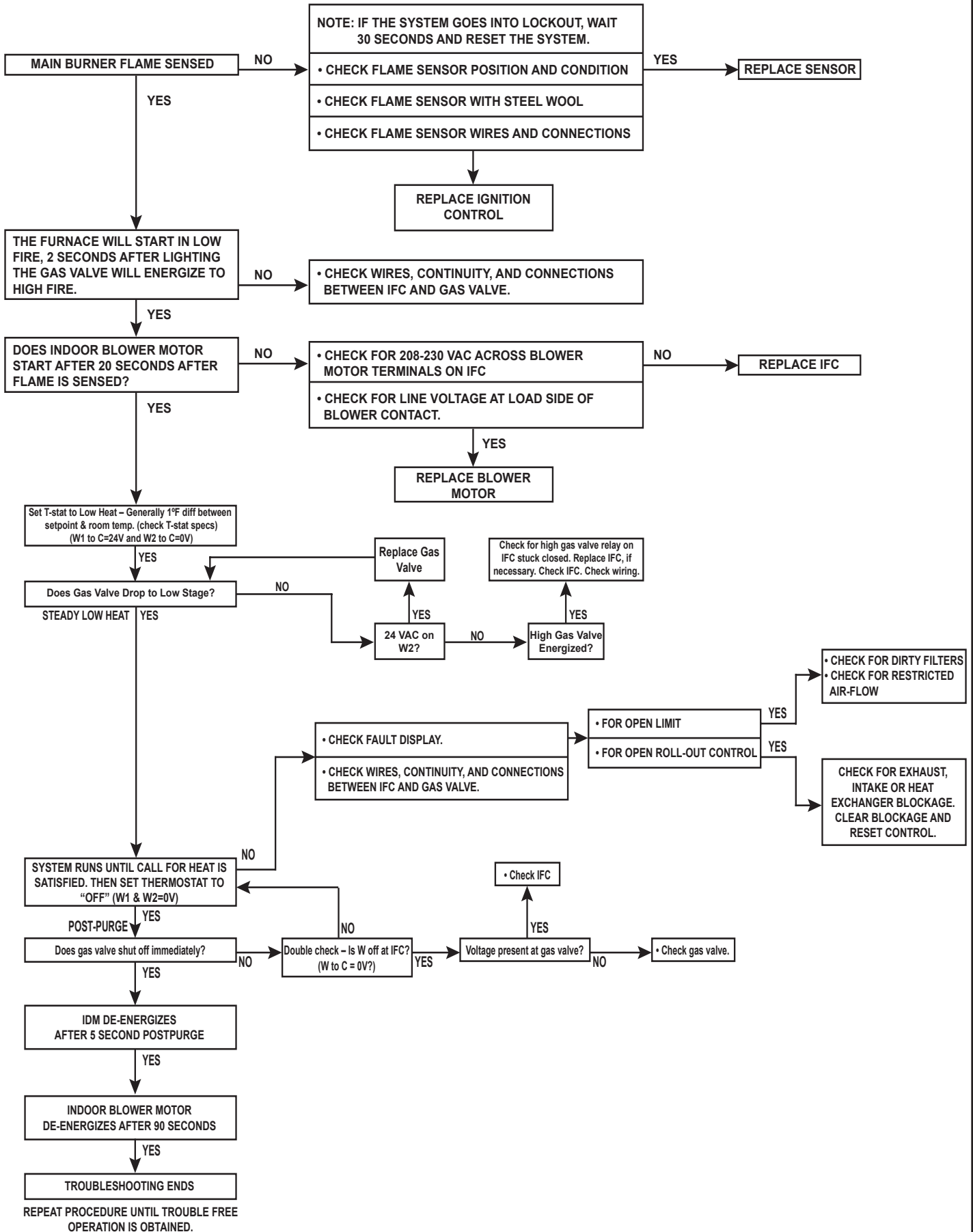
SYMPTOM	POSSIBLE CAUSE	REMEDY
Unit will not run	- Power off or loose electrical connection - Thermostat out of calibration-set too high - Failed contactor - Blown fuses - Transformer defective - High pressure control open (if provided) - Interconnecting low voltage wiring damaged	- Check for correct voltage at compressor contactor in control box - Reset - Check for 24 volts at contactor coil - replace if contacts are open - Replace fuses - Check wiring-replace transformer - Reset-also see high head pressure remedy-The high pressure control opens at 450 PSIG - Replace thermostat wiring
Condenser fan runs, compressor doesn't	- Loose connection - Compressor stuck, grounded or open motor winding open internal overload. - Low voltage condition - Low voltage condition	- Check for correct voltage at compressor - check & tighten all connections - Wait at least 2 hours for overload to reset. If still open, replace the compressor. At compressor terminals, voltage must be within 10% of rating plate volts when unit is operating. - Add start kit components
Insufficient cooling	- Improperly sized unit - Improper airflow - Incorrect refrigerant charge - Air, non-condensibles or moisture in system - Incorrect voltage	- Recalculate load - Check - should be approximately 400 CFM per ton. - Charge per procedure attached to unit service panel. - Recover refrigerant, evacuate & recharge, add filter drier - At compressor terminals, voltage must be within 10% of rating plate volts when unit is operating.
Compressor short cycles	- Incorrect voltage - Defective overload protector - Refrigerant undercharge	- At compressor terminals, voltage must be $\pm 10\%$ of nameplate marking when unit is operating. - Replace - check for correct voltage - Add refrigerant
Registers sweat	Low evaporator airflow	Increase speed of blower or reduce restriction - replace air filter
High head-low vapor pressures	- Restriction in liquid line, expansion device or filter drier - Flow check piston size too small - Incorrect capillary tubes - TXV does not open	- Remove or replace defective component - Change to correct size piston - Change coil assembly - Replace TXV
High head-high or normal vapor pressure - Cooling mode	- Dirty condenser coil - Refrigerant overcharge - Condenser fan not running - Air or non-condensibles in system	- Clean coil - Correct system charge - Repair or replace - Recover refrigerant, evacuate & recharge
Low head-high vapor pressures	- Defective Compressor valves - Incorrect capillary tubes	- Replace compressor - Replace coil assembly
Low vapor - cool compressor - iced evaporator coil	- Low evaporator airflow - Operating below 65°F outdoors - Moisture in system	- Increase speed of blower or reduce restriction - replace air filter - Add Low Ambient Kit - Recover refrigerant - evacuate & recharge - add filter drier
High vapor pressure	- Excessive load - Defective compressor	- Recheck load calculation - Replace
Fluctuating head & vapor pressures	- TXV hunting - Air or non-condensibles in system	- Check TXV bulb clamp - check air distribution on coil - replace TXV - Recover refrigerant, evacuate & recharge
Gurgle or pulsing noise at expansion device or liquid line	Air or non-condensibles in system	Recover refrigerant, evacuate & recharge

FIGURE 20
FURNACE TROUBLESHOOTING GUIDE
 (COMBINATION HEATING AND COOLING UNITS WITH DIRECT SPARK IGNITION)



FLOW CHART CONTINUED ON NEXT PAGE

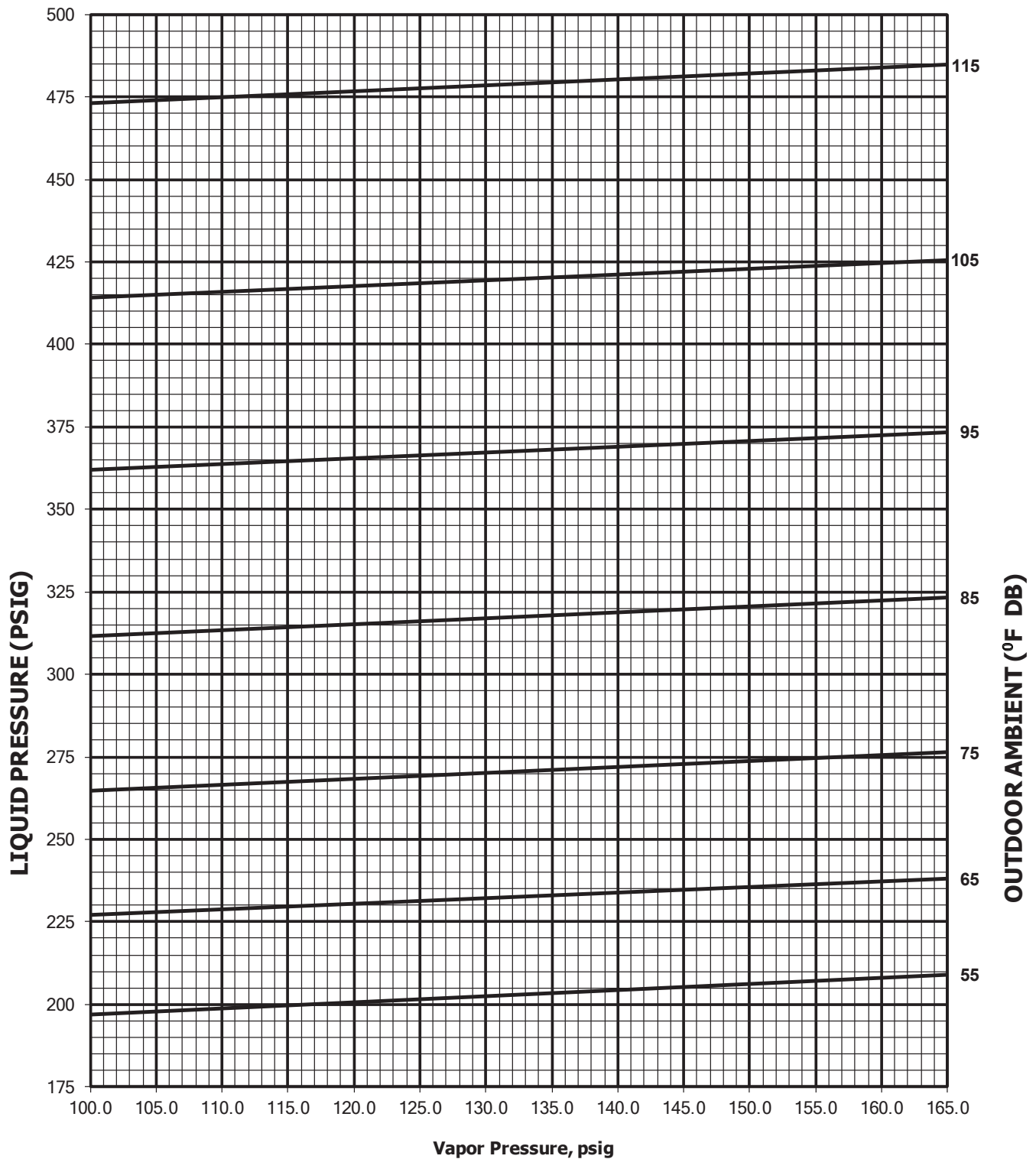
FLOW CHART CONTINUED FROM LAST PAGE



IFC Alarm Codes		
CODE	Description	FAULT LEVEL – 0,1,2,3*
0	STANDBY	0
c	COMPRESSOR ON – Low (Flashing if in time delay)	0
C	COMPRESSOR ON – High (Flashing if in time delay)	0
E	Economizer Cooling – No Compressor	0
F	CONTINUOUS FAN	0
h	HEAT ON – Low Stage	0
H	GAS HEAT ON – High Stage	0
4	Comfort Alert Code 4 for Compressor Circuit 1	3
5	Comfort Alert Code 5 for Compressor Circuit 1	3
6	Comfort Alert Code 6 for Compressor Circuit 1	3
7	Comfort Alert Code 7 for Compressor Circuit 1	3
8	Comfort Alert Code 8 for Compressor Circuit 1	3
9	Comfort Alert Code 9 for Compressor Circuit 1	3
11	FAILED IGNITION	2
12	LO FLAME SENSE	1
13	FLAME LOST	2
14	UNEXPECTED FLAME	3
15	2 nd Stage Gas valve improper voltage	2
20	REFRIGERANT LOW PRESSURE SWITCH OPEN – CIRCUIT 1	2
21	REFRIGERANT LOW PRESSURE SWITCH OPEN – CIRCUIT 2	2
22	MAIN LIMIT OPEN	2
29	REFRIGERANT HIGH PRESSURE SWITCH OPEN – CIRCUIT 1	2
30	REFRIGERANT HIGH PRESSURE SWITCH OPEN – CIRCUIT 2	2
33	MRLC (Rollout Limit) OPEN	2
34	Comfort Alert Code 4 for Compressor Circuit 2	3
35	Comfort Alert Code 5 for Compressor Circuit 2	3
36	Comfort Alert Code 6 for Compressor Circuit 2	3
37	Comfort Alert Code 7 for Compressor Circuit 2	3
38	Comfort Alert Code 8 for Compressor Circuit 2	3
39	Comfort Alert Code 9 for Compressor Circuit 2	3
42	Invalid Thermostat Selection	1
44	1 st Stage COMBUSTION PRESS SWITCH CLOSED	2
46	1 st Stage COMBUSTION PRESS SWITCH OPEN	2
49	FREEZE SWITCH OPEN – CIRCUIT 1	2
50	FREEZE SWITCH OPEN – CIRCUIT 2	2
55	2 nd Stage COMBUSTION PRESS SWITCH CLOSED	2
57	2 nd Stage COMBUSTION PRESS SWITCH OPEN	2,3
59	Condensate Drain Plugged	3
61	Blower Fault – NO RUN	3
83	Condenser Coil Temp Sensor Fail-OCT	2
84	Outdoor Air Temperature Sensor Fail-OAT	2
88	Emergency Stop Fault	3
93	CONTROL Fault	3
97	Smoke Detection	3
*Fault levels:0 = none, 1=warning, 2= problem, 3=shutdown		

SYSTEM CHARGE CHART - REFRIGERANT 410A

7.5 TON



CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS: 1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.

2. MEASURE OUTDOOR AMBIENT TO UNIT.

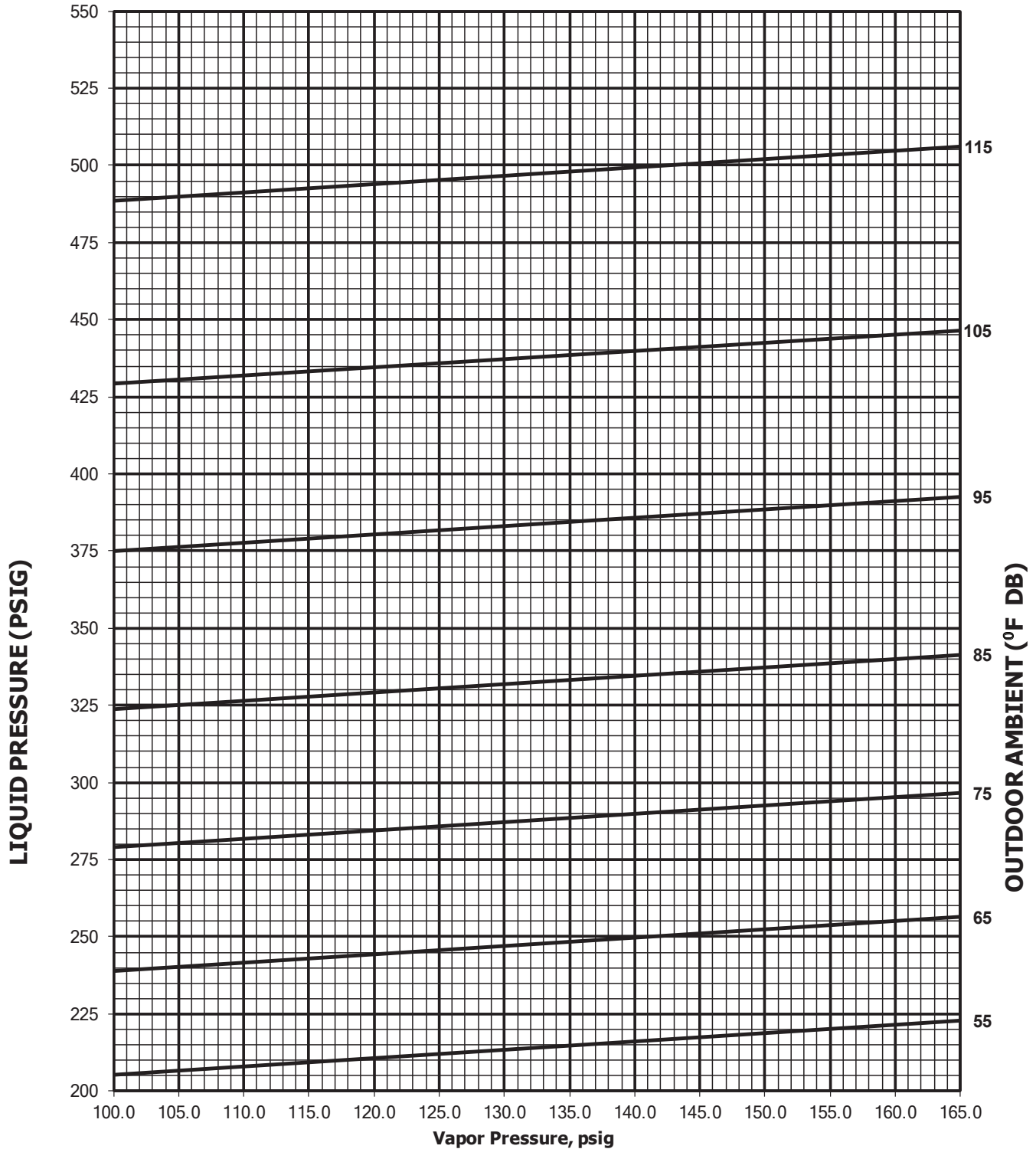
3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.

4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.

5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

SYSTEM CHARGE CHART - REFRIGERANT 410A

8.5 TON



CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS: 1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.

2. MEASURE OUTDOOR AMBIENT TO UNIT.

3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.

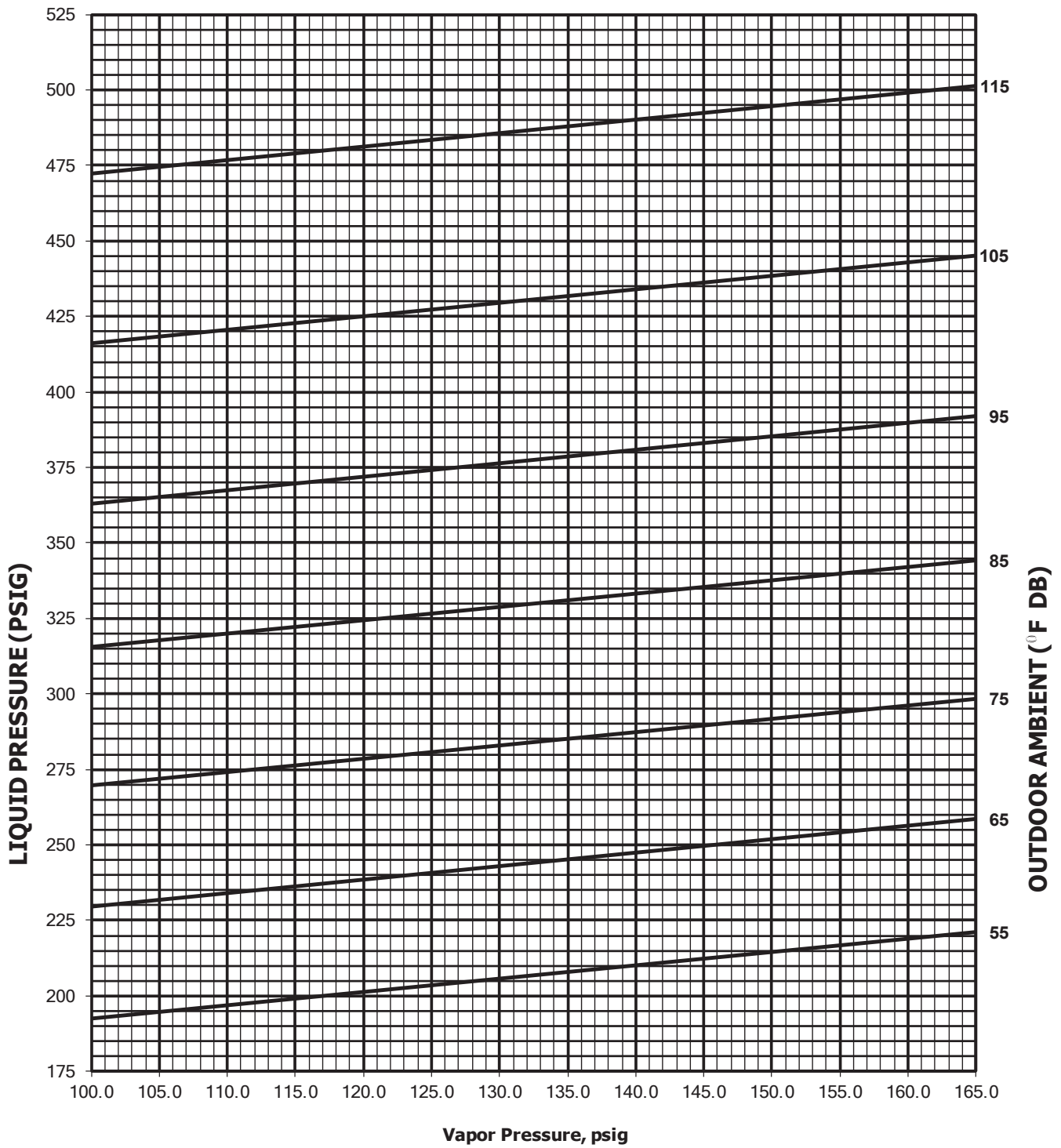
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.

5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106138-02-00

SYSTEM CHARGE CHART - REFRIGERANT 410A

10 TON



CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS: 1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.

2. MEASURE OUTDOOR AMBIENT TO UNIT.

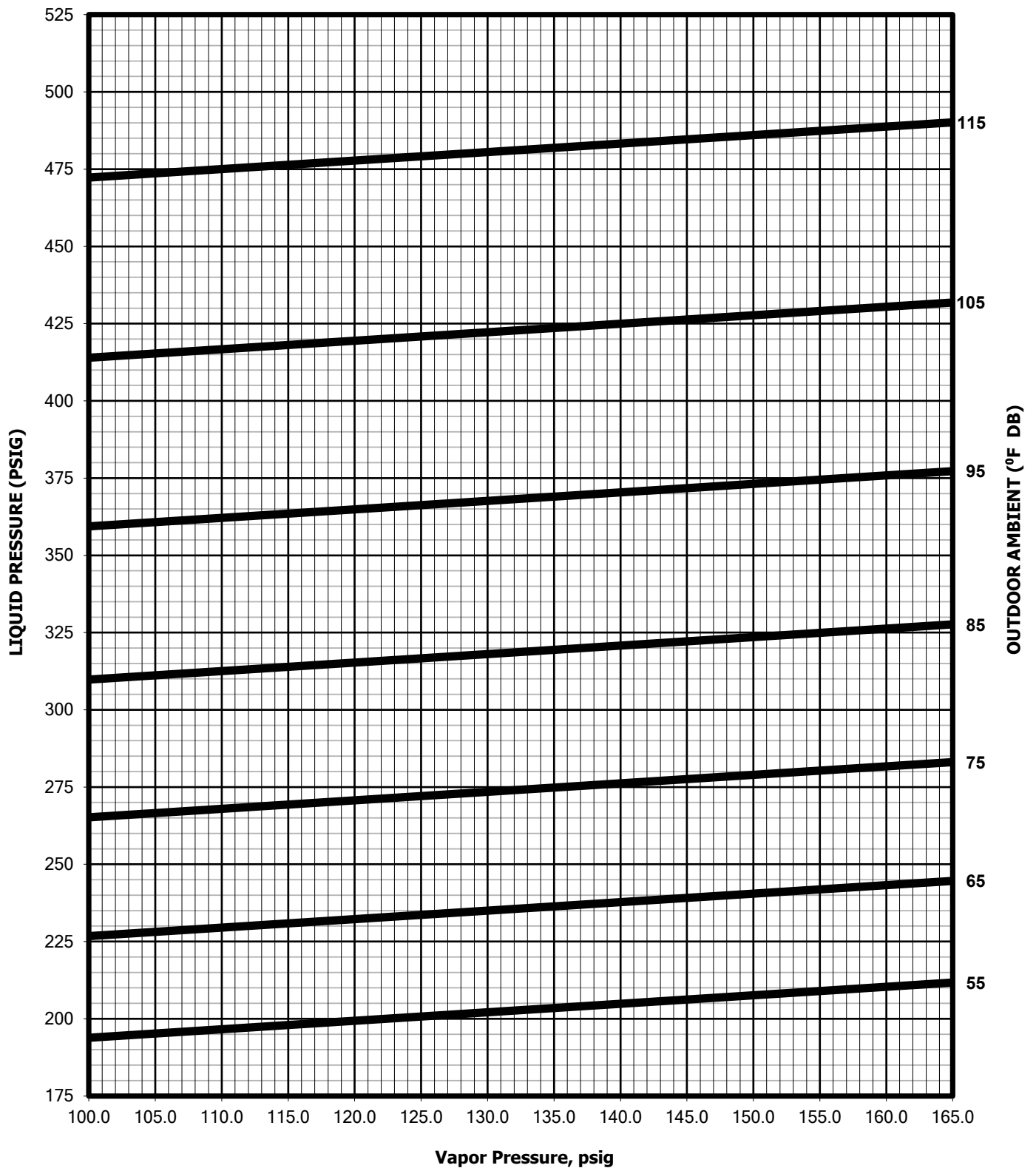
3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.

4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.

5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106138-03-00

12.5-Ton AC Charging Chart



CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS: 1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.

2. MEASURE OUTDOOR AMBIENT TO UNIT.

3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.

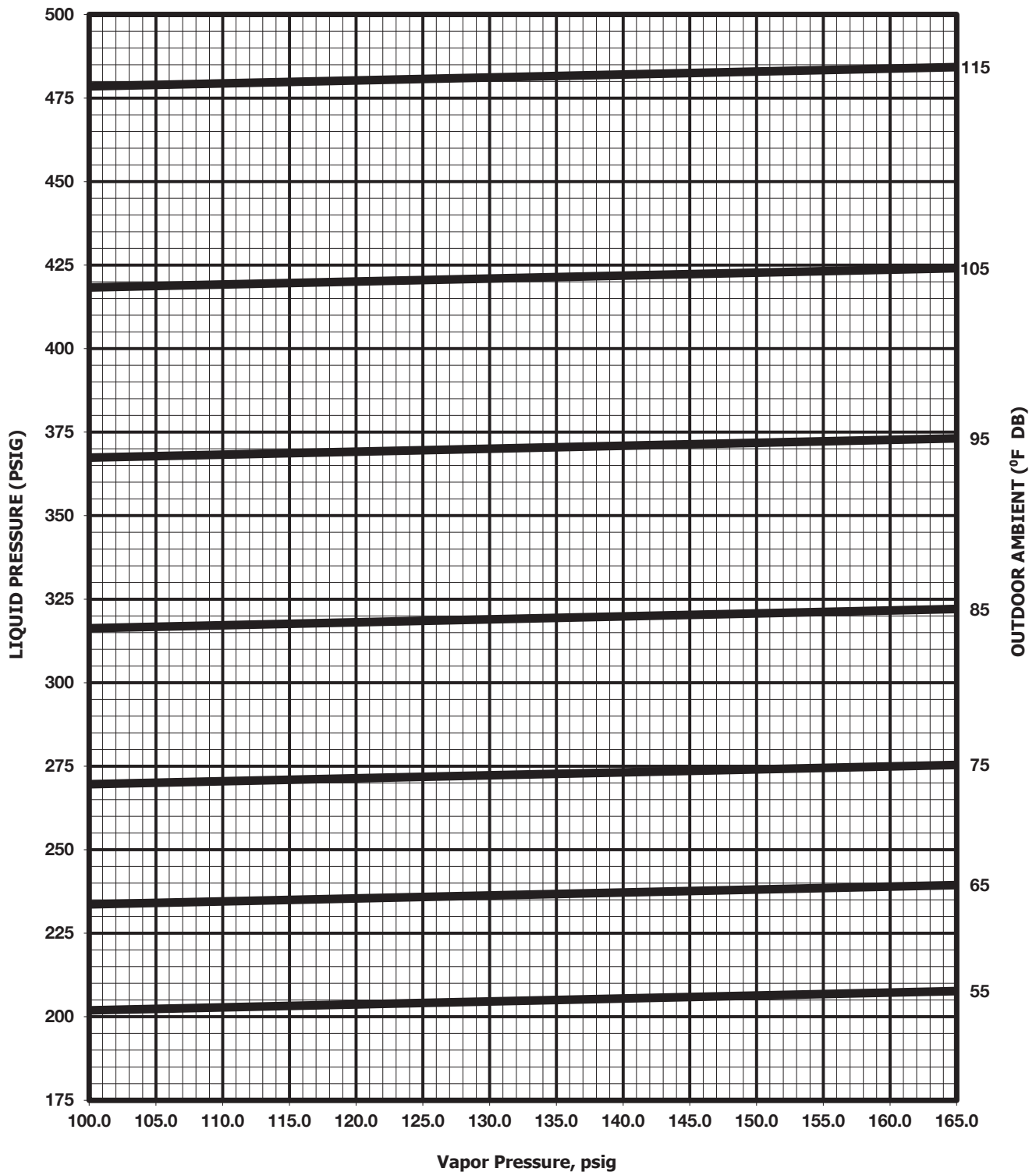
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.

5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106138-04-



7.5 Ton 2 - Stage AC Charging Chart



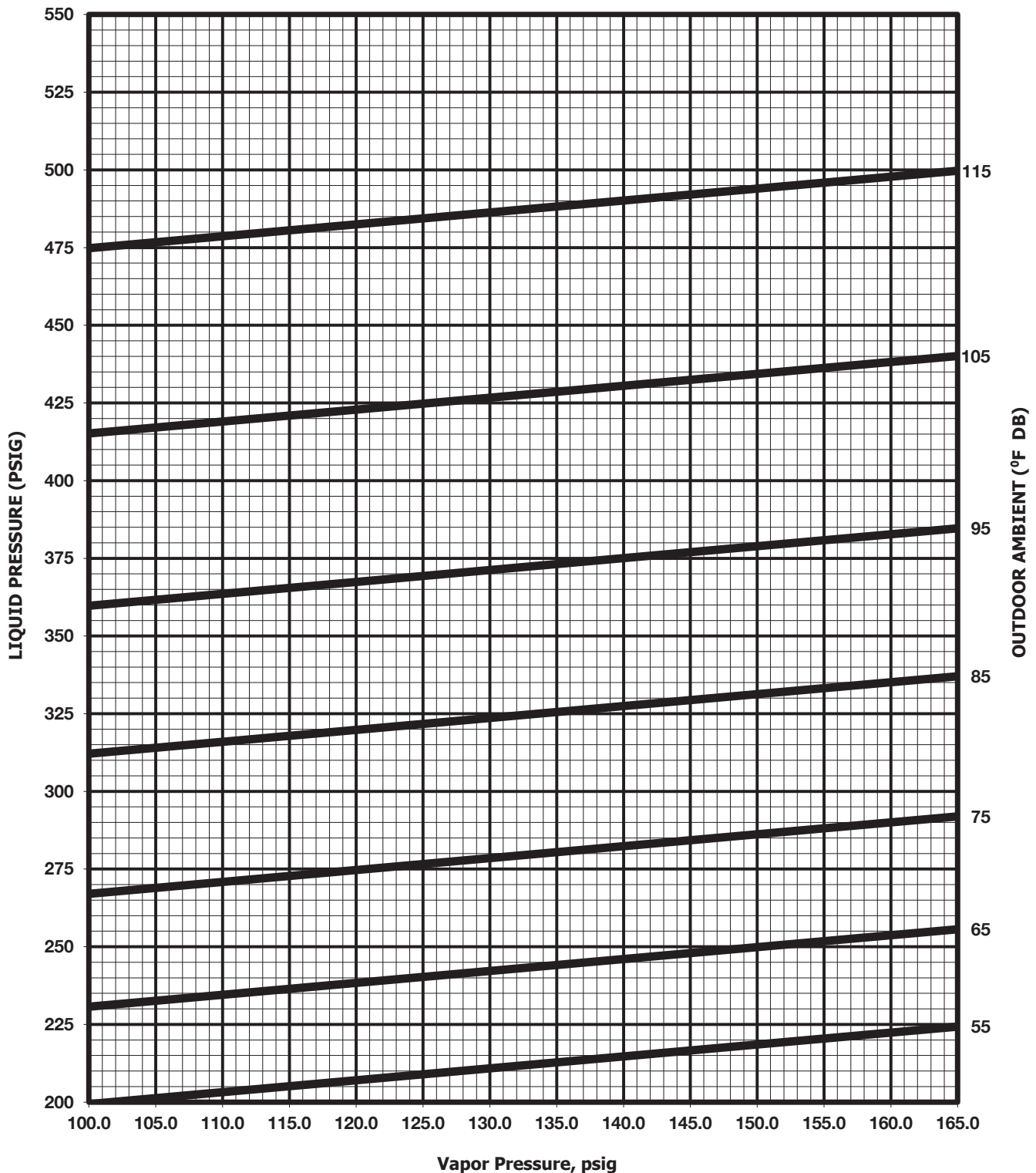
CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:

1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106138-09-0C

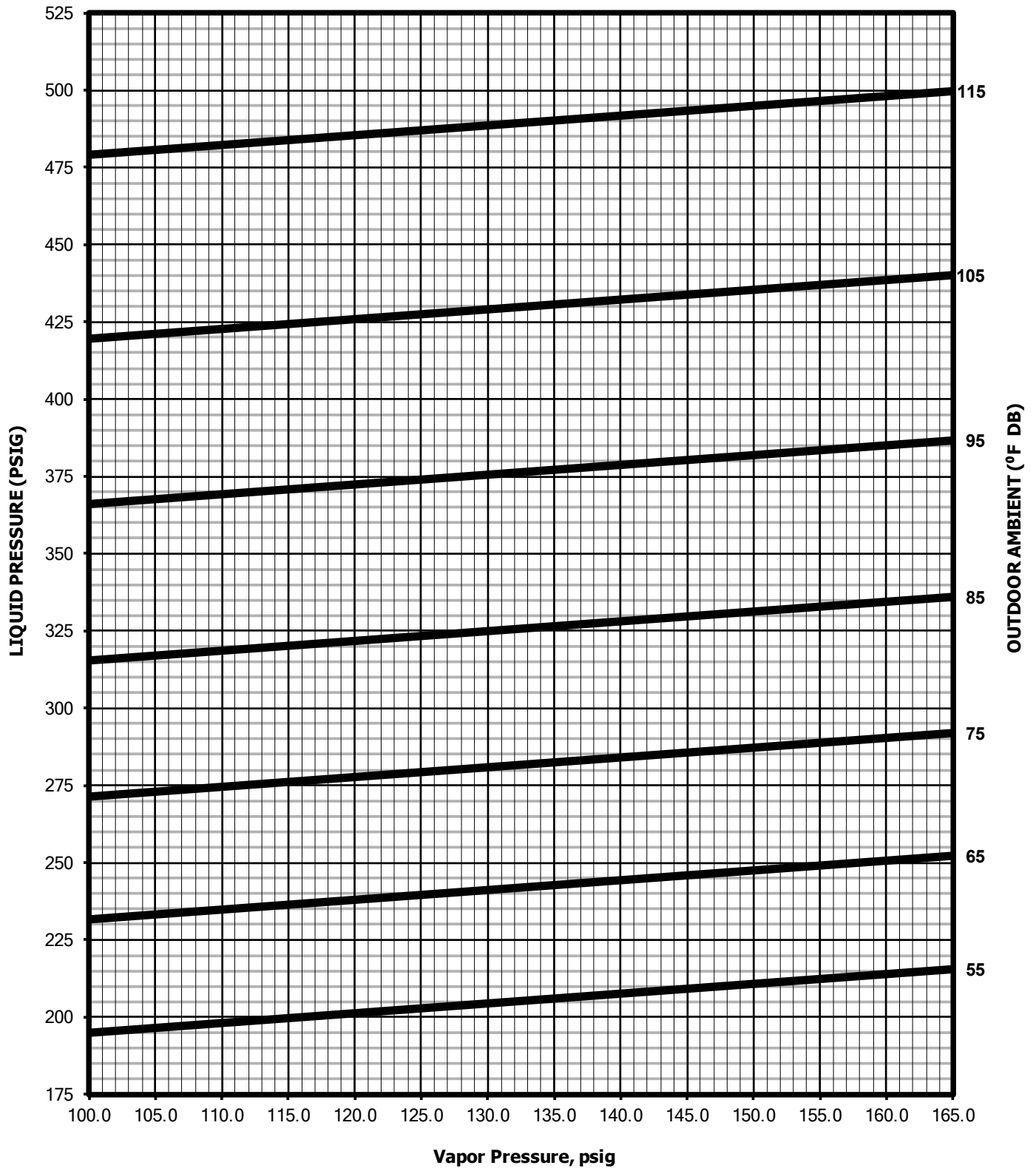
8.5 Ton 2 - Stage AC Charging Chart



CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
INSTRUCTIONS: 1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
 2. MEASURE OUTDOOR AMBIENT TO UNIT.
 3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
 4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
 5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106138-10-00

10-Ton 2 Stage AC Charging Chart



CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS: 1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.

2. MEASURE OUTDOOR AMBIENT TO UNIT.

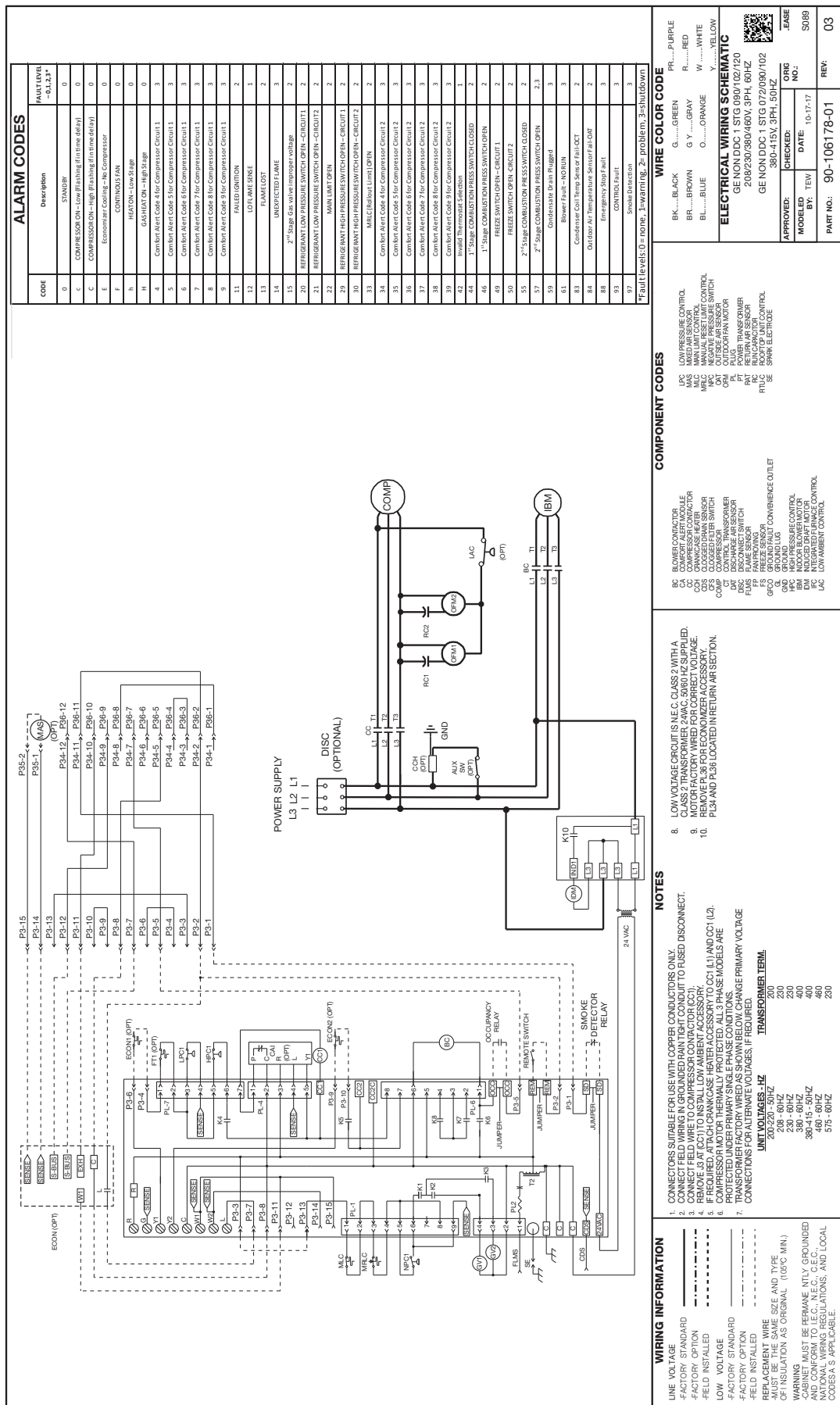
3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.

4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.

5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106138-11-00

56



58



60



FIGURE 28

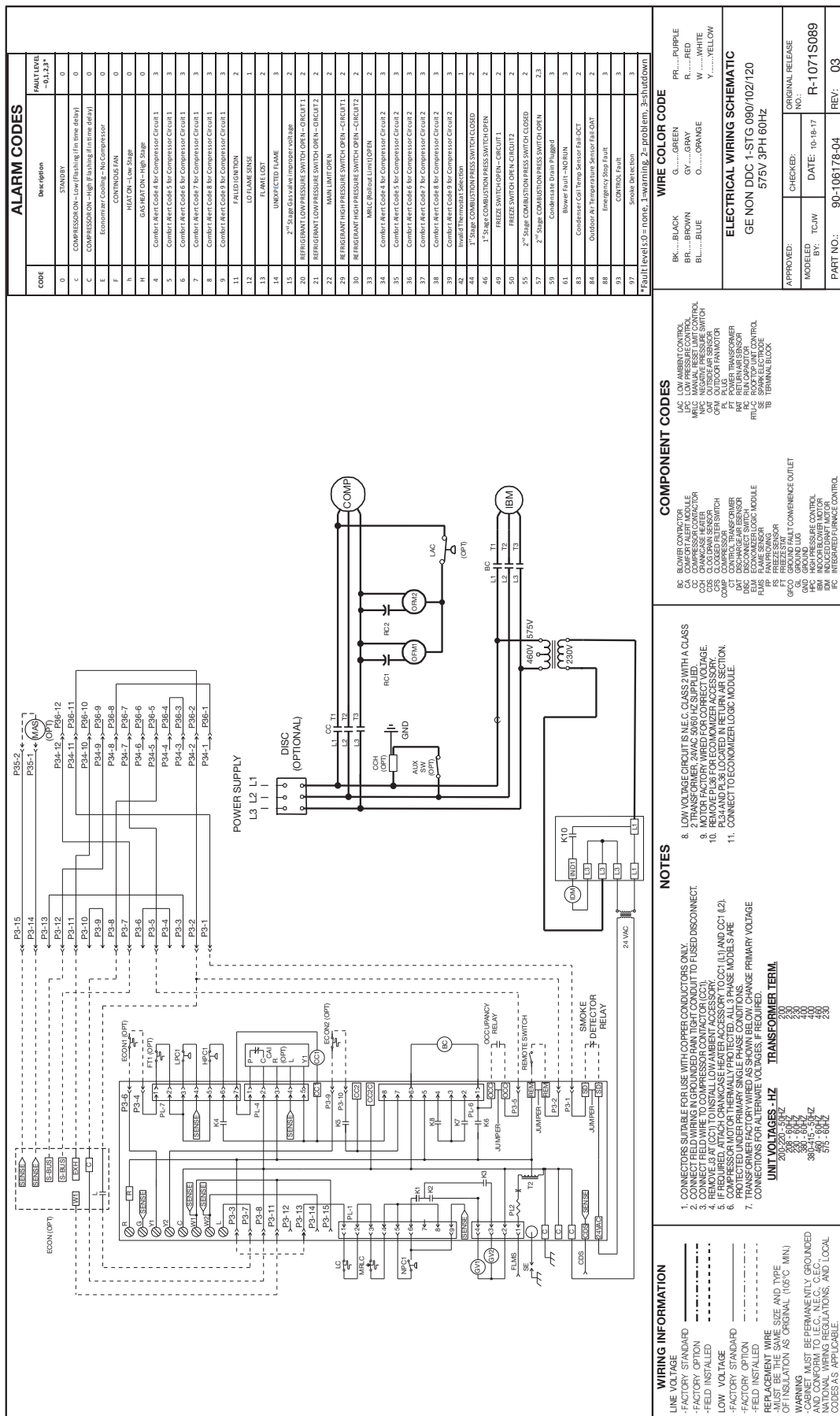


FIGURE 32

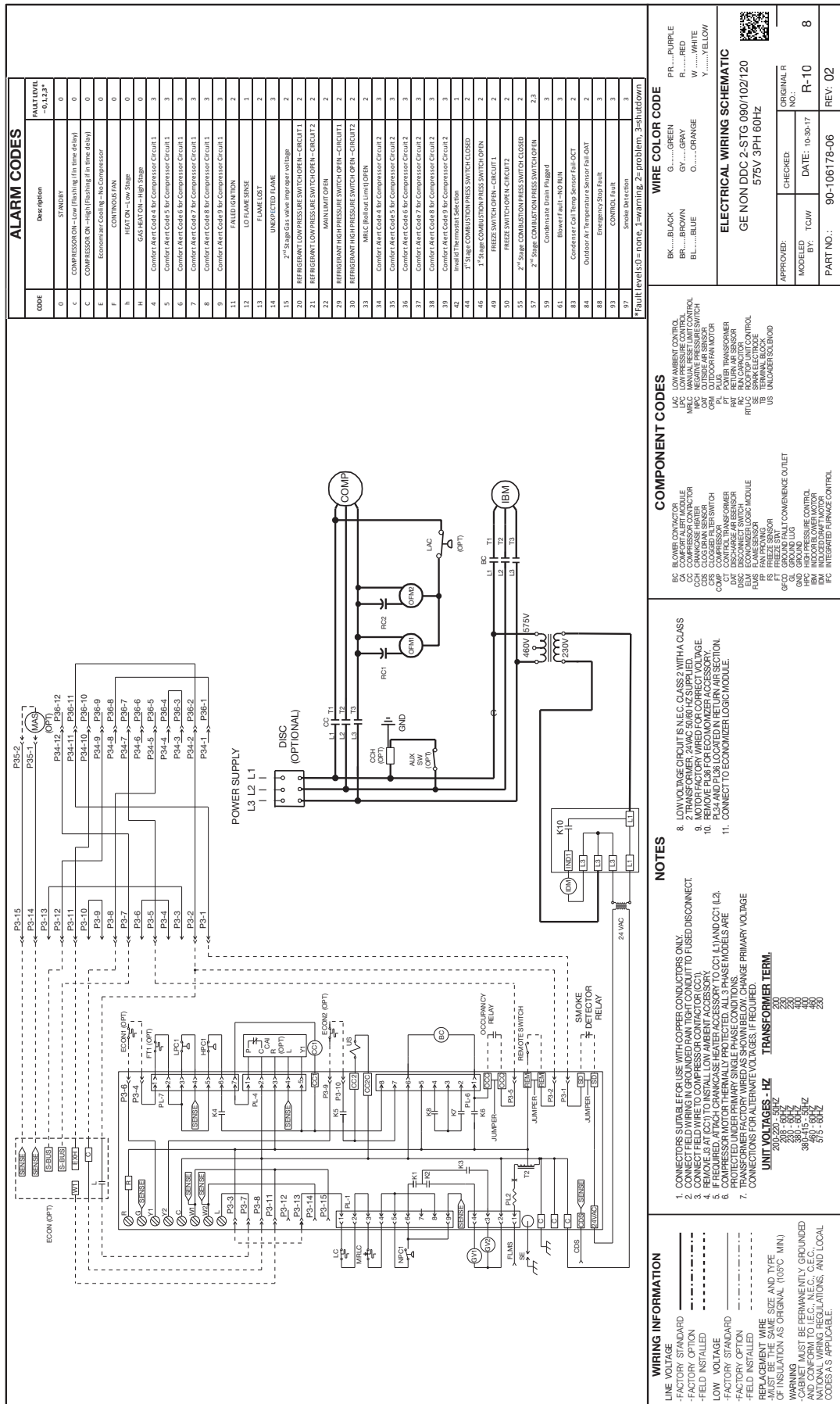


FIGURE 33

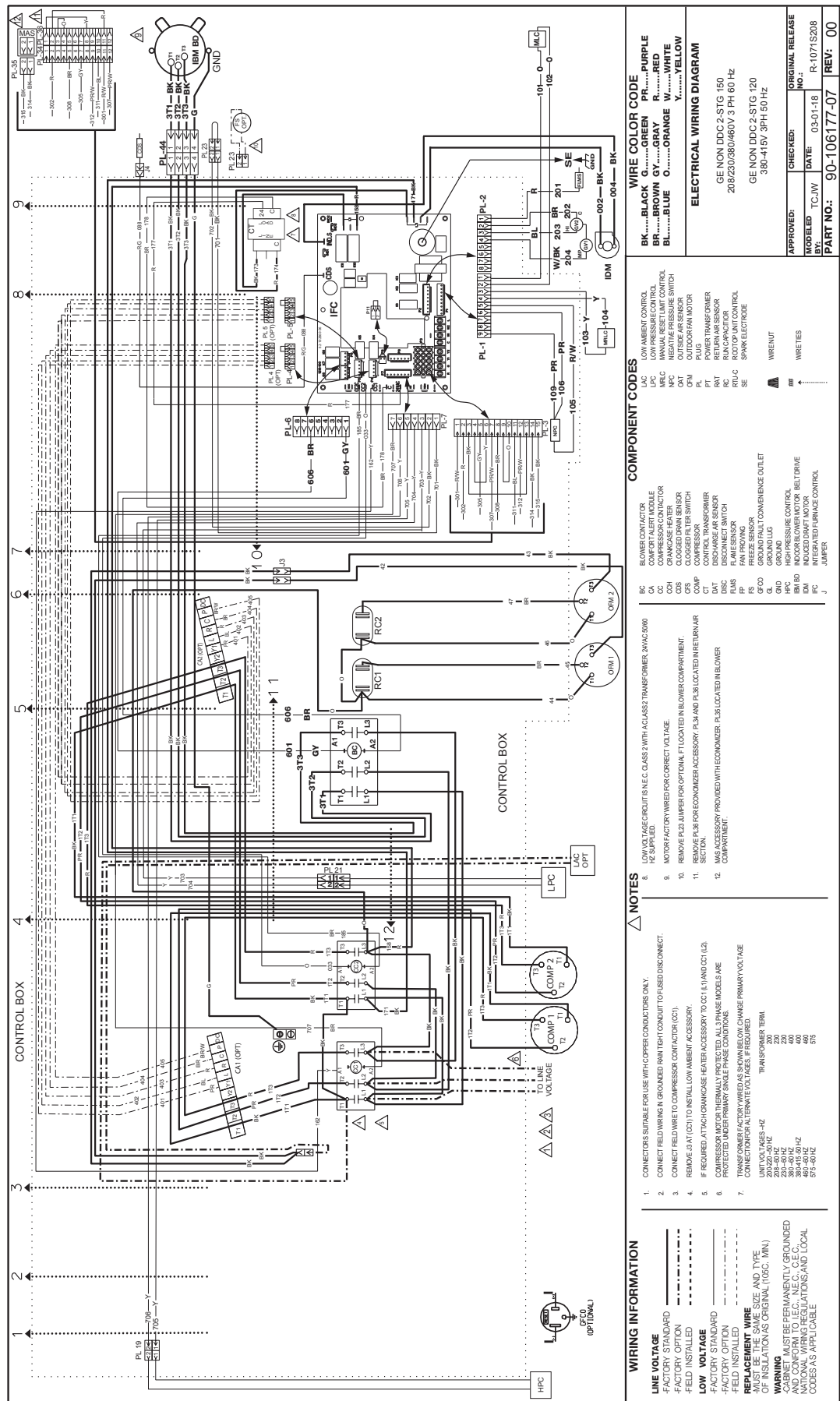


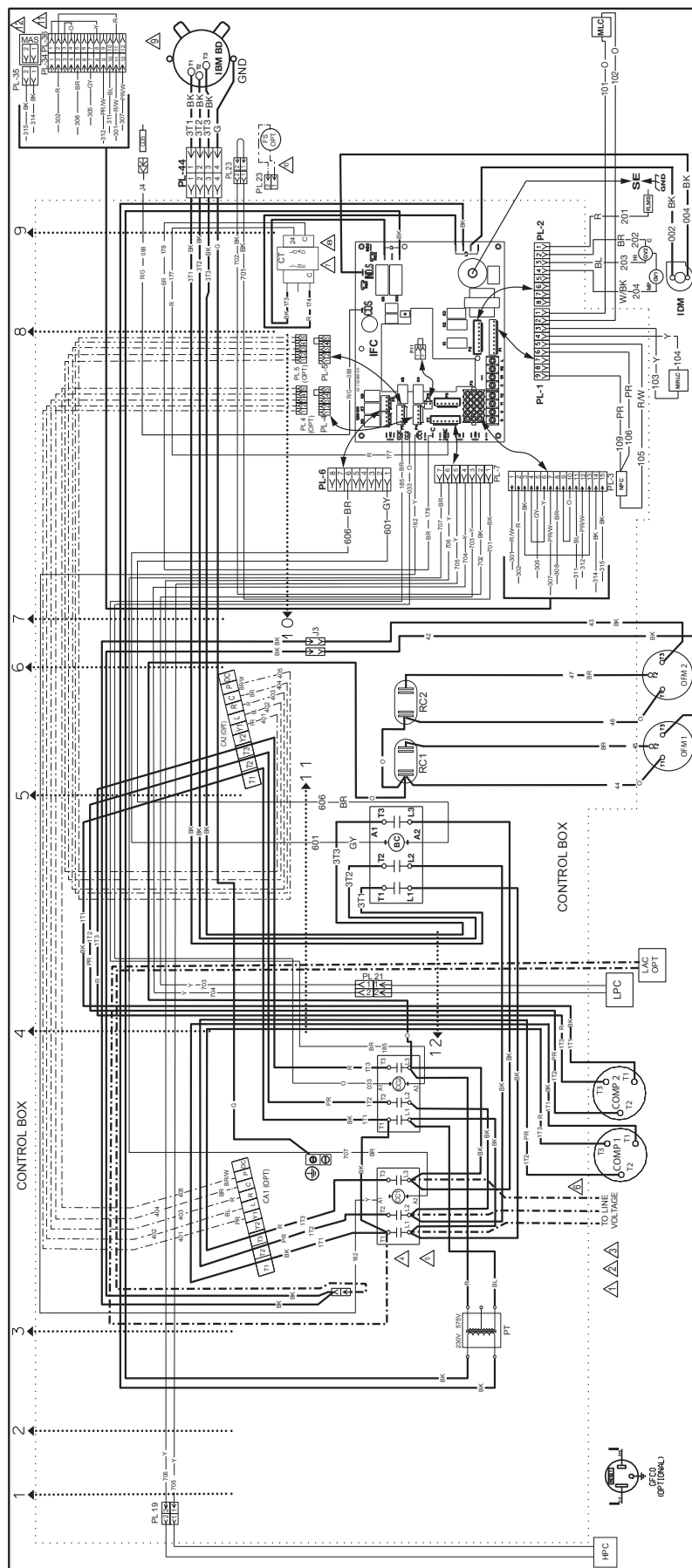
FIGURE 35[illegible]

FIGURE 36

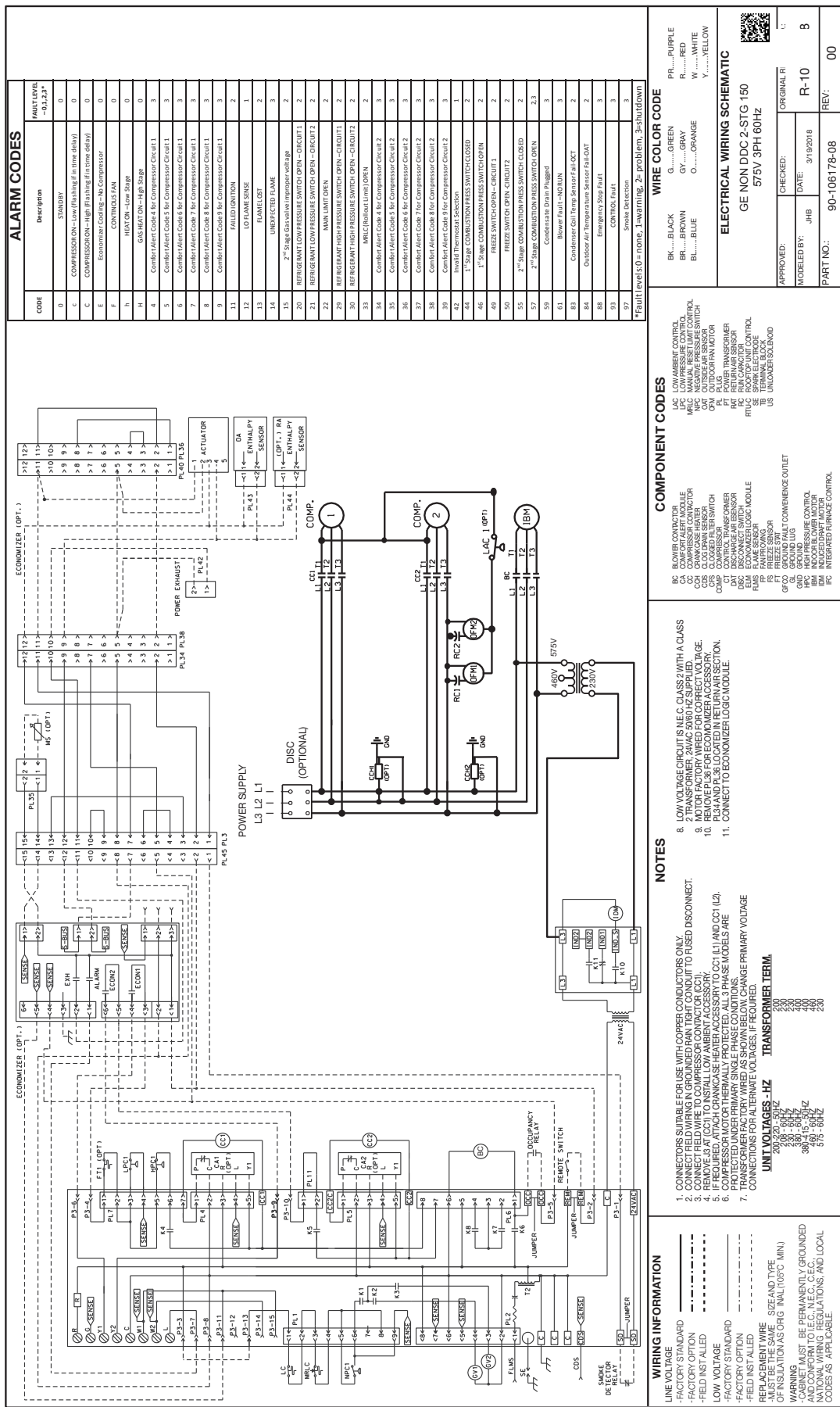


FIGURE 38

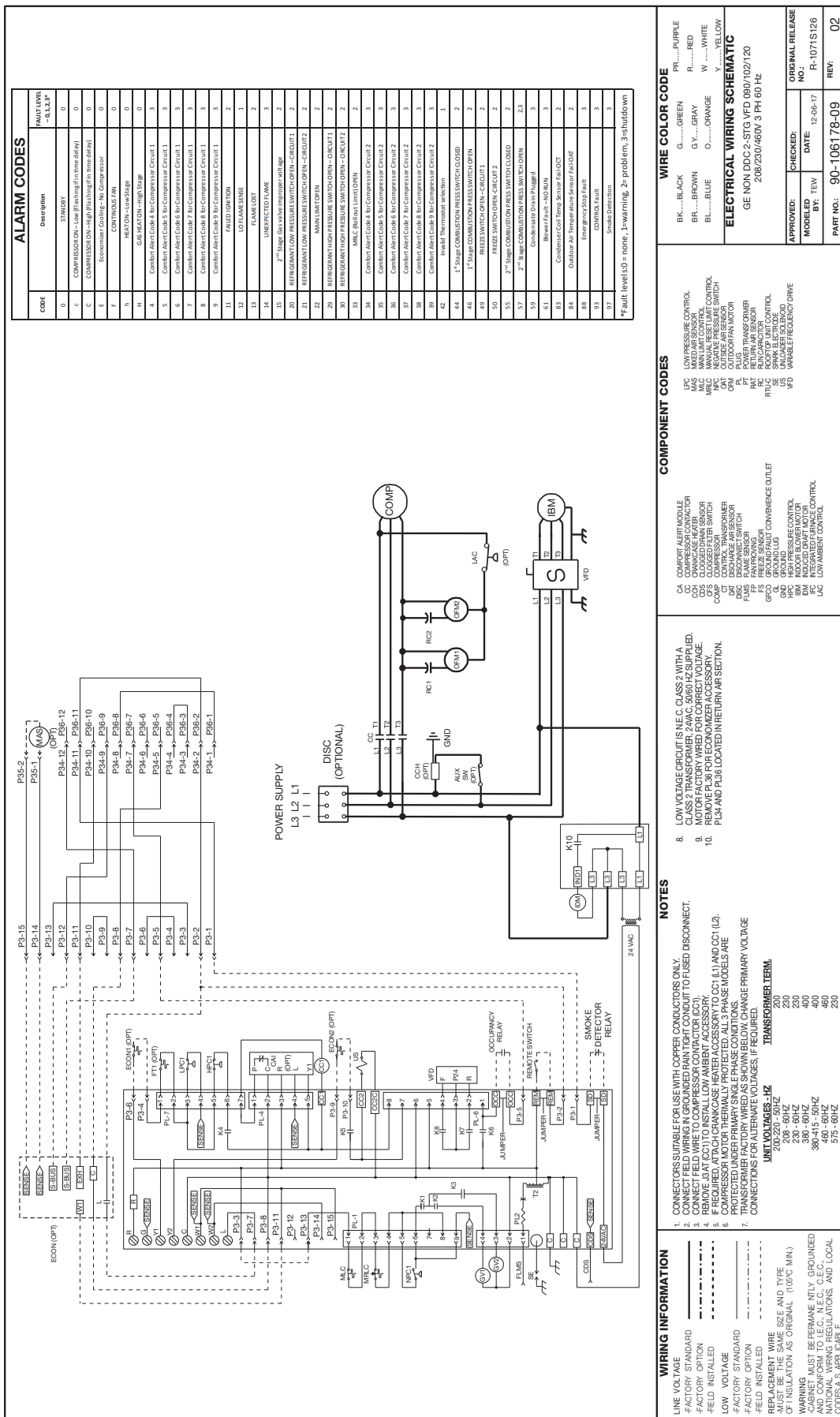


FIGURE 40

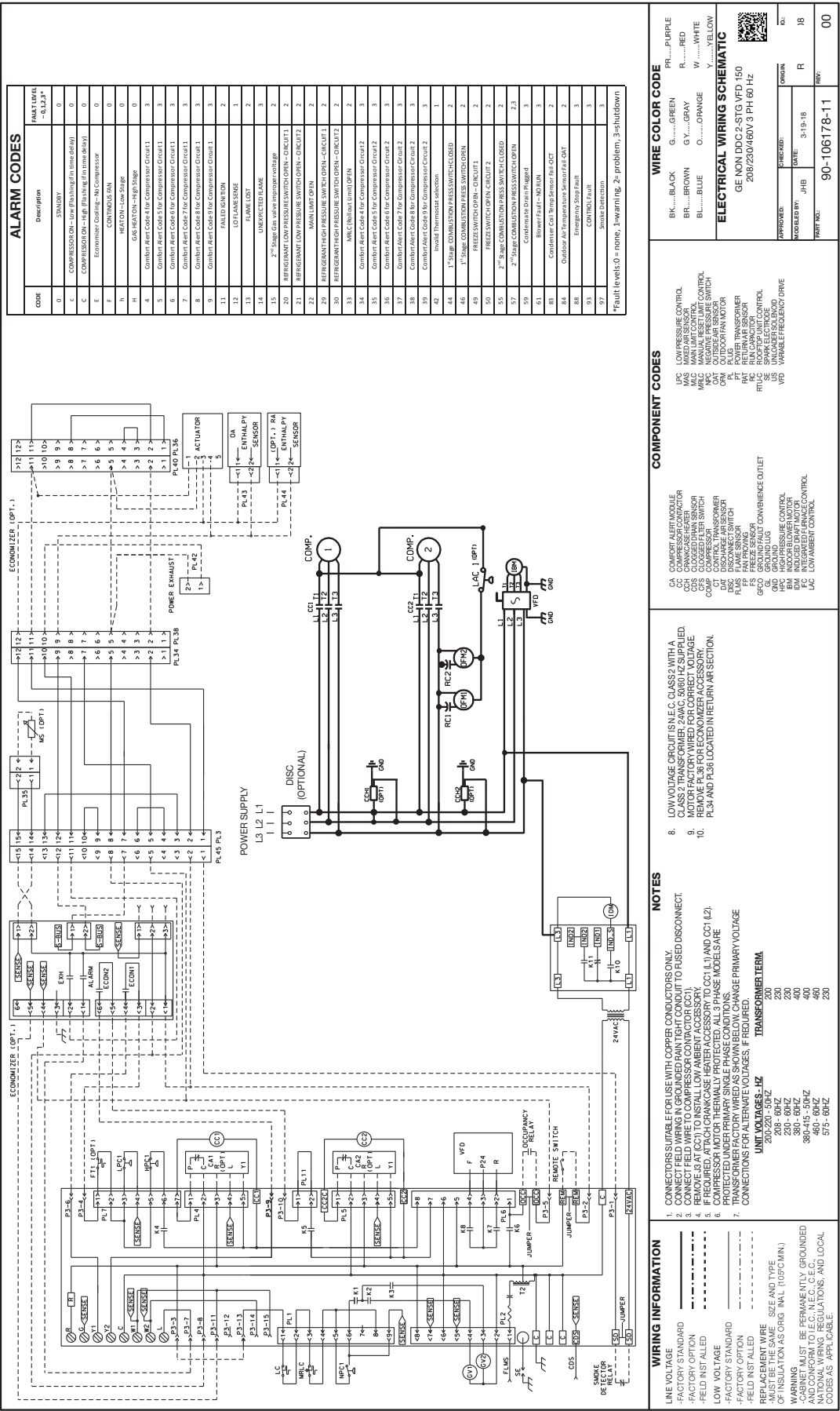


FIGURE 41

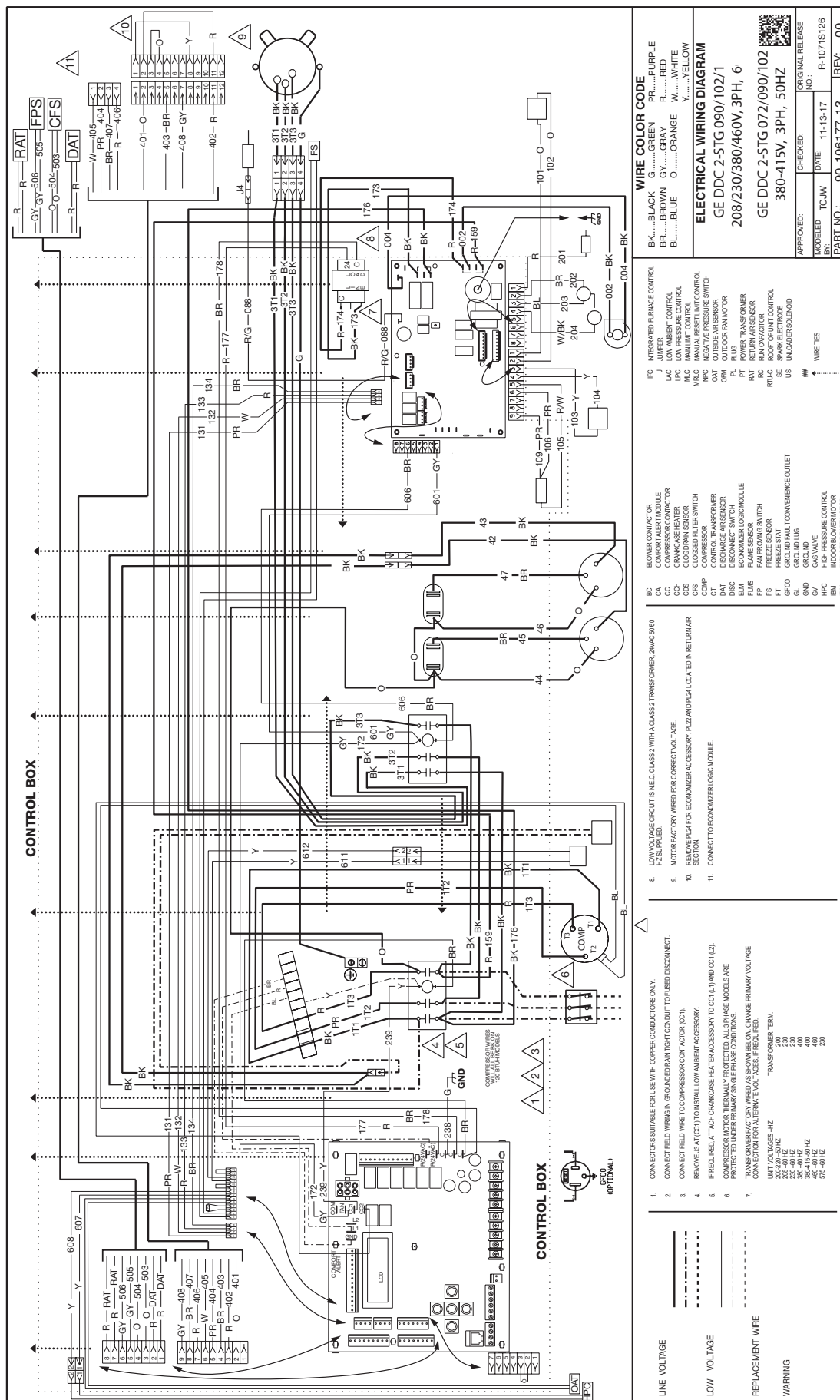


FIGURE 42

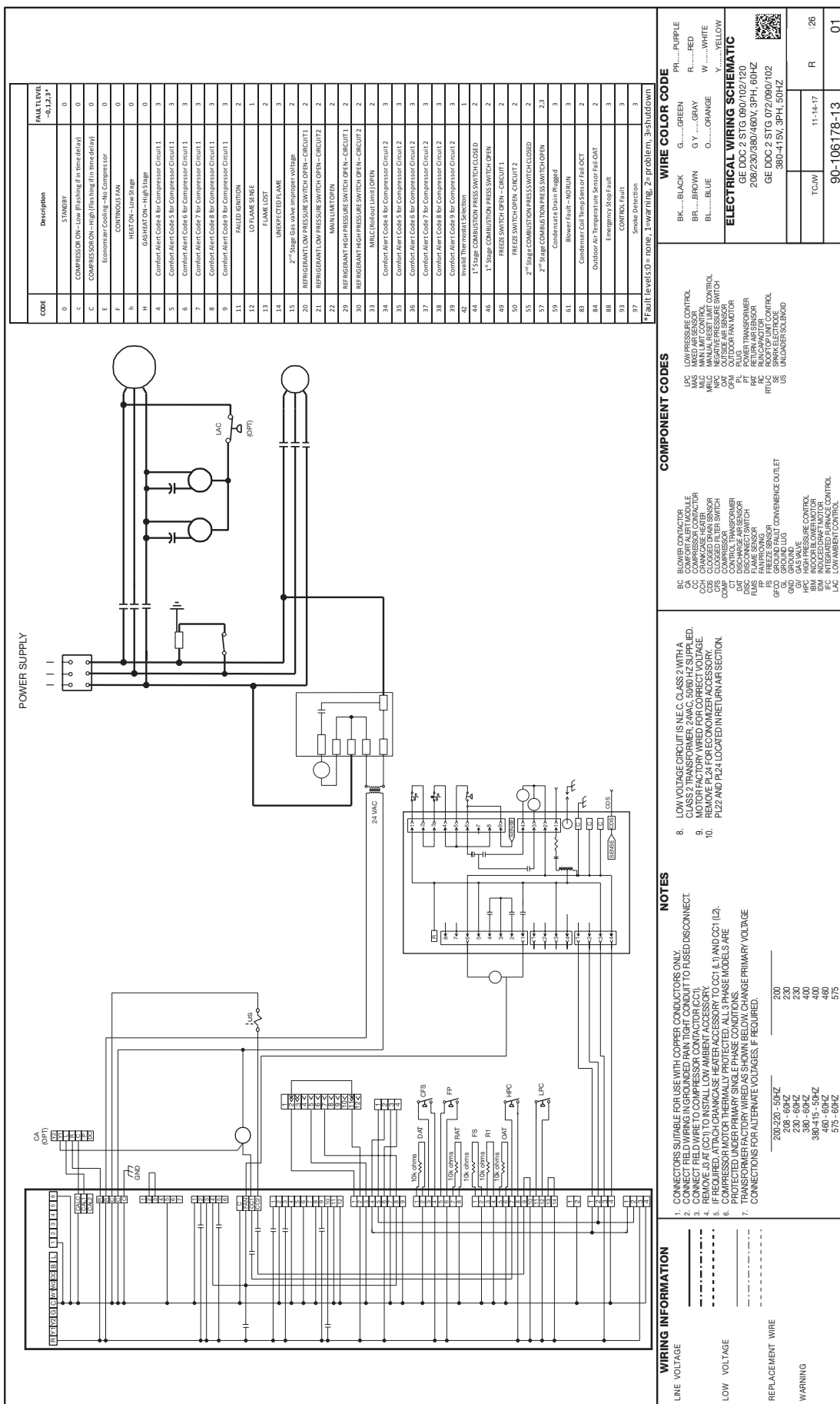


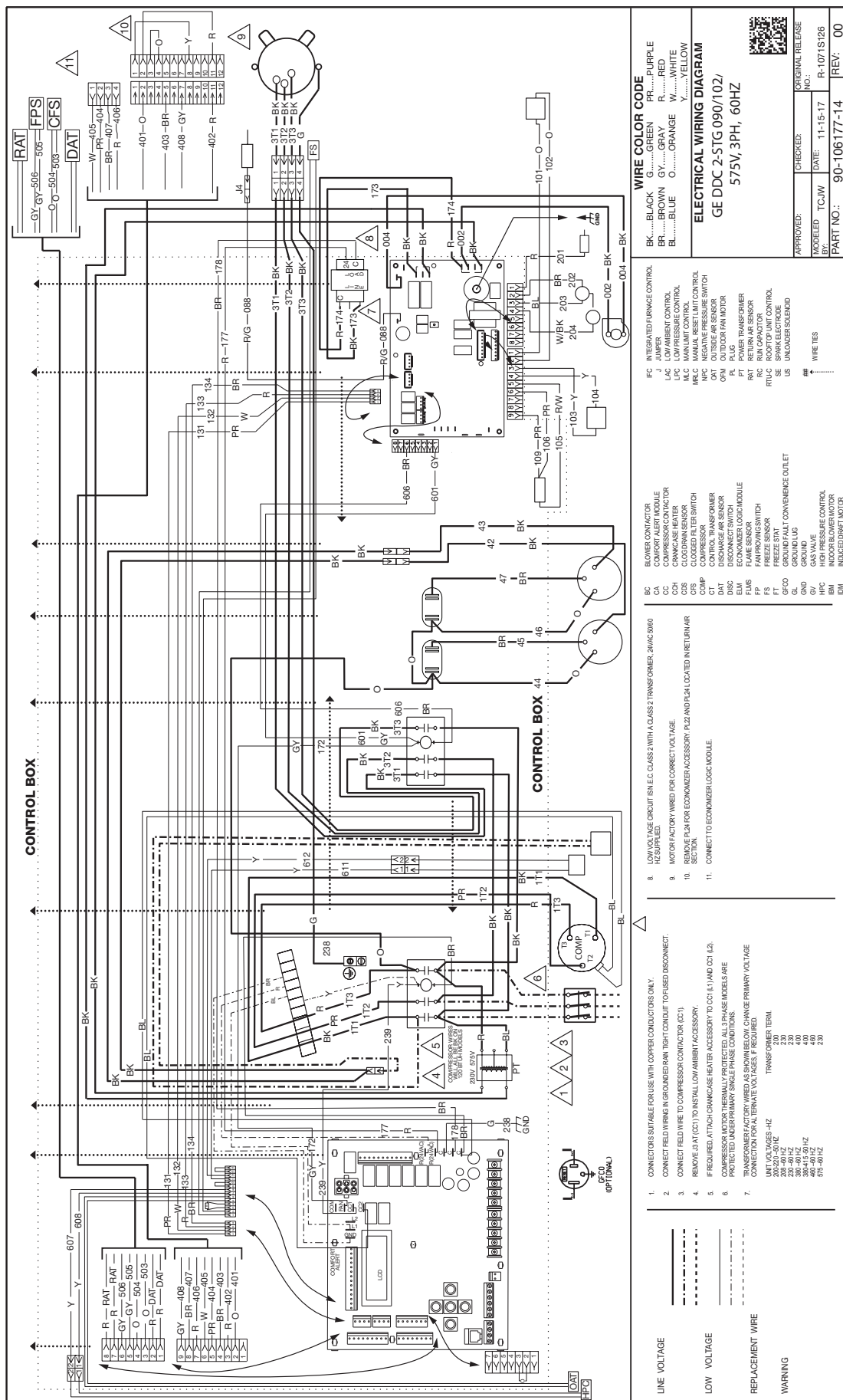
FIGURE 43

FIGURE 44

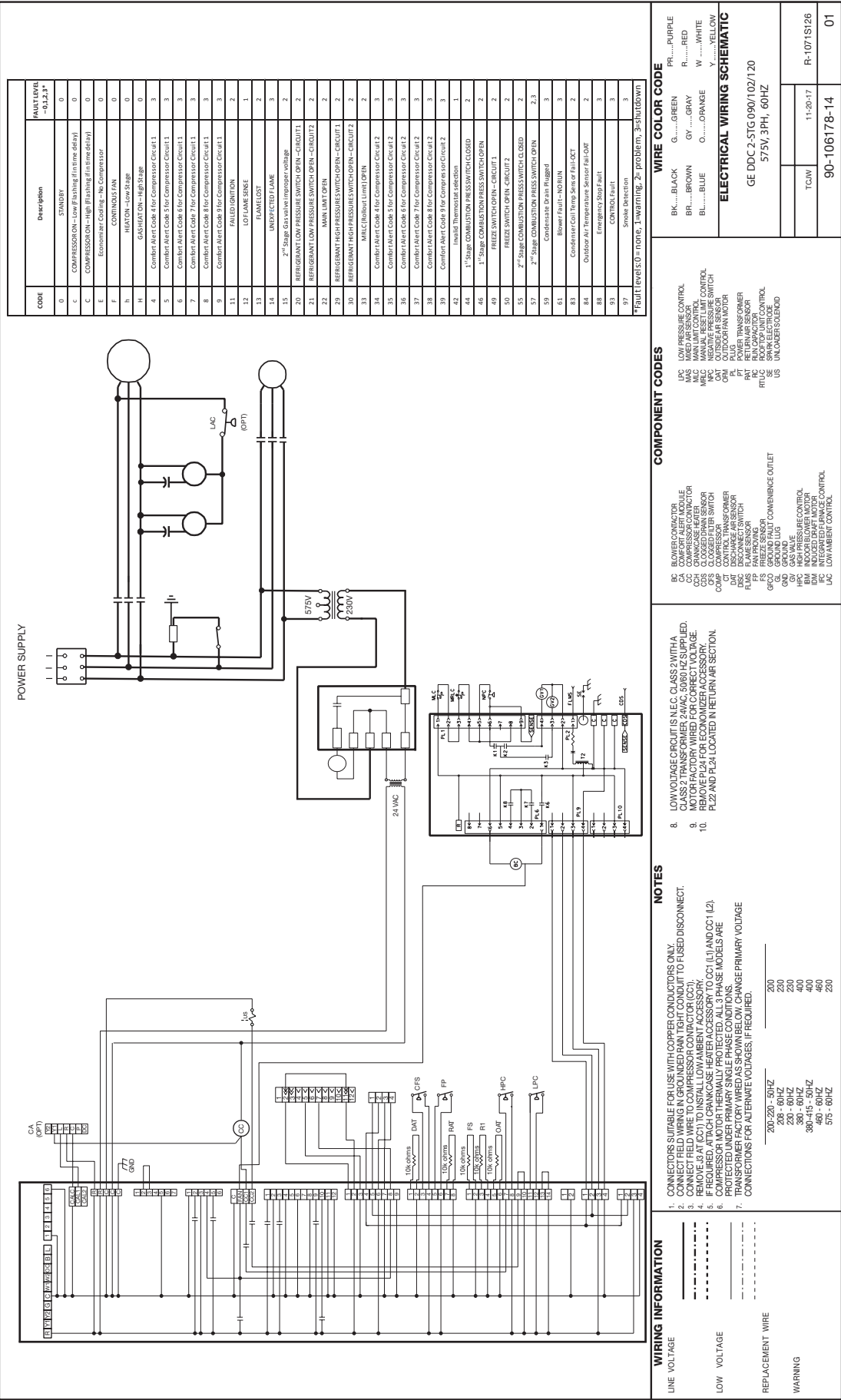


FIGURE 45

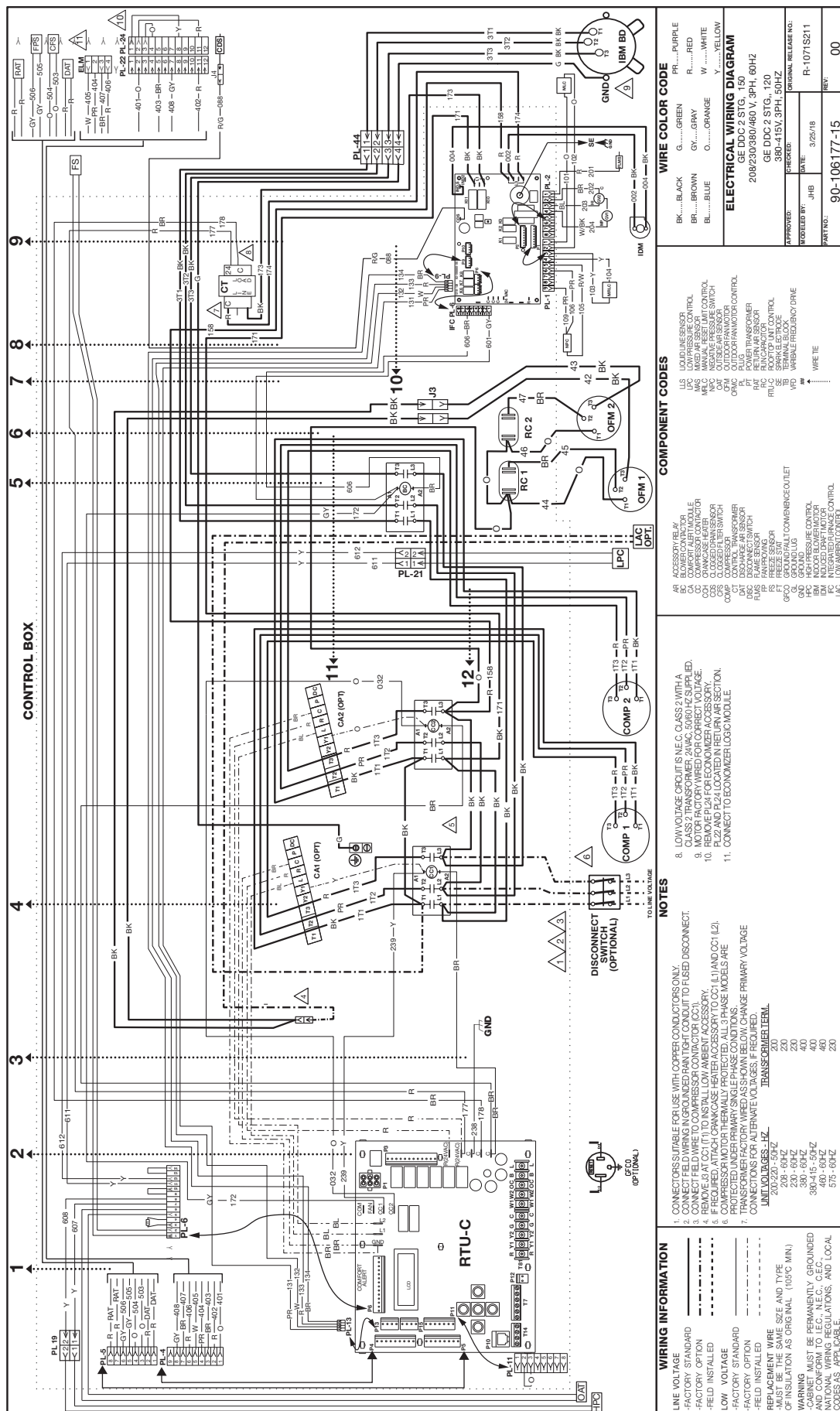


FIGURE 46

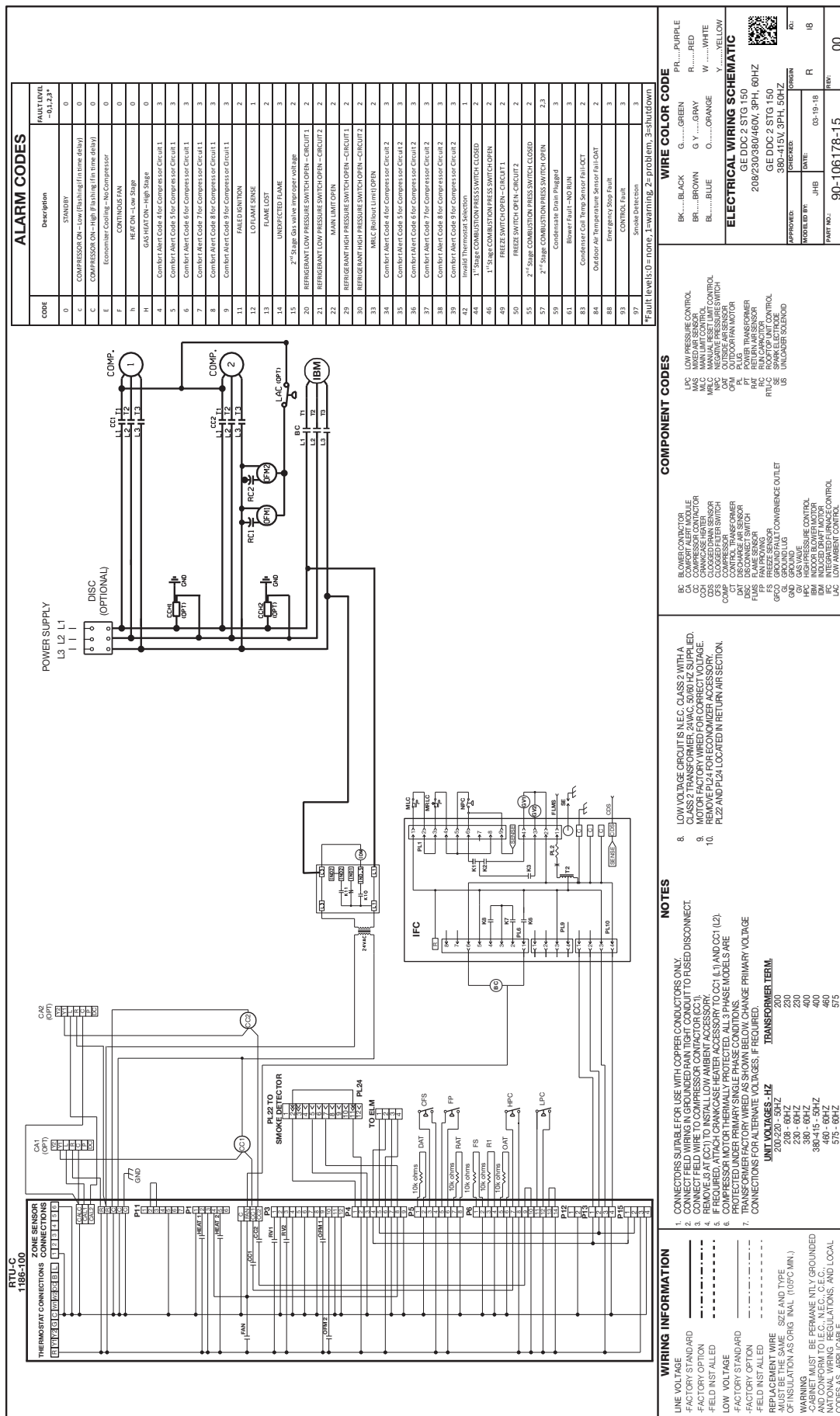


FIGURE 48

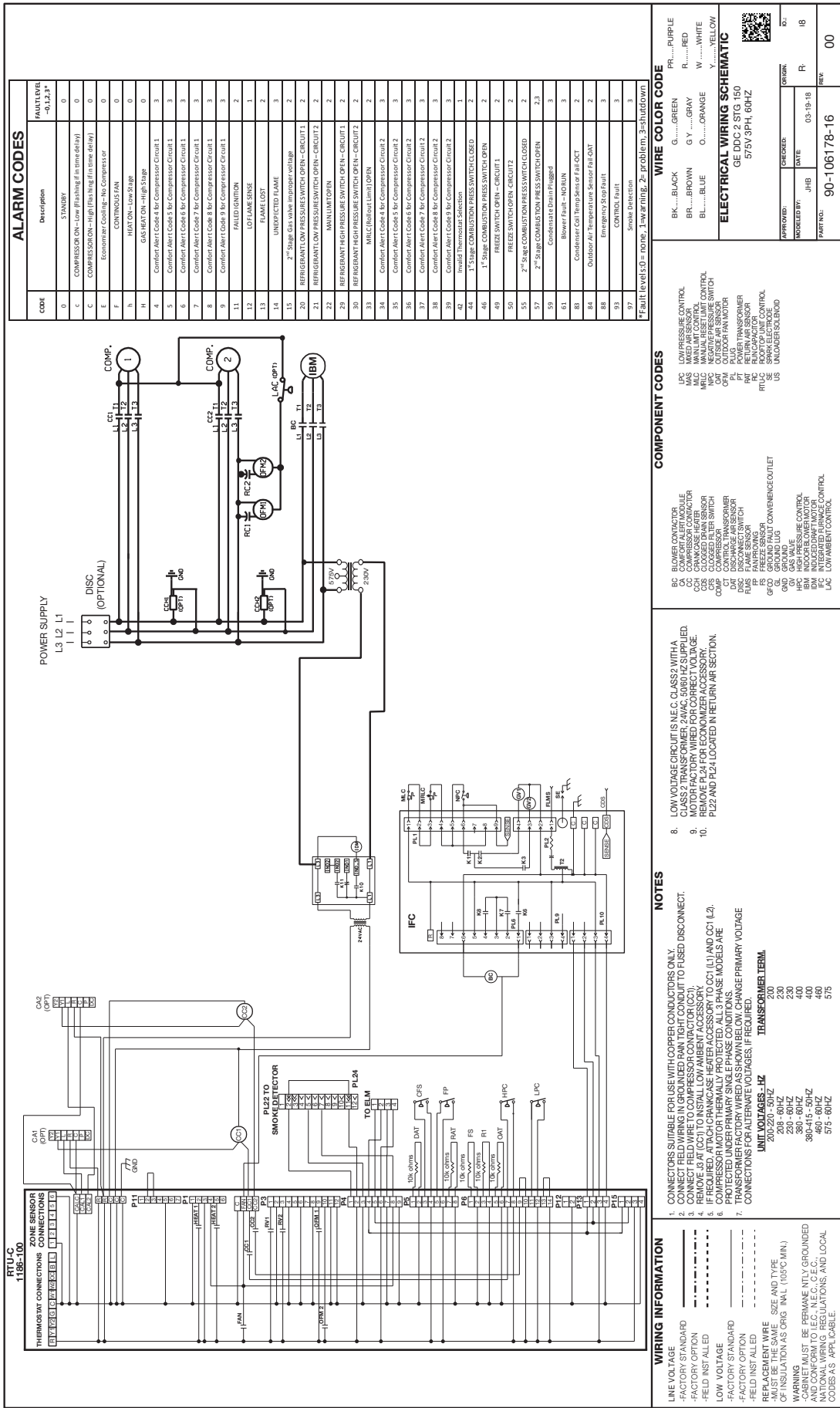


FIGURE 49

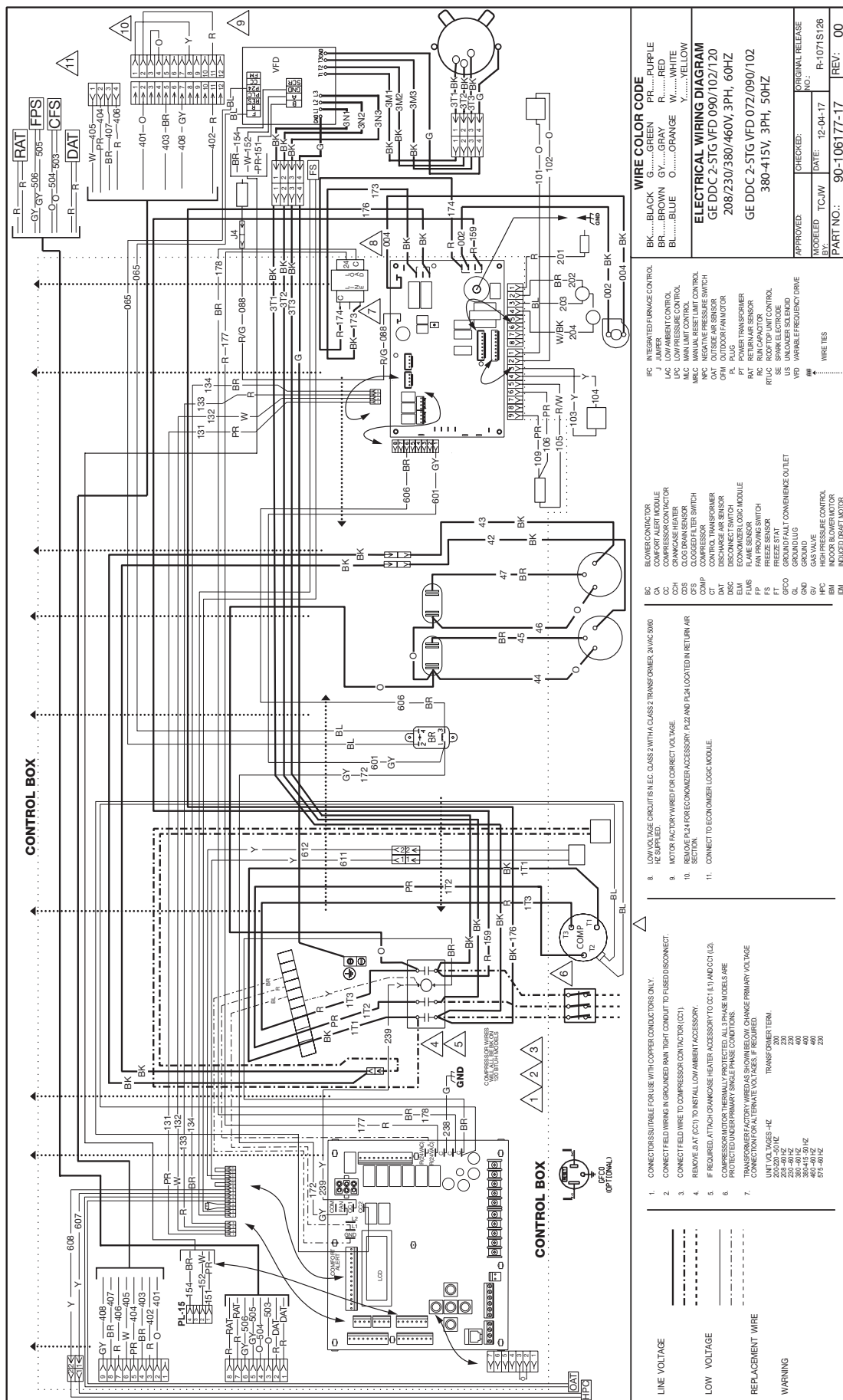


FIGURE 50

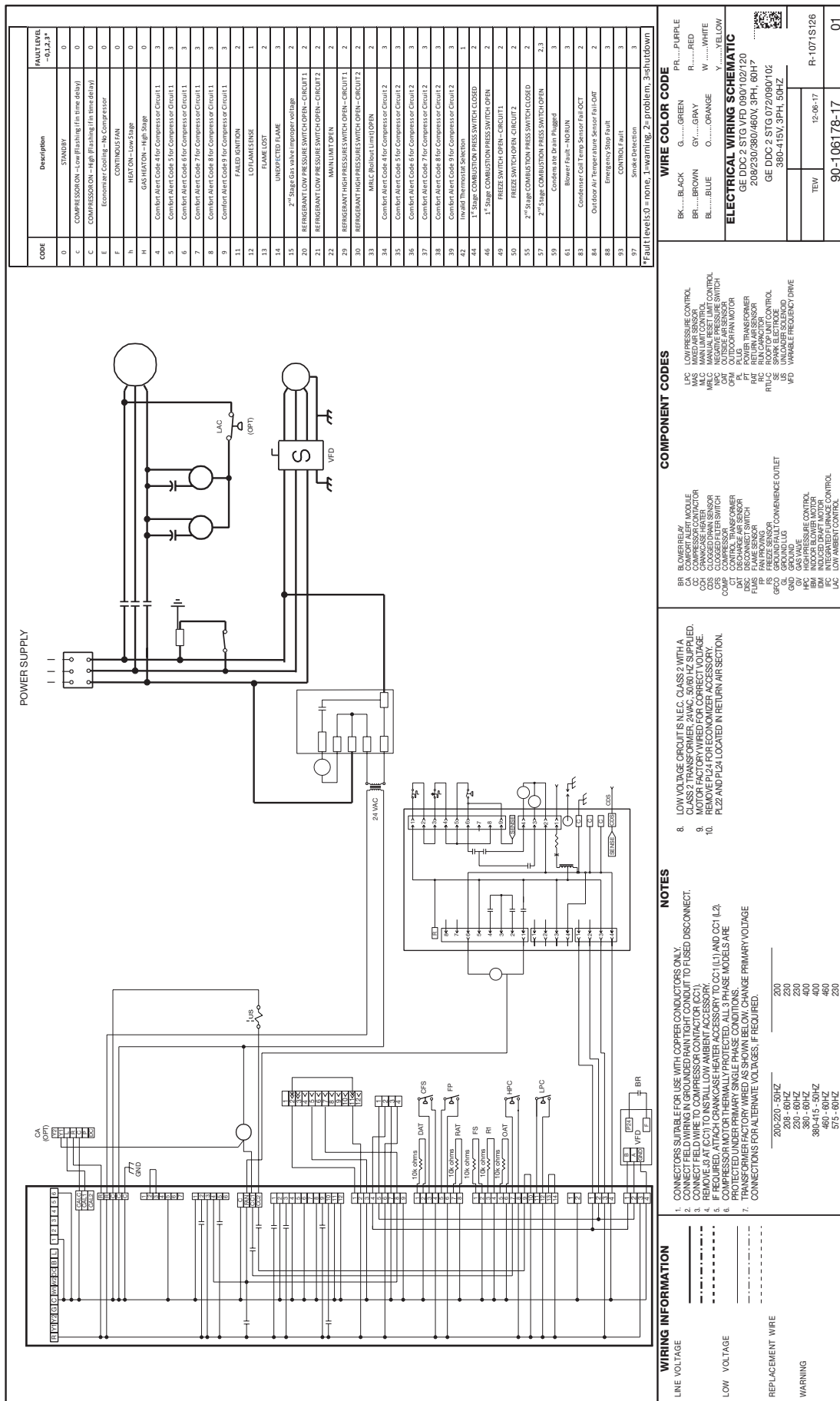
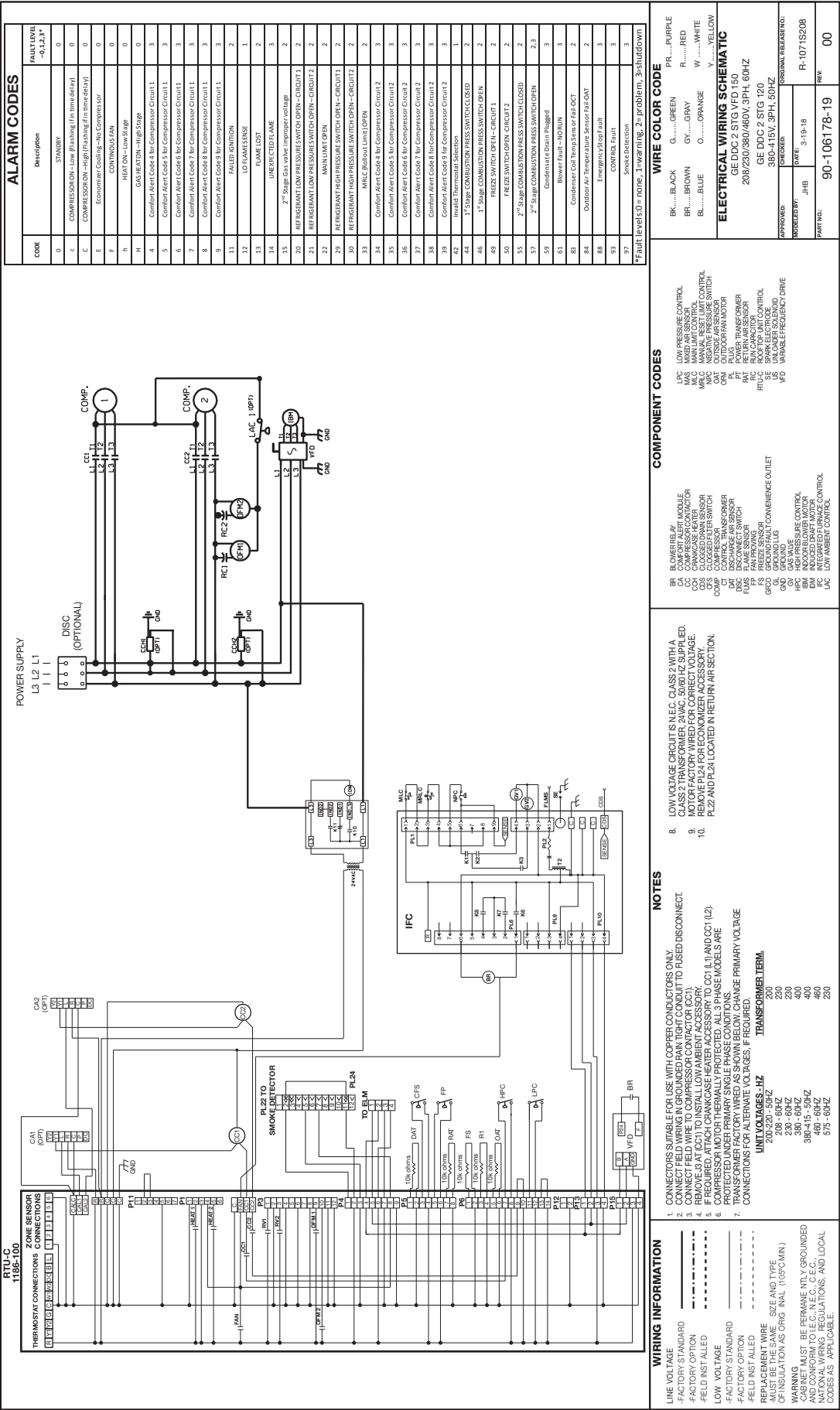


FIGURE 52



In keeping with its policy of continuous progress and product improvement, Rheem reserves the right to make changes without notice.