

# Foundation Gas/Electric Rooftop

## Unit Overview - GBC180A4EMC\*\*000000000000000000000000

Application	Unit Size	Supply Fan		External Dimensions (in.)			Operating Weight		EER	IEER/SEER	Elevation
		Airflow	External Static Pressure	Height	Width	Length	Minimum	Maximum			
Gas/Electric	15 Ton	6000 cfm	0.500 in H2O	4.94 ft	7.24 ft	10.26 ft	1990.0 lb	2412.0 lb	11.0 EER	12.40	

### Unit Features

### Unit Electrical

<b>Voltage/phase/hertz</b>	460/60/3
<b>MCA</b>	36.00 A
<b>MOP</b>	45.00 A



### Controls

**Unit Controls** Electro-mechanical

### Cooling Section

		Capacity
<b>Entering Dry Bulb</b>	80.00 F	<b>Gross Total</b> 187.72 MBh
<b>Entering Wet Bulb</b>	67.00 F	<b>Gross Sensible</b> 141.77 MBh
<b>Ambient Temp</b>	95.00 F	<b>Net Total</b> 179.45 MBh
<b>Leaving Coil Dry Bulb</b>	57.59 F	<b>Net Sensible</b> 133.51 MBh
<b>Leaving Coil Wet Bulb</b>	56.86 F	<b>Refrig Charge-circuit 1</b> 11.4 lb
<b>Leaving Unit Dry Bulb</b>	59.79 F	<b>Refrig Charge-circuit 2</b> 6.0 lb
<b>Leaving Unit Wet Bulb</b>	57.70 F	

### Heating Section

<b>Output Heating Capacity</b>	256.00 MBh
<b>Output Heating Capacity with Fan</b>	256.00 MBh
<b>Heating EAT</b>	70.00 F
<b>Heating LAT</b>	109.32 F
<b>Heating Temp Rise</b>	39.32 F

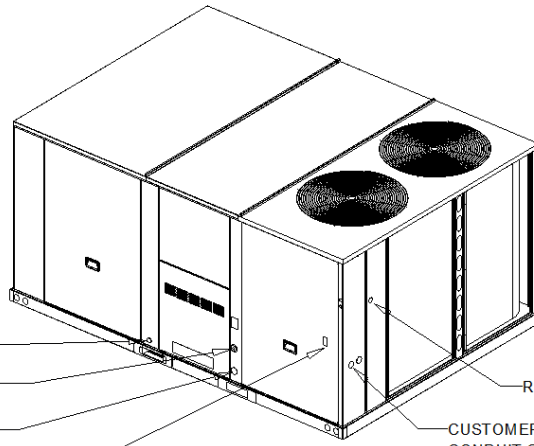
### Fan Section

Indoor Fan Data		Outdoor Fan Data	
<b>Type</b>	FC Centrifugal	<b>Type</b>	Propeller
<b>Drive Type</b>	Belt	<b>Fan Quantity</b>	2
<b>Indoor Fan Performance</b>		<b>Drive Type</b>	Direct
<b>Airflow</b>	6000 cfm	<b>Outdoor Fan Performance</b>	
<b>Design ESP</b>	0.500 in H2O	<b>Condenser Fan FLA</b>	5.00 A
<b>Component SP</b>	0.000 in H2O	<b>Exhaust Fan Data</b>	
<b>Total SP</b>	0.500 in H2O	<b>Type</b>	FC Centrifugal
<b>Indoor Motor Operating Power</b>	1.85 bhp	<b>Drive Type</b>	Direct
<b>Indoor Motor Power</b>	1.38 kW	<b>Exhaust Fan Performance</b>	
<b>Indoor RPM</b>	713 rpm	<b>Exhaust Fan FLA</b>	4.80 A

### Compressor Section

<b>Circuit 1 RLA</b>	12.10 A
<b>Circuit 2 RLA</b>	10.80 A

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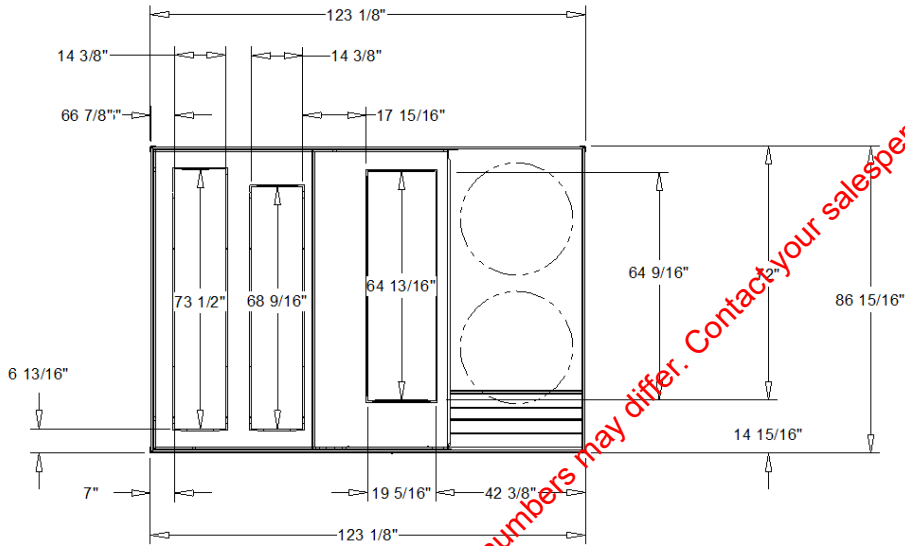


- CONDENSATE DRAIN CONNECTION (1" NPT)
- GAS CONNECTION
- GAS CONNECTION (TBU GAS ONLY)
- DISCONNECT SWITCH ACCESS
- REFRIGERANT GAUGE ACCESS
- CUSTOMER POWER CONDUIT CONNECTION (ALTERNATE)

- NOTES:
1. THRU -THE -BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
  2. VERIFY WEIGHT, CONNECTIONS, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

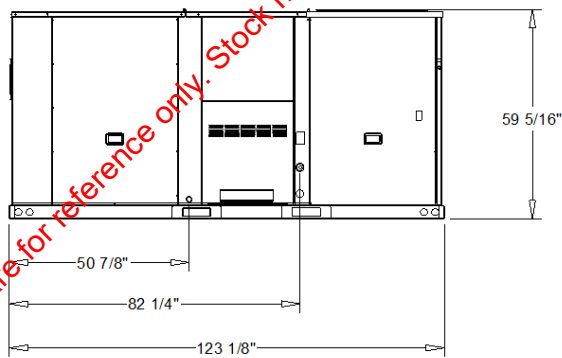
**PACKAGED GAS / ELEC DOWNFLOW**

**DIMENSION DRAWING**



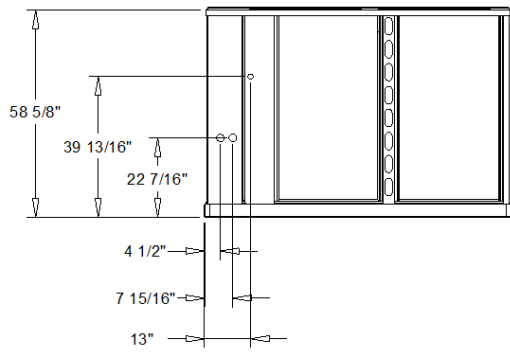
**PLAN VIEW OF UNIT**

**DIMENSION DRAWING**



**FRONT VIEW OF UNIT**

**DIMENSION DRAWING**



**RIGHT VIEW OF UNIT**

**DIMENSION DRAWING**

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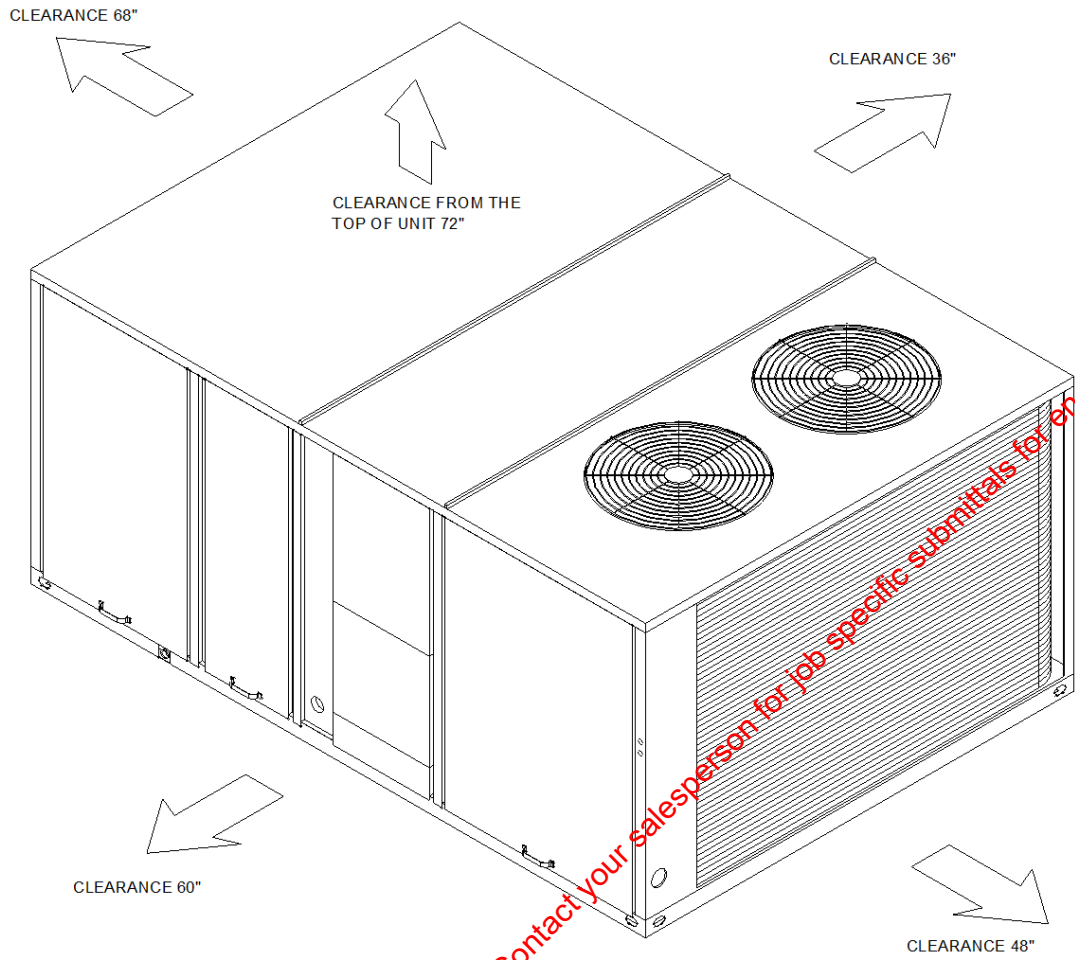
**ELECTRICAL / GENERAL DATA**

<b>GENERAL</b> (2)(4)(6)(7)(10) Model: GBC180 Oversized Motor Unit Operating Voltage: - Unit Primary Voltage: 460 MCA: Unit Secondary Voltage: - MFS: Unit Hertz: 60 MCB: Unit Phase: 3  EER: 10.0 IEER One Speed Fan: 12.4 IEER Multi Speed Fan: -  Standard Motor Field Installed Oversized Motor MCA: 36.0 MCA: MFS: 45.0 MFS: MCB: 45.0 MCB:		<b>HEATING PERFORMANCE</b> HEATING - GENERAL DATA Heating Model: Medium Heating Input (BTU): 320000/224000 Heating Output (BTU): 256000/179200 No. Burners: 8 No. Stages: 2  Gas Inlet Pressure Natural Gas (Min/Max): 4.5 / 14.0 in. wc LP (Min/Max): 11.0 / 14.0 in. wc Gas Pipe Connection Size: 3/4"	
<b>INDOOR MOTOR</b> Standard Motor Oversized Motor Field Installed Oversized Motor Number: 1 Number: Number: Horsepower: 3.0 Horsepower: Motor Speed (RPM): 1750 Motor Speed (RPM): Phase 3 Phase Full Load Amps: 4.8 Full Load Amps: Locked Rotor Amps: 35.5 Locked Rotor Amps:			
<b>COMPRESSOR</b> Circuit 1/2 Number: 2 Horsepower: - Phase: 3 Rated Load Amps: 12.1/10.8 Locked Rotor Amps: 98.0/75.0		<b>OUTDOOR MOTOR</b> Number: 2 Horsepower: 1.0 Motor Speed (RPM): 1125 Phase: 3 Full Load Amps: (11) 5.0 Locked Rotor Amps: -	
<b>POWER EXHAUST ACCESSORY</b> (3) (Field Installed Power Exhaust) Phase: Horsepower: Motor Speed (RPM): Full Load Amps: Locked Rotor Amps:	<b>FILTERS</b> Type: Throwaway Furnished: Yes Number: 8 Recommended: 20"x25"x2"		<b>REFRIGERANT</b> (2) Type: R-410A Factory Charge: Circuit #1 7.6 lb Circuit #2 7.0 lb

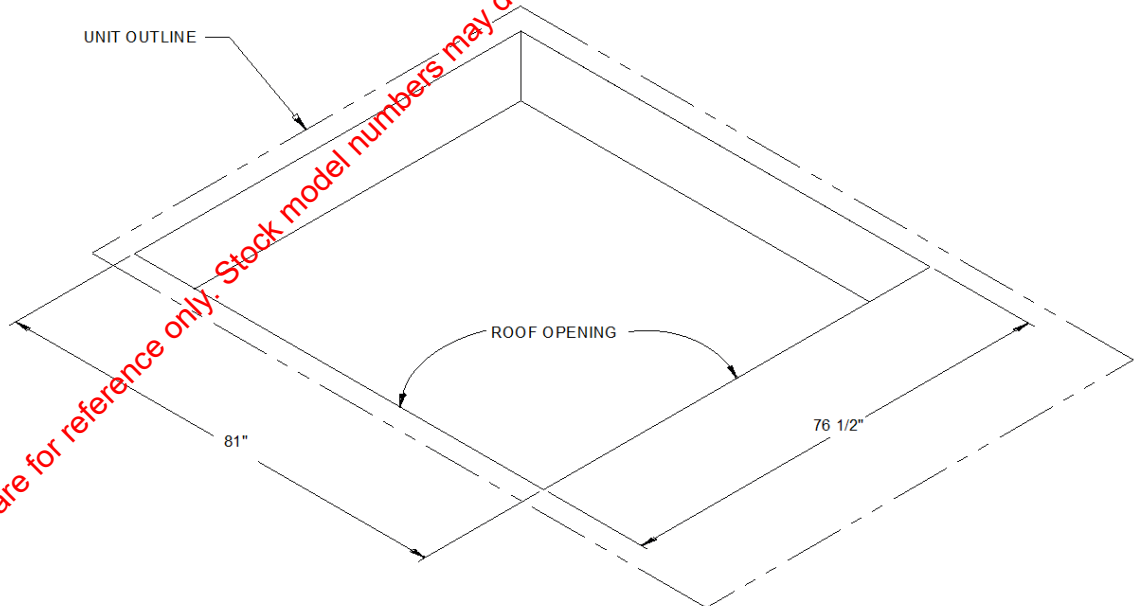
**NOTES:**

1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value does not include Heater.
5. Value include Standard Motor.
6. Value include Oversized Motor
7. EER is rated at AHRI conditions and in accordance with DOE test procedures.
8. For Compressor Motors and Condenser Fan Motors: Amp draw for each motor; multiply value by number of motors to determine total amps.
9. HP for each compressor.
10. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI standard 210/240 or 360.
11. Full Load Amps (FLA) are the combined amps for outdoor motors.

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DOWNFLOW-PACKAGED COOLING WITH ELECTRIC CLEARANCE

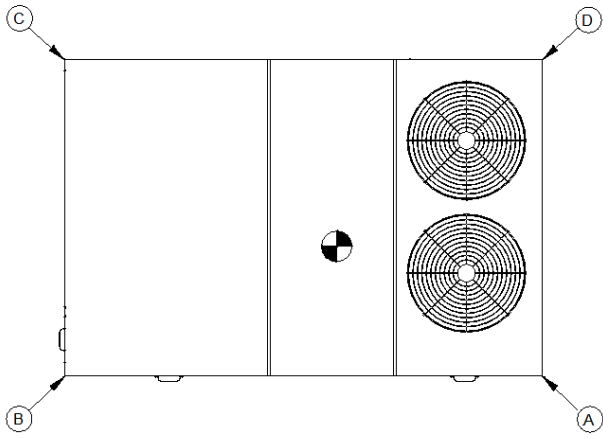


DOWNFLOW-PACKAGED COOLING WITH ELECTRIC ROOF OPENING CLEARANCE

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INSTALLED ACCESSORIES NET WEIGHT DATA

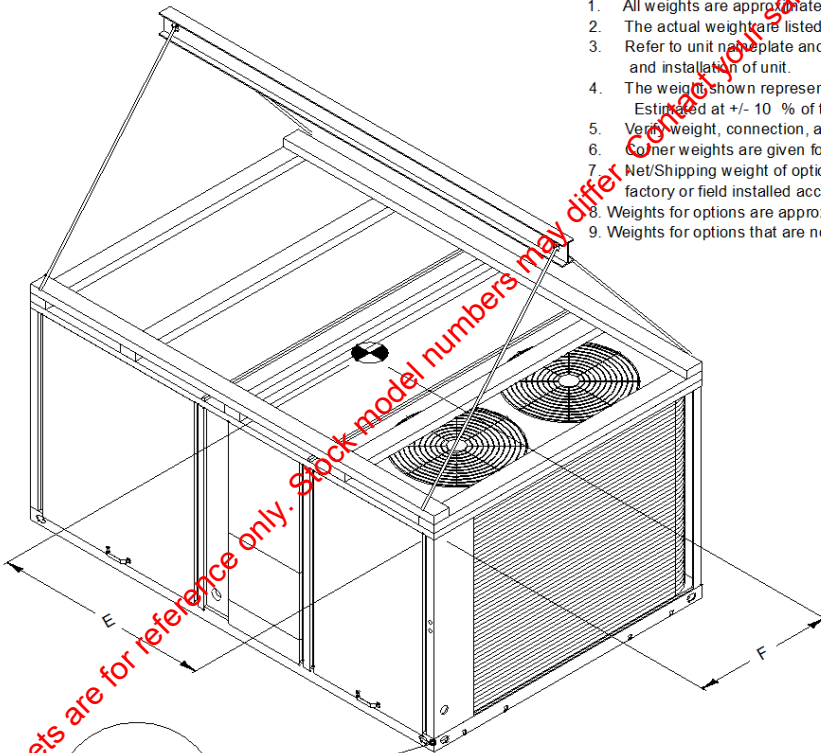
ACCESSORY		WEIGHTS			
ECONOMIZER					
MOTORIZED OUTSIDE AIR DAMPER					
MANUAL OUTSIDE AIR DAMPER					
OVERSIZED MOTOR					
MULTI-SPEED WITH DRIVE					
THROUGH THE BASE ELECTRICAL					
BAROMETRIC					
ROOF CURB					
POWER EXHAUST					
HAIL GUARD					
LP GAS CONVERSION					
STATIC DRIVE					
DISCONNECT					
BASE UNIT WEIGHTS		CORNER WEIGHTS		CENTER OF GRAVITY	
SHIPPING	NET	(A)	(C)	(E) LENGTH	(F) WIDTH
2324.0 lb	2003.0 lb	(A) 646.0 lb	(C) 396.0 lb	55"	37"
		(B) 505.0 lb	(D) 457.0 lb		



CORNER WEIGHT

NOTE:

1. All weights are approximate.
2. The actual weight are listed on the unit nameplate.
3. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
4. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight.
5. Verify weight, connection, and all dimension with installer documents before installation.
6. Corner weights are given for information only.
7. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.
8. Weights for options are approximate.
9. Weights for options that are not list refer to Installation guide.



RIGGING AND CENTER OF GRAVITY

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### 15 thru 25 Ton General

The units shall be dedicated downflow or horizontal airflow. The operating range shall be between 115°F and 40°F in cooling as standard from the factory for all units. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation and control sequence, before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be UL listed and labeled, classified in accordance to UL 1995/C 22.2, 236-05 3rd Edition.

### 15 thru 25 Ton Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 672 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. In order to ensure a water and air tight seal, service panels shall have lifting handles and no more than three screws to remove. All exposed vertical panels and top covers in the indoor air section shall be insulated with a 1/2", 1.0 lbdensity foil-faced, fire-resistant, permanent, odorless, glass fiber material. The base of the downflow unit shall be insulated with 1/2", 1.0 lbdensity foil-faced, closed-cell material. The downflow unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8" high supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting.

### 15 thru 25 Ton Compressors

All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Internal overloads shall be provided with the scroll compressors. All models shall have phase monitors and low and high pressure control as standard.

### 15 thru 25 Ton Controls

Unit shall be completely factory wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device.

### 15 thru 25 Ton Discharge Line Thermostat

A bi-metal element discharge line thermostat is installed as a standard option on the discharge line of each system. This standard option provides extra protection to the compressors against high discharge temperatures in case of loss of charge, extremely high ambient and other conditions which could drive the discharge temperature higher. Discharge line thermostat is wired in series with high pressure control. When the discharge temperature rises above the protection limit, the bi-metal disc in the thermostat switches to the off position, opening the 24 Vac circuit. When the temperature on the discharge line cools down, the bi-metal disc closes the contactor circuit, providing power to the compressor.

### 15 thru 25 Ton Evaporator and Condenser Coils

Microchannel coils will be burst tested by the manufacturer. Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard for evaporator coils. Microchannel condenser coils shall be standard on all units. Coils shall be leak tested to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 225 psig and pressure tested to 450 psig. Sloped condensate drain pans are standard.

### 15 thru 25 Ton Filters

Two inch standard filters shall be factory supplied on all units.

### 15 thru 25 Ton Gas Heating Section

The heating section shall have a progressive tubular heat exchanger design. An induced draft combustion blower shall be used to pull the combustion products through the firing tubes. The heater shall use a direct spark ignition (DSI) system. On initial call for heat, the combustion blower shall purge the heat exchanger for 20 seconds before ignition. After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat. Units shall be suitable for use with natural gas or propane (field-installed kit) and also comply with the California requirement for low NOx emissions (Gas/Electric Only).

### **15 thru 25 Ton High Pressure Control**

All units include High Pressure Cutout as standard.

### **15 thru 25 Ton Indoor Fan**

Units above shall have belt driven, FC centrifugal fans with adjustable motor sheaves. Units with standard motors shall have an adjustable idler-arm assembly for quick-adjustment of fan belts and motor sheaves. All motors shall be thermally protected. Oversized motors shall be available for high static application. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

### **15 thru 25 Ton Low Pressure Control**

All units include Low Pressure Cutout as standard.

### **15 thru 25 Ton Outdoor Fans**

The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor(s) shall be permanently lubricated and shall have built-in thermal overload protection.

### **15 thru 25 Ton Phase Monitor**

The Phase Monitor is a three-phase line monitor module that protects against phase loss, phase reversal and phase unbalance. It is intended to protect compressors from reverse rotation. It has an operating input voltage range of 190-600 Vac, and LED indicators for ON and FAULT. There are no field adjustments and the module will automatically reset from a fault condition.

### **15 thru 25 Ton Refrigerant Circuits**

Each refrigerant circuit shall have independent fixed orifice, service pressure ports, and refrigerant line filter driers factory installed as standard. An area shall be provided for replacement suction line driers.

### **15 thru 25 Ton Unit Top**

The top cover shall be double hemmed and gasket sealed to prevent water leakage.

### **3 thru 5 Ton Filters**

Two inch standard filters shall be factory supplied on all units.

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