HEATING & COOLING PRODUCTS

RHS

Product Specifications

PACKAGE HEAT PUMP UNIT
R–410A SINGLE PACKAGE ROOFTOP 3 – 12.5 TONS (1 & 3–Phase)

BUILT TO LAST, EASY TO INSTALL AND SERVICE

- One–piece, single–packaged heat pump units that are prewired, tested, and charged at the factory
- Single stage cooling on 3 to 6 ton models, 2 stage cooling on 7.5 to 12.5 ton.
- Exclusive non–corrosive composite condensate pan in accordance with ASHRAE 62 Standard, sloping design; side or center drain
- All units are convertible from downflow to horizontal air flow; no special adapter curbs are necessary on 3 to 10 ton models, supply duct kit required for 12.5 ton model only.
- Copper tube aluminum fin coils with optional corrosion resistant coils
- Pre–painted exterior panels and primer–coated interior panels tested to 500 hours salt spray protection
- Fixed orifice metering devices on all models to precisely control refrigerant flow
- Outdoor temperature cooling operation range up to 115°F (46°C) and down to 25°F (–4°C)
- Newly designed terminal board facilitates simple safety circuit troubleshooting and simplified control box arrangement
- Refrigerant circuits contain a liquid line filter drier to trap dirt and moisture
- Fully insulated cabinet
- Access panels with easy grip handles provide quick and easy access to the blower and blower motor, control box, and compressor.
- Dependable time/temperature defrost logic provides a defrost cycle, if needed, every 30, 60, 90, or 120 minutes and is adjustable
- Scroll compressors with internal line–break overload protection
- All units have high and low pressure switches
- Two inch disposable fiberglass type return air filters in dedicated rack with tool–less filter access door
- Precision sized suction line accumulator to provide high reliability
- 4–way reversing valve rapidly changes the flow of refrigerant to quickly changeover from cooling to heating and heating to cooling
- Belt drive evaporator–fan motor and pulley combinations available on all sizes to meet any application
- Direct drive high efficiency blower motor on 3 to 5 ton models, belt drive optional
- Crankcase heaters on all models but the 3 ton
- Newly–designed indoor refrigerant header for easier maintenance and replacement
- “No–strip” screw system has superior holding power and guides screws into position while preventing the screw from stripping the unit’s metal.
- Large, laminated control wiring and power wiring drawings are affixed to unit to make troubleshooting easy
- Provisions for thru–the–bottom power entry capability
- Full perimeter base rail with built-in rigging adapters and fork truck slots
- Single point electrical connections

RHS036–072

RHS090–102

WARRANTY

- 5 Year compressor limited warranty
- 1 Year parts limited warranty

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ASHRAE 90.1 COMPLIANT

UNIT PERFORMANCE DATA

BASE MODEL	Nominal Tons	COOLING Net Cap. (Btuh)	COOLING SEER	COOLING EER	HEATING High Cap. (Btuh)	HEATING HSPF	HEATING COP	Unit Dimensions H x W x L	Unit Weight lbs (kg)
RHS036*0XA0AAA	3	37,000	13.4	11.00	35,600	7.7	N/A	33–3/8” x 46–3/4” x 74–3/8”	505 (229)
RHS048*0XA0AAA	4	47,000	13.1	11.20	45,500	7.7	N/A	33–3/8” x 46–3/4” x 74–3/8”	510 (231)
RHS060*0XA0AAA	5	61,500	13.2	11.15	58,000	7.7	N/A	41–3/8” x 46–3/4” x 74–3/8”	590 (268)
RHS072*0AA0AAA	6	70,000	N/A	11.10	67,000	N/A	3.3	41–3/8” x 46–3/4“ x 74–3/8”	630 (286)
RHS090*0AA0AAA	7 1/2	88,000	N/A	11.20	86,000	N/A	3.4	49–3/8” x 59–1/2“ x 88–1/8”	885 (401)
RHS102*0AA0AAA	8 1/2	99,000	N/A	11.20	96,000	N/A	3.3	49–3/8” x 59–1/2“ x 88–1/8”	910 (413)
RHS120*0AA0AAA	10	117,000	N/A	11.00	116,000	N/A	3.4	49–3/8” x 59–1/2“ x 88–1/8”	1050 (476)
RHS150*0AA0AAA	12.5	142,000	N/A	10.60	142,000	N/A	3.2	57–3/8” x 63–3/8“ x 115–7/8”	1370 (623)

***** Indicates Unit voltage: K = 208/230–1–60, H = 208/230–3–60, L = 460–3–60, S = 575–3–60

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3 to 12.5 TON ROOFTOP UNIT FIOP CODES (Use with Model Nomenclature on next page)

OPTION	DESCRIPTION
2	Non−Fused Disconnect Switch
4	Easy Access Hinged Panels
5	Unpowered Convenience Outlet
9	Supply Air Smoke Detector

NOMENCLATURE CODE	OPTIONS
0A	None
4B	2
AT	5
BR	9
7C	2, 5
7K	2,5,9
BA	5, 9
8A	2, 9
AA	4
6C	2, 4
6D	2, 4, 5
6L	2, 4, 5, 9
7B	2, 4, 9
AB	4, 5
AJ	4, 5, 9
CH	4, 9

MODEL NOMENCLATURE

MODEL SERIES	R	H	S	0	9	0	H	0	A	A	0	A	A	A
Position Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14

R = Rooftop

H = Heat Pump — **Type**

S = Standard ASHRAE 90.1-2010 — **Efficiency**

036 = 3 Tons
048 = 4 Tons
060 = 5 Tons
072 = 6 Tons
090 = 7.5 Tons (Dual Compressor)
102 = 8.5 Tons (Dual Compressor)
120 = 10 Tons (Dual Compressor)
150 = 12.5 Tons (Dual Compressor) — **Nominal Cooling Capacity**

K = 208/230-1-60
H = 208/230-3-60
L = 460-3-60
S = 575-3-60 — **Voltage**

0 = No Heat — **Heating Capacity**

X = Direct drive ECM (3-5 Ton)
A = Standard Static Option - Belt Drive (6-12.5 Ton -1 speed IFM, 7.5-12.5 Ton -2 speed IFM)
C = Medium Static Option (Belt Drive) (3-12.5 Ton -1 speed IFM, 7.5-12.5 Ton -2 speed IFM)
B = High Static Option (Belt Drive) (3-10 Ton -1 speed IFM, 7.5-12.5 Ton -2 speed IFM)
E = High Static Option High Efficiency Motor (12.5 Ton -1 speed IFM) — **Motor Option**

A = None
B = Economizer w/Bara-relief, OA Temp sensor
E = Economizer w/Bara-relief + CO2 Sensor, OA Temp sensor
H = Economizer w/Bara-relief, enthalpy sensor
L = Economizer w/Bara-relief + CO2 Sensor, enthalpy sensor
U = Temp Ultra Low Leak Economixer w/Baro Relief
W = Enthalpy Ultra Low Leak Economixer w/Baro Relief
P = 2-Position damper w/Baro-relief — **Outdoor Air Options / Control**

No more factory installed economizers for single phase

0A = No Options
4B = Non-Fused Disconnect
AT = Non-powered 115v C.O.
BR = Supply Air Smoke Detector
AA = Easy Access Hinged Panels

Factory Installed Options

A = Aluminum / Cu Cond & Evap Coil
B = Precoat Alum/Cu Cond & Alum / Cu Evap (3 phase only)
C = E-Coated Alum/Cu Cond & Alum / Cu Evap (3 phase only)
D = E-Coated Alum / Cu Cond & Evap (3 phase only)
E = Cu / Cu Cond & Alum / Cu Evap (3 phase only)
F = Cu/Cu Cond & Evap (3 phase only) — **Condenser / Evaporator Coil Configuration**

A = Standard Motor
T = 2 Speed Indoor Fan VFD Controller (For 2–stage units only) — **Motor Type Option**

Table 1 – FACTORY INSTALLED OPTIONS AND FIELD INSTALLED ACCESSORIES

CATEGORY	ITEM	FACTORY INSTALLED OPTION	FIELD INSTALLED ACCESSORY
Cabinet	Thru−the−base electrical connections		X
	Disconnect Switch Bracket (Available 12.5 ton only)		X
	Supply Duct Cover (Available 12.5 ton only)		X
	Hinged Access Panels		X
Coil Options	Cu/Cu indoor and/or outdoor coils	X	
	Pre−coated outdoor coils	X	
	Premium, E−coated outdoor coils	X	
Condenser Protection	Condenser coil hail guard (louvered design)		X
Controls	Smoke detector (supply air)	X	
	Time Guard II compressor delay control circuit		X
	Phase Monitor		X
Economizers & Outdoor Air Dampers	Economizer IV (for electro−mechanical controlled RTUs)	X	X
	Motorized 2 position outdoor−air damper	X	X
	Manual outdoor−air damper		X
	Barometric relief[1]	X	X
	Power exhaust		X
	Ultra Low Leak Economizer X (for 2−Speed Indoor Fan Motor System only 090 to 150 sizes with 2 stages of cooling), vertical supply and return air only.	X	X
Economizer Sensors & IAQ Devices	Single dry bulb temperature sensors[2]	X	X
	Differential dry bulb temperature sensors[2]		X
	Single enthalpy sensors[2]	X	X
	Differential enthalpy sensors[2]		X
	CO_2 sensor (wall, duct, or unit mounted)[2]		X
Electric Heat	Electric Resistance Heaters		X
	Single Point Kit		X
Indoor Motor & Drive	Multiple motor and drive packages	X	
	2−Speed Indoor Fan Motor System w/VFD controller	X	
Low Ambient Control	Motormaster head pressure controller[3]		X
Power Options	Convenience outlet (unpowered)	X	
	Non−fused disconnect[4]	X	
Roof Curbs	Roof curb 14” (356mm)		X
	Roof curb 24” (610mm)		X

NOTES:
1.Included with economizer.
2.Sensors used to optimize economizer performance.
3.See application data for assistance.
4. Available on units with MOCP’s of 80 amps or less
5. All FIOP’s are 3 phase only

FACTORY OPTIONS AND/OR ACCESSORIES

Economizer (dry−bulb or enthalpy)

Economizers bring in fresh, outside air for ventilation; and provide cool, outside air to cool your building. This is the preferred method of low−ambient cooling. When coupled to CO_2 sensors, Economizers can provide even more savings by coupling the ventilation air to only that amount required based on occupancy.

Economizers are available, installed and tested by the factory (3 phase only), with either enthalpy or dry−bulb temperature inputs. There are also models for electromechanical as well as direct digital controllers. Additional sensors are available as accessories to optimize the economizers.

CO_2 Sensor

Improves productivity and saves money by working with the economizer to intake only the correct amount of outside air for ventilation. As occupants fill your building, the CO_2 sensor detects their presence through increasing CO_2 levels, and opens the economizer appropriately.

When the occupants leave, the CO_2 levels decrease, and the sensor appropriately closes the economizer. This intelligent control of the ventilation air, called Demand Control Ventilation (DCV) reduces the overall load on the rooftop, saving money. CO_2 sensors are available with the economizer, installed and tested by the factory.

Smoke Detectors (Optional)

Smoke detectors make your application safer and your job easier. The smoke detectors immediately shut down the rooftop unit when smoke is detected. They are available, installed by the factory for supply air.

Louvered Hail Guards

Sleek, accessory louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact.

Convenience Outlet (un−powered)

Lower service bills by including a convenience outlet in your specification. Provides a convenient, 15 amp, 115v GFCI receptacle.

Non−fused Disconnect

This OSHA−compliant, factory−installed, safety switch allows a service technician to locally secure power to the rooftop.

Barometric Relief (included with economizer)

Gravity controlled, barometric relief equalizes building pressure and ambient air pressures. This can be a cast effective solution to prevent building pressurization.

Power Exhaust

Superior internal building pressure control. This field−installed accessory may eliminate the need for costly, external pressure control fans.

Time Guard II Control Circuit

This accessory protects your compressor by preventing short−cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with authorized commercial thermostats.

Filter or Fan Status Switches

Use these accessory differential pressure switches to detect a filter clog or indoor fan motor failure. When used in conjunction with a compatible unit controller/thermostat, the switches will activate an alarm to warn the appropriate personnel.

Motorized 2−Position Damper

A 2−position, motorized outdoor air damper is available factory installed and admits up to 100% outside air. Using reliable, gear−driven technology, the 2−position damper opens to allow ventilation air and closes when the rooftop stops, stopping unwanted infiltration.

Manual OA Damper

Accessory manual outdoor air dampers are an economical way to bring in ventilation air.

2−Speed Indoor Fan Speed Motor System

The 2−Speed Indoor Fan Motor System saves energy and installation time by utilizing a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed in sequence with the units cooling operation. Per ASHRAE 90.1 2010 standard section 6.4.3.10.b, during the first stage of cooling operation the VFD will adjust the fan motor to provide 2/3rd of the total cfm established for the unit. When a call for the second stage of cooling is required, the VFD will allow the total cfm for the unit established (100%). During the heating mode the VFD will allow total design cfm (100%) operation and during the ventilation mode the VFD will allow operation to 2/3rd of total cfm.

Compared to 1−speed indoor fan motor systems, the 2−Speed Indoor Fan Motor System can save substantial energy, 25%+/−, versus 1−speed indoor fan motor systems.

The VFD used in the 2−Speed Indoor Fan Motor System has soft start capabilities to slowly ramp up the speeds, thus eliminating any high inrush air volume during initial start−up. It also has internal over−current protection for the fan motor and a field installed display kit that allows adjustment and in depth diagnostics of the VFD.

This 2−Speed Indoor Fan Motor System is available on models with 2−stage cooling operation with electromechanical or RTU Open, Multi Protocol controls. Both space sensor and conventional thermostats/controls can be used to provide accurate control in any application.

The 2−Speed Indoor Fan Motor System is very flexible for initial fan performance set up and adjustment. The standard factory shipped VFD is pre−programmed to automatically stage the fan speed between the first and second stage of cooling. The unit fan performance static pressure and cfm can be easily adjusted using the traditional means of pulley adjustments. The other means to adjust the unit static and cfm performance is to utilize the field installed Display Kit and adjust the frequency and voltage in the VFD to performance requirements. In either case, once set up, the VFD will automatically adjust the speed between the cooling stage operations.

Hinged Access Panels

Allows access to unit's major components with specifically designed hinged access panels. Panels are: filters, control box, fan motor and compressor.

Head Pressure Controller

The motor controller is a low ambient, head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling not when economizer usage is either not appropriate or desired. The controller will either cycle the outdoor−fan motors or operate them at reduced speed to maintain the unit operation, depending on the model.

Alternate Motors and Drives

Some applications need larger horsepower motors, some need more airflow, and some need both. Regardless of the case, your unit has a factory installed combination to meet your application. A wide selection of motors and pulleys (drives) are available, factory installed, to handle nearly any application.

Disconnect Switch Bracket

Provides a pre−engineered and sized mounting bracket for applications requiring a unit mounted fused disconnect of greater than 100 amps. Bracket assures that no damage will occur to coils when mounting with screws and other fasteners.

Supply Duct Cover

This supply duct cover is required when field converting the factory standard vertical duct supply to horizontal duct supply configuration. One is required per unit. (12.5 ton only.)

Thru−the−Base Connections

Thru−the−base connections, available as an accessory are necessary to ensure proper connection and seal when routing wire through the rooftop's basepan and curb. These couplings eliminate roof penetration and should be considered for main power lines, as well as control power.

Electric Heaters

RHS units offer a full−line of accessory heaters. The heaters are very easy to use, install and are pre−engineered and certified.

ACCESSORIES – RHS036–150

ECONOMIZERS		
Model Number	**Description**	**Use With Model Size**
DNECOMZR020A02	Vertical EconoMi$er IV with solid–state controller, gear–driven, 3–position modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible.	036 – 072
DNECOMZR021A03	Vertical EconoMi$er IV with solid–state controller, gear–driven, 3–position modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible.	090 – 120
DNECOMZR062A00	Vertical EconoMi$er IV with solid–state controller, gear–driven, 3–position modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible.	150
CRECOMZR069A00[1,2]	Ultra Low Leak Vertical[3] Economizer X with solid–state W7220 controller, gear–driven, modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible, for use in electro mechanical controls only.	090 – 120
CRECOMZR071A00[1,2]	Ultra Low Leak Vertical[3] Economizer X with solid–state W7220 controller, gear–driven, modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible, for use in electro mechanical controls only.	150
DNECOMZR024A02	Horizontal EconoMi$er IV with solid–state controller, gear–driven, 3–position modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible.	036 – 072
DNECOMZR025A02	Horizontal EconoMi$er IV with solid–state controller, gear–driven, 3–position modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible.	090 – 120
DNECOMZR064A00	Horizontal EconoMi$er IV with solid–state controller, gear–driven, 3–position modulating damper, spring return actuator, up to 100% barometric relief, supply and outdoor air sensors, and CO2 sensor compatible.	150

[1] Economizer X cannot be installed with Economizer IV, manual damper, or motorized damper.
[2] Can only be used on electrical mechanical units with 2–stage cooling and 2–speed fan control.
[3] Economizer X is currently only available on vertical air flow configuration models.

ECONOMIZER SENSORS		
Model Number	**Description**	**Use With Model Size**
DNTEMPSN002A00	Outdoor or Return Dry Bulb Temperature Sensor used with Electro–Mechanical control.	Economizer IV
DNCBDIOX005A00	CO_2 Sensor for use in return airstream. Also includes Aspirator Box required for Duct Mounting.	Economizer IV & X
DNENTDIF004A00	Return Air Enthalpy Sensor used with Electro–Mechanical controls, use with AXB078ENT for differential enthalpy control.	Economizer IV
AXB078ENT	Accusensor II Economizer Differential Enthalpy Control Upgrade	Economizer IV
CRTEMPSN005A00	Outdoor or return dry bulb temperature sensor used with Honeywell W7220 electro–mechanical control.	Economizer X
HH57AC081	Enthalpy control for W7220 controller only. (One required for single enthalpy, two required for differential enthalpy)	Economizer X

NOTE: Supply air temperature sensor (SAT and low ambient lockout switch) provided with economizer IV or economizer X.

ACCESSORIES – RHS036–150

FLAT ROOF CURBS		
Model Number	**Description**	**Use With Model Size**
CRRFCURB001A01	14” High Roof Curb. Ductwork attaches to the roof curb. Includes thru–the–bottom capability.	036 – 072
CRRFCURB003A01	14” High Roof Curb. Ductwork attaches to the roof curb. Includes thru–the–bottom capability.	090 – 120
CRRFCURB002A01	24” High Roof Curb. Ductwork attaches to the roof curb. Includes thru–the–bottom capability.	036 – 072
CRRFCURB004A01	24” High Roof Curb. Ductwork attaches to the roof curb. Includes thru–the–bottom capability.	090 – 120
CRRFCURB072A00	14” High Roof Curb. Ductwork attaches to the roof curb. Includes thru–the–bottom capability.	150
CRRFCURB073A00	24” High Roof Curb. Ductwork attaches to the roof curb. Includes thru–the–bottom capability.	150
POWER EXHAUST		
Model Number	**Description**	**Use With Model Size**
DNPWREXH030A01	Vertical Power Exhaust –208/230–1–60	036 – 072 208/230 volt (1 or 3 Phase)
DNPWREXH021A01	Vertical Power Exhaust –460–3–60	036 – 072 460–3–60
DNPWREXH022A01	Vertical Power Exhaust –208/230–1–60	090 – 120 208/230 volt (3 Phase)
DNPWREXH023A01	Vertical Power Exhaust –460–3–60 volt	090 – 120 460–3–60
DNPWREXH080A00	Vertical Power Exhaust –208/230–1–60	150 208/230 volt (3 Phase)
DNPWREXH081A00	Vertical Power Exhaust –460–3–60	150 460–3–60
DNPWREXH028A01	Horizontal Power Exhaust –208/230–1–60	036 – 120 208/230 & 575 volt (1 or 3 Phase)
DNPWREXH029A01	Horizontal Power Exhaust –208/230–1–60	036 – 120 460–3–60
DNPWREXH082A00	Horizontal Power Exhaust –208/230–1–60 (Mounted on Return Ductwork)	150 208/230 & 575 volt (1 or 3 Phase)
DNPWREXH083A00	Horizontal Power Exhaust –460–3–60 (Mounted on Return Ductwork)	150 460–3–60
575V TRANSFORMER		
Model Number	**Description**	**Use With Model Size**
1171494 [2]	Transformer for conversion from 575v to 208/230v power exhaust applications.	036 – 150
MANUAL OUTDOOR AIR DAMPERS		
Model Number	**Description**	**Use With Model Size**
CRMANDPR001A03	25% Open Manual Fresh Air Damper	036 – 072
CRMANDPR001A02	50% Open Manual Fresh Air Damper	036 – 072
CRMANDPR002A03	25% Open Manual Fresh Air Damper	090 – 120
CRMANDPR002A02	50% Open Manual Fresh Air Damper	090 – 120
CRMANDPR011A00	50% Open Manual Fresh Air Damper	150
MOTORIZED OUTDOOR AIR DAMPERS		
Model Number	**Description**	**Use With Model Size**
CRTWOPOS010A00	Motorized 2 position outdoor air damper (25–100% Outdoor Air)	036 – 072
CRTWOPOS011A00	Motorized 2 position outdoor air damper	090 – 120
CRTWOPOS014A00	Motorized 2 position outdoor air damper	150

ACCESSORIES – RHS036–150 (cont.)

LOW AMBIENT CONTROLS*		
Model Number	**Description**	**Use With Model Size**
32LT900301 [1]	Motormaster I Single–Phase Solid–State Variable Speed Motor Controller enables cooling down to –20° F by varying the speed on the condenser fan.	036 – 120 208/230–1–60, 208/203–3–60
32LT900611 [1]	MotorMaster I Single–Phase Solid–State Variable Speed Motor Controller enables cooling down to –20° F by varying the speed on the condenser fan.	036 – 120 460–3–60, 575–3–60
1178185 [2]	Motormaster I – Compatible Condenser Fan Motor	036 208/230–1–60, 208/230–3–60, 575–3–60
1178186 [2]	Motormaster I – Compatible Condenser Fan Motor	036 460–3–60
1171974 [2]	Motormaster I – Compatible Condenser Fan Motor	048 – 102 208/230–1–60, 208/230–3–60, 575–3–60
1171975 [2]	Motormaster I – Compatible Condenser Fan Motor	048 – 102 460–3–60
CPLOWAMB001A00	Motormaster® II Low Ambient Control – Enables cooling system to operate down to 0° F by cycling condenser fan on and off. The control is activated by a temperature sensor. No motor change–out required.	036 – 120 208/203–3–60, 460–3–60
CRLOWAMB030A00 [3]	Motormaster V Low Ambient Kit. Mechanical cooling operation down to –20° F (– 29° C)	120 208/230–3–60
CRLOWAMB031A00 [3]	Motormaster V Low Ambient Kit. Mechanical cooling operation down to –20° F (– 29° C)	120 460–3–60
CRLOWAMB032A00 [3]	Motormaster V Low Ambient Kit. Mechanical cooling operation down to –20° F (– 29° C).	120 575–3–60
CRLOWAMB039A00	Motormaster I Low Ambient Kit. Mechanical cooling operation down to –20° F (– 29° C). Kit includes 3 motors, MotorMaster controller, wiring label, and required wire ties and connectors. CRLWHPK001A00 also required.	150 208/203–3–60
CRLOWAMB040A00	Motormaster I Low Ambient Kit. Mechanical cooling operation down to –20° F (– 29° C). Kit includes 3 motors, MotorMaster controller, wiring label, and required wire ties and connectors) 575 Volt models also require CRTRXKIT002A00. CRLWHPK001A00 also required	150 460–3–60, 575–3–60
CRLWHPKT001A00	Low Ambient Heat Pump Relay Kit – This kit provides the necessary relay and hardware required for heat pump duty MotorMaster I operation. Typically separate field installed relay and relay base, now all combined into one.	All 150
CRTRXKIT002A00	Motormaster I Low Ambient Control – Transformer Kit. Must use in conjunction with CRLOWAMB040A00 if used on 575–3–60 volt models.	150 575–3–60

***** See usage tables in kit instructions.

[1] Requires motor change out. Sizes 036–072 require one low ambient controller and one compatible condenser fan motor for change–out. Sizes 090–102 require one low ambient controller and two compatible condenser fan motors for change–out. See Motormaster I kit instructions for capacitor replacement information.

[2] Available from Fast parts.

[3] No motor change is required on these specific models

Field supplied relay also required when using with 120 size heat pumps: Relay Base (1179470), Relay (1179471)

ACCESSORIES – RHS036–150 (cont.)

THROUGH–THE–BOTTOM/CURB POWER CONNECTION		
Model Number	**Description**	**Use With Model Size**
CRBTMPWR001A01	Thru–the–bottom electrical connections and thru–the–curb gas connections. Includes a 3/4–inch diameter liquid tight conduit fitting for high voltage power wires	036 – 072
CRBTMPWR002A01	Thru–the–bottom electrical connections and thru–the–curb gas connections. Includes a 1–1/4–inch diameter liquid tight conduit fitting for high voltage power wires	090 – 120
CRBTMPWR003A01	Thru–the–bottom power, control, and gas connections. Includes a 3/4–inch diameter liquid tight conduit fitting for high voltage power wires	036 – 072
CRBTMPWR004A01	Thru–the–bottom electrical connections and thru the curb (not thru the bottom) gas connections. Includes a 3/4–inch diameter liquid tight conduit fitting for high voltage power wires	090 – 120
CRBTMPWR005A00	Thru–the–bottom power, control, and gas connections. Includes a 1–1/4 inch diameter liquid tight conduit fitting for high voltage power wires	150
CRBTMPWR006A00	Thru–the–bottom power, control, and gas connections. Includes a 1–1/2 inch diameter liquid tight conduit fitting for high voltage power wires	
CRBTMPWR007A00	Thru–the–bottom power, control, and gas connections. Includes a 2 inch diameter liquid tight conduit fitting for high voltage power wires	

LOUVERED HAIL GUARDS – CONDENSER COIL		
Model Number	**Description**	**Use With Model Size**
CRLVHLGD011A00	Louvered Condenser Coil Hail Guard – Includes louvered panel(s) to protect condenser coil from damage and vandalism.	036
CRLVHLGD012A00		048
CRLVHLGD023A00		060
CRLVHLGD013A00		072
CRLVHLGD004A00		090 – 120
CRLVHLGD024A00		150

CONTROL UPGRADE KITS		
Model Number	**Description**	**Use With Model Size**
CRDISKIT001A00	2–Speed VFD display kit provides the field capability to set up points and troubleshooting codes on the VFD controller. Can be used for any associated unit with VFD.	All 2–Speed VFD Controllers
NRTIMEGD001A00	Time Guard II – Automatically prevents the compressor from restarting for at least 4 minutes and 45 seconds after shutdown of the compressor. Not required when a corporate programmable thermostat is applied or the commercial thermostat has a minimum 5 min time delay between cooling cycles available	036 – 150
DNWINSTR001A00	Electronic phase monitor breaks “R” control signal if trouble is detected. (Allows operation down to 25°F from standard 40°F.)	036 – 180
CRPHASE3001A02	Phase Monitor Control	036 – 180 (3 Phase only)
CRPHASE3002A00	Phase Monitor Control	036 – 180 (575v only)
CRSTATUS001A00	Fan/Filter Status Switch – Indicator light not included	036 – 180

ACCESSORIES – RHS036–150 (cont.)

ACCESSORY KITS FOR UNITS WITH HINGED ACCESS PANELS		
Model Number	**Description**	**Use With Model Size**
CRPECONV003A00	Vertical accessory kit used with installing a vertical economizer on a unit that has hinged access panels. Includes angle and seal strip	036–072
CRPECONV004A00	Vertical accessory kit used with installing a vertical economizer on a unit that has hinged access panels. Includes angle and seal strip	090–150
CRPECONV007A00	Vertical & Horizontal accessory kit used with installing a 2–position damper or vertical & horizontal economizer on a unit that has hinged access panels. Includes angle and seal strip	150
CRHNGPNL001A00	Horizontal accessory kit used with installing a vertical economizer on a unit that has hinged access panels. Includes angle and seal strip	036–072
CRHNGPNL002A00	Horizontal accessory kit used with installing a vertical economizer on a unit that has hinged access panels. Includes angle and seal strip	090–150
CRHNGPNL007A00	Vertical & Horizontal accessory kit used with installing a 2–position damper or vertical & horizontal economizer on a unit that has hinged access panels. Includes angle and seal strip	150
RHS150 SPECIFIC ACCESSORIES		
Model Number	**Description**	**Use With Model Size**
CRDISBKT001A00	Disconnect Switch Bracket – Provides a pre engineered and sized mounting bracket for applications requiring a unit mounted fused diconnect of greater than 100 amps. Bracket assures that no damage will occur to coils when mounting with screws and other fasteners.	150
CRDUCTCV001A00	Supply Duct Cover – This supply duct cover is required when field converting the factory standard vertical duct supply to horizontal duct supply configuration. One required per unit.	150

ELECTRIC HEATERS – RHS036–120			
Model Number	**Voltage**	**Nominal Power (kW)**	**Used With Model Size**
CRHEATER101A00	208/230	4.4	036 – 072
CRHEATER102A00	208/230	6.5	036 – 072
CRHEATER103B00	208/230	8.7	036 – 060
CRHEATER104B00	208/230	10.5	036 – 072
CRHEATER105A00	208/230	16.0	036 – 072
CRHEATER106A00	460	6.0	036 – 072
CRHEATER107A00	460	8.8	036
CRHEATER108A00	460	11.5	036 – 072
CRHEATER109A00	460	14.0	036 – 072
CRHEATER110A00	208/230	16.0	090 – 120
CRHEATER111A00	208/230	24.8	090 – 120
CRHEATER112A00	208/230	32.0	090 – 120
CRHEATER113A00	460	16.5	090 – 120
CRHEATER114A00	460	27.8	090 – 120
CRHEATER115A00	460	33.0	090 – 120
CRHEATER116A00	460	13.9	090 – 120
CRHEATER117A00	208/230	10.4	090 – 120
CRHEATER118A00	575	17.0	090 – 120
CRHEATER119A00	575	34.0	090 – 120

ELECTRIC HEATERS – RHS150			
Model Number	**Voltage**	**Nominal Power (kW)**	**Used With Model Size**
CRHEATER291A00	208/230	16.5	150
CRHEATER288A00	208/230	26.5	150
CRHEATER294A00	208/230	33.5	150
CRHEATER292A00	460	16.5	150
CRHEATER289A00	460	26.5	150
CRHEATER295A00	460	33.5	150
CRHEATER293A00	575	16.5	150
CRHEATER290A00	575	26.5	150
CRHEATER296A00	575	33.5	150

SINGLE POINT WIRING KITS	
Model Number	**Used With Model Size**
CRSINGLE037A00	See Electric Heat Tables starting on page 14.
CRSINGLE038A00	
CRSINGLE039A00	
CRSINGLE040A00	
CRSINGLE041A00	
CRSINGLE047A00	
CRSINGLE049A00	
CRSINGLE050A00	
CRSINGLE051A00	
CRSINGLE052A00	
CRSINGLE053A00	
CRSINGLE054A00	

Table 2 – AHRI COOLING RATING TABLE

UNIT RHS	NOM. CAPACITY (TONS)	NET COOLING CAPACITY (BTUH)	TOTAL POWER (KW)	SEER	EER	IEER
036	3	37,000	3.3	13.4*	11.00	N/A
048	4	47,000	4.1	13.1*	11.20	N/A
060	5	61,500	5.5	13.2*	11.15	N/A
072	6	70,000	6.3	N/A	11.10	12.2

UNIT RHS	NOM. CAPACITY (TONS)	NET COOLING CAPACITY (BTUH)	TOTAL POWER (KW)	SEER	EER	IEER W/ 1 SPEED IFM	IEER W/ 2 SPEED IFM
090	7.5	88,000	7.8	N/A	11.2	12.2	12.5
102	8.5	99,000	8.8	N/A	11.2	12.2	12.5
120	10	117,000	10.6	N/A	11.0	11.3	12.5
150	12.5	142,000	13.3	N/A	10.6	10.7	12.0

NOTE:

All AHRI ratings are based on 230, 460 and 575 volt.

* Electric Drive (direct drive) ECM 5 speed/torque motor. SEER rating is 13.0 for belt drive.

NA Not applicable

Table 2 – AHRI HEATING TABLE

UNIT RHS	HSPF	HEATING LOW AT 17°F (–8°C) AMBIENT		HEATING HIGH AT 47°F (8°C) AMBIENT	
		CAPACITY (BTUH)	COP	CAPACITY (BTUH)	COP
036	7.7	18,200	N/A	35,600	N/A
048	7.7	23,600	N/A	45,500	N/A
060	7.7	31,200	N/A	58,000	N/A
072	N/A	34,800	2.25	67,000	3.30
090	N/A	48,000	2.25	86,000	3.40
102	N/A	54,500	2.25	96,000	3.30
120	N/A	62,300	2.25	116,000	3.40
150	N/A	76,000	2.05	142,000	3.20

LEGEND

AHRI – Air–Conditioning, Heating & Refrigeration Institute
ASHRAE – American Society of Heating, Refrigerating and Air Conditioning, Inc.
EER – Energy Efficiency Ratio
IEER – Integrated Energy Efficiency Ratio
SEER – Seasonal Energy Efficiency Ratio
IPLV – Integrated Part Load Value

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org .

NOTES:

1. Rated and certified under AHRI Standard 210/240 or 340/360, as appropriate.
2. Ratings are based on:
   Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temp and 95°F (35°C) db outdoor air temp.
   IEER Standard: A measure that expresses cooling part–load EER efficiency for commercial unitary air conditioning and heat pump equipment on the basis of weighted operation at variable load capacities.
3. All RHS units comply with ASHRAE 90.1 Energy Standard for minimum SEER and EER requirements.

Table 3 – MINIMUM – MAXIMUM AIRFLOWS ELECTRIC HEAT

UNIT RHS	COOLING		ELECTRIC HEATERS	
	Minimum	Maximum	Minimum	Maximum
036	900	1500	900	1500
048	1200	2000	1200	2000
060	1500	2500	1500	2500
072	1800	3000	1800	3000
090	2250 (1508)	3750	2250*	3750
102	2550 (1869)	4250	2250*	4250
120	3000 (1960)	4000	3000	4000
150	3750 (2680)	6250	3750	6250

( ) With 2–speed indoor fan motor system only. Values are minimum for VFD controller at 40Hz.

* Minimum electric heat CFM exceptions :

***Minimum electric heat CFM exceptions:**

UNIT RHS	UNIT VOLTAGE	HEATER kW	UNIT CONFIGURATION	REQUIRED MINIMUM CFM
090 – 102	575	17.0	Horizontal or Vertical	2800
		34.0		2350

Table 4 – SOUND PERFORMANCE TABLE

UNIT RHS	OUTDOOR SOUND (dB)								
	A–Weighted	63	125	250	500	1000	2000	4000	8000
036	77	78.9	81.7	74.9	72.5	70.3	65.6	65.6	62.6
048	80	90.4	84.6	77.6	77.5	74.8	70.6	68.0	64.2
060	80	92.7	84.9	79	76.7	73.8	69.6	66.4	62.8
072	78	88.0	79.5	76.2	75.8	72.5	68.6	65.7	62.4
090	82	89.7	81.5	80.5	79.2	77.1	73.2	70.2	67.4
102	84	90.8	85.2	81.6	79.5	78.1	74.0	70.4	66.5
120	87	88.1	90.0	85.9	83.0	81.6	78.5	76.4	75.5
150	83	89.3	85.2	80.3	78.0	77.0	74.4	73.7	68.9

LEGEND

dB – Decibel

NOTES:

1. Outdoor sound data is measure in accordance with AHRI standard 270–95.
2. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.
3. A–weighted sound ratings filter out very high and very low frequencies, to better approximate the response of “average” human ear. A–weighted measurements are taken in accordance with AHRI standard 270–95.

Table 5 – PHYSICAL DATA (COOLING) 3 – 6 TONS

		RHS036	RHS048	RHS060	RHS072
Refrigeration System					
	# Circuits / # Comp. / Type	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll
	R–410A charge per circuit A/B (lbs–oz)	9 – 8 / –	10 –3 / –	12 – 13 / –	17 – 10 / –
	Metering Device	Fixed Orifice			
	High–pressure Trip / Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505
	Loss of Charge Pressure Trip / Reset (psig)	27 / 44	27 / 44	27 / 44	27 / 44
Evap. Coil					
	Material	Cu / Al	Cu / Al	Cu / Al	Cu / Al
	Coil type	3/8” RTPF	3/8” RTPF	3/8” RTPF	3/8” RTPF
	Rows / FPI	3 / 15	3 / 15	4/ 15	4/ 15
	Total Face Area (ft^2)	5.5	5.5	7.3	7.3
	Condensate Drain Conn. Size	3/4”	3/4”	3/4”	3/4”
Evap. Fan and Motor					
Standard Static 1 phase	Motor Qty / Drive Type	1 / Direct	1 / Direct	1 / Direct	n/a
	Max BHP	1	1	1	n/a
	RPM Range	600–1200	600–1200	600–1200	n/a
	Motor Frame Size	48	48	48	n/a
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	n/a
	Fan Diameter x Length (in)	10 x 10	10 x 10	11 x 10	n/a
Standard Static 3 phase	Motor Qty / Drive Type	1 / Direct	1 / Direct	1 / Direct	1 / Belt
	Max BHP	1	1	1	1.5
	RPM Range	600–1200	600–1200	600–1200	878–1192
	Motor Frame Size	48	48	48	56
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter x Length (in)	10 x 10	10 x 10	11 x 10	10 x 10
Medium Static 3 phase	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	1.5	1.5	2	2.9
	RPM Range	819–1251	920–1303	1066–1380	1066–1380
	Motor Frame Size	56	56	56	56
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter x Length (in)	10 x 10	10 x 10	10 x 10	10 x 10
High Static 3 phase	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	2	2	2.9	2.9
	RPM Range	1035–1466	1035–1466	1208–1639	1208–1639
	Motor Frame Size	56	56	56	56
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter x Length (in)	10 x 10	10 x 10	10 x 10	10 x 10
Cond. Coil					
	Material	Cu / Al	Cu / Al	Cu / Al	Cu / Al
	Coil type	3/8” RTPF*	3/8” RTPF*	3/8” RTPF*	3/8” RTPF*
	Rows / FPI	2 / 17	2 / 17	2 / 17	2 / 17
	Total Face Area (ft^2)	10.7	12.7	15	21.3
Cond. fan / motor					
	Qty / Motor Drive Type	1 / direct	1 / direct	1 / direct	1 / direct
	Motor HP / RPM	1/8 / 825	1/4 / 1100	1/4 / 1100	1/4 / 1100
	Fan diameter (in)	22	22	22	22
Filters					
	RA Filter # / Size (in)	2 / 16 x 25 x 2	2 / 16 x 25 x 2	4 / 16 x 16 x 2	4 / 16 x 16 x 2
	OA inlet screen # / Size (in)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1

* RTPF = Round tube plate fin coil design.

Table 5 – (cont.) PHYSICAL DATA (COOLING) 7.5 – 12.5 TONS

RHS	090	102	120	150
Refrigeration System				
# Circuits / # Comp. / Type	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll
Refrigerant (R−410A) charge per circuit A/B (lbs−oz)	10 − 3 / 10 − 3	11 − 2 / 11 − 2	12 − 2 / 11 − 2	14 − 8 / 13 − 8
Metering Device	FIXED ORIFICE			
High pressure Trip / Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505
Loss of Charge Pressure Trip / Reset (psig)	27 / 44	27 / 44	27 / 44	27 / 44
Compressor Capacity Staging (%)	50% / 100%	50% / 100%	50% / 100%	50% / 100%
Evap. Coil				
Material − Tube / Fin	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8−in RTPF	3/8−in RTPF	3/8−in RTPF	3/8−in RTPF
Rows / FPI	3 / 15	4 / 15	4 / 15	3 / 15
Total Face Area (ft^2)	11.1	11.1	11.1	17.5
Condensate Drain Conn. Size	3/4”	3/4”	3/4”	3/4”
Evap. Fan and Motor				
Standard Static 3 phase: Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	1.2	1.2	2.4	2.9
RPM Range	460−652	460−652	591−839	507−676
Motor Frame Size	56	56	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter x Length (in)	15 x 15	15 x 15	15 x 15	18 x 18
Medium Static 3 phase: Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	2.9	2.9	2.9	2.9
RPM Range	591−838	591−838	733−949	634−833
Motor Frame Size	56	56	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter x Length (in)	15 x 15	15 x 15	15 x 15	18 x 18
High Static 3 phase: Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	n/a
Max BHP	2.9	2.9	3.7	n/a
RPM Range	838−1084	838−1084	838−1084	n/a
Motor Frame Size	56	56	56	n/a
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	n/a
Fan Diameter x Length (in)	15 x 15	15 x 15	15 x 15	n/a
High Static High Eff.* 3 phase: Motor Qty / Drive Type	n/a	n/a	n/a	1 / Belt
Max BHP	n/a	n/a	n/a	6.1
RPM Range	n/a	n/a	n/a	792−971
Motor Frame Size	n/a	n/a	n/a	S184T
Fan Qty / Type	n/a	n/a	n/a	1 / Centrifugal
Fan Diameter x Length (in)	n/a	n/a	n/a	18 x 18
Cond. Coil				
Material − Tube / Fin	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8−in RTPF	3/8−in RTPF	3/8−in RTPF	3/8−in RTPF
Rows / FPI	2 / 17	2 / 17	3 / 17	2 / 17
Total Face Area (ft^2)	25.1	25.1	25.1	36.1
Cond. fan / motor				
Qty / Motor Drive Type	2 / Direct	2 / Direct	1 / Direct	3 / Direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1 / 1175	1/4 / 1100
Fan diameter (in)	22	22	30	22
Filters				
RA Filter # / Size (in)	4 / 20 x 20 x 2	4 / 20 x 20 x 2	4 / 20 x 20 x 2	6 / 18 x 24 x 2
OA inlet screen # / Size (in)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1	2 / 24 x 27 x 1 (Vertical) 1 / 30 x 39 x 1 (Horizontal)

* Section 313 of the Energy Independence and Security Act of 2007 (EISA) mandates that the efficiency of general purpose motors we use in our Light Commercial Rooftops rated at 5.0 HP and larger be increased on or after December 19, 2010.

TABLE 6 – RSH036

ELECTRIC HEAT – ELECTRICAL DATA
SINGLE STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–1–60	STD DD	101A00	4.4	3.3/4.0	037A00	037A00
		102A00	6.5	4.9/6.0	040A00	040A00
		103B00	8.7	6.5/8.0	040A00	040A00
		104B00	10.5	7.9/9.6	040A00	040A00
		102A00,102A00	13.0	9.8/11.9	041A00	041A00
208/ 230–3–60	STD DD	101A00	4.4	3.3/4.0	–	–
		102A00	6.5	4.9/6.0	–	–
		103B00	8.7	6.5/8.0	037A00	037A00
		104B00	10.5	7.9/9.6	037A00	037A00
		105A00	16.0	12.0/14.7	038A00	038A00
	MED BD	101A00	4.4	3.3/4.0	–	–
		102A00	6.5	4.9/6.0	–	–
		103B00	8.7	6.5/8.0	–	037A00
		104B00	10.5	7.9/9.6	037A00	037A00
		105A00	16.0	12.0/14.7	038A00	038A00
	HIGH BD	101A00	4.4	3.3/4.0	–	–
		102A00	6.5	4.9/6.0	–	–
		103B00	8.7	6.5/8.0	–	037A00
		104B00	10.5	7.9/9.6	037A00	037A00
		105A00	16.0	12.0/14.7	038A00	038A00
460–3–60	STD DD	106A00	6.0	5.5	–	–
		107A00	8.8	8.1	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
	MED BD	106A00	6.0	5.5	–	–
		107A00	8.8	8.1	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
	HIGH BD	106A00	6.0	5.5	–	–
		107A00	8.8	8.1	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
BD – Belt drive motor
C.O. – Convenience outlet
DD – Electric Drive ECM 5 speed/torque motor
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 7 – RHS048

ELECTRIC HEAT – ELECTRICAL DATA
SINGLE STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–1–60	STD DD	101A00	4.4	3.3/4.0	037A00	040A00
		103B00	8.7	6.5/8.0	040A00	040A00
		102A00,102A00	13.0	9.8/11.9	041A00	041A00
		103B00,103B00	17.4	13.1/16.0	041A00	041A00
		104B00,104B00	21.0	15.8/19.3	041A00	041A00
208/ 230–3–60	STD DD	102A00	6.5	4.9/6.0	–	–
		103B00	8.7	6.5/8.0	037A00	037A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
	MED BD	102A00	6.5	4.9/6.0	–	–
		103B00	8.7	6.5/8.0	–	037A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
	HIGH BD	102A00	6.5	4.9/6.0	–	–
		103B00	8.7	6.5/8.0	–	037A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
460–3–60	STD DD	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
	MED BD	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
	HIGH BD	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
BD – Belt drive motor
C.O. – Convenience outlet
DD – Electric Drive ECM 5 speed/torque motor
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 8 – RHS060

ELECTRIC HEAT – ELECTRICAL DATA
SINGLE STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–1–60	STD DD	102A00	6.5	4.9/6.0	040A00	040A00
		103B00	8.7	6.5/8.0	040A00	040A00
		102A00,102A00	13.0	9.8/11.9	041A00	041A00
		103B00,103B00	17.4	13.1/16.0	041A00	041A00
		104B00,104B00	21.0	15.8/19.3	041A00	041A00
208/ 230–3–60	STD DD	102A00	6.5	4.9/6.0	–	–
		104B00	10.5	7.9/9.6	038A00	038A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
		104B00,105A00	26.5	19.9/24.3	039A00	039A00
	MED BD	102A00	6.5	4.9/6.0	–	–
		104B00	10.5	7.9/9.6	037A00	037A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
		104B00,105A00	26.5	19.9/24.3	039A00	039A00
	HIGH BD	102A00	6.5	4.9/6.0	–	–
		104B00	10.5	7.9/9.6	038A00	038A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
		104B00,105A00	26.5	19.9/24.3	039A00	039A00
460–3–60	STD DD	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
		108A00,109A00	25.5	23.4	037A00	037A00
	MED BD	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
		108A00,109A00	25.5	23.4	037A00	037A00
	HIGH BD	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
		108A00,109A00	25.5	23.4	037A00	037A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
BD – Belt drive motor
C.O. – Convenience outlet
DD – Electric Drive ECM 5 speed/torque motor
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 9 – RHS072

ELECTRIC HEAT – ELECTRICAL DATA
SINGLE STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	102A00	6.5	4.9/6.0	–	037A00
		104B00	10.5	7.9/9.6	038A00	038A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
		104B00,105A00	26.5	19.9/24.3	039A00	039A00
	MED	102A00	6.5	4.9/6.0	037A00	037A00
		104B00	10.5	7.9/9.6	038A00	038A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
		104B00,105A00	26.5	19.9/24.3	039A00	039A00
	HIGH	102A00	6.5	4.9/6.0	037A00	037A00
		104B00	10.5	7.9/9.6	038A00	038A00
		105A00	16.0	12.0/14.7	038A00	038A00
		104B00,104B00	21.0	15.8/19.3	039A00	039A00
		104B00,105A00	26.5	19.9/24.3	039A00	039A00
460–3–60	STD	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
		108A00,109A00	25.5	23.4	037A00	037A00
	MED	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
		108A00,109A00	25.5	23.4	037A00	037A00
	HIGH	106A00	6.0	5.5	–	–
		108A00	11.5	10.6	–	–
		109A00	14.0	12.9	–	–
		108A00,108A00	23.0	21.1	037A00	037A00
		108A00,109A00	25.5	23.4	037A00	037A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
C.O. – Convenience outlet
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 10 – RHS090

ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBERCRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	MED	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	HIGH	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
460–3–60	STD	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	047A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	MED	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	HIGH	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
575–3–60	STD	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	MED	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	HIGH	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
C.O. – Convenience outlet
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 11 – RHS090

ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING 2–SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	MED	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	HIGH	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
460–3–60	STD	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	047A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	MED	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	HIGH	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
575–3–60	STD	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	MED	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	HIGH	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
BD – Belt drive motor
C.O. – Convenience outlet
DD – Electric Drive ECM 5 speed/torque motor
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR –240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 12 – RHS102

ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	MED	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	HIGH	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
460–3–60	STD	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	MED	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	HIGH	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
575–3–60	STD	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	MED	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	HIGH	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
C.O. – Convenience outlet
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 13 – RHS102

ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING 2–SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 203–3–60	STD	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	MED	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
	HIGH	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		111A00	24.8	18.6/22.8	051A00	051A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
460–3–60	STD	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	MED	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
	HIGH	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		114A00	27.8	25.5	050A00	050A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
575–3–60	STD	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	MED	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
	HIGH	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
BD – Belt drive motor
C.O. – Convenience outlet
DD – Electric Drive ECM 5 speed/torque motor
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 14 – RHS120

ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
		112A00,110A00	50.0	37.6/45.9	053A00	053A00
	MED	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
		112A00,110A00	50.0	37.6/45.9	053A00	053A00
	HIGH	117A00	10.4	7.8/9.6	051A00	051A00
		110A00	16.0	12.0/14.7	051A00	051A00
		112A00	32.0	24.0/29.4	053A00	053A00
		112A00,117A00	42.4	31.8/38.9	054A00	054A00
		112A00,110A00	50.0	37.6/45.9	054A00	054A00
460–3–60	STD	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
		115A00,113A00	50.0	45.9	052A00	052A00
	MED	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
		115A00,113A00	50.0	45.9	052A00	052A00
	HIGH	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
		115A00,113A00	50.0	45.9	052A00	052A00
575–3–60	STD	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
		118A00,119A00	51.0	51.0	052A00	052A00
	MED	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
		118A00,119A00	51.0	51.0	052A00	052A00
	HIGH	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
		118A00,119A00	51.0	51.0	052A00	052A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
C.O. – Convenience outlet
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 15 – RHS120

ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING 2–SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	117A00	10.4	7.8/9.6	049A00	049A00
		110A00	16.0	12.0/14.7	049A00	049A00
		112A00	32.0	24.0/29.4	051A00	051A00
		112A00,117A00	42.4	31.8/38.9	053A00	053A00
		112A00,110A00	50.0	37.6/45.9	053A00	053A00
	MED	117A00	10.4	7.8/9.6	049A00	051A00
		110A00	16.0	12.0/14.7	049A00	051A00
		112A00	32.0	24.0/29.4	051A00	053A00
		112A00,117A00	42.4	31.8/38.9	053A00	054A00
		112A00,110A00	50.0	37.6/45.9	053A00	054A00
	HIGH	117A00	10.4	7.8/9.6	049A00	051A00
		110A00	16.0	12.0/14.7	049A00	051A00
		112A00	32.0	24.0/29.4	051A00	053A00
		112A00,117A00	42.4	31.8/38.9	053A00	054A00
		112A00,110A00	50.0	37.6/45.9	053A00	054A00
460–3–60	STD	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
		115A00,113A00	50.0	45.9	052A00	052A00
	MED	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
		115A00,113A00	50.0	45.9	052A00	052A00
	HIGH	116A00	13.9	12.8	047A00	047A00
		113A00	16.5	15.2	047A00	047A00
		115A00	33.0	30.3	050A00	050A00
		114A00,116A00	41.7	38.3	052A00	052A00
		115A00,113A00	50.0	45.9	052A00	052A00
575–3–60	STD	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
		118A00,119A00	51.0	51.0	052A00	052A00
	MED	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
		118A00,119A00	51.0	51.0	052A00	052A00
	HIGH	118A00	17.0	17.0	047A00	047A00
		119A00	34.0	34.0	050A00	050A00
		118A00,119A00	51.0	51.0	052A00	052A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
BD – Belt drive motor
C.O. – Convenience outlet
DD – Electric Drive ECM 5 speed/torque motor
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 16 – RHS150

ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING SINGLE SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	291A00	16.5	12.4/15.2	051A00	051A00
		288A00,291A00	26.5	19.9/24.3	053A00	053A00
		294A00	33.5	25.2/30.8	053A00	053A00
		288A00,294A00	43.5	32.7/40.0	054A00	054A00
		291A00,294A00	50.0	37.6/45.9	054A00	054A00
	MED	291A00	16.5	12.4/15.2	051A00	051A00
		288A00,291A00	26.5	19.9/24.3	053A00	053A00
		294A00	33.5	25.2/30.8	053A00	053A00
		288A00,294A00	43.5	32.7/40.0	054A00	054A00
		291A00,294A00	50.0	37.6/45.9	054A00	054A00
	HIGH	291A00	16.5	12.4/15.2	051A00	051A00
		288A00,291A00	26.5	19.9/24.3	053A00	053A00
		294A00	33.5	25.2/30.8	053A00	053A00
		288A00,294A00	43.5	32.7/40.0	054A00	054A00
		291A00,294A00	50.0	37.6/45.9	054A00	054A00
460–3–60	STD	292A00	16.5	15.2	047A00	047A00
		289A00,292A00	26.5	24.3	050A00	050A00
		295A00	33.5	30.8	050A00	050A00
		289A00,295A00	43.5	40.0	052A00	052A00
		292A00,295A00	50.0	45.9	052A00	052A00
	MED	292A00	16.5	15.2	047A00	047A00
		289A00,292A00	26.5	24.3	050A00	050A00
		295A00	33.5	30.8	050A00	050A00
		289A00,295A00	43.5	40.0	052A00	052A00
		292A00,295A00	50.0	45.9	052A00	052A00
	HIGH	292A00	16.5	15.2	050A00	050A00
		289A00,292A00	26.5	24.3	050A00	050A00
		295A00	33.5	30.8	050A00	050A00
		289A00,295A00	43.5	40.0	052A00	052A00
		292A00,295A00	50.0	45.9	052A00	052A00
575–3–60	STD	293A00	16.5	15.2	047A00	047A00
		290A00,293A00	26.5	24.3	047A00	047A00
		296A00	33.5	30.8	050A00	050A00
		290A00,296A00	43.5	40.0	052A00	052A00
		293A00,296A00	50.0	45.9	052A00	052A00
	MED	293A00	16.5	15.2	047A00	047A00
		290A00,293A00	26.5	24.3	047A00	047A00
		296A00	33.5	30.8	050A00	050A00
		290A00,296A00	43.5	40.0	052A00	052A00
		293A00,296A00	50.0	45.9	052A00	052A00
	HIGH	293A00	16.5	15.2	047A00	047A00
		290A00,293A00	26.5	24.3	050A00	050A00
		296A00	33.5	30.8	050A00	050A00
		290A00,296A00	43.5	40.0	052A00	052A00
		293A00,296A00	50.0	45.9	052A00	052A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
C.O. – Convenience outlet
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

TABLE 17 – RHS150

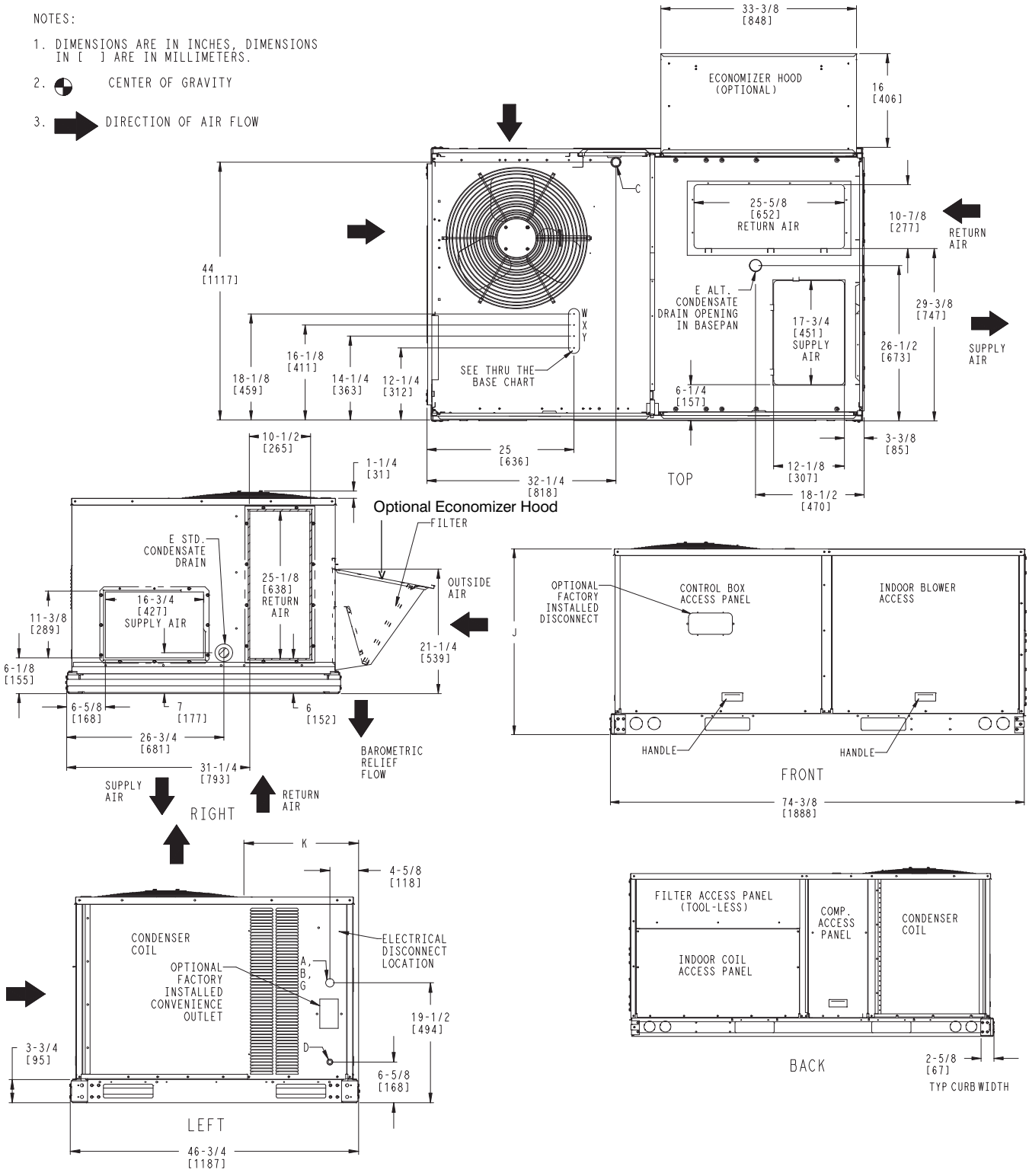
ELECTRIC HEAT – ELECTRICAL DATA
2–STAGE COOLING 2–SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER CRHEATER	NOM PWR (kW)	APP PWR (kW)	SINGLE POINT KIT PART NUMBER CRSINGLE	
					WITHOUT C.O. or UNPWRD C.O.	
					WITHOUT P.E.	w/ P.E. (pwrd fr/unit)
208/ 230–3–60	STD	291A00	16.5	12.4/15.2	051A00	051A00
		288A00,291A00	26.5	19.9/24.3	053A00	053A00
		294A00	33.5	25.2/30.8	053A00	053A00
		288A00,294A00	43.5	32.7/40.0	054A00	054A00
		291A00,294A00	50.0	37.6/45.9	054A00	054A00
	MED	291A00	16.5	12.4/15.2	051A00	051A00
		288A00,291A00	26.5	19.9/24.3	053A00	053A00
		294A00	33.5	25.2/30.8	053A00	053A00
		288A00,294A00	43.5	32.7/40.0	054A00	054A00
		291A00,294A00	50.0	37.6/45.9	054A00	054A00
	HIGH	291A00	16.5	12.4/15.2	051A00	051A00
		288A00,291A00	26.5	19.9/24.3	053A00	053A00
		294A00	33.5	25.2/30.8	053A00	053A00
		288A00,294A00	43.5	32.7/40.0	054A00	054A00
		291A00,294A00	50.0	37.6/45.9	054A00	054A00
460–3–60	STD	292A00	16.5	15.2	047A00	047A00
		289A00,292A00	26.5	24.3	050A00	050A00
		295A00	33.5	30.8	050A00	050A00
		289A00,295A00	43.5	40.0	052A00	052A00
		292A00,295A00	50.0	45.9	052A00	052A00
	MED	292A00	16.5	15.2	047A00	047A00
		289A00,292A00	26.5	24.3	050A00	050A00
		295A00	33.5	30.8	050A00	050A00
		289A00,295A00	43.5	40.0	052A00	052A00
		292A00,295A00	50.0	45.9	052A00	052A00
	HIGH	292A00	16.5	15.2	050A00	050A00
		289A00,292A00	26.5	24.3	050A00	050A00
		295A00	33.5	30.8	050A00	050A00
		289A00,295A00	43.5	40.0	052A00	052A00
		292A00,295A00	50.0	45.9	052A00	052A00
575–3–60	STD	293A00	16.5	15.2	047A00	047A00
		290A00,293A00	26.5	24.3	047A00	050A00
		296A00	33.5	30.8	050A00	050A00
		290A00,296A00	43.5	40.0	052A00	052A00
		293A00,296A00	50.0	45.9	052A00	052A00
	MED	293A00	16.5	15.2	047A00	047A00
		290A00,293A00	26.5	24.3	047A00	050A00
		296A00	33.5	30.8	050A00	050A00
		290A00,296A00	43.5	40.0	052A00	052A00
		293A00,296A00	50.0	45.9	052A00	052A00
	HIGH	293A00	16.5	15.2	047A00	047A00
		290A00,293A00	26.5	24.3	050A00	050A00
		296A00	33.5	30.8	050A00	050A00
		290A00,296A00	43.5	40.0	052A00	052A00
		293A00,296A00	50.0	45.9	052A00	052A00

LEGEND

– No Single Point Kit required
APP PWR – 208 / 230V / 460V / 575V
C.O. – Convenience outlet
FLA – Full load amps
IFM – Indoor fan motor
NOM PWR – 240V / 480V / 600V
P.E. – Power exhaust
UNPWRD – Unpowered convenience outlet

BASE UNIT DIMENSIONS – RHS036–072

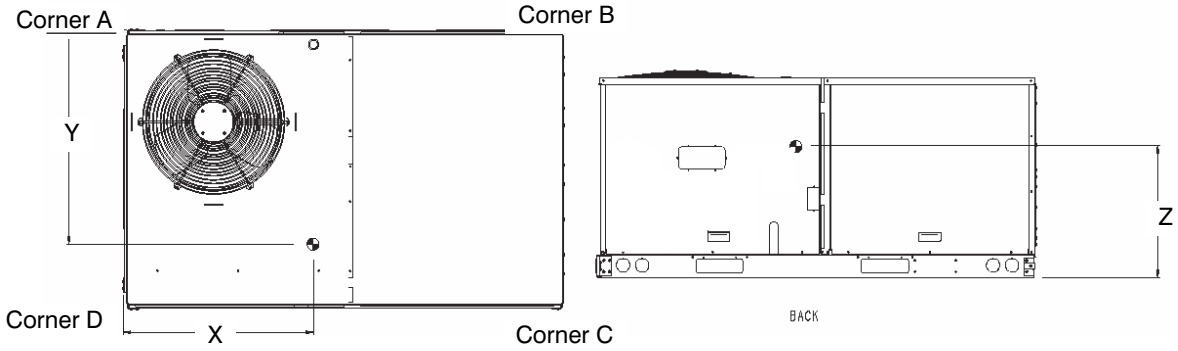


	Connection Sizes	Thru the Base Chart These Holes Req'd For Use CRBTMPWR001A01				Unit	J	K
			Threaded Conduit Size	Wire Use	Req'd Hole Sizes (Max.)			
A	1-3/8" [35] DIA Field Power Supply Hole	W	1/2"	Acc.	7/8" [22.2]	036	33-3/8 [847]	18-5/8 [472]
B	2" [51] DIA Power Supply Knockout	X	1/2"	24V	7/8" [22.2]	048	33-3/8 [847]	14-7/8 [377]
C	1-3/4" [44] DIA Gauge Access Plug	Y*	3/4" (001)	Power*	1-1/8" [28.4]	060	41-3/8 [1051]	14-7/8 [377]
D	7/8" [22] DIA Field Control Wiring Hole	* Select either 3/4" or 1-1/4" for power, depending on wire size.				072	41-3/8 [1051]	14-7/8 [377]
E	3/4" 14 NPT Condensate Drain							
G	2" [51] DIA Power Supply Knockout							

Specifications subject to change without notice.

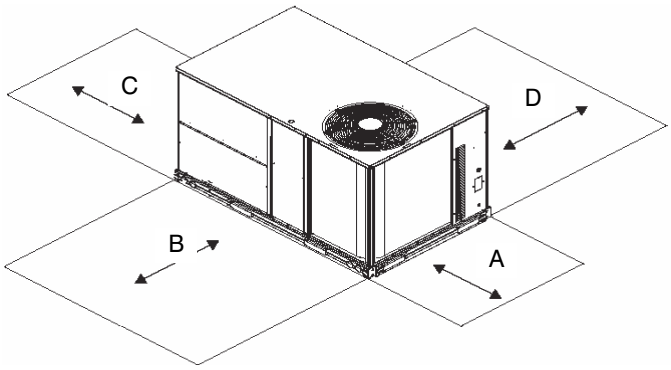
WEIGHTS & DIMENSIONS – RHS036–072 (cont.)

UNIT	BASE UNIT WEIGHT		Corner Weight A		Corner Weight B		Corner Weight C		Corner Weight D		Center of Gravity In [mm]		
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	X	Y	Z
RHS036	505	229	136	62	130	59	117	53	123	56	36–1/4 [921]	22–1/8 [562]	16–3/8 [416]
RHS048	510	231	138	63	131	59	118	54	124	56	36–1/4 [921]	22–1/8 [562]	16–1/2 [419]
RHS060	590	268	159	72	146	66	137	62	149	68	35–5/8 [905]	22–1/8 [562]	20–1/8 [511]
RHS072	630	286	166	75	166	75	149	68	149	68	37–1/4 [946]	22–1/8 [562]	20–3/4 [527]



UNIT CLEARANCES

LOC	DIMENSION	CONDITION
A	48” (1219 mm)	Unit disconnect is mounted on panel
	18” (457 mm)	No disconnect, convenience outlet option
	18” (457 mm)	Recommended service clearance
	12” (305 mm)	Minimum clearance
B	42” (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	36” (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
	Special	Check for sources of flue products within 10–ft of unit fresh air intake hood
C	36” (914 mm)	Side condensate drain is used
	18” (457 mm)	Minimum clearance
D	42” (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36” (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)

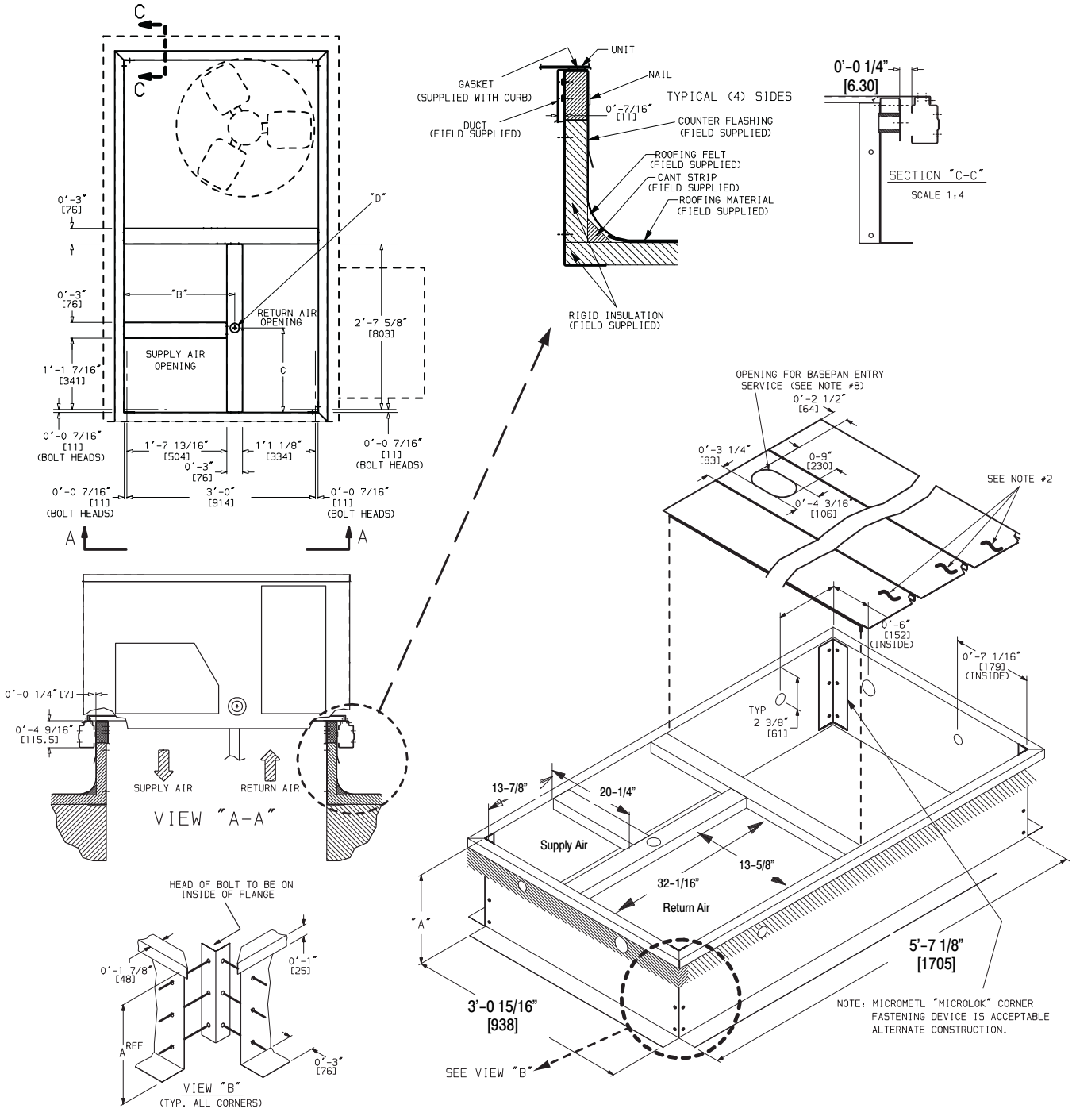


ROOF CURB DETAILS – RHS036–072

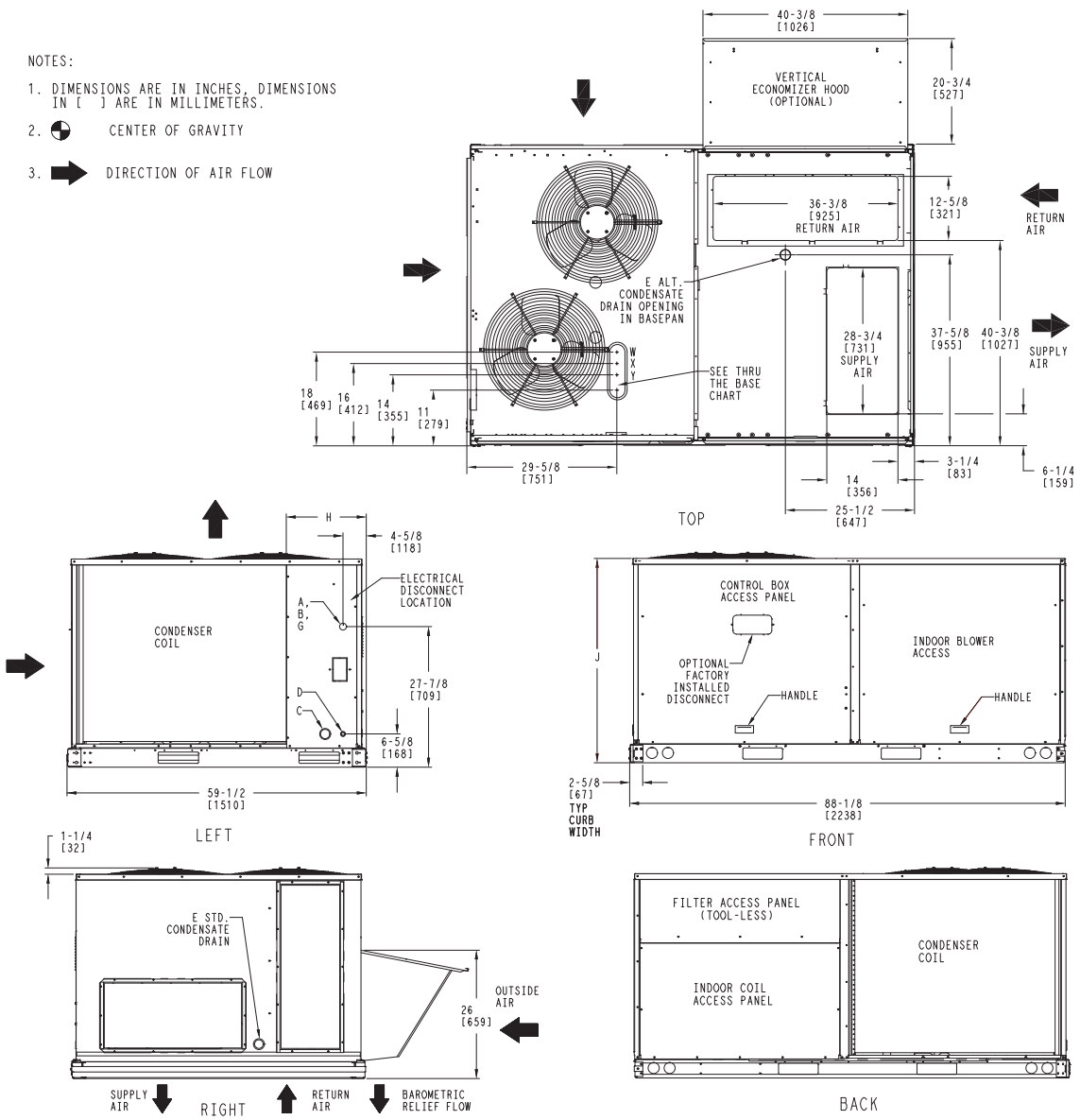
RoofCurb Accessory	A	Unit Size
CRRFCURB001A01	1’ 2 “ [356]	RHS036–072
CRRFCURB002A01	2’ 0” [610]	

NOTES:
1. Roofcurb accessory is shipped disassembled.
2. Insulated panels, 1” thick polyurethane foam, 1–3/4# density.
3. Dimensions in. [ ] in millimeters.
4. Roofcurb 18 ga steel on 14” curb, 16 ga steel on 24” curb.
5. Attach ductwork to curb (Flanges of duct rest on curb)
6. Service clearance 4’ on each side.
7. ⇨ Direction of airflow.
8. Connector pkg. CRBTMPWR001A01 is for thru–the–curb connections. Pkg. CRBTMPWR003A01 is for thru–the–base connections.

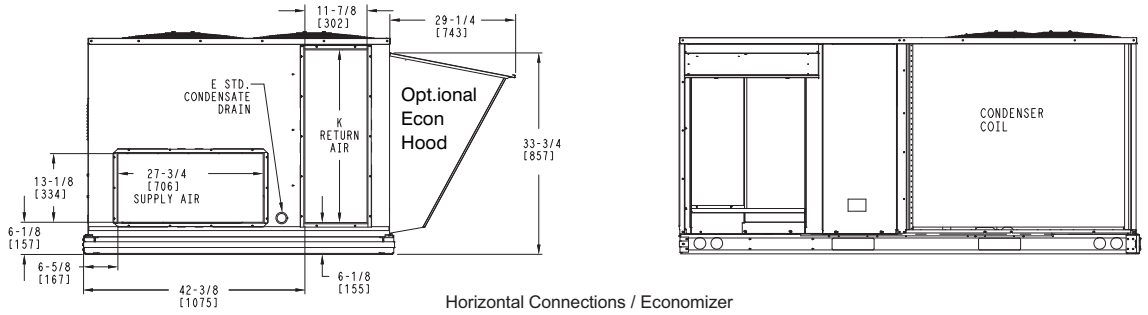
Connector Pkg. Acc.	B	C	D Alt. Drain Hole	Power	Control	Accessory Power
CRBTMPWR001A01	1’–9 11/16” [551]	1’–4” [406]	1I–3/4” [44.5]	3/4” [19] NPT	1/2” [12.7] NPT	1/2” [12.7] NPT
CRBTMPWR003A01						



BASE UNIT DIMENSIONS – RHS090–102



Vertical Connections / Economizer

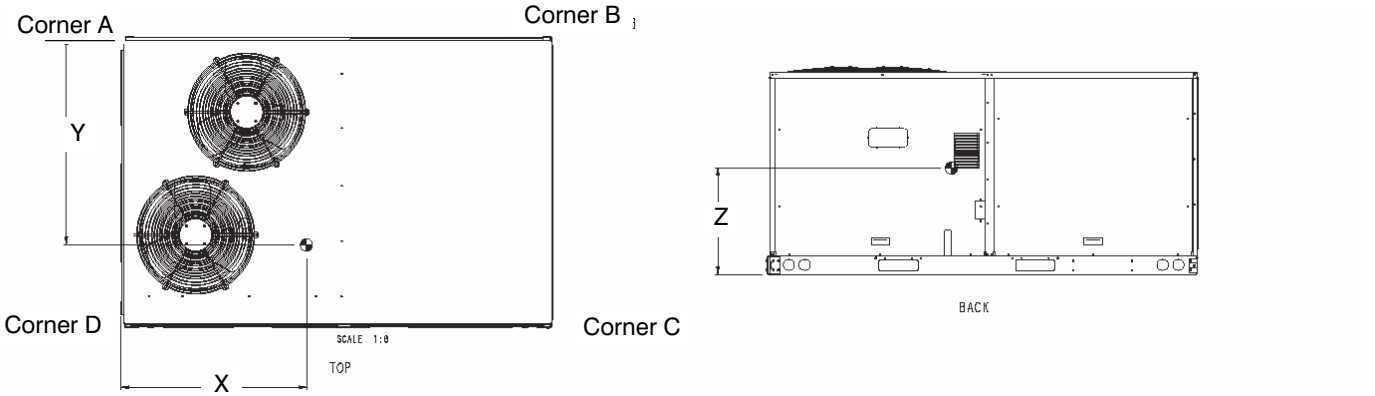


Horizontal Connections / Economizer

	Connection Sizes		Thru the Base Chart These Holes Req'd For Use CRBTMPWR002A01 Threaded Conduit Size	Wire Use	Req'd Hole Sizes (Max.)	Unit	J	K	H
A	1-3/8" [35] DIA Field Power Supply Hole	W	1/2"	Acc.	7/8" [22.2]	090	49-3/8 [1253]	37-1/4 [946]	23-7/8 [609]
B	2-1/2" [64] DIA Power Supply Knockout	X	1/2"	24V	7/8" [22.2]	102	49-3/8 [1253]	37-1/4 [946]	23-7/8 [609]
C	1-3/4" [44] DIA Gauge Access Plug	Y	1-1/4" (002)	Power*	1-3/4" [44.4]				
D	7/8" [22] DIA Field Control Wiring Hole	For "Thru-the-Basepan" option, fittings for only X & Y are provided.							
E	3/4" 14 NPT Condensate Drain								
G	2" [51] DIA Power Supply Knockout								

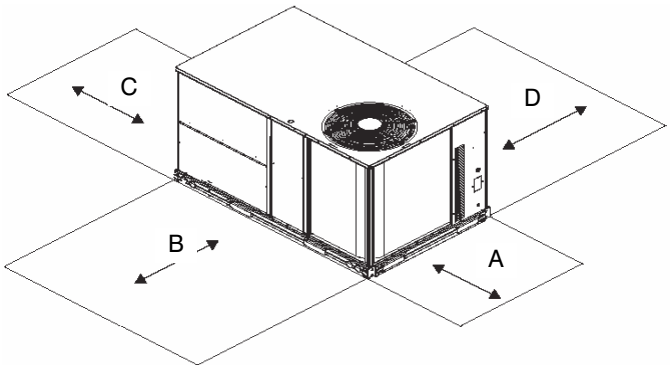
WEIGHT & CLEARANCE DIMENSIONS – RHS090–102 (cont.)

UNIT	BASE UNIT WEIGHT		Corner Weight A		Corner Weight B		Corner Weight C		Corner Weight D		Center of Gravity In [mm]		
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	X	Y	Z
RHS090	885	401	187	85	158	72	247	112	293	133	40 [1014]	35–1/4 [895]	23–1/2 [597]
RHS102	910	413	200	91	166	75	247	112	297	135	39–5/8 [1006]	34–1/2 [876]	23–1/2 [597]



UNIT CLEARANCES

LOC	DIMENSION	CONDITION
A	48” (1219 mm)	Unit disconnect is mounted on panel
	36” (914 mm)	If dimension–B is 12”
	18” (457 mm)	No disconnect, convenience outlet option
	18” (457 mm)	Recommended service clearance (use electric screwdriver)
	12” (305 mm)	Minimum clearance (use manual ratchet screwdriver)
B	36” (914 mm)	Unit has economizer
	12” (305 mm)	If dimension–A is 36”
	Special	Check for sources of flue products within 10–ft of unit fresh air intake hood
C	36” (914 mm)	Side condensate drain is used
	18” (457 mm)	Minimum clearance
D	42” (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36” (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)

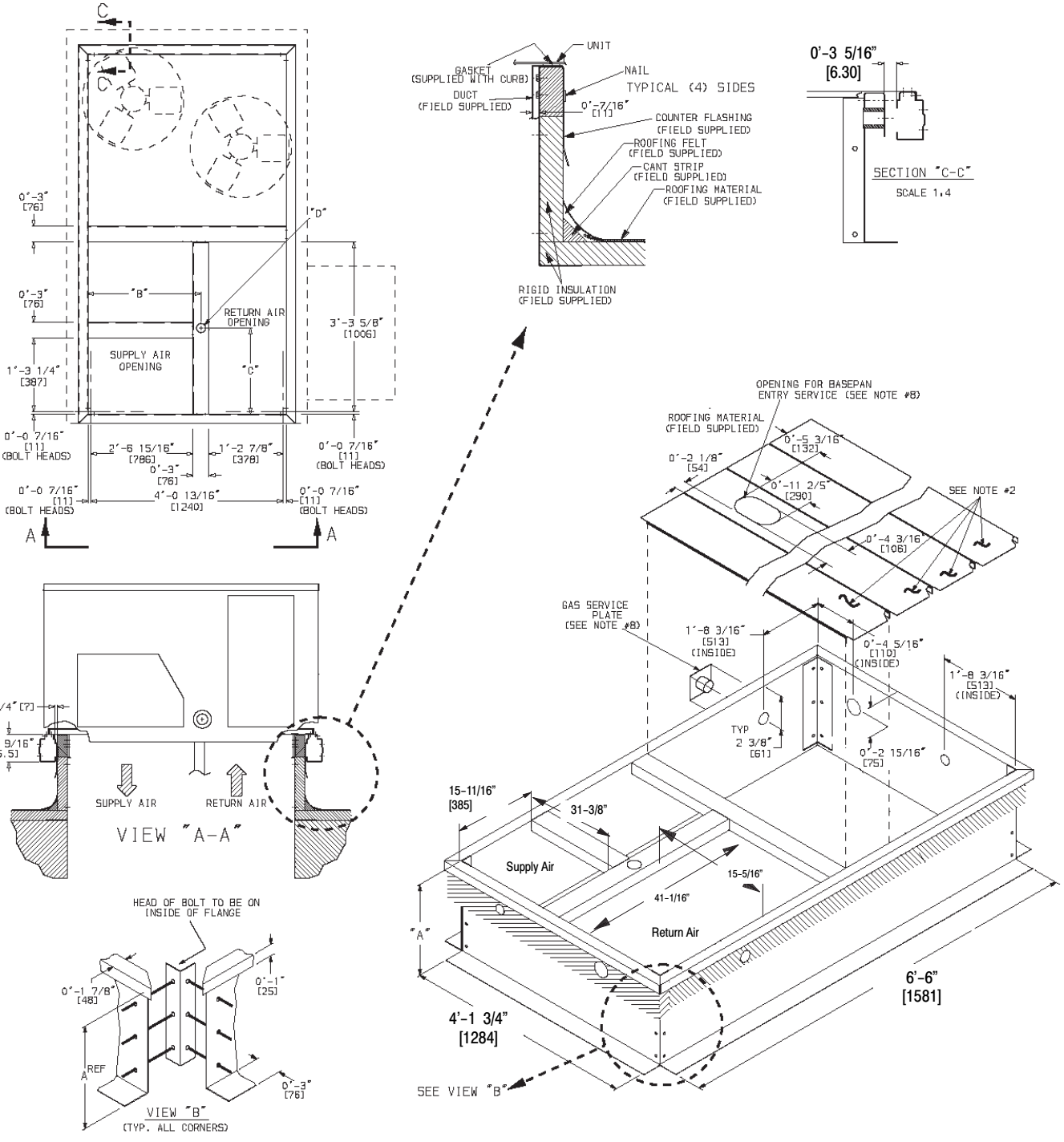


ROOF CURB DETAILS – RHS090 – 102

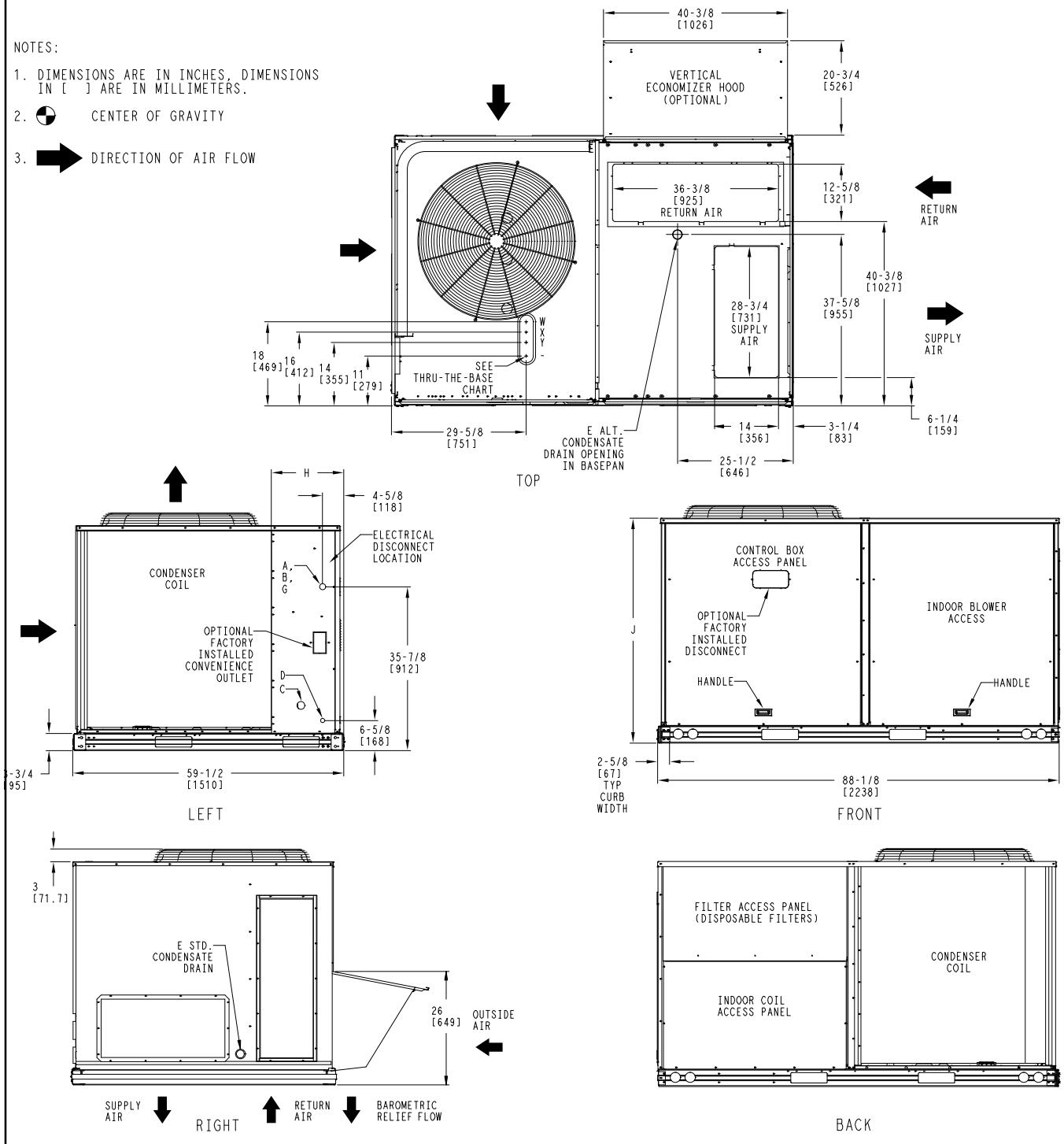
RoofCurb Accessory	A	Unit Size
CRRFCURB003A01	1' 2 " [356]	RHS090–102
CRRFCURB004A01	2' 0" [610]	

NOTES:
1. Roofcurb accessory is shipped disassembled.
2. Insulated panels, 1" thick polyurethane foam, 1–3/4# density.
3. Dimensions in. [ ] in millimeters.
4. Roofcurb 18 ga steel on 14" curb, 16 ga steel on 24" curb.
5. Attach ductwork to curb (Flanges of duct rest on curb)
6. Service clearance 4' on each side.
7. ⇨ Direction of airflow.
8. Connector pkg. CRBTMPWR001A01 and 2A01 are for thru–the–curb connections. Pkg. CRBTMPWR003A01 and 4A01 are for thru–the–bottom connections.

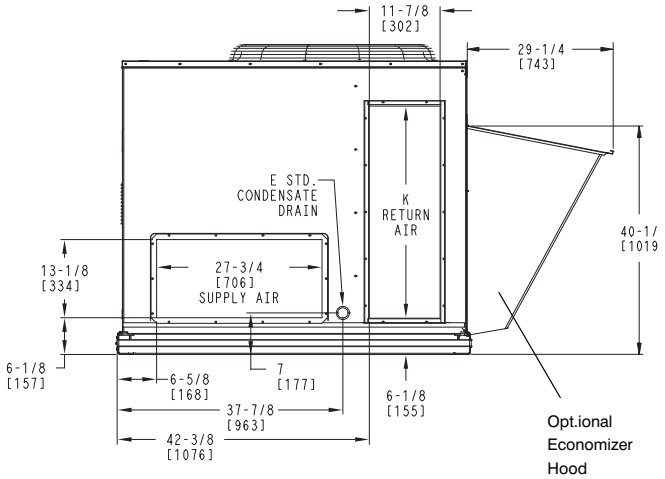
Connector Pkg. Acc.	B	C	D Alt. Drain Hole	Power	Control	Accessory Power
CRBTMPWR001A01	2' 8V–7/16" [827]	1' 10I–15/16" [583]	1I–3/4" [44.5]	3/4" [19] NPT 1–1/4 [31.7]	1/2" [12.7] NPT	1/2" [12.7] NPT
CRBTMPWR002A01						
CRBTMPWR003A01				3/4" [19] NPT		
CRBTMPWR004A01				1I–1/4" [31.7] NPT		

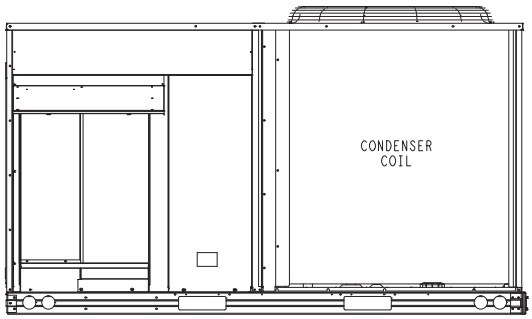


Vertical Connections / Economizer



Horizontal Connections / Economizer





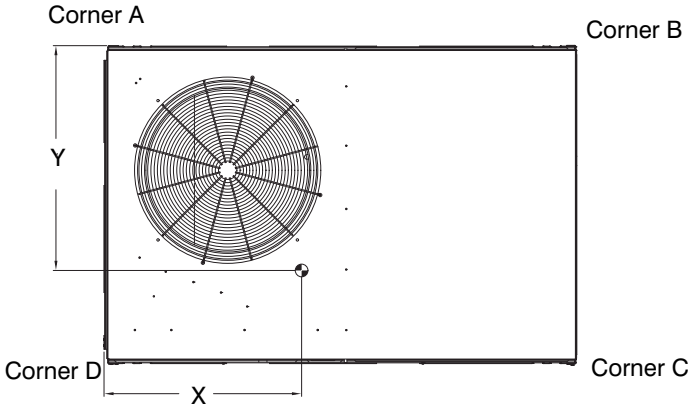
	CONNECTION SIZES
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2" [51] DIA POWER SUPPLY KNOCK-OUT

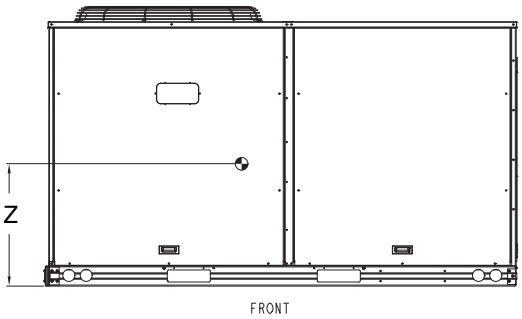
THRU-THE-BASE CHART THESE HOLES REQUIRED FOR USE CRBTMPWR002A01			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC.	7/8" (22.2)
X	1/2"	24V	7/8" (22.2)
Y	1 1/4" (002)	POWER	1 3/4" (44.4)
	FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X & Y ARE PROVIDED		

UNIT	H	J	K
RHS120	15 7/8 [403]	49 3/8 [1253]	36 3/8 [924]

WEIGHT & CLEARANCE DIMENSIONS – RHS120 (cont.)

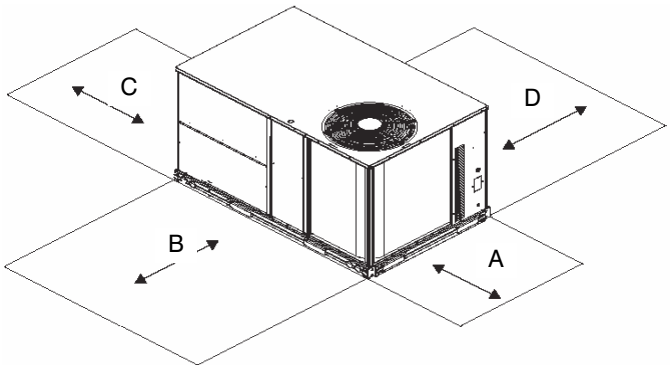
UNIT	BASE UNIT WEIGHT		Corner Weight A		Corner Weight B		Corner Weight C		Corner Weight D		Center of Gravity In [mm]		
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	X	Y	Z
RHS120	1050	476	284	129	201	91	234	106	331	150	36-1/2 [927]	32 [813]	23-1/2 [597]





UNIT CLEARANCES

LOC	DIMENSION	CONDITION
A	48” (1219 mm)	Unit disconnect is mounted on panel
	36” (914 mm)	If dimension–B is 12”
	18” (457 mm)	No disconnect, convenience outlet option
	18” (457 mm)	Recommended service clearance (use electric screwdriver)
	12” (305 mm)	Minimum clearance (use manual ratchet screwdriver)
B	36” (914 mm)	Unit has economizer
	12” (305 mm)	If dimension–A is 36”
	Special	Check for sources of flue products within 10–ft of unit fresh air intake hood
C	36” (914 mm)	Side condensate drain is used
	18” (457 mm)	Minimum clearance
D	42” (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36” (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)

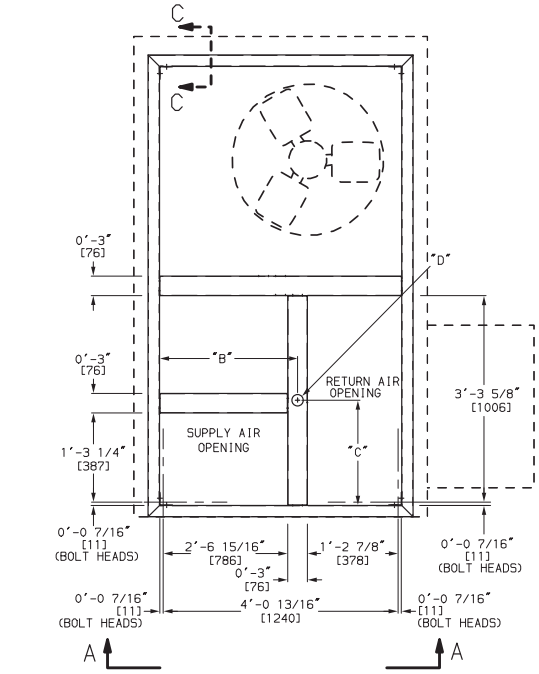


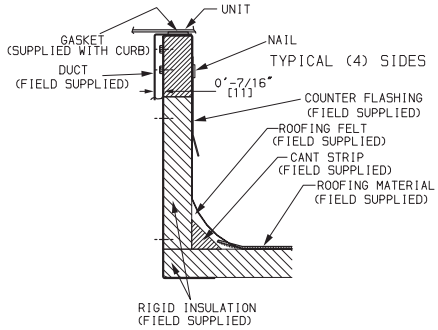
ROOF CURB DETAILS – RHS120

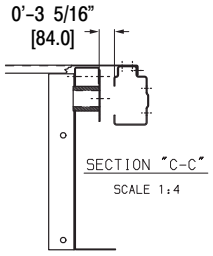
RoofCurb Accessory	A	Unit Size
CRRFCURB003A01	1' 2 " [356]	RHS120
CRRFCURB004A01	2' 0" [610]	

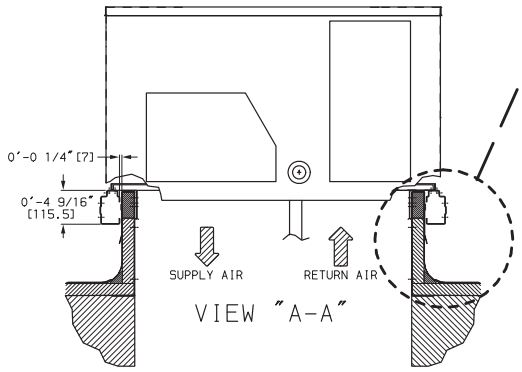
NOTES:
1. Roofcurb accessory is shipped disassembled.
2. Insulated panels, 1" thick polyurethane foam, 1–3/4# density.
3. Dimensions in. [ ] in millimeters.
4. Roofcurb 18 ga steel on 14" curb, 16 ga steel on 24" curb.
5. Attach ductwork to curb (Flanges of duct rest on curb)
6. Service clearance 4' on each side.
7. ⇨ Direction of airflow.
8. Connector pkg. CRBTMPWR001A01 and 2A01 are for thru–the–curb connections. Pkg. CRBTMPWR003A01 and 4A01 are for thru–the–bottom connections.

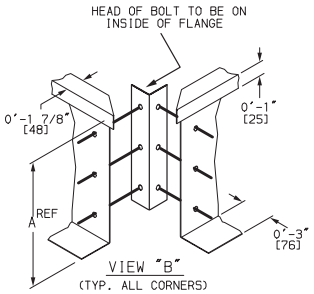
Connector Pkg. Acc.	B	C	D Alt. Drain Hole	Power	Control	Accessory Power
CRBTMPWR002A01	2' 8V–$^{7}/_{16}$" [827]	1' 10–$^{15}/_{16}$" [583]	1–$^{3}/_{4}$" [44.5]	1–1/4 [31.7]	$^{1}/_{2}$" [12.7] NPT	$^{1}/_{2}$" [12.7] NPT

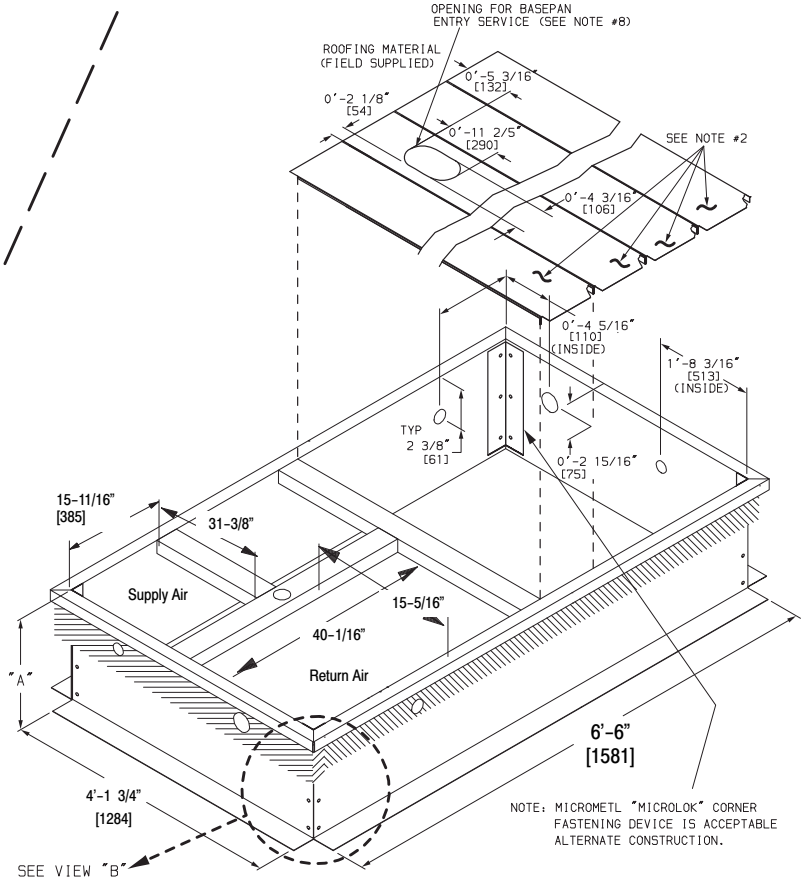








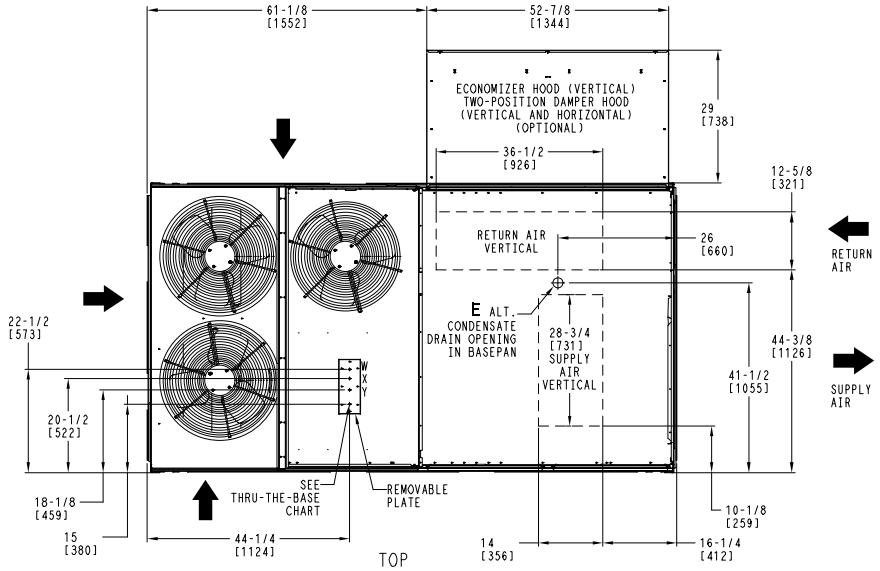


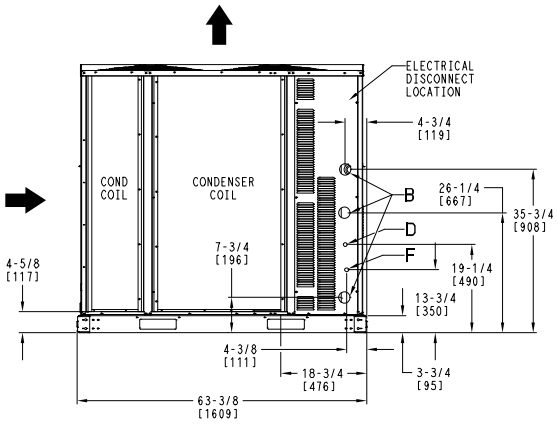


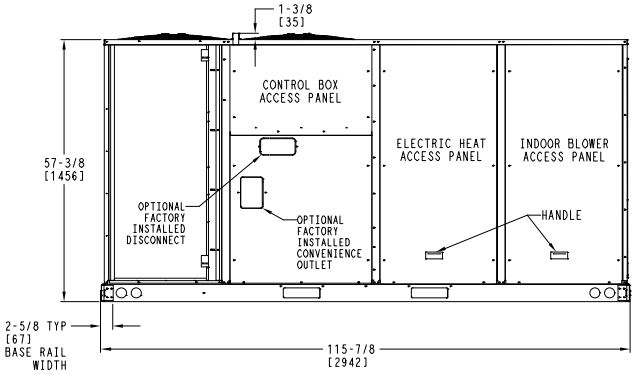
Vertical Connections / Economizer

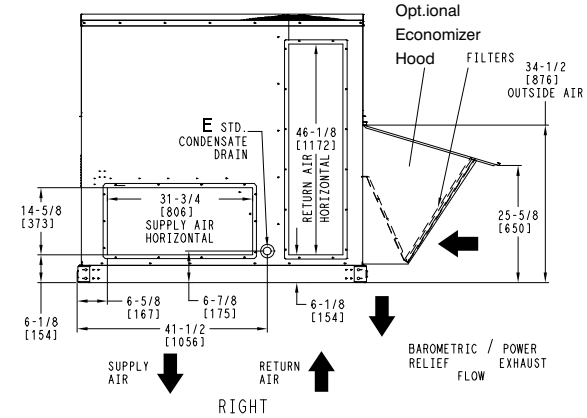
NOTES:

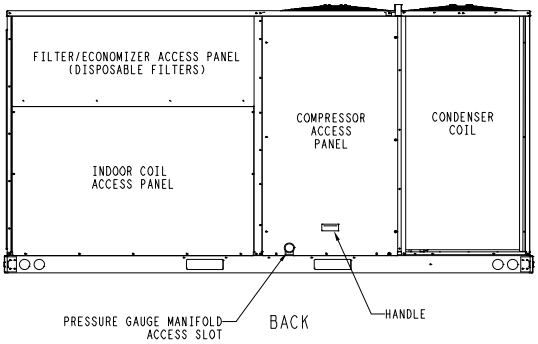
1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. ⊕ CENTER OF GRAVITY
3. ➡ DIRECTION OF AIR FLOW



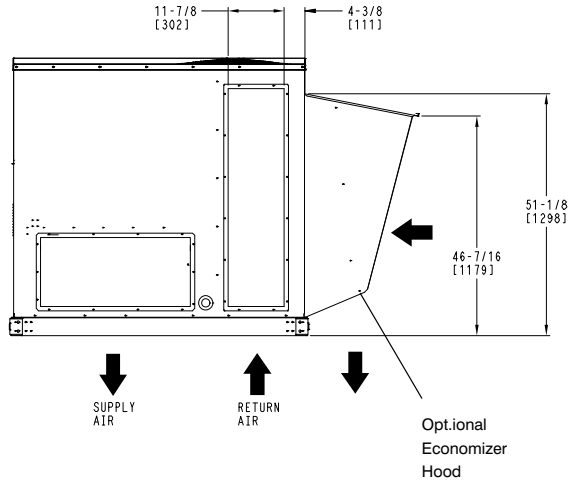


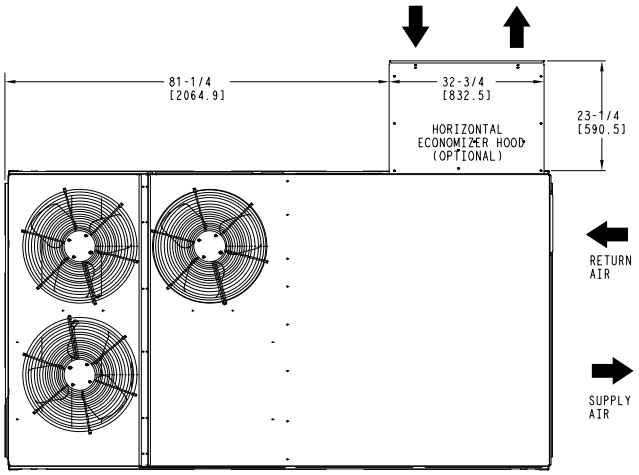






Horizontal Connections / Economizer



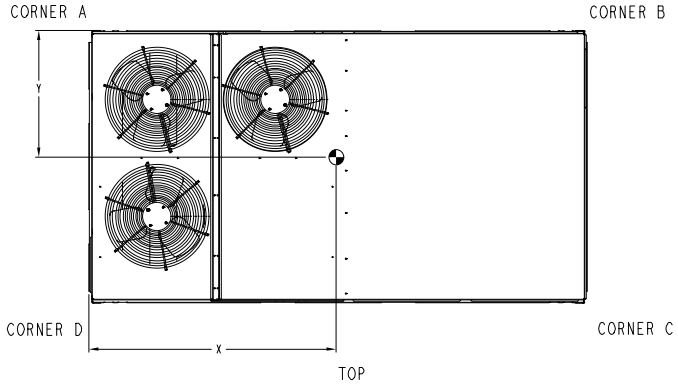


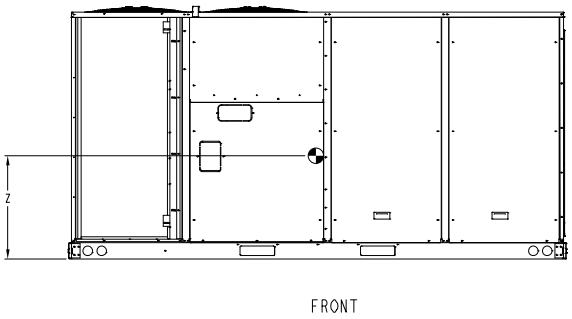
	CONNECTION SIZES
B	2 1/2" [64] DIA POWER SUPPLY HOLE
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
F	7/8" [22] DIA FIELD CONVENIENCE OUTLET HOLE

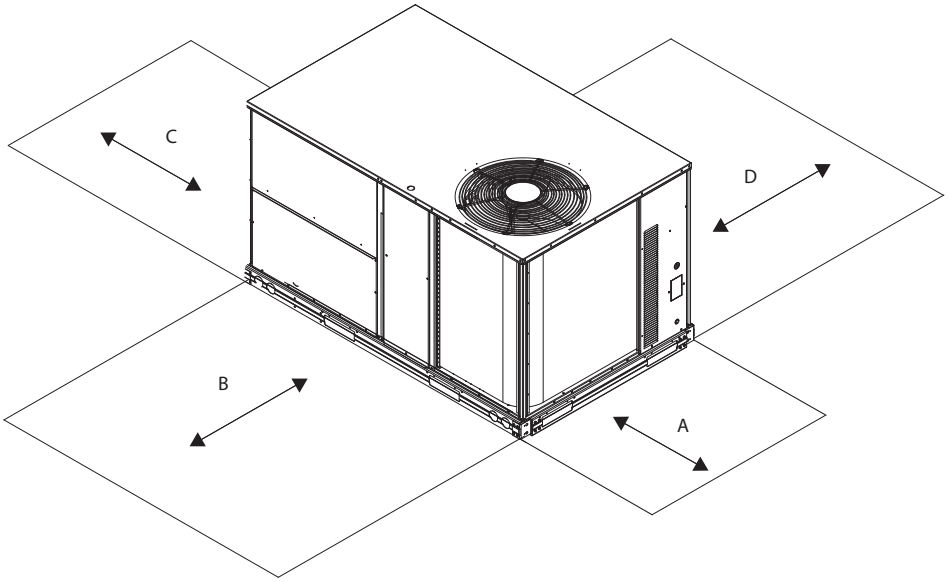
THRU-THE-BASE CHART THESE HOLES REQUIRED FOR USE CRBTMPWR005A00,006A00,007A00				
ACCESSORY NO.		THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
005	W	1/2"	ACC.	7/8" [22.2]
	X	1/2"	24V	7/8" [22.2]
	Y	1 1/4"	POWER	1 1/2" [38.1]
006	W	1/2"	ACC.	7/8" [22.2]
	X	1/2"	24V	7/8" [22.2]
	Y	1 1/2"	POWER	2" [50.8]
007	W	1/2"	ACC.	7/8" [22.2]
	X	1/2"	24V	7/8" [22.2]
	Y	2"	POWER	2 1/2" [63.5]
	FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR X & Y ARE PROVIDED AS SPECIFIED ON "006".			

WEIGHT & CLEARANCE DIMENSIONS – RHS150 (cont.)

UNIT	BASE UNIT WEIGHT		Corner Weight A		Corner Weight B		Corner Weight C		Corner Weight D		Center of Gravity In [mm]		
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	X	Y	Z
RHS150	1370	623	369	168	361	164	316	144	324	147	57-1/2 [1460]	29-1/2 [750]	24[610]







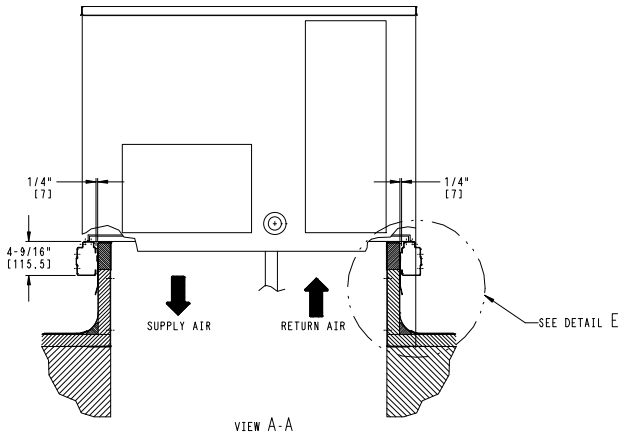
Service Clearance

LOC	DIMENSION	CONDITION
A	48—in. (1219 mm)	Unit disconnect is mounted on panel
	18—in. (457 mm)	No disconnect, convenience outlet option
	18—in. (457 mm)	Recommended service clearance
	12—in. (305 mm)	Minimum clearance
B	42—in. (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	36—in. (914 mm)	Surface behind servicer is electrically non—conductive (e.g., wood, fiberglass)
	Special	Check for sources of flue products within 10—ft of unit fresh air intake hood
C	36—in. (914 mm)	Side condensate drain is used
	18—in. (457 mm)	Minimum clearance
D	42—in. (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36—in. (914 mm)	Surface behind servicer is electrically non—conductive (e.g., wood, fiberglass)

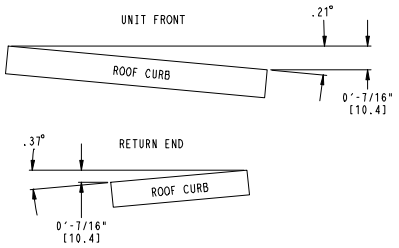
WEIGHT & CLEARANCE DIMENSIONS – RHS150 (cont.)

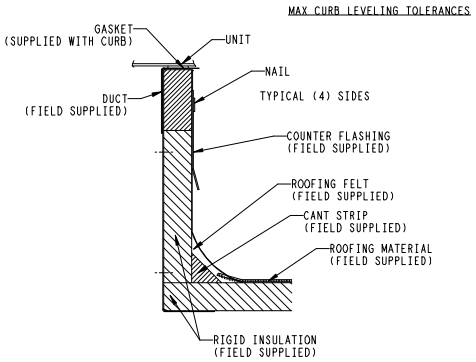
RoofCurb Accessory	A	Unit Size
CRRFCURB072A00	1’ 2 “ [356]	RHS150
CRRFCURB073A00	2’ 0” [610]	

NOTES:
1. ROOFCURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 1/2" THK. NEOPRENE FOAM, 1.0# DENSITY.
3. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4. ROOFCURB SIDEWALLS: 16 GAGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE 4 FT ON EACH SIDE.
7. ➡ DIRECTION OF AIR FLOW.
8. "L" & "S" DESIGNATIONS DENOTE LOCATION OF COMMON CROSS RAIL. (POSITION "S" FOR SMALL DUCT OPENING CURB).

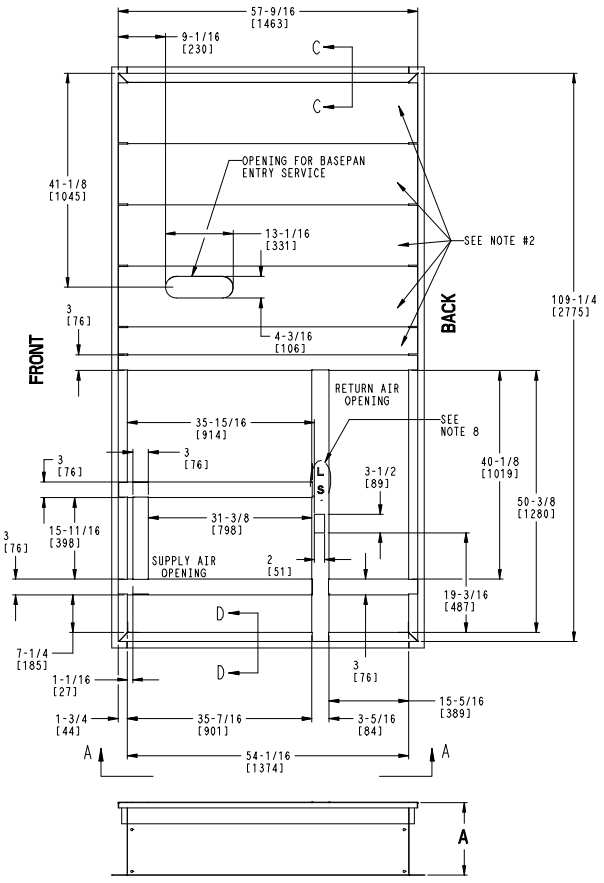


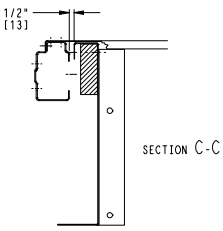
VIEW A-A



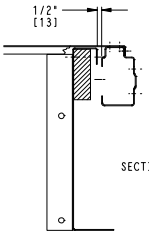


DETAIL E

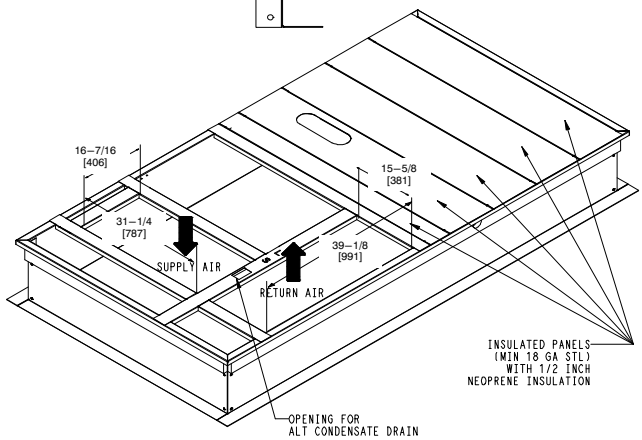




SECTION C-C



SECTION D-D



OPTION / ACCESSORY WEIGHT

OPTION / ACCESSORY	OPTION / ACCESSORY WEIGHTS															
	036		048		060		072		090		102		120		150	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Power Exhaust – vertical	50	23	50	23	50	23	50	23	75	34	75	34	75	34	85	39
Power Exhaust – horizontal	30	14	30	14	30	14	30	14	30	14	30	14	30	14	75	34
EconoMi$er IV OR X	50	23	50	23	50	23	50	23	75	34	75	34	75	34	115	52
Two Position damper	39	18	39	18	39	18	39	18	58	26	58	26	58	26	65	29
Manual Dampers	12	5	12	5	12	5	12	5	18	8	18	8	18	8	25	11
Hail Guard (louvered)	16	7	16	7	16	7	16	7	34	15	34	15	34	15	45	20
Cu/Cu Condenser Coil	35	16	35	16	35	16	95	43	95	43	95	43	170	77	160	73
Cu/Cu Cond. & Evaporator Coils	60	27	60	27	90	41	165	75	140	64	195	88	270	122	280	127
Roof Curb (14–in. curb)	115	52	115	52	115	52	115	52	143	65	143	65	143	65	180	82
Roof Curb (24–in. curb)	197	89	197	89	197	89	197	89	245	111	245	111	245	111	235	107
CO_2 sensor	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Electric Heater	30	14	30	14	30	14	30	14	45	20	45	20	45	20	25	11
Single Point Kit	10	5	10	5	10	5	10	5	12	5	12	5	12	5	25	11
Optional Indoor Motor / Drive	10	5	10	5	10	5	10	5	15	7	15	7	15	7	45	20
Motormaster Controller	35	16	35	16	35	16	35	16	35	16	35	16	35	16	25	11
Supply Smoke Detector	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Non–Fused Disconnect	15	7	15	7	15	7	15	7	15	7	15	7	15	7	10	5
Non–Powered Convenience outlet	5	2	5	2	5	2	5	2	5	2	5	2	5	2	4	2
Enthalpy Sensor	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1
System with VFD	–	–	–	–	–	–	–	–	20	9	20	9	20	9	20	9

APPLICATION DATA

Min operating ambient temp (cooling):

In mechanical cooling mode, your rooftop can safely operate down to an outdoor ambient temperature of 25°F (–4°C), with an accessory winter start kit; 40°F (4°C) standard minimum operating temperature. It is possible to provide cooling at lower outdoor ambient temperatures by using less outside air, economizers, and/or accessory low ambient kits.

Max operating ambient temp (cooling):

The maximum operating ambient temperature for cooling mode is 115°F (46°C). While cooling operation above 115°F (46°C) may be possible, it could cause either a reduction in performance, reliability, or a protective action by the unit's internal safety devices.

Min and max airflow (cooling):

To maintain safe and reliable operation of your rooftop, operate within the cooling airflow limits. Operating above the max may cause blow–off, undesired airflow noise, or airflow related problems with the rooftop unit. Operating below the min may cause problems with coil freeze–up.

Airflow:

All units are draw–though in cooling mode and blow–through in heating mode.

Outdoor air application strategies:

Economizers reduce operating expenses and compressor run time by providing a free source of cooling and a means of ventilation to match application changing needs. In fact, they should be considered for most applications. Also, consider the various economizer control methods and their benefits, as well as sensors required to accomplish your application goals. Please contact your local sales representative for assistance.

Motor limits, break horsepower (BHP):

Due to the internal unit design, air path, and specially designed motors, the full horsepower (maximum continuous BHP) band, as listed in this specification, can be used with the utmost confidence. There is no need for extra safety factors, the motors are designed and rigorously tested to use the entire, listed BHP range without either nuisance tripping or premature motor failure.

Sizing a rooftop

Bigger isn't necessarily better. While an air conditioner needs to have enough capacity to meet the design loads, it doesn't need excess capacity. In fact, excess capacity typically results in very poor partload performance and humidity control.

Using higher design temperatures than ASHRAE recommends for your location, adding "safety factors" to the calculated load, are all signs of oversizing air conditioners. Oversizing the air conditioner leads to short cycling (quick on–off cycles) which results in: poor humidity control, reduced efficiency, higher utility bills, larger indoor temperature swings, excessive noise, and increased wear and tear on the air conditioner.

Rather than oversizing an air conditioner, engineers should "right–size" or even slightly undersize air conditioners. Correctly sizing an air conditioner controls humidity better; promotes efficiency; reduces utility bills; extends equipment life, and maintains even, comfortable temperatures. Please contact your local representative for assistance.

Low ambient applications

The optional economizer can adequately cool your space by bringing in fresh, cool outside air. In fact, when so equipped, accessory low–ambient kit may not be necessary. In low ambient conditions, unless the outdoor air is excessively humid or contaminated, economizer–based "free cooling" is the preferred less costly and energy conscious method.

In low ambient applications where outside air might not be desired (such as contaminated or excessively humid outdoor environments), your rooftop can operate to ambient temperatures down to –20°F (–29°C) using the recommended accessory Motormaster low ambient controller.

SELECTION PROCEDURE (WITH RHS072 EXAMPLE)

I. Determine cooling and heating loads.

Given:

Mixed Air Drybulb	80°F
Mixed Air Wetbulb	67°F
Ambient Drybulb	95°F
TC_{Load}	65.0 MBH
SHC_{Load}	46.0 MBH
HC_{Load}	45.0 MBH
Outdoor−Air Winter Design Temp	0°F (−18°C)
Indoor−Air Winter Design Temp	70°F (21°C)
Vertical Supply Air	2100 CFM
External Static Pressure	0.66 in.wg
Electrical Characteristics	230−3−60

II. Make an initial guess at cooling tons.

Refrig. tons = TC_{Load} / 12 MBH per ton
Refrig. tons = 65.0 / 12 = 5.42 tons

In this case, start by looking at the RHS072.

III. Look up the rooftop's TC and SHC.

Table 11 shows that, at the application's supply air CFM, mixed air and ambient temperatures, the RHS072 supplies:
TC_{Load} = 69.0 MBH
SHC_{Load} = 50.7 MBH.

IV. Calculate the building Latent Heat Load.

$LHC_{Load} = TC_{Load} - SHC_{Load}$
LHC_{Load} = 65.0 MBH − 46.0 MBH = 19.0 MBH

V. Select Electric Heat

Enter the Instantaneous and Integrated Heating Ratings, Table 18 at 2100 cfm. At 70°F (21°C) return indoor air and 0°F (−18°C) air entering outdoor coil, the integrated heating capacity after interpolation, is 24,300 Btuh. (Select integrated heating capacity value since deductions for outdoor−coil frost and defrosting have already been made. No correction is required.)

The required heating capacity is 45,000 Btuh. Therefore, 20,700 Btuh (45,000 − 24,300) additional electric heat is required.

Determine additional electric heat capacity in kW.

$$\frac{20{,}700 \text{ Btuh}}{3413 \text{ Btuh/kW}} = 6.1 \text{ kW of heat required.}$$

Enter the Electric Heating Capacities table for RHS072 at 208/230, 3−phase. The 6.5-kW heater at 230V most closely satisfies the heating required.

6.5 kW x 3413 = 22,185 Btuh

Total unit heating capacity is 46,485 Btuh (22,185 + 24,300).

VI. Calculate RTU Latent Heat Capacity

LHC = TC − SHC
LHC = 69.0 MBH − 50.7 MBH = 18.3 MBH

VII. Compare RTU capacities to loads.

Compare the rooftop's SHC and LHC to the building's Sensible and Latent Heat Loads.
See notes 1 and 2.

VIII. Select factory options (FIOP)

Local code requires an economizer for any unit with TC larger than 65.0 MBH.

IX. Calculate the total static pressure.

External static pressure	0.66 in. wg
Sum of FIOP/Accessory static (Table 23)	+0.14 in. wg
Total Static Pressure	0.80 in. wg

X. Look up the Indoor Fan RPM & BHP.

Table 37 shows, at 2100 CFM & ESP= 0.8,
RPM = 1268 & BHP = 1.52

XI. Determine electrical requirements

Table 55 shows the MCA and MOCP of a RHS072 (without convenience outlet) with 6.5 kW electric heater as:

MCA = 52.3 amps & MOCP = 60 amps
Min. Disconnect Size: FLA = 50 & LRA = 199.

Legend

BHP	—	Break horsepower
FLA	—	Full load amps
HC	—	Heating Capacities
LC	—	Latent capacity
LRA	—	Lock rotor amp
MBH	—	(1,000) BTUH
MCA	—	Min. circuit ampacity
MOCP	—	Max. over−current protection
RPM	—	Revolutions per minute
RTU	—	Rooftop unit
SHC	—	Sensible heat capacity
TC	—	Total capacity

NOTES:

1. Selecting a unit with a SHC slightly lower than the SHC_{Load} is often better than oversizing. Slightly lower SHC's will help control indoor humidity, and prevent temperature swings.
2. If the rooftop's capacity meets the Sensible Heat Load, but not the Latent Heat Load.

Table 18 – COOLING CAPACITIES 1–Stage Cooling 3 TONS

RHS036				AMBIENT TEMPERATURE											
				85			95			105			115		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85
900 Cfm	EAT (wb)	58	TC	31.4	31.4	35.7	29.6	29.6	33.6	27.6	27.6	31.5	25.6	25.6	29.1
			SHC	27.1	31.4	35.7	25.5	29.6	33.6	23.8	27.6	31.5	22.0	25.6	29.1
		62	TC	33.5	33.5	34.4	30.9	30.9	33.2	28.3	28.3	31.9	25.7	25.7	30.4
			SHC	24.8	29.6	34.4	23.6	28.4	33.2	22.3	27.1	31.9	20.9	25.7	30.4
		67	TC	38.0	38.0	38.0	35.3	35.3	35.3	32.4	32.4	32.4	29.4	29.4	29.4
			SHC	21.0	25.8	30.7	19.8	24.6	29.5	18.6	23.4	28.2	17.3	22.2	27.0
		72	TC	42.1	42.1	42.1	39.7	39.7	39.7	37.1	37.1	37.1	34.0	34.0	34.0
			SHC	16.7	21.6	26.4	15.8	20.6	25.5	14.7	19.6	24.4	13.6	18.4	23.2
		76	TC	–	44.9	44.9	–	43.0	43.0	–	40.5	40.5	–	37.5	37.5
			SHC	–	17.8	22.7	–	17.1	22.0	–	16.2	21.1	–	15.2	20.1
1050 Cfm	EAT (wb)	58	TC	33.7	33.7	38.3	31.7	31.7	36.0	29.6	29.6	33.6	27.4	27.4	31.2
			SHC	29.1	33.7	38.3	27.3	31.7	36.0	25.5	29.6	33.6	23.6	27.4	31.2
		62	TC	35.0	35.0	38.1	32.3	32.3	36.7	29.7	29.7	35.1	27.4	27.4	32.5
			SHC	26.9	32.5	38.1	25.6	31.2	36.7	24.2	29.7	35.1	22.4	27.4	32.5
		67	TC	39.4	39.4	39.4	36.7	36.7	36.7	33.7	33.7	33.7	30.5	30.5	30.5
			SHC	22.4	28	33.6	21.2	26.8	32.4	20.0	25.6	31.2	18.7	24.3	29.9
		72	TC	43.3	43.3	43.3	41.0	41.0	41.0	38.3	38.3	38.3	35.2	35.2	35.2
			SHC	17.2	22.8	28.4	16.4	22.0	27.7	15.3	21.0	26.6	14.2	19.8	25.4
		76	TC	–	45.8	45.8	–	44.0	44.0	–	41.6	41.6	–	38.6	38.6
			SHC	–	18.4	24.2	–	17.8	23.5	–	16.9	22.7	–	15.9	21.6
1200 Cfm	EAT (wb)	58	TC	35.7	35.7	40.5	33.5	33.5	38.1	31.3	31.3	35.6	28.9	28.9	32.9
			SHC	30.8	35.7	40.5	28.9	33.5	38.1	27.0	31.3	35.6	24.9	28.9	32.9
		62	TC	36.3	36.3	41.5	33.6	33.6	39.7	31.3	31.3	37.1	29.0	29.0	34.3
			SHC	28.9	35.2	41.5	27.4	33.6	39.7	25.6	31.3	37.1	23.6	29.0	34.3
		67	TC	40.4	40.4	40.4	37.8	37.8	37.8	34.7	34.7	34.7	31.4	31.4	32.6
			SHC	23.6	30.0	36.4	22.5	28.9	35.3	21.3	27.6	34.0	19.9	26.3	32.6
		72	TC	44.1	44.1	44.1	42.0	42.0	42.0	39.2	39.2	39.2	36.0	36.0	36.0
			SHC	17.7	23.9	30.2	16.9	23.3	29.6	15.9	22.3	28.6	14.7	21.1	27.5
		76	TC	–	46.6	46.6	–	44.4	44.4	–	42.3	42.3	–	39.4	39.4
			SHC	–	19.0	25.5	–	18.3	24.7	–	17.6	24.0	–	16.6	23.1
1350 Cfm	EAT (wb)	58	TC	37.5	37.5	42.6	35.1	35.1	40.0	32.8	32.8	37.3	30.3	30.3	34.5
			SHC	32.4	37.5	42.6	30.3	35.1	40.0	28.3	32.8	37.3	26.1	30.3	34.5
		62	TC	37.6	37.6	44.4	35.2	35.2	41.6	32.8	32.8	38.8	30.3	30.3	35.9
			SHC	30.7	37.6	44.4	28.8	35.2	41.6	26.8	32.8	38.8	24.8	30.3	35.9
		67	TC	41.2	41.2	41.2	38.6	38.6	38.6	35.6	35.6	36.7	32.2	32.2	35.3
			SHC	24.8	31.9	39	23.7	30.8	38.0	22.5	29.6	36.7	21.1	28.2	35.3
		72	TC	44.7	44.7	44.7	42.7	42.7	42.7	39.9	39.9	39.9	36.7	36.7	36.7
			SHC	18.0	24.9	31.8	17.3	24.4	31.5	16.3	23.5	30.6	15.2	22.3	29.5
		76	TC	–	47.2	47.2	–	44.9	44.9	–	42.9	42.9	–	39.9	39.9
			SHC	–	19.5	26.6	–	18.7	25.7	–	18.1	25.2	–	17.2	24.4
1500 Cfm	EAT (wb)	58	TC	38.8	38.8	44.1	36.6	36.6	41.6	34.1	34.1	38.8	31.5	31.5	35.8
			SHC	33.5	38.8	44.1	31.6	36.6	41.6	29.4	34.1	38.8	27.2	31.5	35.8
		62	TC	38.8	38.8	45.9	36.6	36.6	43.3	34.1	34.1	40.4	31.6	31.6	37.3
			SHC	31.7	38.8	45.9	29.9	36.6	43.3	27.9	34.1	40.4	25.8	31.6	37.3
		67	TC	41.8	41.8	41.8	39.2	39.2	40.6	36.3	36.3	39.3	32.8	32.8	37.9
			SHC	25.8	33.6	41.4	24.9	32.7	40.6	23.7	31.5	39.3	22.3	30.1	37.9
		72	TC	45.2	45.2	45.2	43.2	43.2	43.2	40.5	40.5	40.5	37.2	37.2	37.2
			SHC	18.4	25.8	33.3	17.7	25.4	33.2	16.8	24.6	32.5	15.6	23.5	31.4
		76	TC	–	47.6	47.6	–	45.2	45.2	–	43.2	43.2	–	40.3	40.3
			SHC	–	19.9	27.5	–	19.1	26.7	–	18.6	26.3	–	17.7	25.6

= Indicates standard rating point

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 19 – COOLING CAPACITIES 1–Stage Cooling 4 TONS

RHS048				AMBIENT TEMPERATURE											
				85			95			105			115		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85
1200 Cfm	EAT (wb)	58	TC	41.7	41.7	46.9	39.9	39.9	45.1	37.8	37.8	43.1	35.6	35.6	41.0
			SHC	36.5	41.7	46.9	34.7	39.9	45.1	32.5	37.8	43.1	30.3	35.6	41.0
		62	TC	44.1	44.1	44.1	42.0	42.0	43.1	39.4	39.4	41.9	36.7	36.7	40.6
			SHC	33.7	38.9	44.1	32.6	37.8	43.1	31.3	36.6	41.9	29.8	35.2	40.6
		67	TC	48.8	48.8	48.8	46.4	46.4	46.4	43.7	43.7	43.7	40.9	40.9	40.9
			SHC	28.2	33.4	38.6	27.1	32.4	37.6	25.9	31.3	36.6	24.6	30.0	35.4
		72	TC	53.2	53.2	53.2	50.7	50.7	50.7	48.1	48.1	48.1	45.2	45.2	45.2
			SHC	22.3	27.5	32.7	21.3	26.5	31.8	20.2	25.5	30.8	18.9	24.4	29.8
		76	TC	–	56.2	56.2	–	53.8	53.8	–	51.1	51.1	–	48.0	48.0
			SHC	–	22.5	27.7	–	21.7	27.0	–	20.8	26.1	–	19.7	25.1
1400 cfm	EAT (wb)	58	TC	44.1	44.1	50.2	42.2	42.2	48.3	40.2	40.2	46.4	38.0	38.0	44.3
			SHC	38.1	44.1	50.2	36.1	42.2	48.3	34.0	40.2	46.4	31.7	38.0	44.3
		62	TC	45.8	45.8	48.3	43.3	43.3	47.1	40.8	40.8	45.8	38.0	38.0	44.3
			SHC	36.2	42.3	48.3	34.9	41.0	47.1	33.4	39.6	45.8	31.7	38.0	44.3
		67	TC	50.2	50.2	50.2	47.7	47.7	47.7	44.9	44.9	44.9	42.0	42.0	42.0
			SHC	29.7	35.8	41.9	28.7	34.8	40.9	27.5	33.7	39.9	26.2	32.5	38.8
		72	TC	54.4	54.4	54.4	52.0	52.0	52.0	49.2	49.2	49.2	46.2	46.2	46.2
			SHC	22.9	28.9	35.0	21.9	28.0	34.1	20.8	27.0	33.2	19.5	25.8	32.2
		76	TC	–	57.1	57.1	–	54.8	54.8	–	52.0	52.0	–	48.7	48.7
			SHC	–	23.3	29.4	–	22.5	28.6	–	21.5	27.7	–	20.3	26.7
1600 Cfm	EAT (wb)	58	TC	46.1	46.1	53.1	44.0	44.0	51.0	41.9	41.9	48.9	39.6	39.6	46.8
			SHC	39.2	46.1	53.1	37.1	44.0	51.0	34.8	41.9	48.9	32.4	39.6	46.8
		62	TC	46.9	46.9	52.1	44.6	44.6	50.5	42.0	42.0	49.0	39.6	39.6	46.8
			SHC	38.2	45.2	52.1	36.5	43.5	50.5	34.9	42.0	49.0	32.4	39.6	46.8
		67	TC	51.2	51.2	51.2	48.7	48.7	48.7	45.9	45.9	45.9	42.8	42.8	42.8
			SHC	31.1	38.0	45.0	30.1	37.1	44.0	28.9	35.9	43.0	27.5	34.7	42.0
		72	TC	55.3	55.3	55.3	52.9	52.9	52.9	50.0	50.0	50.0	46.9	46.9	46.9
			SHC	23.2	30.1	37.1	22.3	29.3	36.3	21.2	28.3	35.4	19.9	27.1	34.4
		76	TC	–	57.8	57.8	–	55.4	55.4	–	52.6	52.6	–	49.3	49.3
			SHC	–	23.9	30.8	–	23.1	30.1	–	22.1	29.2	–	20.9	28.2
1800 Cfm	EAT (wb)	58	TC	47.7	47.7	55.5	45.6	45.6	53.5	43.4	43.4	51.3	41.0	41.0	49.1
			SHC	39.9	47.7	55.5	37.8	45.6	53.5	35.4	43.4	51.3	32.8	41.0	49.1
		62	TC	47.9	47.9	55.7	45.7	45.7	53.5	43.4	43.4	51.4	41.0	41.0	49.1
			SHC	40.1	47.9	55.7	37.8	45.7	53.5	35.5	43.4	51.4	32.9	41.0	49.1
		67	TC	52.0	52.0	52.0	49.4	49.4	49.4	46.6	46.6	46.6	43.5	43.5	45.0
			SHC	32.3	40.1	47.9	31.3	39.2	47.1	30.1	38.1	46.0	28.7	36.9	45.0
		72	TC	55.9	55.9	55.9	53.5	53.5	53.5	50.6	50.6	50.6	47.4	47.4	47.4
			SHC	23.4	31.3	39.1	22.6	30.5	38.3	21.5	29.5	37.4	20.1	28.3	36.4
		76	TC	–	58.3	58.3	–	55.9	55.9	–	53.1	53.1	–	49.6	49.6
			SHC	–	24.4	32.2	–	23.6	31.5	–	22.6	30.6	–	21.4	29.6
2000 Cfm	EAT (wb)	58	TC	49.1	49.1	57.7	46.9	46.9	55.7	44.6	44.6	53.5	42.1	42.1	51.1
			SHC	40.4	49.1	57.7	38.2	46.9	55.7	35.8	44.6	53.5	33.1	42.1	51.1
		62	TC	49.1	49.1	57.7	47.0	47.0	55.7	44.7	44.7	53.5	42.2	42.2	51.2
			SHC	40.4	49.1	57.7	38.2	47.0	55.7	35.8	44.7	53.5	33.1	42.2	51.2
		67	TC	52.6	52.6	52.6	50.0	50.0	50.0	47.1	47.1	49.0	44.0	44.0	47.9
			SHC	33.4	42.0	50.7	32.5	41.2	49.9	31.2	40.1	49.0	29.8	38.8	47.9
		72	TC	56.4	56.4	56.4	53.9	53.9	53.9	51.1	51.1	51.1	47.8	47.8	47.8
			SHC	23.6	32.2	40.9	22.8	31.5	40.3	21.7	30.6	39.4	20.3	29.3	38.4
		76	TC	–	58.6	58.6	–	56.3	56.3	–	53.4	53.4	–	49.9	49.9
			SHC	–	24.8	33.5	–	24.0	32.8	–	23.1	32.0	–	21.8	30.9

▨ = Indicates standard rating point

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 20 – COOLING CAPACITIES 1–Stage Cooling 5 TONS

RHS060				AMBIENT TEMPERATURE											
				85			95			105			115		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85
1500 Cfm	EAT (wb)	58	TC	52.7	52.7	59.2	49.9	49.9	56.5	46.9	46.9	53.6	43.6	43.6	50.4
			SHC	46.2	52.7	59.2	43.4	49.9	56.5	40.3	46.9	53.6	36.8	43.6	50.4
		62	TC	55.5	55.5	55.8	52.1	52.1	54.3	48.1	48.1	52.4	43.7	43.7	50.3
			SHC	42.8	49.3	55.8	41.1	47.7	54.3	39.2	45.8	52.4	36.7	43.5	50.3
		67	TC	61.7	61.7	61.7	58.1	58.1	58.1	54.1	54.1	54.1	49.6	49.6	49.6
			SHC	35.6	42.1	48.6	34.0	40.5	47.1	32.2	38.8	45.5	30.2	37.0	43.8
		72	TC	68.0	68.0	68.0	64.3	64.3	64.3	60.1	60.1	60.1	55.5	55.5	55.5
			SHC	27.9	34.4	40.9	26.4	33.0	39.6	24.7	31.4	38.1	22.8	29.7	36.5
		76	TC	–	72.9	72.9	–	69.0	69.0	–	64.5	64.5	–	59.5	59.5
			SHC	–	28.0	34.5	–	26.6	33.2	–	25.1	31.8	–	23.4	30.2
1750 Cfm	EAT (wb)	58	TC	56.0	56.0	63.6	53.0	53.0	60.7	49.9	49.9	57.7	46.5	46.5	54.5
			SHC	48.4	56.0	63.6	45.4	53.0	60.7	42.2	49.9	57.7	38.6	46.5	54.5
		62	TC	57.6	57.6	61.6	54.1	54.1	59.9	50.1	50.1	57.6	46.6	46.6	54.5
			SHC	46.4	54.0	61.6	44.6	52.2	59.9	42.1	49.8	57.6	38.7	46.6	54.5
		67	TC	63.6	63.6	63.6	59.9	59.9	59.9	55.7	55.7	55.7	51.1	51.1	51.1
			SHC	38.0	45.6	53.2	36.4	44.0	51.7	34.5	42.3	50.1	32.5	40.5	48.4
		72	TC	69.9	69.9	69.9	66.0	66.0	66.0	61.7	61.7	61.7	56.9	56.9	56.9
			SHC	29.0	36.6	44.2	27.5	35.2	42.8	25.7	33.5	41.3	23.7	31.7	39.7
		76	TC	–	74.6	74.6	–	70.6	70.6	–	65.8	65.8	–	60.5	60.5
			SHC	–	29.2	36.8	–	27.8	35.5	–	26.1	34.0	–	24.3	32.3
2000 Cfm	EAT (wb)	58	TC	58.8	58.8	67.4	55.8	55.8	64.5	52.5	52.5	61.4	48.8	48.8	57.9
			SHC	50.1	58.8	67.4	47.0	55.8	64.5	43.6	52.5	61.4	39.7	48.8	57.9
		62	TC	59.3	59.3	66.9	55.9	55.9	64.6	52.5	52.5	61.4	48.8	48.8	57.9
			SHC	49.5	58.2	66.9	47.1	55.9	64.6	43.6	52.5	61.4	39.8	48.8	57.9
		67	TC	65.1	65.1	65.1	61.3	61.3	61.3	56.9	56.9	56.9	52.2	52.2	52.8
			SHC	40.2	48.9	57.6	38.6	47.3	56.1	36.7	45.6	54.5	34.6	43.7	52.8
		72	TC	71.3	71.3	71.3	67.3	67.3	67.3	62.8	62.8	62.8	57.8	57.8	57.8
			SHC	29.9	38.6	47.3	28.3	37.1	45.9	26.5	35.5	44.4	24.5	33.6	42.7
		76	TC	–	75.9	75.9	–	71.7	71.7	–	66.6	66.6	–	61.2	61.2
			SHC	–	30.2	38.9	–	28.7	37.6	–	27.0	36.0	–	25.1	34.3
2250 Cfm	EAT (wb)	58	TC	61.0	61.0	70.8	57.9	57.9	67.8	54.5	54.5	64.5	50.7	50.7	60.9
			SHC	51.3	61.0	70.8	48.1	57.9	67.8	44.5	54.5	64.5	40.5	50.7	60.9
		62	TC	61.1	61.1	70.8	58.0	58.0	67.8	54.6	54.6	64.6	50.7	50.7	61.0
			SHC	51.3	61.1	70.8	48.1	58.0	67.8	44.6	54.6	64.6	40.5	50.7	61.0
		67	TC	66.2	66.2	66.2	62.3	62.3	62.3	57.9	57.9	58.8	53.1	53.1	57.0
			SHC	42.3	52.0	61.8	40.6	50.5	60.4	38.7	48.7	58.8	36.6	46.8	57.0
		72	TC	72.3	72.3	72.3	68.3	68.3	68.3	63.7	63.7	63.7	58.5	58.5	58.5
			SHC	30.6	40.4	50.2	29.1	39.0	48.9	27.2	37.3	47.3	25.0	35.3	45.5
		76	TC	–	76.9	76.9	–	72.5	72.5	–	67.4	67.4	–	61.8	61.8
			SHC	–	31.1	40.9	–	29.6	39.5	–	27.9	37.9	–	25.9	36.2
2500 Cfm	EAT (wb)	58	TC	63.0	63.0	73.8	59.8	59.8	70.7	56.2	56.2	67.3	52.3	52.3	63.7
			SHC	52.1	63.0	73.8	48.8	59.8	70.7	45.1	56.2	67.3	41.0	52.3	63.7
		62	TC	63.0	63.0	73.9	59.8	59.8	70.8	56.3	56.3	67.4	52.4	52.4	63.7
			SHC	52.2	63.0	73.9	48.9	59.8	70.8	45.2	56.3	67.4	41.0	52.4	63.7
		67	TC	67.2	67.2	67.2	63.1	63.1	64.5	58.7	58.7	62.8	53.8	53.8	61.0
			SHC	44.2	55.0	65.9	42.5	53.5	64.5	40.6	51.7	62.8	38.3	49.6	61.0
		72	TC	73.2	73.2	73.2	69.0	69.0	69.0	64.3	64.3	64.3	59.0	59.0	59.0
			SHC	31.3	42.2	53.1	29.7	40.7	51.7	27.8	38.9	50.1	25.5	36.9	48.3
		76	TC	–	77.7	77.7	–	73.1	73.1	–	67.9	67.9	–	62.2	62.2
			SHC	–	32.0	42.9	–	30.5	41.5	–	28.6	39.8	–	26.6	38.0

= Indicates standard rating point

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 21 – COOLING CAPACITIES 1–Stage Cooling 6 TONS

RHS072				AMBIENT TEMPERATURE											
				85			95			105			115		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85
1800 Cfm	EAT (wb)	58	TC	61.1	61.1	68.9	58.3	58.3	66.1	55.2	55.2	63.2	51.8	51.8	59.9
			SHC	53.3	61.1	68.9	50.4	58.3	66.1	47.2	55.2	63.2	43.7	51.8	59.9
		62	TC	64.1	64.1	65.2	60.5	60.5	63.6	56.5	56.5	61.8	52.1	52.1	59.7
			SHC	49.6	57.4	65.2	47.8	55.7	63.6	45.8	53.8	61.8	43.4	51.6	59.7
		67	TC	70.8	70.8	70.8	67.2	67.2	67.2	63.1	63.1	63.1	58.6	58.6	58.6
			SHC	40.7	48.5	56.3	39.1	47.0	54.9	37.3	45.3	53.3	35.3	43.5	51.7
		72	TC	77.4	77.4	77.4	73.7	73.7	73.7	69.5	69.5	69.5	64.9	64.9	64.9
			SHC	31.1	38.9	46.7	29.6	37.5	45.5	27.9	36.0	44.0	26.0	34.2	42.5
		76	TC	–	82.0	82.0	–	78.4	78.4	–	73.9	73.9	–	68.8	68.8
			SHC	–	30.9	38.8	–	29.7	37.6	–	28.1	36.2	–	26.4	34.6
2100 Cfm	EAT (wb)	58	TC	64.6	64.6	73.7	61.6	61.6	70.8	58.4	58.4	67.7	54.8	54.8	64.3
			SHC	55.5	64.6	73.7	52.5	61.6	70.8	49.1	58.4	67.7	45.3	54.8	64.3
		62	TC	66.1	66.1	71.7	62.5	62.5	69.9	58.5	58.5	67.8	54.9	54.9	64.4
			SHC	53.4	62.5	71.7	51.5	60.7	69.9	49.2	58.5	67.8	45.3	54.9	64.4
		67	TC	72.8	72.8	72.8	69.0	69.0	69.0	64.8	64.8	64.8	60.2	60.2	60.2
			SHC	43.1	52.2	61.3	41.5	50.7	59.9	39.7	49.1	58.4	37.7	47.3	56.8
		72	TC	79.2	79.2	79.2	75.4	75.4	75.4	71.0	71.0	71.0	66.2	66.2	66.2
			SHC	31.9	41.1	50.2	30.5	39.7	49.0	28.7	38.1	47.5	26.7	36.3	45.9
		76	TC	–	83.1	83.1	–	79.8	79.8	–	75.1	75.1	–	69.7	69.7
			SHC	–	32.0	41.2	–	30.7	39.9	–	29.1	38.5	–	27.3	36.9
2400 Cfm	EAT (wb)	58	TC	67.4	67.4	77.8	64.4	64.4	74.9	61.0	61.0	71.7	57.3	57.3	68.2
			SHC	57.0	67.4	77.8	53.9	64.4	74.9	50.3	61.0	71.7	46.4	57.3	68.2
		62	TC	67.8	67.8	77.4	64.4	64.4	74.9	61.0	61.0	71.7	57.3	57.3	68.3
			SHC	56.5	66.9	77.4	53.9	64.4	74.9	50.3	61.0	71.7	46.4	57.3	68.3
		67	TC	74.3	74.3	74.3	70.4	70.4	70.4	66.1	66.1	66.1	61.4	61.4	61.7
			SHC	45.3	55.7	66.1	43.7	54.2	64.7	41.9	52.6	63.3	39.9	50.8	61.7
		72	TC	80.4	80.4	80.4	76.6	76.6	76.6	72.1	72.1	72.1	67.1	67.1	67.1
			SHC	32.6	43.0	53.4	31.2	41.7	52.3	29.3	40.1	50.8	27.2	38.2	49.2
		76	TC	–	84.0	84.0	–	80.7	80.7	–	76.0	76.0	–	70.4	70.4
			SHC	–	32.6	43.1	–	31.6	42.2	–	30.0	40.8	–	28.1	39.1
2700 Cfm	EAT (wb)	58	TC	69.7	69.7	81.5	66.6	66.6	78.5	63.1	63.1	75.2	59.3	59.3	71.6
			SHC	58.0	69.7	81.5	54.8	66.6	78.5	51.1	63.1	75.2	47.0	59.3	71.6
		62	TC	69.8	69.8	81.5	66.6	66.6	78.4	63.2	63.2	75.2	59.4	59.4	71.7
			SHC	58.0	69.8	81.5	54.8	66.6	78.4	51.2	63.2	75.2	47.1	59.4	71.7
		67	TC	75.4	75.4	75.4	71.4	71.4	71.4	67.1	67.1	67.9	62.3	62.3	66.4
			SHC	47.2	59.0	70.7	45.7	57.6	69.4	43.9	55.9	67.9	41.8	54.1	66.4
		72	TC	81.3	81.3	81.3	77.5	77.5	77.5	72.9	72.9	72.9	67.8	67.8	67.8
			SHC	33.0	44.8	56.5	31.7	43.6	55.5	29.8	41.9	54.0	27.7	40.0	52.4
		76	TC	–	84.9	84.9	–	81.3	81.3	–	76.6	76.6	–	70.8	70.8
			SHC	–	33.4	45.2	–	33.0	44.9	–	30.8	43.0	–	28.8	41.3
3000 Cfm	EAT (wb)	58	TC	71.7	71.7	84.7	68.5	68.5	81.7	64.9	64.9	78.3	61.0	61.0	74.7
			SHC	58.7	71.7	84.7	55.4	68.5	81.7	51.6	64.9	78.3	47.3	61.0	74.7
		62	TC	71.7	71.7	84.8	68.6	68.6	81.7	65.0	65.0	78.3	61.0	61.0	74.7
			SHC	58.7	71.7	84.8	55.4	68.6	81.7	51.6	65.0	78.3	47.4	61.0	74.7
		67	TC	76.4	76.4	76.4	72.3	72.3	73.8	67.9	67.9	72.4	63.0	63.0	70.8
			SHC	49.0	62.1	75.1	47.5	60.7	73.8	45.7	59	72.4	43.4	57.1	70.8
		72	TC	82.0	82.0	82.0	78.2	78.2	78.2	73.5	73.5	73.5	68.2	68.2	68.2
			SHC	33.4	46.5	59.5	32.1	45.3	58.5	30.2	43.6	57.1	28.0	41.7	55.5
		76	TC	–	85.5	85.5	–	81.8	81.8	–	77.1	77.1	–	71.3	71.3
			SHC	–	34.2	47.2	–	33.0	46.3	–	31.6	45.1	–	29.5	43.3

= Indicates standard rating point

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 22 – COOLING CAPACITIES 2–Stage Cooling 7.5 TONS

RHS090				AMBIENT TEMPERATURE											
				85			95			105			115		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85
2250 Cfm	EAT (wb)	58	TC	77.4	77.4	87.8	74.1	74.1	84.1	69.8	69.8	79.2	65.2	65.2	74.1
			SHC	66.9	77.4	87.8	64.0	74.1	84.1	60.3	69.8	79.2	56.4	65.2	74.1
		62	TC	81.8	81.8	83.7	77.2	77.2	81.4	71.9	71.9	78.9	66.6	66.6	75.9
			SHC	60.6	72.1	83.7	58.4	69.9	81.4	55.9	67.4	78.9	53.2	64.5	75.9
		67	TC	90.6	90.6	90.6	86.0	86.0	86.0	80.8	80.8	80.8	75.1	75.1	75.1
			SHC	50.4	62.0	73.5	48.4	60.0	71.6	46.2	57.8	69.3	43.9	55.4	67.0
		72	TC	99.4	99.4	99.4	94.7	94.7	94.7	89.5	89.5	89.5	83.8	83.8	83.8
			SHC	39.6	51.3	62.9	37.7	49.4	61.0	35.8	47.4	59.0	33.6	45.2	56.8
		76	TC	–	105.7	105.7	–	100.8	100.8	–	95.5	95.5	–	89.7	89.7
			SHC	–	42.1	54.5	–	40.4	52.8	–	38.6	50.9	–	36.5	48.8
2625 Cfm	EAT (wb)	58	TC	81.8	81.8	92.8	78.0	78.0	88.6	74.1	74.1	84.2	69.5	69.5	78.9
			SHC	70.7	81.8	92.8	67.5	78.0	88.6	64.1	74.1	84.2	60.1	69.5	78.9
		62	TC	84.7	84.7	91.7	79.9	79.9	89.2	75.2	75.2	86.2	69.8	69.8	81.6
			SHC	65.2	78.5	91.7	62.9	76.1	89.2	60.3	73.3	86.2	56.8	69.2	81.6
		67	TC	93.4	93.4	93.4	88.6	88.6	88.6	83.2	83.2	83.2	77.4	77.4	77.4
			SHC	53.4	66.7	80.1	51.4	64.7	78.1	49.2	62.5	75.9	46.8	60.2	73.5
		72	TC	101.9	101.9	101.9	97.1	97.1	97.1	91.8	91.8	91.8	86.0	86.0	86.0
			SHC	40.8	54.1	67.5	38.9	52.3	65.6	36.9	50.3	63.6	34.8	48.1	61.5
		76	TC	–	107.7	107.7	–	102.6	102.6	–	97.2	97.2	–	91.2	91.2
			SHC	–	43.7	58.1	–	41.9	56.0	–	39.9	53.9	–	37.9	51.6
3000 Cfm	EAT (wb)	58	TC	85.6	85.6	97.2	81.8	81.8	92.9	77.6	77.6	88.0	72.9	72.9	82.8
			SHC	74.1	85.6	97.2	70.7	81.8	92.9	67.1	77.6	88.0	63.0	72.9	82.8
		62	TC	87.0	87.0	98.9	82.5	82.5	95.4	78.0	78.0	90.5	73.3	73.3	85.6
			SHC	69.4	84.1	98.9	66.6	81.0	95.4	63.1	76.8	90.5	59.6	72.6	85.6
		67	TC	95.5	95.5	95.5	90.5	90.5	90.5	85.1	85.1	85.1	79.0	79.0	79.6
			SHC	56.1	71.2	86.2	54.1	69.2	84.2	51.9	67.0	82.1	49.5	64.6	79.6
		72	TC	103.8	103.8	103.8	98.8	98.8	98.8	93.4	93.4	93.4	87.5	87.5	87.5
			SHC	41.8	56.7	71.6	39.9	54.8	69.8	37.9	52.9	67.8	35.8	50.7	65.7
		76	TC	–	109.1	109.1	–	104.0	104.0	–	98.3	98.3	–	92.2	92.2
			SHC	–	44.9	60.6	–	43.1	58.6	–	41.1	56.4	–	39.0	54.2
3375 Cfm	EAT (wb)	58	TC	88.9	88.9	100.9	84.9	84.9	96.4	80.5	80.5	91.4	75.7	75.7	86.0
			SHC	76.9	88.9	100.9	73.4	84.9	96.4	69.6	80.5	91.4	65.5	75.7	86.0
		62	TC	89.6	89.6	103.8	85.1	85.1	100.4	81.0	81.0	94.1	75.8	75.8	89.5
			SHC	72.4	88.1	103.8	69.7	85.0	100.4	65.6	79.8	94.1	62.1	75.8	89.5
		67	TC	97.1	97.1	97.1	92.1	92.1	92.1	86.5	86.5	87.9	80.3	80.3	85.4
			SHC	58.7	75.3	92.0	56.7	73.4	90.1	54.5	71.2	87.9	52.0	68.7	85.4
		72	TC	105.2	105.2	105.2	100.0	100.0	100.0	94.5	94.5	94.5	88.5	88.5	88.5
			SHC	42.6	59.0	75.3	40.7	57.1	73.5	38.8	55.2	71.6	36.6	53.1	69.5
		76	TC	–	110.1	110.1	–	105.0	105.0	–	99.2	99.2	–	92.9	92.9
			SHC	–	45.9	62.8	–	44.1	60.9	–	42.1	58.7	–	40.0	56.4
3750 Cfm	EAT (wb)	58	TC	91.6	91.6	104.0	87.5	87.5	99.4	83.0	83.0	94.3	78.1	78.1	88.7
			SHC	79.2	91.6	104.0	75.7	87.5	99.4	71.8	83.0	94.3	67.6	78.1	88.7
		62	TC	91.7	91.7	108.3	87.7	87.7	103.5	83.1	83.1	98.1	78.2	78.2	92.3
			SHC	75.2	91.7	108.3	71.8	87.7	103.5	68.1	83.1	98.1	64.1	78.2	92.3
		67	TC	98.4	98.4	98.4	93.3	93.3	95.6	87.7	87.7	93.4	81.5	81.5	90.9
			SHC	61.1	79.3	97.5	59.1	77.3	95.6	56.9	75.2	93.4	54.5	72.7	90.9
		72	TC	106.2	106.2	106.2	101.0	101.0	101.0	95.4	95.4	95.4	89.3	89.3	89.3
			SHC	43.4	61.1	78.8	41.5	59.2	76.9	39.5	57.3	75.0	37.4	55.2	73.0
		76	TC	–	111.0	111.0	–	105.8	105.8	–	99.8	99.8	–	93.5	93.5
			SHC	–	46.8	64.9	–	45.1	63.1	–	43.0	60.8	–	40.9	58.4

= Indicates standard rating point

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 23 – COOLING CAPACITIES 2–Stage Cooling 8.5 TONS

RHS102				AMBIENT TEMPERATURE											
				85			95			105			115		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85
2550 Cfm	EAT (wb)	58	TC	91.1	91.1	102.9	86.4	86.4	97.5	81.2	81.2	91.7	75.7	75.7	85.5
			SHC	79.4	91.1	102.9	75.2	86.4	97.5	70.8	81.2	91.7	66.0	75.7	85.5
		62	TC	96.0	96.0	99.4	89.2	89.2	96.4	83.0	83.0	93.4	76.5	76.5	88.0
			SHC	72.7	86.0	99.4	69.6	83.0	96.4	66.7	80.0	93.4	62.4	75.2	88.0
		67	TC	106.4	106.4	106.4	100.4	100.4	100.4	92.9	92.9	92.9	86.0	86.0	86.0
			SHC	60.4	73.8	87.2	57.7	71.1	84.5	54.7	68.1	81.6	51.8	65.2	78.6
		72	TC	117.3	117.3	117.3	111.2	111.2	111.2	104.3	104.3	104.3	97.0	97.0	97.0
			SHC	47.4	60.9	74.4	45.1	58.5	72.0	42.4	55.9	69.4	39.7	53.1	66.6
		76	TC	–	126.1	126.1	–	119.9	119.9	–	113.0	113.0	–	105.6	105.6
			SHC	–	50.3	64.3	–	48.0	61.8	–	45.6	59.4	–	43.0	56.7
2975 Cfm	EAT (wb)	58	TC	96.5	96.5	109.0	91.7	91.7	103.5	86.7	86.7	97.9	80.5	80.5	90.9
			SHC	84.1	96.5	109.0	79.9	91.7	103.5	75.5	86.7	97.9	70.1	80.5	90.9
		62	TC	98.2	98.2	109.0	92.9	92.9	105.4	87.0	87.0	100.5	80.6	80.6	94.5
			SHC	78.1	93.6	109.0	75.1	90.2	105.4	71.3	85.9	100.5	66.7	80.6	94.5
		67	TC	109.5	109.5	109.5	103.0	103.0	103.0	96.3	96.3	96.3	87.6	87.6	87.6
			SHC	64.1	79.6	95.2	61.4	76.9	92.5	58.7	74.3	89.8	55.3	70.9	86.5
		72	TC	120.6	120.6	120.6	114.2	114.2	114.2	107.3	107.3	107.3	99.5	99.5	99.5
			SHC	49.1	64.7	80.3	46.7	62.3	77.9	44.1	59.7	75.3	41.3	56.9	72.5
		76	TC	–	129.2	129.2	–	122.9	122.9	–	115.7	115.7	–	108.1	108.1
			SHC	–	52.3	68.4	–	50.0	65.8	–	47.6	63.5	–	45.0	60.8
3400 Cfm	EAT (wb)	58	TC	101.0	101.0	114.0	96.7	96.7	109.1	90.9	90.9	102.6	84.9	84.9	95.8
			SHC	88.0	101.0	114.0	84.2	96.7	109.1	79.2	90.9	102.6	74.0	84.9	95.8
		62	TC	102.3	102.3	116.5	96.9	96.9	112.5	90.7	90.7	106.3	84.6	84.6	99.1
			SHC	82.9	99.7	116.5	79.7	96.1	112.5	75.1	90.7	106.3	70.0	84.6	99.1
		67	TC	112.1	112.1	112.1	105.5	105.5	105.5	98.4	98.4	98.4	90.8	90.8	94.2
			SHC	67.7	85.3	102.9	65.1	82.7	100.2	62.2	79.8	97.3	59.2	76.7	94.2
		72	TC	123.0	123.0	123.0	116.5	116.5	116.5	109.4	109.4	109.4	101.6	101.6	101.6
			SHC	50.5	68.2	85.9	48.2	65.8	83.5	45.6	63.2	80.8	42.8	60.4	78.1
		76	TC	–	131.5	131.5	–	124.9	124.9	–	117.7	117.7	–	109.9	109.9
			SHC	–	54.1	72.1	–	51.8	69.7	–	49.4	67.2	–	46.8	64.6
3825 Cfm	EAT (wb)	58	TC	104.5	104.5	118.0	99.8	99.8	112.6	94.4	94.4	106.6	87.9	87.9	99.2
			SHC	91.1	104.5	118.0	86.9	99.8	112.6	82.3	94.4	106.6	76.6	87.9	99.2
		62	TC	105.0	105.0	123.0	100.3	100.3	117.5	93.4	93.4	109.5	87.3	87.3	102.3
			SHC	86.9	105.0	123.0	83.0	100.3	117.5	77.4	93.4	109.5	72.3	87.3	102.3
		67	TC	114.1	114.1	114.1	107.4	107.4	107.6	99.4	99.4	104.6	92.0	92.0	101.3
			SHC	71.2	90.8	110.4	68.5	88.1	107.6	65.4	85.0	104.6	62.4	81.9	101.3
		72	TC	124.9	124.9	124.9	118.2	118.2	118.2	111.0	111.0	111.0	103.1	103.1	103.1
			SHC	51.9	71.5	91.1	49.5	69.1	88.7	47.0	66.6	86.2	44.2	63.8	83.4
		76	TC	–	133.3	133.3	–	126.5	126.5	–	119.2	119.2	–	111.2	111.2
			SHC	–	55.7	75.6	–	53.5	73.3	–	51.1	70.8	–	48.5	68.1
4250 Cfm	EAT (wb)	58	TC	108.6	108.6	122.6	102.7	102.7	115.9	97.4	97.4	110.0	90.8	90.8	102.5
			SHC	94.6	108.6	122.6	89.5	102.7	115.9	84.9	97.4	110.0	79.1	90.8	102.5
		62	TC	109.0	109.0	126.4	103.4	103.4	121.2	97.5	97.5	114.2	91.3	91.3	106.9
			SHC	89.5	107.9	126.4	85.6	103.4	121.2	80.7	97.5	114.2	75.6	91.3	106.9
		67	TC	115.6	115.6	117.4	108.9	108.9	114.7	101.6	101.6	111.4	93.6	93.6	108.1
			SHC	74.3	95.9	117.4	71.7	93.2	114.7	68.7	90.1	111.4	65.6	86.8	108.1
		72	TC	126.4	126.4	126.4	119.7	119.7	119.7	112.3	112.3	112.3	104.2	104.2	104.2
			SHC	53.1	74.6	96.1	50.8	72.3	93.8	48.2	69.8	91.4	45.4	67.0	88.5
		76	TC	–	134.6	134.6	–	127.8	127.8	–	120.3	120.3	–	112.3	112.3
			SHC	–	57.2	78.8	–	55.0	76.6	–	52.6	74.1	–	50.0	71.5

▨ = Indicates standard rating point

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 24 – COOLING CAPACITIES 2–Stage Cooling 10 TONS

RHS120				AMBIENT TEMPERATURE																
				85			95			105			115			125				
				EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)				
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85		
3000 Cfm	EAT (wb)	58	TC	102.8	102.8	121.0	96.3	96.3	115.8	90.1	90.1	109.5	83.5	83.5	102.9	96.3	96.3	115.8		
			SHC	82.1	101.5	121.0	76.8	96.3	115.8	70.6	90.1	109.5	64.0	83.5	102.9	76.8	96.3	115.8		
		62	TC	108.0	108.0	114.3	100.4	100.4	111.1	92.1	92.1	107.1	84.2	84.2	102.0	100.4	100.4	111.1		
			SHC	75.4	94.9	114.3	72.2	91.7	111.1	68.1	87.6	107.1	63.1	82.5	102.0	72.2	91.7	111.1		
		67	TC	120.5	120.5	120.5	113.5	113.5	113.5	104.9	104.9	104.9	95.2	95.2	95.2	113.5	113.5	113.5		
			SHC	60.2	79.7	99.2	57.7	77.2	96.7	54.4	73.9	93.4	50.8	70.3	89.7	57.7	77.2	96.7		
		72	TC	132.8	132.8	132.8	126.5	126.5	126.5	118.6	118.6	118.6	109.3	109.3	109.3	126.5	126.5	126.5		
			SHC	44.5	64.0	83.4	42.2	61.7	81.2	39.5	59.0	78.5	36.4	55.9	75.3	42.2	61.7	81.2		
		76	TC	–	142.0	142.0	–	136.0	136.0	–	129.1	129.1	–	120.3	120.3	–	136.0	136.0		
			SHC	–	50.9	70.4	–	48.8	68.2	–	46.6	66.0	–	43.7	63.2	–	48.8	68.2		
3500 Cfm	EAT (wb)	58	TC	108.2	108.2	130.9	102.5	102.5	125.2	95.5	95.5	118.2	88.3	88.3	111.0	102.5	102.5	125.2		
			SHC	85.5	108.2	130.9	79.8	102.5	125.2	72.8	95.5	118.2	65.6	88.3	111.0	79.8	102.5	125.2		
		62	TC	111.4	111.4	125.8	104.6	104.6	122.1	96.3	96.3	117.0	88.7	88.7	110.7	104.6	104.6	122.1		
			SHC	80.4	103.1	125.8	76.7	99.4	122.1	71.6	94.3	117.0	65.3	88.0	110.7	76.7	99.4	122.1		
		67	TC	123.4	123.4	123.4	116.3	116.3	116.3	107.9	107.9	107.9	97.5	97.5	98.9	116.3	116.3	116.3		
			SHC	62.6	85.3	108.0	60.1	82.9	105.6	57.2	79.9	102.6	53.5	76.2	98.9	60.1	82.9	105.6		
		72	TC	135.4	135.4	135.4	129.2	129.2	129.2	121.2	121.2	121.2	112.0	112.0	112.0	129.2	129.2	129.2		
			SHC	44.2	67.0	89.7	42.2	64.9	87.6	39.5	62.2	85.0	36.5	59.3	82.0	42.2	64.9	87.6		
		76	TC	–	144.6	144.6	–	138.4	138.4	–	131.3	131.3	–	–	–	–	138.4	138.4		
			SHC	–	51.9	74.6	–	50.0	72.7	–	47.8	70.5	–	–	–	–	50.0	72.7		
4000 Cfm	EAT (wb)	58	TC	112.7	112.7	138.7	106.9	106.9	132.9	99.9	99.9	125.9	92.3	92.3	118.2	106.9	106.9	132.9		
			SHC	86.7	112.7	138.7	81.0	106.9	132.9	74.0	99.9	125.9	66.3	92.3	118.2	81.0	106.9	132.9		
		62	TC	114.0	114.0	135.3	107.6	107.6	131.3	100.4	100.4	125.5	92.3	92.3	118.3	107.6	107.6	131.3		
			SHC	83.4	109.3	135.3	79.3	105.3	131.3	73.6	99.6	125.5	66.4	92.3	118.3	79.3	105.3	131.3		
		67	TC	125.4	125.4	125.4	118.2	118.2	118.2	109.5	109.5	111.2	99.1	99.1	107.7	118.2	118.2	118.2		
			SHC	64.5	90.5	116.4	62.2	88.1	114.1	59.3	85.3	111.2	55.8	81.8	107.7	62.2	88.1	114.1		
		72	TC	137.2	137.2	137.2	130.7	130.7	130.7	122.8	122.8	122.8	113.5	113.5	113.5	130.7	130.7	130.7		
			SHC	43.6	69.6	95.5	41.7	67.6	93.6	39.2	65.1	91.1	36.3	62.2	88.2	41.7	67.6	93.6		
		76	TC	–	146.3	146.3	–	139.9	139.9	–	132.5	132.5	–	–	–	–	139.9	139.9		
			SHC	–	52.8	78.7	–	50.8	76.8	–	48.6	74.6	–	–	–	–	50.8	76.8		
4500 Cfm	EAT (wb)	58	TC	115.9	115.9	145.2	110.4	110.4	139.6	103.4	103.4	132.6	95.4	95.4	124.6	110.4	110.4	139.6		
			SHC	86.7	115.9	145.2	81.2	110.4	139.6	74.2	103.4	132.6	66.2	95.4	124.6	81.2	110.4	139.6		
		62	TC	116.6	116.6	143.2	110.4	110.4	139.4	103.9	103.9	131.8	95.4	95.4	124.6	110.4	110.4	139.4		
			SHC	84.8	114.0	143.2	81.0	110.2	139.4	73.4	102.6	131.8	66.2	95.4	124.6	81.0	110.2	139.4		
		67	TC	126.5	126.5	126.5	119.5	119.5	122.2	110.6	110.6	119.6	100.2	100.2	116.1	119.5	119.5	122.2		
			SHC	65.9	95.1	124.3	63.8	93.0	122.2	61.2	90.4	119.6	57.7	86.9	116.1	63.8	93.0	122.2		
		72	TC	138.0	138.0	138.0	131.5	131.5	131.5	123.9	123.9	123.9	114.2	114.2	114.2	131.5	131.5	131.5		
			SHC	42.7	71.9	101.1	40.8	70.0	99.2	38.5	67.7	96.9	35.6	64.8	94.0	40.8	70.0	99.2		
		76	TC	–	147.3	147.3	–	140.6	140.6	–	–	–	–	–	–	–	140.6	140.6		
			SHC	–	53.3	82.6	–	51.4	80.6	–	–	–	–	–	–	–	51.4	80.6		
5000 Cfm	EAT (wb)	58	TC	118.4	118.4	150.9	112.9	112.9	145.4	105.9	105.9	138.4	97.8	97.8	130.2	112.9	112.9	145.4		
			SHC	86.0	118.4	150.9	80.5	112.9	145.4	73.5	105.9	138.4	65.3	97.8	130.2	80.5	112.9	145.4		
		62	TC	118.5	118.5	150.7	113.5	113.5	144.5	106.0	106.0	138.4	97.9	97.9	130.3	113.5	113.5	144.5		
			SHC	85.8	118.3	150.7	79.6	112.0	144.5	73.5	106.0	138.4	65.4	97.9	130.3	79.6	112.0	144.5		
		67	TC	126.9	126.9	131.8	120.0	120.0	130.0	111.1	111.1	127.4	100.8	100.8	123.9	120.0	120.0	130.0		
			SHC	66.9	99.4	131.8	65.1	97.5	130.0	62.5	94.9	127.4	59.0	91.4	123.9	65.1	97.5	130.0		
		72	TC	138.4	138.4	138.4	131.6	131.6	131.6	124.0	124.0	124.0	114.2	114.2	114.2	131.6	131.6	131.6		
			SHC	41.4	73.8	106.3	39.5	71.9	104.4	37.3	69.8	102.2	34.6	67.0	99.5	39.5	71.9	104.4		
		76	TC	–	147.7	147.7	–	140.9	140.9	–	–	–	–	–	–	–	–	–		
			SHC	–	53.6	86.1	–	51.7	84.2	–	–	–	–	–	–	–	–	–		

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 25 – COOLING CAPACITIES 2–Stage Cooling 12.5 TONS

RHS150				AMBIENT TEMPERATURE											
				85			95			105			115		
				EAT (DB)			EAT (DB)			EAT (DB)			EAT (DB)		
				75	80	85	75	80	85	75	80	85	75	80	85
3750 Cfm	EAT (wb)	58	THC	126.4	126.4	143.6	119.1	119.1	135.3	111.8	111.8	127.0	104.0	104.0	118.2
			SHC	109.2	126.4	143.6	102.9	119.1	135.3	96.5	111.8	127.0	89.8	104.0	118.2
		62	THC	134.5	134.5	138.4	124.7	124.7	133.4	114.9	114.9	128.1	105.8	105.8	120.8
			SHC	100.3	119.4	138.4	95.5	114.4	133.4	90.5	109.3	128.1	84.6	102.7	120.8
		67	THC	149.6	149.6	149.6	140.5	140.5	140.5	130.0	130.0	130.0	118.8	118.8	118.8
			SHC	83.5	102.5	121.4	79.8	98.9	118.1	75.4	94.6	113.7	70.8	89.9	109.1
		72	THC	161.4	161.4	161.4	155.2	155.2	155.2	146.4	146.4	146.4	135.7	135.7	135.7
			SHC	64.5	83.5	102.5	62.1	81.2	100.4	58.8	78.1	97.3	54.8	74.1	93.3
		76	THC	–	169.5	169.5	–	163.1	163.1	–	156.8	156.8	–	147.7	147.7
			SHC	–	68.1	88.7	–	65.7	86.2	–	63.4	83.7	–	60.3	80.3
4375 Cfm	EAT (wb)	58	THC	134.6	134.6	152.9	126.8	126.8	144.1	118.8	118.8	135.0	110.5	110.5	125.6
			SHC	116.3	134.6	152.9	109.6	126.8	144.1	102.7	118.8	135.0	95.5	110.5	125.6
		62	THC	139.9	139.9	151.3	130.0	130.0	145.7	120.7	120.7	138.1	111.2	111.2	130.1
			SHC	107.9	129.6	151.3	102.8	124.2	145.7	96.7	117.4	138.1	90.4	110.3	130.1
		67	THC	153.7	153.7	153.7	145.2	145.2	145.2	134.5	134.5	134.5	122.9	122.9	122.9
			SHC	87.9	109.4	131.0	84.8	106.8	128.8	80.6	102.6	124.7	75.8	97.9	120.0
		72	THC	164.6	164.6	164.6	158.2	158.2	158.2	150.5	150.5	150.5	139.9	139.9	139.9
			SHC	66.0	87.2	108.5	63.6	85.1	106.5	60.9	82.8	104.8	57.0	79.1	101.2
		76	THC	–	172.4	172.4	–	165.7	165.7	–	159.3	159.3	–	150.8	150.8
			SHC	–	70.2	93.5	–	67.8	91.0	–	65.7	88.8	–	62.8	85.8
5000 Cfm	EAT (wb)	58	THC	141.4	141.4	160.6	133.5	133.5	151.6	125.0	125.0	142.0	116.2	116.2	132.0
			SHC	122.1	141.4	160.6	115.3	133.5	151.6	108.0	125.0	142.0	100.4	116.2	132.0
		62	THC	144.4	144.4	162.1	135.4	135.4	155.1	125.9	125.9	147.1	116.4	116.4	137.6
			SHC	114.3	138.2	162.1	108.5	131.8	155.1	102.2	124.6	147.1	95.3	116.4	137.6
		67	THC	156.6	156.6	156.6	148.8	148.8	148.8	138.1	138.1	138.1	126.3	126.3	130.2
			SHC	91.7	115.6	139.5	89.3	113.9	138.6	85.3	110.2	135.0	80.6	105.4	130.2
		72	THC	167.0	167.0	167.0	160.5	160.5	160.5	153.3	153.3	153.3	142.9	142.9	142.9
			SHC	67.3	90.6	113.9	64.9	88.6	112.2	62.5	87.0	111.4	58.9	83.7	108.5
		76	THC	–	174.6	174.6	–	167.5	167.5	–	160.7	160.7	–	152.9	152.9
			SHC	–	72.2	98.1	–	69.8	95.6	–	67.4	92.9	–	64.8	90.2
5625 Cfm	EAT (wb)	58	THC	146.6	146.6	166.6	139.0	139.0	157.9	130.3	130.3	148.1	121.2	121.2	137.7
			SHC	126.6	146.6	166.6	120.0	139.0	157.9	112.6	130.3	148.1	104.7	121.2	137.7
		62	THC	148.4	148.4	169.8	139.9	139.9	163.3	130.5	130.5	154.3	121.3	121.3	143.4
			SHC	118.8	144.3	169.8	113.5	138.4	163.3	106.8	130.5	154.3	99.2	121.3	143.4
		67	THC	158.8	158.8	158.8	151.5	151.5	151.5	140.9	140.9	144.6	129.1	129.1	140.0
			SHC	95.1	121.2	147.3	93.3	120.4	147.4	89.6	117.1	144.6	85.0	112.5	140.0
		72	THC	168.9	168.9	168.9	162.1	162.1	162.1	155.3	155.3	155.3	145.1	145.1	145.1
			SHC	68.4	93.7	118.9	66.1	91.7	117.3	63.9	90.6	117.3	60.6	87.9	115.2
		76	THC	–	176.2	176.2	–	168.9	168.9	–	161.7	161.7	–	154.3	154.3
			SHC	–	73.9	101.8	–	71.3	98.8	–	68.8	96.1	–	66.6	94.1
6250 Cfm	EAT (wb)	58	THC	150.6	150.6	171.1	143.5	143.5	163.1	134.9	134.9	153.3	125.5	125.5	142.6
			SHC	130.0	150.6	171.1	123.9	143.5	163.1	116.5	134.9	153.3	108.4	125.5	142.6
		62	THC	151.4	151.4	176.1	143.7	143.7	169.9	135.1	135.1	159.7	125.6	125.6	148.5
			SHC	122.6	149.3	176.1	117.6	143.7	169.9	110.5	135.1	159.7	102.7	125.6	148.5
		67	THC	160.4	160.4	160.4	153.4	153.4	155.3	143.2	143.2	153.4	131.3	131.3	148.7
			SHC	98.2	126.4	154.5	96.8	126.0	155.3	93.6	123.5	153.4	88.9	118.8	148.7
		72	THC	170.3	170.3	170.3	163.4	163.4	163.4	156.7	156.7	156.7	146.8	146.8	146.8
			SHC	69.5	96.5	123.5	67.1	94.5	121.9	65.1	93.8	122.5	62.0	91.7	121.3
		76	THC	–	177.5	177.5	–	170.1	170.1	–	162.7	162.7	–	155.4	155.4
			SHC	–	75.2	104.7	–	72.6	101.8	–	70.2	99.2	–	68.2	97.7

LEGEND:

– = Do not operate in this region (Points are outside SST and SDT permissible operating range)
Cfm = Cubic feet per minute (supply air)
EAT(db) = Entering air temperature (dry bulb)
EAT(wb) = Entering air temperature (wet bulb)
SHC = Sensible heat capacity
TC = Total cooling capacity

Table 26 – HEATING CAPACITIES 3 TONS

RETURN AIR (°F db)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F db at 70% rh)								
			–10	0	10	17	30	40	47	50	60
55	900	Capacity	11.6	15.1	18.9	21.7	27.6	32.7	36.0	37.1	41.8
		Int. Cap.	10.7	13.9	17.4	19.8	24.2	32.7	36.0	37.1	41.8
	1200	Capacity	12.0	15.5	19.4	22.3	28.4	33.5	36.7	37.8	42.7
		Int. Cap.	11.1	14.3	17.8	20.3	24.9	33.5	36.7	37.8	42.7
	1500	Capacity	12.6	16.3	20.2	23.1	29.5	34.2	37.5	38.6	43.5
		Int. Cap.	11.6	15.0	18.5	21.1	25.8	34.2	37.5	38.6	43.5
70	900	Capacity	9.8	13.3	17.2	20.0	25.6	30.4	34.5	35.5	40.2
		Int. Cap.	9.0	12.3	15.7	18.2	22.5	30.4	34.5	35.5	40.2
	1200	Capacity	10.1	13.8	17.7	20.7	26.6	31.7	35.4	36.5	41.2
		Int. Cap.	9.3	12.7	16.3	18.8	23.3	31.7	35.4	36.5	41.2
	1500	Capacity	10.8	14.6	18.6	21.5	27.7	33.0	36.4	37.4	42.0
		Int. Cap.	10.0	13.4	17.1	19.6	24.3	33.0	36.4	37.4	42.0
80	900	Capacity	8.3	11.9	15.7	18.6	24.1	29.0	32.7	34.1	39.0
		Int. Cap.	7.7	10.9	14.4	16.9	21.2	29.0	32.7	34.1	39.0
	1200	Capacity	8.6	12.4	16.3	19.3	25.1	30.2	34.3	35.4	40.1
		Int. Cap.	8.0	11.4	15.0	17.6	22.0	30.2	34.3	35.4	40.1
	1500	Capacity	9.3	13.2	17.2	20.2	26.2	31.4	35.5	36.5	41.1
		Int. Cap.	8.6	12.1	15.8	18.4	23.0	31.4	35.5	36.5	41.1

Table 27 – HEATING CAPACITIES 4 TONS

RETURN AIR (°F db)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F db at 70% rh)								
			–10	0	10	17	30	40	47	50	60
55	1200	Capacity	17.5	22.0	26.6	30.0	36.8	42.6	47.1	48.9	55.3
		Int. Cap.	16.2	20.2	24.4	27.3	32.2	42.6	47.1	48.9	55.3
	1600	Capacity	17.5	22.1	26.7	30.2	37.3	43.5	47.9	49.8	56.1
		Int. Cap.	16.2	20.3	24.5	27.5	32.7	43.5	47.9	49.8	56.1
	2000	Capacity	18.5	23.1	27.8	31.3	38.7	44.9	49.1	50.9	57.1
		Int. Cap.	17.1	21.3	25.5	28.6	33.9	44.9	49.1	50.9	57.1
70	1200	Capacity	15.8	20.3	25.0	28.3	35.0	40.5	44.7	46.7	53.0
		Int. Cap.	14.6	18.7	22.9	25.8	30.6	40.5	44.7	46.7	53.0
	1600	Capacity	15.9	20.5	25.3	28.7	35.6	41.3	45.8	47.8	53.9
		Int. Cap.	14.7	18.9	23.2	26.1	31.2	41.3	45.8	47.8	53.9
	2000	Capacity	17.0	21.7	26.5	29.9	36.9	42.9	47.3	49.1	55.2
		Int. Cap.	15.7	20.0	24.3	27.3	32.4	42.9	47.3	49.1	55.2
80	1200	Capacity	14.2	18.8	23.5	26.9	33.6	39.0	43.2	45.1	51.4
		Int. Cap.	13.1	17.3	21.6	24.6	29.4	39.0	43.2	45.1	51.4
	1600	Capacity	14.4	19.1	23.9	27.4	34.2	39.8	44.2	46.1	52.4
		Int. Cap.	13.3	17.6	22.0	25.0	30.0	39.8	44.2	46.1	52.4
	2000	Capacity	15.5	20.3	25.2	28.7	35.6	41.4	45.9	47.8	53.8
		Int. Cap.	14.3	18.7	23.1	26.1	31.2	41.4	45.9	47.8	53.8

= Indicates standard rating point — = Indicates operation not permissible

LEGEND

Capacity – Instantaneous Capacity (1000 Btuh) includes indoor fan motor heat @AHRI static conditions
Int. Cap. – Integrated Capacity is Instantaneous Capacity minus the effects of frost on the outdoor coil and the heat required to defrost
rh – Relative Humidity
db – Dry Bulb

Table 28 – HEATING CAPACITIES 5 TONS

RETURN AIR (°F DB)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F DB AT 70% RH)								
			–10	0	10	17	30	40	47	50	60
55	1500	Capacity	22.7	28.3	34.2	38.6	47.4	54.3	60.0	62.6	70.3
		Int. Cap.	21.0	26.1	31.4	35.2	41.5	54.3	60.0	62.6	70.3
	2000	Capacity	22.8	28.5	34.4	38.9	47.9	55.3	60.9	63.1	70.9
		Int. Cap.	21.1	26.2	31.6	35.4	42.0	55.3	60.9	63.1	70.9
	2500	Capacity	24.2	30.0	35.9	40.4	49.6	56.9	62.3	64.4	72.0
		Int. Cap.	22.4	27.6	33.0	36.8	43.5	56.9	62.3	64.4	72.0
70	1500	Capacity	19.9	25.8	31.9	36.3	45.2	51.7	57.6	60.0	67.9
		Int. Cap.	18.4	23.7	29.3	33.1	39.6	51.7	57.6	60.0	67.9
	2000	Capacity	20.1	26.1	32.3	36.7	45.8	52.9	58.4	61.0	68.8
		Int. Cap.	18.6	24.0	29.6	33.5	40.1	52.9	58.4	61.0	68.8
	2500	Capacity	21.5	27.6	33.8	38.3	47.5	54.7	60.4	62.7	70.2
		Int. Cap.	19.9	25.4	31.1	35.0	41.6	54.7	60.4	62.7	70.2
80	1500	Capacity	17.6	23.7	30.0	34.6	43.5	50.2	55.7	58.2	66.1
		Int. Cap.	16.3	21.9	27.6	31.5	38.1	50.2	55.7	58.2	66.1
	2000	Capacity	17.8	24.1	30.5	35.1	44.3	51.2	56.6	59.4	67.2
		Int. Cap.	16.5	22.2	28.0	32.0	38.8	51.2	56.6	59.4	67.2
	2500	Capacity	19.3	25.6	32.1	36.8	46.0	53.1	58.8	61.1	68.8
		Int. Cap.	17.8	23.6	29.4	33.5	40.3	53.1	58.8	61.1	68.8

Table 29 – HEATING CAPACITIES 6 TONS

RETURN AIR (°F DB)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F DB AT 70% RH)								
			–10	0	10	17	30	40	47	50	60
55	1800	Capacity	22.4	29.8	37.1	42.5	53.5	62.4	68.6	71.2	80.3
		Int. Cap.	20.7	27.4	34.1	38.8	46.9	62.4	68.6	71.2	80.3
	2400	Capacity	24.6	32.1	39.6	45.1	56.4	65.6	71.5	74.2	83.8
		Int. Cap.	22.7	29.5	36.3	41.1	49.4	65.6	71.5	74.2	83.8
	3000	Capacity	27.4	35.0	42.5	48.2	59.5	68.6	74.5	77.2	86.8
		Int. Cap.	25.3	32.2	39.0	43.9	52.1	68.6	74.5	77.2	86.8
70	1800	Capacity	17.7	25.5	33.2	38.6	49.5	58.5	65.0	67.7	76.5
		Int. Cap.	16.4	23.5	30.5	35.2	43.4	58.5	65.0	67.7	76.5
	2400	Capacity	19.9	27.9	35.8	41.4	52.7	62.0	68.4	71.0	80.3
		Int. Cap.	18.4	25.7	32.9	37.7	46.2	62.0	68.4	71.0	80.3
	3000	Capacity	22.8	30.9	38.9	44.5	56.1	65.5	71.7	74.4	83.9
		Int. Cap.	21.1	28.4	35.7	40.6	49.2	65.5	71.7	74.4	83.9
80	1800	Capacity	13.9	21.9	29.9	35.5	46.2	55.3	62.0	64.9	73.7
		Int. Cap.	12.8	20.2	27.4	32.3	40.5	55.3	62.0	64.9	73.7
	2400	Capacity	16.0	24.4	32.6	38.4	49.6	59.0	65.8	68.6	77.5
		Int. Cap.	14.8	22.5	29.9	35.0	43.5	59.0	65.8	68.6	77.5
	3000	Capacity	18.8	27.4	35.8	41.6	53.1	62.7	69.4	72.1	81.4
		Int. Cap.	17.4	25.2	32.8	37.9	46.6	62.7	69.4	72.1	81.4

= Indicates standard rating point — = Indicates operation not permissible

LEGEND

Capacity – Instantaneous Capacity (1000 Btuh) includes indoor fan motor heat @AHRI static conditions

Int. Cap. – Integrated Capacity is Instantaneous Capacity minus the effects of frost on the outdoor coil and the heat required to defrost

rh – Relative Humidity

db – Dry Bulb

Table 30 – HEATING CAPACITIES 7.5 TONS

RETURN AIR (°F db)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F db at 70% rh)								
			–10	0	10	17	30	40	47	50	60
55	2250	Capacity			46.9	53.5	66.3	77.2	86.2	89.4	103.3
		Int. Cap.			43.1	48.7	58.1	77.2	86.2	89.4	103.3
	3000	Capacity					68.5	80.2	89.8	93.1	106.7
		Int. Cap.					60.0	80.2	89.8	93.1	106.7
	3750	Capacity				58.9	72.5	84.6	94.5	97.6	110.6
		Int. Cap.				53.7	63.5	84.6	94.5	97.6	110.6
70	2250	Capacity	25.9	34.6	43.6	50.2	62.7	73.0	81.4	84.5	98.0
		Int. Cap.	23.9	31.8	40.0	45.7	55.0	73.0	81.4	84.5	98.0
	3000	Capacity	27.4	36.2	45.5	52.2	65.1	75.9	85.0	88.2	102.1
		Int. Cap.	25.3	33.4	41.8	47.6	57.0	75.9	85.0	88.2	102.1
	3750	Capacity	31.0	40.0	49.3	56.1	69.1	80.4	89.8	93.2	106.5
		Int. Cap.	28.6	36.8	45.3	51.1	60.6	80.4	89.8	93.2	106.5
80	2250	Capacity	22.5	31.5	40.7	47.3	60.1	70.3	78.2	81.2	94.3
		Int. Cap.	20.8	29.0	37.3	43.1	52.6	70.3	78.2	81.2	94.3
	3000	Capacity	24.1	33.3	42.7	49.5	62.5	73.1	81.6	84.7	98.6
		Int. Cap.	22.3	30.6	39.2	45.2	54.8	73.1	81.6	84.7	98.6
	3750	Capacity	27.8	37.1	46.6	53.5	66.7	77.5	86.4	89.7	103.4
		Int. Cap.	25.7	34.1	42.8	48.8	58.4	77.5	86.4	89.7	103.4

Table 31 – HEATING CAPACITIES 8.5 TONS

RETURN AIR (°F db)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F db at 70% rh)								
			–10	0	10	17	30	40	47	50	60
55	2550	Capacity	33.1	42.7	52.7	60.0	75.6	87.4	97.5	100.6	113.8
		Int. Cap.	30.7	39.3	48.3	54.7	66.2	87.4	97.5	100.6	113.8
	3400	Capacity	34.4	44.0	54.2	61.8	77.5	89.9	100.2	103.1	115.7
		Int. Cap.	31.8	40.5	49.8	56.4	67.9	89.9	100.2	103.1	115.7
	4250	Capacity	38.0	47.7	58.0	65.8	81.5	94.2	103.9	106.6	118.2
		Int. Cap.	35.2	43.9	53.2	60.0	71.4	94.2	103.9	106.6	118.2
70	2550	Capacity	29.0	38.6	48.6	55.9	70.7	83.5	93.1	96.2	109.5
		Int. Cap.	26.8	35.5	44.6	51.0	61.9	83.5	93.1	96.2	109.5
	3400	Capacity	30.3	40.2	50.4	58.0	73.5	86.1	96.5	99.2	111.9
		Int. Cap.	28.0	37.0	46.3	52.9	64.4	86.1	96.5	99.2	111.9
	4250	Capacity	34.0	44.0	54.4	62.1	77.8	90.5	100.5	103.3	115.2
		Int. Cap.	31.5	40.5	50.0	56.6	68.2	90.5	100.5	103.3	115.2
80	2550	Capacity	25.3	35.0	45.2	52.6	67.1	80.0	90.0	93.2	106.5
		Int. Cap.	23.4	32.2	41.5	48.0	58.8	80.0	90.0	93.2	106.5
	3400	Capacity	26.6	36.7	47.2	54.8	69.8	83.0	93.1	96.2	109.2
		Int. Cap.	24.6	33.8	43.3	50.0	61.2	83.0	93.1	96.2	109.2
	4250	Capacity	30.4	40.6	51.2	59.0	74.4	87.7	97.7	100.7	112.8
		Int. Cap.	28.1	37.4	47.0	53.8	65.1	87.7	97.7	100.7	112.8

= Indicates standard rating point — Indicates operation not permissible

LEGEND

Capacity – Instantaneous Capacity (1000 Btuh) includes indoor fan motor heat @AHRI static conditions
Int. Cap. – Integrated Capacity is Instantaneous Capacity minus the effects of frost on the outdoor coil and the heat required to defrost
rh – Relative Humidity
db – Dry Bulb

Table 32 – HEATING CAPACITIES 10 TONS

RETURN AIR (°F db)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F dB AT 70% RH)								
			–10	0	10	17	30	40	47	50	60
55	3000	Capacity	41.8	52.4	64.1	72.8	90.4	105.3	118.0	121.9	140.3
		Int. Cap.	38.7	48.2	58.8	66.3	79.2	105.3	118.0	121.9	140.3
	4000	Capacity	43.3	54.0	66.0	74.5	92.7	107.8	120.2	124.1	142.1
		Int. Cap.	40.0	49.7	60.6	68.0	81.2	107.8	120.2	124.1	142.1
	5000	Capacity	46.9	57.7	69.7	78.2	96.6	111.5	123.5	127.3	142.3
		Int. Cap.	43.3	53.1	64.0	71.3	84.6	111.5	123.5	127.3	142.3
70	3000	Capacity	37.4	48.2	59.7	68.5	86.2	100.6	113.0	117.1	135.3
		Int. Cap.	34.6	44.4	54.8	62.4	75.5	100.6	113.0	117.1	135.3
	4000	Capacity	39.0	49.9	61.6	70.7	88.5	103.3	115.9	119.8	137.6
		Int. Cap.	36.1	45.9	56.6	64.5	77.5	103.3	115.9	119.8	137.6
	5000	Capacity	42.6	53.7	65.5	74.8	92.5	107.5	119.6	123.4	140.6
		Int. Cap.	39.4	49.4	60.1	68.2	81.1	107.5	119.6	123.4	140.6
80	3000	Capacity	33.9	44.8	56.5	65.1	83.2	97.3	109.5	113.4	131.6
		Int. Cap.	31.4	41.3	51.8	59.3	72.9	97.3	109.5	113.4	131.6
	4000	Capacity	35.5	46.6	58.5	67.3	85.5	100.0	112.5	116.5	134.2
		Int. Cap.	32.8	42.9	53.7	61.4	75.0	100.0	112.5	116.5	134.2
	5000	Capacity	39.1	50.4	62.3	71.3	89.6	104.3	116.6	120.4	137.5
		Int. Cap.	36.2	46.4	57.2	65.0	78.5	104.3	116.6	120.4	137.5

= Indicates standard rating point

LEGEND

Capacity – Instantaneous Capacity (1000 Btuh) includes indoor fan motor heat @AHRI static conditions
Int. Cap. – Integrated Capacity is Instantaneous Capacity minus the effects of frost on the outdoor coil and the heat required to defrost
RH – Relative Humidity
dB – Dry Bulb

Table 33 – HEATING CAPACITIES 12.5 TONS

RETURN AIR (°F dB)	CFM (STANDARD AIR)		TEMPERATURE AIR ENTERING OUTDOOR COIL (°F db AT 70% RH)								
			–10	0	10	17	30	40	47	50	60
55	3750	Capacity	33.7	47.5	69.8	83.1	109.3	131.7	149.7	155.6	180.1
		Int. Cap.	31.2	43.7	64.0	75.8	95.8	131.7	149.7	155.6	180.1
	5000	Capacity	35.7	49.7	72.4	85.8	112.9	136.1	152.9	158.1	178.7
		Int. Cap.	33.0	45.7	66.5	78.2	99.0	136.1	152.9	158.1	178.7
	6250	Capacity	38.9	53.0	76.2	89.5	117.1	139.4	153.5	158.0	175.6
		Int. Cap.	36.0	48.8	70.0	81.6	102.6	139.4	153.5	158.0	175.6
70	3750	Capacity	24.4	38.2	59.4	73.1	99.8	121.2	138.5	144.5	169.7
		Int. Cap.	22.6	35.2	54.5	66.7	87.4	121.2	138.5	144.5	169.7
	5000	Capacity	26.4	40.4	62.1	76.6	103.2	125.4	143.0	148.6	170.3
		Int. Cap.	24.4	37.2	57.0	69.8	90.4	125.4	143.0	148.6	170.3
	6250	Capacity	29.6	43.8	65.9	80.7	107.3	129.8	145.5	150.4	169.1
		Int. Cap.	27.3	40.3	60.5	73.6	94.0	129.8	145.5	150.4	169.1
80	3750	Capacity	17.5	31.4	52.6	65.6	93.3	114.2	131.1	137.0	162.4
		Int. Cap.	16.2	28.9	48.3	59.8	81.8	114.2	131.1	137.0	162.4
	5000	Capacity	19.3	33.4	55.2	68.7	96.6	118.2	135.7	141.5	164.0
		Int. Cap.	17.8	30.8	50.7	62.6	84.6	118.2	135.7	141.5	164.0
	6250	Capacity	22.4	40.3	58.8	72.7	100.6	122.6	139.3	144.3	163.8
		Int. Cap.	20.7	37.1	54.0	66.3	88.2	122.6	139.3	144.3	163.8

= Indicates standard rating point

LEGEND

Capacity – Instantaneous Capacity (1000 Btuh) includes indoor fan motor heat @AHRI static conditions
Int. Cap. – Integrated Capacity is Instantaneous Capacity minus the effects of frost on the outdoor coil and the heat required to defrost
RH – Relative Humidity
dB – Dry Bulb

Table 34 – STATIC PRESSURE ADDERS (Factory Options and/or Accessories)

Economizer

3 – 6 TONS											
CFM (in. wg)	**600**	**800**	**1000**	**1250**	**1500**	**1750**	**2000**	**2250**	**2500**	**2750**	**3000**
Vertical Economizer	0.01	0.02	0.04	0.05	0.07	0.09	0.12	0.15	0.18	0.22	0.26
Horizontal Economizer	0.02	0.03	0.04	0.06	0.08	0.10	0.13	0.15	0.18	0.23	0.28

7.5 – 12.5 TONS																
CFM (in. wg)	**2250**	**2500**	**2750**	**3000**	**3250**	**3500**	**3750**	**4000**	**4250**	**4500**	**4750**	**5000**	**5250**	**5500**	**5750**	**6000**
Vertical Economizer	0.06	0.08	0.09	0.12	0.13	0.15	0.17	0.20	0.22	0.25	0.29	0.33	0.36	0.40	0.44	0.48
Horizontal Economizer	0.08	0.10	0.13	0.15	0.18	0.21	0.25	0.28	0.30	0.34	0.39	0.43	0.47	0.51	0.56	0.60

Electric Heaters *

3 – 6 TONS										
CFM (in. wg)	**600**	**900**	**1200**	**1400**	**1600**	**1800**	**2000**	**2200**	**2400**	**2600**
1 Electric Heater Module	0.03	0.05	0.07	0.09	0.09	0.10	0.11	0.11	0.12	0.13
2 Electric Heater Modules	0.13	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18

7.5 – 10 TONS																
CFM (in. wg)	**2250**	**2500**	**2750**	**3000**	**3250**	**3500**	**3750**	**4000**	**4250**	**4500**	**4750**	**5000**	**5250**	**5500**	**5750**	**6000**
1 Electric Heater Module	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.18
2 Electric Heater Modules	0.04	0.05	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.15	0.16	0.17	0.19	0.20

12.5 TONS												
CFM (in. wg)	**2813**	**3125**	**3438**	**3750**	**4063**	**4375**	**4688**	**5000**	**5313**	**5625**	**5938**	**6250**
Vertical – 1 Electric Heater Module	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04
Vertical – 2 Electric Heater Modules	0.02	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08
Horizontal – 1 Electric Heater Module	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09
Horizontal – 2 Electric Heater Modules	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08

***** Available as field installed accessories only.

General fan performance notes:

1. Interpolation is permissible. Do not extrapolate.
2. External static pressure is the static pressure difference between the return duct and the supply duct plus the static pressure caused by any FIOPs or accessories.
3. Tabular data accounts for pressure loss due to clean filters, unit casing, and wet coils. Factory options and accessories may add static pressure losses, as shown in Table 23. Selection software is available, through your salesperson, to help you select the best motor/drive combination for your application.
4. The Fan Performance tables offer motor/drive recommendations. In cases when two motor/drive combinations would work, recommend the lower horsepower option.
5. For information on the electrical properties of motors, please see the Electrical information section of this book.
6. For more information on the performance limits of motors, see the application data section of this book.

FAN PERFORMANCE

Table 35 – 3 TON DIRECT DRIVE, ECM MOTOR, HORIZONTAL SUPPLY

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	900	0.70	0.31
	975	0.60	0.30
	1050	0.50	0.29
	1125	0.39	0.27
	1200	0.29	0.26
	1275	0.21	0.24
	1350	0.12	0.23
	1425	0.03	0.21
	1500	–	–
2	900	0.85	0.37
	975	0.76	0.36
	1050	0.66	0.36
	1125	0.55	0.34
	1200	0.46	0.34
	1275	0.36	0.32
	1350	0.27	0.31
	1425	0.17	0.29
	1500	0.07	0.27
3	900	1.02	0.44
	975	0.94	0.45
	1050	0.86	0.45
	1125	0.79	0.45
	1200	0.71	0.45
	1275	0.61	0.44
	1350	0.51	0.43
	1425	0.40	0.41
	1500	0.29	0.39
4	900	1.12	0.49
	975	1.06	0.50
	1050	1.00	0.52
	1125	0.95	0.53
	1200	0.89	0.54
	1275	0.80	0.53
	1350	0.70	0.52
	1425	0.57	0.50
	1500	0.46	0.49
5	900	1.18	0.52
	975	1.14	0.54
	1050	1.10	0.56
	1125	1.06	0.58
	1200	1.02	0.60
	1275	0.98	0.63
	1350	0.94	0.65
	1425	0.90	0.68
	1500	0.87	0.71

Table 36 – 3 TON DIRECT DRIVE, ECM MOTOR, VERTICAL SUPPLY

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	900	0.44	0.22
	975	0.35	0.21
	1050	0.24	0.20
	1125	0.15	0.19
	1200	0.08	0.19
	1275	0.02	0.18
	1350	–	–
	1425	–	–
	1500	–	–
2	900	0.64	0.30
	975	0.53	0.29
	1050	0.42	0.28
	1125	0.32	0.27
	1200	0.24	0.26
	1275	0.15	0.25
	1350	0.07	0.24
	1425	–	–
	1500	–	–
3	900	0.93	0.42
	975	0.80	0.41
	1050	0.68	0.39
	1125	0.57	0.38
	1200	0.47	0.37
	1275	0.35	0.36
	1350	0.26	0.34
	1425	0.13	0.33
	1500	0.08	0.32
4	900	1.04	0.47
	975	0.92	0.46
	1050	0.80	0.45
	1125	0.71	0.45
	1200	0.62	0.45
	1275	0.52	0.44
	1350	0.43	0.44
	1425	0.27	0.42
	1500	0.22	0.41
5	900	1.10	0.50
	975	1.00	0.49
	1050	0.90	0.49
	1125	0.82	0.50
	1200	0.75	0.51
	1275	0.70	0.54
	1350	0.67	0.57
	1425	0.60	0.60
	1500	0.62	0.64

FAN PERFORMANCE

Table 37 – 4 TON DIRECT DRIVE, ECM MOTOR, HORIZONTAL SUPPLY

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1200	0.75	0.48
	1300	0.63	0.46
	1400	0.48	0.44
	1500	0.33	0.41
	1600	0.19	0.39
	1700	0.05	0.36
	1800	–	–
	1900	–	–
	2000	–	–
2	1200	0.97	0.58
	1300	0.88	0.59
	1400	0.77	0.59
	1500	0.64	0.59
	1600	0.50	0.57
	1700	0.36	0.54
	1800	0.21	0.52
	1900	0.06	0.49
	2000	–	–
3	1200	0.98	0.59
	1300	0.91	0.60
	1400	0.82	0.62
	1500	0.71	0.62
	1600	0.58	0.61
	1700	0.45	0.60
	1800	0.31	0.58
	1900	0.16	0.56
	2000	0.03	0.52
4	1200	0.98	0.59
	1300	0.92	0.62
	1400	0.86	0.64
	1500	0.79	0.66
	1600	0.70	0.68
	1700	0.62	0.70
	1800	0.52	0.71
	1900	0.37	0.69
	2000	0.21	0.67
5	1200	1.02	0.60
	1300	0.97	0.64
	1400	0.92	0.67
	1500	0.87	0.71
	1600	0.82	0.75
	1700	0.77	0.79
	1800	0.71	0.84
	1900	0.65	0.88
	2000	0.58	0.92

Table 38 – 4 TON DIRECT DRIVE, ECM MOTOR, VERTICAL SUPPLY

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1200	0.50	0.39
	1300	0.36	0.37
	1400	0.19	0.35
	1500	0.10	0.33
	1600	0.02	0.32
	1700	–	–
	1800	–	–
	1900	–	–
	2000	–	–
2	1200	0.80	0.55
	1300	0.69	0.55
	1400	0.50	0.54
	1500	0.38	0.52
	1600	0.24	0.50
	1700	0.13	0.48
	1800	0.01	0.46
	1900	–	–
	2000	–	–
3	1200	0.89	0.59
	1300	0.78	0.61
	1400	0.59	0.60
	1500	0.46	0.58
	1600	0.31	0.56
	1700	0.20	0.54
	1800	0.07	0.52
	1900	–	–
	2000	–	–
4	1200	0.89	0.60
	1300	0.80	0.63
	1400	0.67	0.64
	1500	0.57	0.65
	1600	0.43	0.65
	1700	0.31	0.66
	1800	0.23	0.65
	1900	0.12	0.63
	2000	0.01	0.62
5	1200	0.94	0.62
	1300	0.85	0.65
	1400	0.73	0.68
	1500	0.65	0.70
	1600	0.55	0.72
	1700	0.47	0.75
	1800	0.42	0.78
	1900	0.39	0.82
	2000	0.38	0.88

FAN PERFORMANCE

Table 39 – 5 TON DIRECT DRIVE, ECM MOTOR, HORIZONTAL SUPPLY

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1500	1.19	0.74
	1625	1.01	0.73
	1750	0.82	0.70
	1875	0.60	0.66
	2000	0.38	0.62
	2125	0.16	0.57
	2250	–	–
	2375	–	–
	2500	–	–
2	1500	1.40	0.86
	1625	1.25	0.88
	1750	1.08	0.86
	1875	0.90	0.84
	2000	0.67	0.80
	2125	0.44	0.75
	2250	0.20	0.71
	2375	–	–
	2500	–	–
3	1500	1.41	0.87
	1625	1.28	0.89
	1750	1.13	0.89
	1875	0.96	0.88
	2000	0.74	0.85
	2125	0.51	0.80
	2250	0.27	0.75
	2375	0.02	0.70
	2500	–	–
4	1500	1.44	0.89
	1625	1.35	0.93
	1750	1.24	0.96
	1875	1.11	0.98
	2000	0.90	0.96
	2125	0.69	0.92
	2250	0.43	0.86
	2375	0.17	0.81
	2500	–	–
5	1500	1.49	0.90
	1625	1.38	0.95
	1750	1.28	1.00
	1875	1.18	1.05
	2000	1.11	1.09
	2125	0.97	1.11
	2250	0.72	1.07
	2375	0.47	1.02
	2500	0.20	0.96

Table 40 – 5 TON DIRECT DRIVE, ECM MOTOR, VERTICAL SUPPLY

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1500	1.00	0.70
	1625	0.72	0.65
	1750	0.46	0.60
	1875	0.28	0.55
	2000	0.14	0.51
	2125	0.00	0.52
	2250	–	–
	2375	–	–
	2500	–	–
2	1500	1.18	0.88
	1625	1.00	0.90
	1750	0.75	0.87
	1875	0.51	0.83
	2000	0.30	0.79
	2125	0.13	0.75
	2250	–	–
	2375	–	–
	2500	–	–
3	1500	1.19	0.88
	1625	1.03	0.91
	1750	0.80	0.90
	1875	0.56	0.87
	2000	0.35	0.83
	2125	0.19	0.80
	2250	0.01	0.77
	2375	–	–
	2500	–	–
4	1500	1.25	0.89
	1625	1.09	0.93
	1750	0.89	0.96
	1875	0.65	0.94
	2000	0.45	0.93
	2125	0.26	0.89
	2250	0.12	0.86
	2375	–	–
	2500	–	–
5	1500	1.26	0.90
	1625	1.16	0.96
	1750	0.99	1.01
	1875	0.80	1.05
	2000	0.67	1.07
	2125	0.48	1.07
	2250	0.26	1.03
	2375	0.11	1.00
	2500	–	–

FAN PERFORMANCE

Table 41 – RHS036, 3 TON HORIZONTAL SUPPLY, 3 PHASE BELT DRIVE

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	574	0.13	707	0.23	817	0.34	913	0.47	999	0.61
975	597	0.15	727	0.25	835	0.37	929	0.50	1015	0.64
1050	621	0.18	747	0.28	853	0.40	946	0.53	1030	0.68
1125	646	0.20	768	0.31	872	0.43	964	0.57	1047	0.72
1200	671	0.23	790	0.34	892	0.47	982	0.61	1064	0.76
1275	696	0.26	812	0.38	912	0.51	1001	0.65	1082	0.81
1350	723	0.30	835	0.42	933	0.55	1020	0.70	1100	0.86
1425	749	0.34	859	0.46	955	0.60	1040	0.75	1119	0.91
1500	776	0.38	883	0.51	977	0.65	1061	0.80	1138	0.97

Med static – 819–1251, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3 ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1078	0.77	1151	0.93	1220	1.11	1284	1.30	1346	1.49
975	1093	0.80	1165	0.97	1233	1.15	1297	1.33	1358	1.53
1050	1108	0.84	1180	1.01	1247	1.19	1311	1.38	1371	1.58
1125	1123	0.88	1195	1.05	1261	1.23	1325	1.42	1385	1.62
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1275	1157	0.97	1226	1.15	1292	1.33	1354	1.53	1414	1.73
1350	1174	1.02	1243	1.20	1308	1.39	1370	1.59	1429	1.80
1425	1192	1.08	1260	1.26	1325	1.45	1386	1.65	1444	1.86
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93

Med static – 819–1251, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3 ph)

Table 42 – RHS036, 3 TON VERTICAL SUPPLY, 3 PHASE BELT DRIVE

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	594	0.15	740	0.25	867	0.37	981	0.52	1084	0.68
975	618	0.17	758	0.28	881	0.40	991	0.55	1092	0.71
1050	642	0.19	777	0.30	896	0.43	1003	0.58	1102	0.75
1125	668	0.22	797	0.34	912	0.47	1017	0.62	1113	0.79
1200	695	0.25	818	0.37	930	0.51	1032	0.66	1126	0.83
1275	722	0.29	841	0.41	949	0.55	1048	0.71	1140	0.88
1350	750	0.33	864	0.46	968	0.60	1065	0.76	1155	0.93
1425	778	0.37	888	0.50	989	0.65	1083	0.81	1171	0.99
1500	807	0.42	913	0.56	1011	0.71	1103	0.87	1188	1.05

Med static – 819–1251, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3 ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1180	0.86	1269	1.05	1354	1.25	1434	1.47	**1511**	**1.70**
975	1186	0.89	1275	1.08	1358	1.29	1437	1.51	**1513**	**1.74**
1050	1194	0.92	1281	1.12	1363	1.32	1441	1.54	**1516**	**1.78**
1125	1204	0.97	1289	1.16	1370	1.37	1447	1.59	**1520**	**1.82**
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	**1526**	**1.87**
1275	1227	1.06	1309	1.26	1387	1.47	1462	1.69	**1533**	**1.92**
1350	1240	1.12	1321	1.32	1397	1.53	**1471**	**1.75**	**1541**	**1.99**
1425	1254	1.18	1333	1.38	1409	1.59	**1481**	**1.82**	–	–
1500	1270	1.24	1347	1.45	1421	1.66	**1492**	**1.89**	–	–

Med static – 819–1251, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3 ph)

Bold Face indicates field–supplied drive
1.Recommend using field–supplied fan pulley (part no. 1178447), motor pulley (part no. 1070551) and belt (part no.1178129).

FAN PERFORMANCE (cont.)

Table 43 – RHS048, 4 TON HORIZONTAL SUPPLY, 3 PHASE BELT DRIVE

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	671	0.23	790	0.34	892	0.47	982	0.61	1064	0.76
1300	705	0.28	820	0.39	919	0.52	1007	0.67	1088	0.82
1400	740	0.33	851	0.45	947	0.58	1034	0.73	1113	0.89
1500	776	0.38	883	0.51	977	0.65	1061	0.80	1138	0.97
1600	813	0.45	916	0.58	1007	0.73	1089	0.89	1165	1.05
1700	851	0.52	949	0.66	1038	0.81	1118	0.97	1192	1.15
1800	888	0.60	984	0.75	1069	0.90	1148	1.07	1221	1.25
1900	927	0.69	1019	0.84	1102	1.00	1179	1.18	1250	1.36
2000	965	0.78	1054	0.94	1135	1.11	1210	1.29	1280	1.48

Med static – 920–1303, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1300	1162	0.99	1232	1.16	1297	1.35	1360	1.55	1419	1.75
1400	1186	1.06	1254	1.24	1319	1.43	1381	1.63	1439	1.84
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93
1600	1236	1.23	1302	1.42	1365	1.62	1425	1.82	**1483**	**2.04**
1700	1262	1.33	1328	1.52	1390	1.72	1449	1.93	**1505**	**2.15**
1800	1289	1.44	1354	1.63	1415	1.84	**1473**	**2.05**	**1529**	**2.27**
1900	1317	1.55	1380	1.75	1441	1.96	**1498**	**2.18**	–	–
2000	1345	1.68	1408	1.88	**1467**	**2.10**	**1524**	**2.32**	–	–

Med static – 920–1303, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3ph)

Bold Face indicates field–supplied drive

1.Recommend using field–supplied fan pulley (part no. 1178447), motor pulley (part no. 1170551) and belt (part no.1178129).

Table 44 – RHS048, 4 TON VERTICAL SUPPLY, 3 PHASE BELT DRIVE

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	695	0.25	818	0.37	930	0.51	1032	0.66	1126	0.83
1300	731	0.30	849	0.43	955	0.57	1053	0.72	1145	0.89
1400	769	0.36	880	0.49	982	0.63	1077	0.79	1166	0.97
1500	807	0.42	913	0.56	1011	0.71	1103	0.87	1188	1.05
1600	847	0.49	948	0.63	1042	0.79	1130	0.96	1213	1.14
1700	887	0.57	983	0.72	1073	0.88	1158	1.06	1239	1.24
1800	928	0.66	1020	0.82	1106	0.98	1188	1.16	1266	1.35
1900	969	0.76	1057	0.92	1140	1.09	1219	1.28	1295	1.48
2000	1010	0.87	1095	1.04	1175	1.21	1251	1.41	1325	1.61

Med static – 920–1303, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	**1526**	**1.87**
1300	1231	1.08	1313	1.28	1390	1.49	1465	1.71	**1536**	**1.94**
1400	1249	1.16	1329	1.36	1405	1.57	**1478**	**1.79**	–	–
1500	1270	1.24	1347	1.45	1421	1.66	**1492**	**1.89**	–	–
1600	1292	1.34	1367	1.54	1440	1.76	**1509**	**1.99**	–	–
1700	1315	1.44	1389	1.65	1459	1.88	**1527**	**2.11**	–	–
1800	1341	1.56	1412	1.77	**1481**	**2.00**	–	–	–	–
1900	1367	1.68	1437	1.90	**1504**	**2.13**	–	–	–	–
2000	1395	1.82	**1463**	**2.04**	**1528**	**2.28**	–	–	–	–

Med static – 920–1303, 1.5 HP (motor is new 1.7 HP 3 ph)
High static – 1035–1466, 2.0 max HP (motor is 2.4 HP 3ph)

Bold Face indicates field–supplied drive

1.Recommend using field–supplied fan pulley (part no. 1178447), motor pulley (part no. 1170551) and belt (part no.1178129).

FAN PERFORMANCE (cont.)

Table 45 – RHS060, 5 TON HORIZONTAL SUPPLY, 3 PHASE BELT DRIVE

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	725	0.33	840	0.46	937	0.60	1023	0.75	1101	0.90
1625	765	0.40	876	0.54	970	0.68	1054	0.84	1131	1.00
1750	806	0.48	912	0.63	1004	0.78	1087	0.94	1162	1.11
1875	847	0.57	950	0.72	1039	0.88	1120	1.05	1194	1.23
2000	889	0.66	988	0.83	1075	1.00	1154	1.18	1226	1.36
2125	931	0.78	1027	0.95	1112	1.13	1189	1.31	1260	1.50
2250	974	0.90	1067	1.08	1149	1.27	1224	1.46	1294	1.66
2375	1018	1.03	1107	1.23	1187	1.43	1261	1.63	1329	1.84
2500	1061	1.19	1148	1.39	1226	1.59	1297	1.81	1364	2.02

Med static – 1066–1380, 2.0 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1172	1.06	1239	1.23	1302	1.40	1361	1.58	1418	1.77
1625	1201	1.16	1267	1.34	1329	1.52	1388	1.71	1444	1.90
1750	1231	1.28	1296	1.46	1358	1.65	1416	1.84	1472	2.04
1875	1262	1.41	1326	1.60	1387	1.79	1445	1.99	1499	2.20
2000	1294	1.55	1357	1.74	1417	1.95	1474	2.15	1528	2.36
2125	1326	1.70	1388	1.90	1447	2.11	1504	2.33	1557	2.55
2250	1359	1.87	1420	2.08	1479	2.29	1534	2.51	1587	2.74
2375	1393	2.05	1453	2.27	1511	2.49	1566	2.72	1618	2.95
2500	1427	2.24	1487	2.47	1543	2.70	1597	2.94	1649	3.18

Med static – 1066–1380, 2.0 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

Table 46 – RHS060, 5 TON VERTICAL SUPPLY, 3 PHASE BELT DRIVE

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	794	0.41	902	0.55	993	0.69	1074	0.85	1147	1.00
1625	840	0.49	945	0.64	1034	0.80	1113	0.96	1185	1.13
1750	888	0.59	988	0.75	1075	0.92	1153	1.09	1223	1.26
1875	936	0.70	1033	0.87	1117	1.05	1193	1.23	1263	1.41
2000	984	0.82	1078	1.00	1160	1.19	1235	1.39	1303	1.58
2125	1033	0.96	1124	1.15	1204	1.35	1277	1.56	1343	1.76
2250	1083	1.11	1170	1.32	1248	1.53	1319	1.74	1385	1.96
2375	1133	1.28	1217	1.50	1293	1.72	1363	1.95	1427	2.17
2500	1183	1.47	1265	1.70	1339	1.93	1406	2.17	1470	2.41

Med static – 1066–1380, 2.0 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1214	1.16	1277	1.33	1336	1.50	1392	1.67	1445	1.85
1625	1251	1.30	1313	1.47	1371	1.65	1427	1.83	1479	2.02
1750	1289	1.44	1350	1.63	1407	1.81	1462	2.01	1514	2.20
1875	1327	1.60	1387	1.80	1444	1.99	1498	2.19	1550	2.40
2000	1366	1.78	1426	1.98	1482	2.19	1535	2.40	1586	2.61
2125	1406	1.97	1464	2.18	1520	2.40	1573	2.62	1623	2.84
2250	1446	2.18	1504	2.40	1559	2.62	1611	2.85	1661	3.09
2375	1487	2.40	1544	2.63	1598	2.87	1650	3.11	–	–
2500	1529	2.64	1585	2.89	1638	3.13	–	–	–	–

Med static – 1066–1380, 2.0 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

FAN PERFORMANCE (cont.)

Table 47 – RHS072, 6 TON HORIZONTAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	822	0.51	927	0.66	1018	0.82	1100	0.98	1174	1.15
1950	872	0.62	973	0.79	1061	0.95	1140	1.13	1213	1.31
2100	923	0.75	1019	0.92	1104	1.10	1182	1.29	1253	1.48
2250	974	0.90	1067	1.08	1149	1.27	1224	1.46	1294	1.66
2400	1026	1.06	1115	1.26	1195	1.46	1268	1.66	1336	1.87
2550	1079	1.25	1164	1.46	1241	1.67	1312	1.88	1379	2.10
2700	1132	1.46	1214	1.67	1289	1.90	1358	2.12	1422	2.35
2850	1186	1.69	1264	1.92	1336	2.15	1404	2.39	1467	2.63
3000	1240	1.94	1315	2.18	1385	2.43	1451	2.68	1512	2.93

Std static – 878–1192, 1.5 HP (motor is 1.7 HP 3 ph)
Med static – 1066–1380, 2.9 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	1244	1.33	1308	1.51	1369	1.70	1427	1.90	1483	2.10
1950	1281	1.49	1345	1.68	1405	1.88	1462	2.09	1517	2.30
2100	1320	1.67	1382	1.87	1441	2.08	1498	2.29	1552	2.51
2250	1359	1.87	1420	2.08	1479	2.29	1534	2.51	1587	2.74
2400	1400	2.09	1460	2.31	1517	2.53	1572	2.76	1624	2.99
2550	1441	2.33	1500	2.55	1557	2.79	1610	3.03	1662	3.27
2700	1483	2.59	1541	2.83	1597	3.07	1650	3.32	–	–
2850	1527	2.87	1583	3.12	1638	3.37	–	–	–	–
3000	1571	3.18	1626	3.44	1680	3.70	–	–	–	–

Std static – 878–1192, 1.5 HP (motor is 1.7 HP 3 ph)
Med static – 1066–1380, 2.9 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

Table 48 – RHS072, 6 TON VERTICAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	907	0.63	1006	0.80	1092	0.97	1169	1.14	1239	1.32
1950	965	0.77	1060	0.95	1143	1.13	1218	1.32	1287	1.51
2100	1024	0.93	1115	1.12	1195	1.32	1268	1.52	1335	1.72
2250	1083	1.11	1170	1.32	1248	1.53	1319	1.74	1385	1.96
2400	1143	1.32	1227	1.54	1302	1.76	1371	1.99	1435	2.22
2550	1203	1.55	1284	1.78	1357	2.02	1424	2.26	1487	2.50
2700	1264	1.81	1342	2.06	1412	2.31	1478	2.56	1539	2.82
2850	1326	2.09	1400	2.36	1469	2.62	1532	2.89	1592	3.16
3000	1387	2.41	1459	2.69	1525	2.97	1587	3.25	1646	3.53

Std static – 878–1192, 1.5 HP (motor is 1.7 HP 3 ph)
Med static – 1066–1380, 2.9 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	1304	1.51	1365	1.69	1422	1.88	1477	2.08	1528	2.28
1950	1350	1.71	1410	1.91	1467	2.11	1520	2.31	1572	2.52
2100	1398	1.93	1457	2.14	1512	2.35	1565	2.57	1616	2.79
2250	1446	2.18	1504	2.40	1559	2.62	1611	2.85	1661	3.09
2400	1496	2.45	1552	2.68	1606	2.92	1658	3.16	–	–
2550	1546	2.75	1601	2.99	1654	3.24	–	–	–	–
2700	1597	3.07	1651	3.33	–	–	–	–	–	–
2850	1648	3.43	–	–	–	–	–	–	–	–
3000	–	–	–	–	–	–	–	–	–	–

Std static – 878–1192, 1.5 HP (motor is 1.7 HP 3 ph)
Med static – 1066–1380, 2.9 HP (motor is 2.4 HP 3 ph)
High static – 1208–1639, 2.9 max HP (motor is 2.9 HP 3 ph)

FAN PERFORMANCE (cont.)

Table 49 – RHS090, 7.5 TON HORIZONTAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	423	0.28	509	0.40	587	0.52	659	0.66	725	0.80
2438	444	0.34	525	0.46	600	0.59	669	0.73	733	0.88
2625	465	0.40	543	0.53	614	0.67	680	0.82	743	0.97
2813	487	0.47	561	0.61	629	0.76	693	0.91	753	1.08
3000	510	0.55	580	0.70	646	0.86	707	1.02	765	1.19
3188	534	0.65	600	0.80	663	0.96	722	1.13	779	1.31
3375	557	0.75	621	0.91	681	1.08	738	1.26	793	1.44
3563	582	0.86	642	1.03	700	1.21	755	1.39	808	1.58
3750	606	0.99	664	1.17	720	1.35	773	1.54	824	1.74

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	788	0.94	847	1.09	903	1.25	957	1.41	1009	1.58
2438	794	1.03	852	1.19	907	1.36	959	1.52	1010	1.70
2625	802	1.13	858	1.30	911	1.47	963	1.64	1012	1.82
2813	811	1.24	865	1.41	917	1.59	967	1.77	1016	1.96
3000	821	1.36	874	1.54	925	1.72	974	1.91	1021	2.11
3188	832	1.49	884	1.68	933	1.87	981	2.06	1028	2.26
3375	845	1.63	895	1.82	943	2.02	990	2.22	1035	2.43
3563	858	1.78	907	1.98	954	2.19	1000	2.40	1044	2.61
3750	873	1.94	920	2.15	966	2.36	1011	2.58	1054	2.80

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

Table 50 – RHS090, 3 PHASE, 7.5 TON VERTICAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	447	0.31	528	0.43	597	0.54	658	0.66	713	0.78
2438	470	0.37	548	0.50	615	0.62	675	0.75	729	0.88
2625	494	0.45	569	0.58	634	0.71	692	0.85	745	0.99
2813	518	0.53	590	0.67	653	0.82	710	0.96	763	1.11
3000	543	0.62	612	0.77	673	0.93	729	1.08	780	1.24
3188	568	0.72	635	0.89	694	1.05	749	1.21	799	1.38
3375	593	0.84	658	1.01	716	1.19	769	1.36	818	1.53
3563	619	0.97	681	1.15	737	1.33	789	1.52	837	1.70
3750	645	1.11	705	1.30	760	1.49	810	1.68	857	1.88

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	764	0.89	812	1.02	856	1.14	899	1.26	939	1.39
2438	779	1.00	826	1.13	870	1.26	912	1.40	952	1.53
2625	795	1.12	841	1.26	885	1.40	926	1.54	966	1.68
2813	811	1.25	857	1.40	900	1.55	941	1.69	980	1.84
3000	828	1.39	873	1.55	916	1.70	956	1.86	995	2.02
3188	846	1.54	890	1.71	932	1.87	972	2.04	1010	2.21
3375	864	1.70	907	1.88	949	2.05	988	2.23	1026	2.40
3563	882	1.88	925	2.06	966	2.25	1005	2.43	1042	2.62
3750	902	2.07	944	2.26	984	2.45	1022	2.65	1059	2.84

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

FAN PERFORMANCE (cont.)

Table 51 – RHS102, 8.5 TON HORIZONTAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	468	0.39	546	0.52	618	0.66	684	0.80	747	0.96
2763	493	0.47	567	0.61	635	0.76	699	0.91	760	1.07
2975	520	0.57	589	0.72	654	0.87	716	1.03	774	1.20
3188	547	0.68	613	0.83	675	1.00	733	1.17	789	1.34
3400	575	0.80	637	0.96	696	1.14	752	1.31	806	1.50
3613	603	0.94	662	1.11	719	1.29	773	1.48	824	1.67
3825	631	1.09	688	1.27	742	1.46	794	1.66	843	1.86
4038	660	1.26	714	1.45	766	1.65	816	1.85	864	2.06
4250	689	1.45	741	1.65	790	1.86	838	2.07	885	2.29

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	806	1.11	863	1.28	916	1.45	968	1.62	1018	1.80
2763	817	1.24	871	1.41	924	1.59	974	1.77	1022	1.95
2975	829	1.37	882	1.55	932	1.74	981	1.93	1028	2.12
3188	843	1.53	894	1.71	943	1.90	990	2.10	1036	2.30
3400	858	1.69	907	1.88	955	2.09	1001	2.29	1046	2.50
3613	874	1.87	922	2.07	968	2.28	1013	2.49	1057	2.71
3825	891	2.07	938	2.28	983	2.49	1027	2.71	1069	2.94
4038	910	2.28	955	2.50	999	2.72	1041	2.95	1083	3.19
4250	930	2.51	973	2.74	1015	2.97	1057	3.21	1097	3.45

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

Table 52 – RHS102, 8.5 TON VERTICAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	495	0.43	570	0.56	634	0.70	693	0.83	746	0.96
2763	524	0.53	595	0.67	657	0.81	714	0.95	766	1.09
2975	552	0.63	620	0.79	681	0.94	736	1.09	787	1.24
3188	582	0.76	647	0.92	705	1.08	759	1.25	808	1.41
3400	611	0.89	674	1.07	730	1.24	782	1.42	831	1.59
3613	641	1.05	701	1.23	756	1.42	806	1.60	854	1.79
3825	672	1.22	729	1.42	782	1.61	831	1.81	877	2.00
4038	702	1.41	758	1.62	809	1.83	857	2.03	901	2.24
4250	733	1.62	787	1.84	836	2.06	883	2.28	926	2.49

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	795	1.09	841	1.23	885	1.36	926	1.50	965	1.64
2763	814	1.24	859	1.38	902	1.53	943	1.68	982	1.82
2975	834	1.40	878	1.55	921	1.71	961	1.86	999	2.02
3188	855	1.57	898	1.74	940	1.90	979	2.07	1017	2.24
3400	876	1.76	919	1.94	960	2.12	998	2.29	1036	2.47
3613	898	1.97	940	2.16	980	2.34	1018	2.53	1055	2.72
3825	921	2.20	962	2.40	1001	2.59	1039	2.79	1075	2.99
4038	944	2.45	984	2.65	1023	2.86	1060	3.07	1096	3.27
4250	968	2.71	1007	2.93	1045	3.15	1081	3.36	1117	3.58

Std static – 460–652, 1.2 BHP
Med static – 591–838, 2.9 HP
High static – 838–1084, 2.9 HP

FAN PERFORMANCE (cont.)

Table 53 – RHS120, 10 TON HORIZONTAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	523	0.58	592	0.73	657	0.88	718	1.05	775	1.22
3250	555	0.71	620	0.87	681	1.04	739	1.21	794	1.39
3500	588	0.86	649	1.03	707	1.21	762	1.39	815	1.58
3750	621	1.03	679	1.21	734	1.40	786	1.59	837	1.79
4000	655	1.23	709	1.42	761	1.61	812	1.82	860	2.03
4250	689	1.45	741	1.65	790	1.86	838	2.07	885	2.29
4500	723	1.69	773	1.90	820	2.12	866	2.35	910	2.57
4750	758	1.96	805	2.19	850	2.42	894	2.65	937	2.89
5000	793	2.26	838	2.50	881	2.74	923	2.98	965	3.23

Std static – 591–839 RPM, Max BHP 1.2
Med static – 733–949 RPM, Max BHP 2.9
High static – 838–1084 RPM, Max BHP 3.7

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	830	1.39	883	1.57	934	1.76	982	1.95	1029	2.14
3250	847	1.57	897	1.76	946	1.96	993	2.16	1039	2.36
3500	865	1.77	914	1.97	961	2.18	1007	2.38	1051	2.60
3750	885	1.99	932	2.20	978	2.42	1022	2.64	1065	2.86
4000	907	2.24	952	2.46	996	2.68	1038	2.91	1080	3.14
4250	930	2.51	973	2.74	1015	2.97	1057	3.21	1097	3.45
4500	954	2.81	996	3.05	1037	3.29	1076	3.54	1115	3.79
4750	979	3.13	1019	3.38	1059	3.63	1097	3.89	1135	4.15
5000	1005	3.49	1044	3.74	1082	4.01	1119	4.27	1156	4.55

Std static – 591–839 RPM, Max BHP 2.4
Med static – 733–949 RPM, Max BHP 2.9
High static – 838–1084 RPM, Max BHP 3.7

Table 54 – RHS120, 10 TON VERTICAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	556	0.65	623	0.80	684	0.95	738	1.11	789	1.26
3250	590	0.79	655	0.96	713	1.13	766	1.29	815	1.46
3500	625	0.96	687	1.14	742	1.32	794	1.50	841	1.68
3750	661	1.16	719	1.35	773	1.54	822	1.73	869	1.93
4000	697	1.37	753	1.58	804	1.79	852	1.99	897	2.20
4250	733	1.62	787	1.84	836	2.06	883	2.28	926	2.49
4500	770	1.89	821	2.13	869	2.36	914	2.59	956	2.82
4750	807	2.20	856	2.45	902	2.69	945	2.94	986	3.18
5000	844	2.54	891	2.80	936	3.06	978	3.31	1018	3.57

Std static – 591–839 RPM, Max BHP 2.4
Med static – 733–949 RPM, Max BHP 2.9
High static – 838–1084 RPM, Max BHP 3.7

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	836	1.42	881	1.57	923	1.73	963	1.89	1001	2.05
3250	861	1.63	904	1.79	945	1.96	985	2.13	1023	2.30
3500	886	1.86	929	2.04	969	2.22	1008	2.40	1045	2.58
3750	912	2.12	954	2.31	994	2.50	1031	2.70	1068	2.89
4000	940	2.40	980	2.61	1019	2.81	1056	3.02	1092	3.22
4250	968	2.71	1007	2.93	1045	3.15	1081	3.36	1117	3.58
4500	996	3.05	1035	3.28	1072	3.51	1108	3.74	1142	3.97
4750	1026	3.42	1063	3.66	1100	3.91	1135	4.15	1168	4.39
5000	1056	3.82	1093	4.08	1128	4.34	1162	4.59	–	–

Std static – 591–839 RPM, Max BHP 2.4
Med static – 733–949 RPM, Max BHP 2.9
High static – 838–1084 RPM, Max BHP 3.7

FAN PERFORMANCE (cont.)

Table 55 – RHS150, 12.5 TON HORIZONTAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3750	**381**	**0.53**	**452**	**0.74**	520	0.98	584	1.26	645	1.56
4063	**401**	**0.63**	**468**	**0.86**	531	1.11	592	1.39	651	1.69
4375	**421**	**0.75**	**484**	**0.99**	544	1.25	601	1.53	657	1.85
4688	**441**	**0.89**	**501**	**1.14**	558	1.40	612	1.70	666	2.02
5000	**462**	**1.04**	519	1.30	573	1.58	625	1.88	675	2.21
5313	**483**	**1.21**	537	1.49	589	1.77	638	2.08	686	2.42
5625	**504**	**1.40**	556	1.69	605	1.99	653	2.31	699	2.65
5938	525	1.61	575	1.91	622	2.22	668	2.55	712	2.90
6250	546	1.84	595	2.15	640	2.48	684	2.82	*726*	*3.17*

Std static – 507–676, 2.9 HP
Med static – 634–833, 2.9 HP
High static – 792–971, 208V: 5.0 HP; 230V/460V: 6.1 HP; 575V: 5.9 HP

Bold Face requires standard static drive package with 1183310 motor pulley (338–507)
Italics requires high static drive package with 1170699 motor pulley (684–864)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)											
	1.2		1.4		1.6		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3750	703	1.88	757	2.23	808	2.59	855	2.97	878	3.17	900	3.36
4063	707	2.03	760	2.38	810	2.75	857	3.14	880	3.34	902	3.55
4375	711	2.18	763	2.55	812	2.93	859	3.33	882	3.53	904	3.74
4688	717	2.36	767	2.73	815	3.12	862	3.52	884	3.73	906	3.94
5000	725	2.55	*773*	*2.93*	820	3.32	865	3.73	887	3.95	908	4.16
5313	734	2.77	*780*	*3.15*	825	3.55	869	3.96	890	4.18	912	4.40
5625	*744*	*3.01*	*788*	*3.39*	832	3.79	874	4.22	895	4.44	916	4.66
5938	*755*	*3.27*	798	3.65	840	4.06	881	4.49	901	4.71	921	4.94
6250	*768*	*3.55*	808	3.94	849	4.36	888	4.79	908	5.01	927	5.24

Std static – 507–676, 2.9 HP
Med static – 634–833, 2.9 HP
High static – 792–971, 208V: 5.0 HP; 230V/460V: 6.1 HP; 575V: 5.9 HP

Italics requires high static drive package with 1170699 motor pulley (684–864)

Table 56 – RHS150, 12.5 TON VERTICAL SUPPLY

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3750	**441**	**0.65**	513	0.88	582	1.15	647	1.45	707	1.78
4063	**466**	**0.78**	533	1.03	598	1.30	660	1.61	718	1.95
4375	**491**	**0.94**	554	1.19	615	1.48	674	1.80	730	2.14
4688	517	1.11	576	1.38	634	1.68	690	2.00	744	2.36
5000	543	1.31	599	1.59	653	1.90	706	2.23	758	2.59
5313	570	1.54	622	1.82	674	2.14	724	2.48	774	2.85
5625	596	1.78	646	2.08	695	2.41	743	2.76	*790*	*3.14*
5938	623	2.06	671	2.37	717	2.71	*763*	*3.07*	808	3.45
6250	650	2.36	695	2.69	*740*	*3.03*	*784*	*3.40*	827	3.80

Std static – 507–676, 2.9 HP
Med static – 634–833, 2.9 HP
High static – 792–971, 208V: 5.0 HP; 230V/460V: 6.1 HP; 575V: 5.9 HP

Bold Face requires standard static drive package with 1183310 motor pulley (338–507)
Italics requires high static drive package with 1170699 motor pulley (684–864)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IN. WG)											
	1.2		1.4		1.6		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3750	764	2.12	816	2.48	866	2.86	912	3.24	935	3.44	956	3.64
4063	773	2.31	825	2.68	874	3.07	921	3.47	943	3.68	965	3.88
4375	784	2.51	835	2.90	883	3.30	929	3.72	951	3.93	973	4.14
4688	795	2.73	845	3.13	893	3.54	938	3.98	960	4.19	981	4.42
5000	808	2.98	856	3.38	903	3.81	947	4.25	969	4.48	990	4.71
5313	822	3.25	868	3.66	914	4.10	957	4.55	978	4.78	999	5.02
5625	837	3.54	882	3.96	925	4.41	968	4.87	989	5.11	1009	5.35
5938	852	3.86	896	4.30	938	4.75	980	5.22	1000	5.46	1020	5.71
6250	869	4.22	911	4.65	952	5.12	992	5.59	1012	5.84	1032	6.09

Std static – 507–676, 2.9 HP
Med static – 634–833, 2.9 HP
High static – 792–971, 208V: 5.0 HP; 230V/460V: 6.1 HP; 575V: 5.9 HP

Bold Face requires standard static drive package with 1183310 motor pulley (338–507)
Italics requires high static drive package with 1170699 motor pulley (684–864)
Underline requires high static drive package with 1178187 motor pulley (864–1061).

FAN PERFORMANCE (cont.)

Table 57 – PULLEY ADJUSTMENT

UNIT RHS		MOTOR/DRIVE COMBO	MOTOR PULLEY TURNS OPEN											
			0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
036	3 phase	Medium Static	1251	1208	1165	1121	1078	1035	992	949	905	862	819	–	–
		High Static	1466	1423	1380	1337	1294	1251	1207	1164	1121	1078	1035	–	–
048	3 phase	Medium Static	1303	1265	1226	1188	1150	1112	1073	1035	997	958	920	–	–
		High Static	1466	1423	1380	1337	1294	1251	1207	1164	1121	1078	1035	–	–
060	3 phase	Medium Static	1380	1349	1317	1286	1254	1223	1192	1160	1129	1097	1066	–	–
		High Static	1639	1596	1553	1510	1467	1424	1380	1337	1294	1251	1208	–	–
072	3 phase	Standard Static	1192	1161	1129	1098	1066	1035	1004	972	941	909	878	–	–
		Medium Static	1380	1349	1317	1286	1254	1223	1192	1160	1129	1097	1066	–	–
		High Static	1639	1596	1553	1510	1467	1424	1380	1337	1294	1251	1208	–	–
090	3 phase	Standard Static	652	633	614	594	575	556	537	518	498	479	460	–	–
		Medium Static	838	813	789	764	739	715	690	665	640	616	591	–	–
		High Static	1084	1059	1035	1010	986	961	936	912	887	863	838	–	–
102	3 phase	Standard Static	652	633	614	594	575	556	537	518	498	479	460	–	–
		Medium Static	838	813	789	764	739	715	690	665	640	616	591	–	–
		High Static	1084	1059	1035	1010	986	961	936	912	887	863	838	–	–
120	3 phase	Standard Static	652	633	614	594	575	556	537	518	498	479	460	–	–
		Medium Static	838	813	789	764	739	715	690	665	640	616	591	–	–
		High Static	1084	1059	1035	1010	986	961	936	912	887	863	838	–	–
150	3 phase	Standard Static	676	659	642	625	608	592	575	558	541	524	507	*	*
		Medium Static	**	**	833	813	793	773	753	734	714	694	674	654	634
		High Static	**	**	971	953	935	917	899	882	864	846	828	810	792

NOTE: Do not adjust pulley further than 5 turns open.

– Factory settings

* Do not set motor pulley above 5 turns open for A or AX section belts

** Do not set motor pulley below 1 turn open for B or BX section belts

ECONOMIZER, BAROMETRIC RELIEF, AND PERFORMANCE

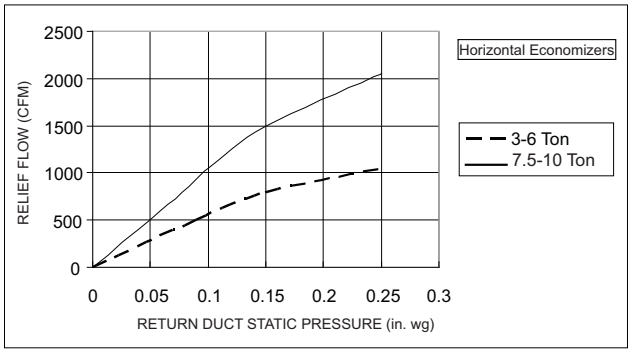


Fig 1 – Barometric Relief Flow Capacity

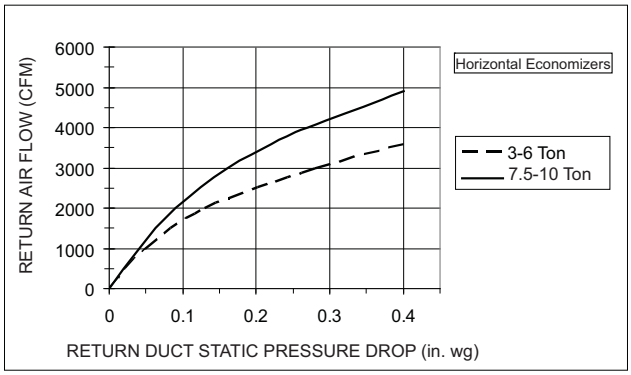


Fig 2 – Return Air Pressure Drop

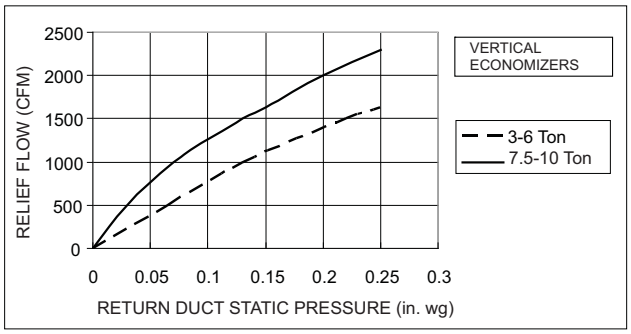


Fig 3 – Barometric Relief flow Capacity

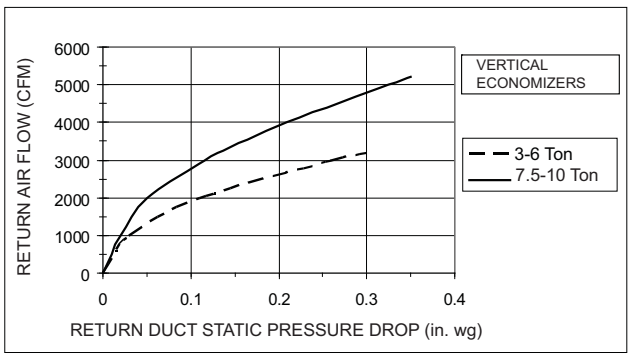


Fig 4 – Return Air Pressure Drop

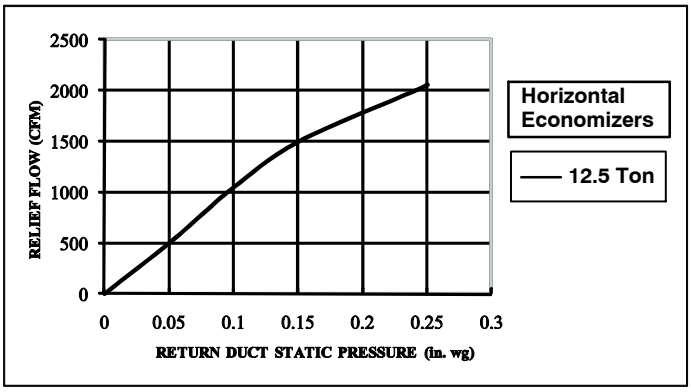


Fig 5 – Relief Flow

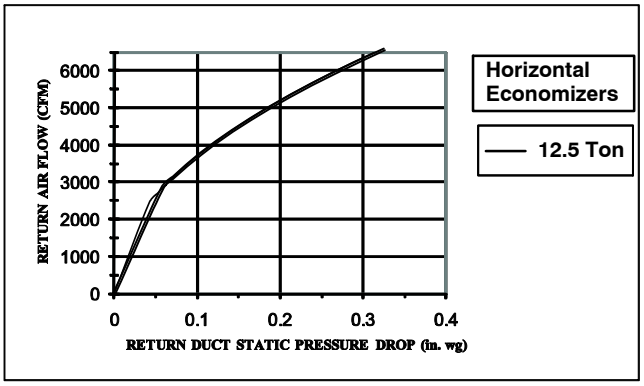


Fig 6 – Return Air Flow

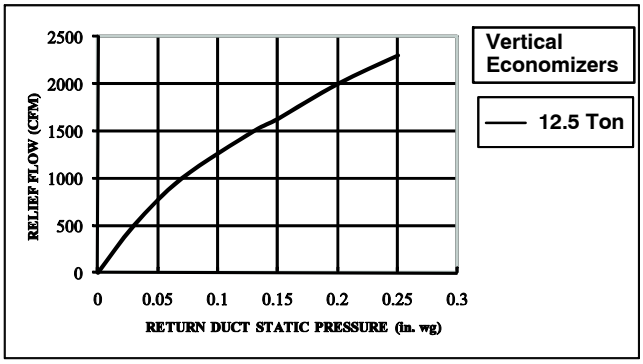


Fig 7 – Relief Flow

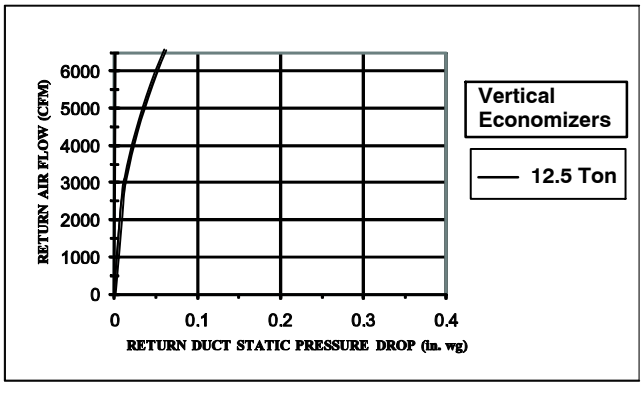


Fig 8 – Return Air Flow

ELECTRICAL INFORMATION

Table 58 – RHS036, 3 TONS.....1−Stage Cooling

	VOLTAGE RANGE		COMP (ea)		OFM (ea)		IFM				
V−Ph−Hz	MIN	MAX	RLA	LRA	WATTS	FLA	TYPE	Max WATTS	Max AMP Draw	EFF at Full Load	FLA
208−1−60	187	253	17.9	112	190	0.9	DD−STD	980	7.8	84%	7.4
230−1−60	187	253	17.9	112	190	0.9	DD−STD	980	7.8	84%	7.4
208−3−60	187	253	13.2	88	190	0.9	DD−STD	980	7.8	84%	7.4
							MED	2000	5.5	80%	5.2
							HIGH	2000	5.5	80%	5.2
230−3−60	187	253	13.2	88	190	0.9	DD−STD	980	7.8	84%	7.4
							MED	2000	5.5	80%	5.2
							HIGH	2000	5.5	80%	5.2
460−3−60	414	506	6.0	44	190	0.5	DD−STD	980	8.0	84%	7.6
							MED	2000	2.7	80%	2.6
							HIGH	2000	2.7	80%	2.6
575−3−60	518	633	NA	NA	190	0.4	DD−STD	980	4.2	84%	4.0
							MED	2000	2.5	80%	2.4
							HIGH	2000	2.1	80%	2.0

Table 59 – RHS048, 4 TONS.....1−Stage Cooling

	VOLTAGE RANGE		COMP (ea)		OFM (ea)		IFM				
V−Ph−Hz	MIN	MAX	RLA	LRA	WATTS	FLA	TYPE	Max WATTS	Max AMP Draw	EFF at Full Load	FLA
208−1−60	187	253	21.8	117	325	1.5	DD−STD	980	7.8	84%	7.4
230−1−60	187	253	21.8	117	325	1.5	DD−STD	980	7.8	84%	7.4
208−3−60	187	253	13.7	83	325	1.5	DD−STD	980	7.8	84%	7.4
							MED	2000	5.5	80%	5.2
							HIGH	2000	5.5	80%	5.2
230−3−60	187	253	13.7	83	325	1.5	DD−STD	980	7.8	84%	7.4
							MED	2000	5.5	80%	5.2
							HIGH	2000	5.5	80%	5.2
460−3−60	414	506	6.2	41	325	0.8	DD−STD	980	8.0	84%	7.6
							MED	2000	2.7	80%	2.6
							HIGH	2000	2.7	80%	2.6
575−3−60	518	633	4.8	37	325	0.6	DD−STD	980	4.2	84%	4.0
							MED	2000	2.5	80%	2.4
							HIGH	2000	2.1	80%	2.0

Table 60 – RHS060, 5 TONS.....1−Stage Cooling

	VOLTAGE RANGE		COMP (ea)		OFM (ea)		IFM				
V−Ph−Hz	MIN	MAX	RLA	LRA	WATTS	FLA	TYPE	Max WATTS	Max AMP Draw	EFF at Full Load	FLA
208−1−60	187	253	26.2	134	325	1.5	DD−STD	980	7.8	84%	7.4
230−1−60	187	253	26.2	134	325	1.5	DD−STD	980	7.8	84%	7.4
208−3−60	187	253	15.6	110	325	1.5	DD−STD	980	7.8	84%	7.4
							MED	2000	5.5	80%	5.2
							HIGH	2770	7.9	81%	7.5
230−3−60	187	253	15.6	110	325	1.5	DD−STD	980	7.8	84%	7.4
							MED	2000	5.5	80%	5.2
							HIGH	2770	7.9	81%	7.5
460−3−60	414	506	7.7	52	325	0.8	DD−STD	980	8.0	84%	7.6
							MED	2000	2.7	80%	2.6
							HIGH	2770	3.6	81%	3.4
575−3−60	518	633	5.8	39	325	0.6	DD−STD	980	4.2	84%	4.0
							MED	2000	2.1	80%	2.0
							HIGH	2770	2.9	81%	2.8

ELECTRICAL INFORMATION (cont.)

Table 61 – RHS072, 6 TONS.....1–Stage Cooling

	VOLTAGE RANGE		COMP (ea)		OFM (ea)		IFM				
V–Ph–Hz	MIN	MAX	RLA	LRA	WATTS	FLA	TYPE	Max WATTS	Max AMP Draw	EFF at Full Load	FLA
208–3–60	187	253	19.0	123	325	1.5	STD	1600	5.5	80%	5.2
							MED	2770	7.9	81%	7.5
							HIGH	2770	7.9	81%	7.5
230–3–60	187	253	19.0	123	325	1.5	STD	1600	5.5	80%	5.2
							MED	2770	7.9	81%	7.5
							HIGH	2770	7.9	81%	7.5
460–3–60	414	506	9.7	62	325	0.8	STD	1600	2.7	80%	2.6
							MED	2770	3.6	81%	3.4
							HIGH	2770	3.6	81%	3.4
575–3–60	518	633	7.4	50	325	0.6	STD	1600	2.5	80%	2.4
							MED	2770	2.9	81%	2.8
							HIGH	2770	2.9	81%	2.8

Table 62 – RHS090, 7.5 TONS.....2–Stage Cooling With 1–Speed Indoor Motor

	VOLTAGE RANGE		COMP (Cir 1)		COMP (Cir 2)		OFM (ea)		IFM		
V–Ph–Hz	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
208–3–60	187	253	13.1	83	13.1	83	325	1.5	STD	80%	5.2
									MED	81%	7.5
									HIGH	81%	7.5
230–3–60	187	253	13.1	83	13.1	83	325	1.5	STD	80%	5.2
									MED	81%	7.5
									HIGH	81%	7.5
460–3–60	414	506	6.1	41	6.1	41	325	0.8	STD	80%	2.6
									MED	81%	3.4
									HIGH	81%	3.4
575–3–60	518	633	4.4	33	4.4	33	325	0.6	STD	80%	2.4
									MED	81%	2.8
									HIGH	81%	2.8

Table 63 – RHS090, 7.5 TONS.....2–Stage Cooling With 2–Speed Indoor Fan Motor

	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		IFM		
V–Ph–Hz	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
208–3–60	187	253	13.1	83	13.1	83	325	1.5	STD	84%	5.8
							325	1.5	MED	85%	8.6
							325	1.5	HIGH	85%	8.6
230–3–60	187	253	13.1	83	13.1	83	325	1.5	STD	84%	5.6
							325	1.5	MED	85%	7.8
							325	1.5	HIGH	85%	7.8
460–3–60	414	506	6.1	41	6.1	41	325	0.8	STD	79%	2.9
							325	0.8	MED	85%	3.8
							325	0.8	HIGH	85%	3.8
575–3–60	518	633	4.4	33	4.4	33	325	0.6	STD	81%	2.8
							325	0.6	MED	84%	4.5
							325	0.6	HIGH	84%	4.5

Table 64 – RHS102, 8.5 TONS.....2−Stage Cooling With 1−Speed Indoor Motor

	VOLTAGE RANGE		COMP (Cir 1)		COMP (Cir 2)		OFM (ea)		IFM				
V−Ph−Hz	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	Max WATTS	Max AMP Draw	EFF at Full Load	FLA
208−3−60	187	253	16.0	91	13.7	83	325	1.5	STD	1310	5.5	80%	5.2
									MED	2770	7.9	80%	7.5
									HIGH	2770	7.9	80%	7.5
230−3−60	187	253	16.0	91	13.7	83	325	1.5	STD	1310	5.5	80%	5.2
									MED	2770	7.9	80%	7.5
									HIGH	2770	7.9	80%	7.5
460−3−60	414	506	7.0	46	6.2	41	325	0.8	STD	1310	2.7	80%	2.6
									MED	2770	3.6	80%	3.4
									HIGH	2770	3.6	80%	3.4
575−3−60	518	633	5.6	37	4.8	37	325	0.6	STD	1310	2.5	80%	2.4
									MED	2770	2.9	80%	2.8
									HIGH	2770	2.9	81%	2.8

Table 65 – RHS102, 8.5 TONS.....2−Stage Cooling With 2−Speed Indoor Motor

	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		IFM		
V−Ph−Hz	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
208−3−60	187	253	16.0	91	13.7	83	325	1.5	STD	84%	5.8
							325	1.5	MED	85%	8.6
							325	1.5	HIGH	85%	8.6
230−3−60	187	253	16.0	91	13.7	83	325	1.5	STD	84%	5.6
							325	1.5	MED	85%	7.8
							325	1.5	HIGH	85%	7.8
460−3−60	414	506	7.0	46	6.2	41	325	0.8	STD	79%	2.9
							325	0.8	MED	85%	3.8
							325	0.8	HIGH	85%	3.8
575−3−60	518	633	5.6	37	4.8	33	325	0.6	STD	81%	2.8
							325	0.6	MED	84%	4.5
							325	0.6	HIGH	84%	4.5

Table 66 – RHS120, 10 TONS.....2−Stage Cooling With 1−Speed Indoor Motor

	VOLTAGE RANGE		COMP (Cir 1)		COMP (Cir 2)		OFM (ea)		IFM		
V−Ph−Hz	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
208−3−60	187	253	15.6	110	15.9	110	800	6.2	STD	80%	5.2
									MED	80%	10
									HIGH	80%	15
230−3−60	187	253	15.6	110	15.9	110	800	6.2	STD	80%	5.2
									MED	80%	10
									HIGH	80%	15
460−3−60	414	506	7.7	52	7.7	52	800	3.1	STD	80%	2.6
									MED	80%	4.4
									HIGH	80%	7.4
575−3−60	518	633	5.8	39	5.7	39	800	2.5	STD	80%	2
									MED	80%	2.8
									HIGH	81%	5.6

Table 67 – RHS120, 10 TONS.....2–Stage Cooling With 2–Speed Indoor Motor

V–Ph–Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		IFM		
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
208–3–60	187	253	15.6	110	15.9	110	1070	6.2	STD	77%	7.1
							1070	6.2	MED	82%	10.8
							1070	6.2	HIGH	84%	13.6
230–3–60	187	253	15.6	110	15.9	110	1070	6.2	STD	77%	6.8
							1070	6.2	MED	82%	9.8
							1070	6.2	HIGH	84%	12.7
460–3–60	414	506	7.7	52	7.7	52	1070	3.1	STD	77%	3.8
							1070	3.1	MED	82%	4.9
							1070	3.1	HIGH	84%	6.4
575–3–60	518	633	5.8	39	5.7	39	1070	2.5	STD	80%	3.5
							1070	2.5	MED	84%	4.5
							1070	2.5	HIGH	83%	6.2

Table 68 – RHS150, 12.5 TONS.....2–Stage Cooling With 1–Speed Indoor Motor

V–Ph–Hz	VOLTAGE RANGE		COMP (Cir 1)		COMP (Cir 2)		OFM (ea)		IFM		
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
208–3–60	187	253	22.4	149	22.4	149	325	1.5	STD	80%	7.5
									MED	80%	7.5
									HIGH	89.5%	20.4
230–3–60	187	253	22.4	149	22.4	149	325	1.5	STD	80%	7.5
									MED	80%	7.5
									HIGH	89.5%	20.4
460–3–60	414	506	10.6	75	10.6	75	325	0.8	STD	80%	3.4
									MED	80%	3.4
									HIGH	89.5%	10.2
575–3–60	518	633	8.5	54	8.5	54	325	0.7	STD	80%	2.8
									MED	80%	2.8
									HIGH	89.5%	9.0

Table 69 – RHS150, 12.5 TONS.....2–Stage Cooling With 2–Speed Indoor Motor

V–Ph–Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		IFM		
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
208–3–60	187	253	22.4	149	22.4	149	280	1.5	STD	85%	8.6
							280	1.5	MED	85%	8.6
							280	1.5	HIGH	90%	20.4
230–3–60	187	253	22.4	149	22.4	149	280	1.5	STD	85%	7.8
							280	1.5	MED	85%	7.8
							280	1.5	HIGH	90%	20.4
460–3–60	414	506	10.6	75	10.6	75	280	0.8	STD	85%	3.8
							280	0.8	MED	85%	3.8
							280	0.8	HIGH	90%	10.2
575–3–60	518	633	8.5	54	8.5	54	280	0.7	STD	84%	4.5
							280	0.7	MED	84%	4.5
							280	0.7	HIGH	94%	9.0

MCA/MOCP

TABLE 70 – RHS036 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.**
SINGLE STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR

NOM. V–PH–Hz	IFM TYPE	ELECTRIC HEATER		WITHOUT C.O. or UNPWR C.O.							
				WITHOUT P.E.				WITH P.E.			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/ 230–1–60	DD–STD	–	–	30.7	45	30	121	32.6	50	32	123
		3.3/4.4	15.9/18.3	50.6/53.6	60/60	48/51	137/139	52.5/55.5	60/60	51/53	139/141
		4.9/6.5	23.5/27.1	60.1/64.6	70/70	57/61	145/148	62.0/66.5	70/70	59/63	147/150
		6.5/8.7	31.4/36.3	69.9/76.1	70/80	66/72	152/157	71.8/78.0	80/80	68/74	154/159
		7.9/10.5	37.9/43.8	78.1/85.4	80/90	74/81	159/165	80.0/87.3	80/90	76/83	161/167
		9.8/13.0	46.9/54.2	89.3/98.4	90/100	84/92	215/229	91.2/100.3	100/110	86/95	217/231
208/ 230–3–60	DD–STD	–	–	24.8	30	25	97	26.7	30	27	99
		3.3/4.4	9.2/10.6	36.3/38.1	45/45	35/37	106/108	38.2/40.0	45/50	37/39	108/110
		4.9/6.5	13.6/15.6	41.8/44.3	50/50	40/43	111/113	43.7/46.2	50/50	43/45	113/115
		6.5/8.7	18.1/20.9	47.4/50.9	50/60	46/49	115/118	49.3/52.8	50/60	48/51	117/120
		7.9/10.5	21.9/25.3	52.2/56.4	60/60	50/54	119/122	54.1/58.3	60/60	52/56	121/124
		12.0/16.0	33.4/38.5	66.6/72.9	70/80	63/69	130/136	68.5/74.8	70/80	65/71	132/138
	MED	–	–	22.6	30	22	109	24.5	30	24	111
		3.3/4.4	9.2/10.6	34.1/35.9	45/45	33/34	118/120	36.0/37.8	45/45	35/37	120/122
		4.9/6.5	13.6/15.6	39.6/42.1	45/50	38/40	123/125	41.5/44.0	50/50	40/42	125/127
		6.5/8.7	18.1/20.9	45.2/48.7	50/50	43/46	127/130	47.1/50.6	50/60	45/48	129/132
		7.9/10.5	21.9/25.3	50.0/54.2	50/60	47/51	131/134	51.9/56.1	60/60	50/53	133/136
		12.0/16.0	33.4/38.5	64.4/70.7	70/80	61/66	142/148	66.3/72.6	70/80	63/69	144/150
	HIGH	–	–	22.6	30	22	120	24.5	30	24	122
		3.3/4.4	9.2/10.6	34.1/35.9	45/45	33/34	129/131	36.0/37.8	45/45	35/37	131/133
		4.9/6.5	13.6/15.6	39.6/42.1	45/50	38/40	134/136	41.5/44.0	50/50	40/42	136/138
		6.5/8.7	18.1/20.9	45.2/48.7	50/50	43/46	138/141	47.1/50.6	50/60	45/48	140/143
		7.9/10.5	21.9/25.3	50.0/54.2	50/60	47/51	142/145	51.9/56.1	60/60	50/53	144/147
		12.0/16.0	33.4/38.5	64.4/70.7	70/80	61/66	153/159	66.3/72.6	70/80	63/69	155/161
460–3–60	DD–STD	–	–	16.0	20	16	53	17.0	20	17	54
		6.0	7.2	25.0	30	24	60	26.0	30	26	61
		8.8	10.6	29.3	30	28	64	30.3	35	30	65
		11.5	13.8	33.3	35	32	67	34.3	35	33	68
		14.0	16.8	37.0	40	36	70	38.0	40	37	71
	MED	–	–	10.6	15	10	54	11.6	15	12	55
		6.0	7.2	19.6	20	19	61	20.6	25	20	62
		8.8	10.6	23.9	25	23	65	24.9	25	24	66
		11.5	13.8	27.9	30	26	68	28.9	30	27	69
		14.0	16.8	31.6	35	30	71	32.6	35	31	72
	HIGH	–	–	10.6	15	10	60	11.6	15	12	61
		6.0	7.2	19.6	20	19	67	20.6	25	20	68
		8.8	10.6	23.9	25	23	71	24.9	25	24	72
		11.5	13.8	27.9	30	26	74	28.9	30	27	75
		14.0	16.8	31.6	35	30	77	32.6	35	31	78
575–3–60	DD–STD	–	–	5.4	15	5	5	7.4	15	7	7
	MED	–	–	3.4	15	3	8	5.4	15	5	10
	HIGH	–	–	2.9	15	3	12	4.9	15	5	14

LEGEND
C.O. – Convenience outlet
DD – Electric Drive X13 Motor
DISC – Disconnect
FLA – Full load amps
IFM – Indoor fan motor
LRA – Locked rotor amps
MCA – Minimum circuit amps
MOCP – Maximum over current protection
P.E. – Power exhaust
UNPWRD C.O. – Unpowered Convenience outlet

NOTES:

1. In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. Canadian units may be fuse or circuit breaker.
2. **Unbalanced 3-Phase Supply Voltage**
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

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

Example: Supply voltage is 230-3-60

AB = 224V
BC = 231V
AC = 226V

$$\text{Average Voltage} = \frac{(224 + 231 + 226)}{3} = \frac{681}{3}$$

$$= 227$$

Determine maximum deviation from average voltage.
(AB) 227 – 224 = 3V Maximum deviation is 4V.
(BC) 231 – 227 = 4V Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{4}{227}$$

$$= 1.76\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

MCA/MOCP (cont.)

TABLE 71 – RHS048 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O. SINGLE STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR**

Nom. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER		WITHOUT C.O. or UNPWR C.O.							
				WITHOUT P.E.				WITH P.E.			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/230–1–60	DD–STD	–	–	36.2	50	35	128	38.1	50	37	130
		3.3/4.4	15.9/18.3	56.0/59.0	60/60	54/56	144/146	57.9/60.9	60/70	56/59	146/148
		6.5/8.7	31.4/36.3	75.4/81.5	80/90	71/77	159/164	77.3/83.4	80/90	74/79	161/166
		9.8/13.0	46.9/54.2	94.8/103.9	100/110	89/98	222/236	96.7/105.8	100/110	91/100	224/238
		13.1/17.4	62.8/72.5	114.7/126.8	125/150	108/119	254/273	116.6/128.7	125/150	110/121	256/275
		15.8/21.0	75.8/87.5	130.9/145.5	150/150	122/136	280/303	132.8/147.4	150/150	125/138	282/305
208/230–3–60	DD–STD	–	–	26.0	30	26	94	27.9	40	28	96
		4.9/6.5	13.6/15.6	43.0/45.5	50/50	42/44	108/110	44.9/47.4	50/50	44/46	110/112
		6.5/8.7	18.1/20.9	48.7/52.2	50/60	47/50	112/115	50.6/54.1	60/60	49/52	114/117
		12.0/16.0	33.4/38.5	67.8/74.2	70/80	64/70	127/133	69.7/76.1	70/80	67/72	129/135
		15.8/21.0	43.8/50.5	80.8/89.2	90/90	76/84	182/195	82.7/91.1	90/100	79/86	184/197
	MED	–	–	23.8	30	23	106	25.7	30	26	108
		4.9/6.5	13.6/15.6	40.8/43.3	50/50	39/41	120/122	42.7/45.2	50/50	41/44	122/124
		6.5/8.7	18.1/20.9	46.5/50.0	50/50	44/47	124/127	48.4/51.9	50/60	46/50	126/129
		12.0/16.0	33.4/38.5	65.6/72.0	70/80	62/68	139/145	67.5/73.9	70/80	64/70	141/147
		15.8/21.0	43.8/50.5	78.6/87.0	80/90	74/82	194/207	80.5/88.9	90/90	76/84	196/209
	HIGH	–	–	23.8	30	23	117	25.7	30	26	119
		4.9/6.5	13.6/15.6	40.8/43.3	50/50	39/41	131/133	42.7/45.2	50/50	41/44	133/135
		6.5/8.7	18.1/20.9	46.5/50.0	50/50	44/47	135/138	48.4/51.9	50/60	46/50	137/140
		12.0/16.0	33.4/38.5	65.6/72.0	70/80	62/68	150/156	67.5/73.9	70/80	64/70	152/158
		15.8/21.0	43.8/50.5	78.6/87.0	80/90	74/82	205/218	80.5/88.9	90/90	76/84	207/220
400–3–60	DD–STD	–	–	16.5	20	17	51	17.5	25	18	52
		6.0	7.2	25.5	30	25	58	26.5	30	26	59
		11.5	13.8	33.8	35	33	65	34.8	35	34	66
		14.0	16.8	37.5	40	36	68	38.5	40	37	69
		23.0	27.7	51.1	60	49	106	52.1	60	50	107
	MED	–	–	11.2	15	11	52	12.2	15	12	53
		6.0	7.2	20.2	25	19	59	21.2	25	20	60
		11.5	13.8	28.4	30	27	66	29.4	30	28	67
		14.0	16.8	32.2	35	30	69	33.2	35	32	70
		23.0	27.7	45.8	50	43	107	46.8	50	44	108
	HIGH	–	–	11.2	15	11	58	12.2	15	12	59
		6.0	7.2	20.2	25	19	65	21.2	25	20	66
		11.5	13.8	28.4	30	27	72	29.4	30	28	73
		14.0	16.8	32.2	35	30	75	33.2	35	32	76
		23.0	27.7	45.8	50	43	113	46.8	50	44	114
575–3–60	DD–STD	–	–	10.6	15	11	43	12.5	15	13	45
	MED	–	–	9.0	15	9	46	10.9	15	11	48
	HIGH	–	–	8.6	15	9	50	10.5	15	11	52

See Notes Page 75.

MCA/MOCP (cont.)

TABLE 72 – RHS060 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.**
SINGLE STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR

Nom. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER		WITHOUT C.O. or UNPWR C.O.							
				WITHOUT P.E.				WITH P.E.			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/230–1–60	DD–STD	–	–	41.7	60	40	145	43.6	60	43	147
		4.9/6.5	23.5/27.1	71.0/75.5	80/80	67/72	169/172	72.9/77.4	80/80	70/74	171/174
		6.5/8.7	31.4/36.3	80.9/87.0	90/100	76/82	176/181	82.8/88.9	100/100	79/84	178/183
		9.8/13.0	46.9/54.2	100.3/109.4	110/110	94/103	239/253	102.2/111.3	110/125	96/105	241/255
		13.1/17.4	62.8/72.5	120.2/132.3	125/150	113/124	271/290	122.1/134.2	125/150	115/126	273/292
		15.8/21.0	75.8/87.5	136.4/151.0	150/175	128/141	297/320	138.3/152.9	150/175	130/143	299/322
208/230–3–60	DD–STD	–	–	28.4	40	28	121	30.3	45	30	123
		4.9/6.5	13.6/15.6	45.4/47.9	50/50	44/46	135/137	47.3/49.8	50/60	46/48	137/139
		7.9/10.5	21.9/25.3	55.8/60.0	60/70	53/57	143/146	57.7/61.9	60/70	56/59	145/148
		12.0/16.0	33.4/38.5	70.2/76.5	80/80	67/72	154/160	72.1/78.4	80/80	69/75	156/162
		15.8/21.0	43.8/50.5	83.2/91.5	90/100	79/86	209/222	85.1/93.4	90/100	81/88	211/224
		19.9/26.5	55.2/63.8	97.4/108.2	100/110	92/102	231/249	99.3/110.1	100/125	94/104	233/251
	MED	–	–	26.2	40	26	144	28.1	40	28	146
		4.9/6.5	13.6/15.6	43.2/45.7	50/50	41/44	158/160	45.1/47.6	50/50	43/46	160/162
		7.9/10.5	21.9/25.3	53.6/57.8	60/60	51/55	166/169	55.5/59.7	60/60	53/57	168/171
		12.0/16.0	33.4/38.5	68.0/74.3	70/80	64/70	177/183	69.9/76.2	70/80	66/72	179/185
		15.8/21.0	43.8/50.5	81.0/89.3	90/90	76/84	232/245	82.9/91.2	90/100	78/86	234/247
		19.9/26.5	55.2/63.8	95.2/106.0	100/110	89/99	254/272	97.1/107.9	100/110	91/101	256/274
	HIGH	–	–	28.5	40	28	170	30.4	45	30	172
		4.9/6.5	13.6/15.6	45.5/48.0	50/50	44/46	184/186	47.4/49.9	50/60	46/48	186/188
		7.9/10.5	21.9/25.3	55.9/60.1	60/70	53/57	192/195	57.8/62.0	60/70	56/60	194/197
		12.0/16.0	33.4/38.5	70.3/76.6	80/80	67/73	203/209	72.2/78.5	80/80	69/75	205/211
		15.8/21.0	43.8/50.5	83.3/91.6	90/100	79/86	258/271	85.2/93.5	90/100	81/89	260/273
		19.9/26.5	55.2/63.8	97.5/108.3	100/110	92/102	280/298	99.4/110.2	100/125	94/104	282/300
460–3–60	DD–STD	–	–	18.0	25	19	62	19.0	25	20	63
		6.0	7.2	27.0	30	27	69	28.0	30	28	70
		11.5	13.8	35.3	40	34	76	36.3	40	36	77
		14.0	16.8	39.0	40	38	79	40.0	45	39	80
		23.0	27.7	52.7	60	50	117	53.7	60	52	118
		25.5	30.7	56.4	60	54	123	57.4	60	55	124
	MED	–	–	13.0	20	13	69	14.0	20	14	70
		6.0	7.2	22.0	25	21	76	23.0	25	22	77
		11.5	13.8	30.3	35	29	83	31.3	35	30	84
		14.0	16.8	34.0	35	32	86	35.0	40	33	87
		23.0	27.7	47.7	50	45	124	48.7	50	46	125
		25.5	30.7	51.4	60	48	130	52.4	60	49	131
	HIGH	–	–	13.8	20	14	82	14.8	20	15	83
		6.0	7.2	22.8	25	22	89	23.8	25	23	90
		11.5	13.8	31.1	35	30	96	32.1	35	31	97
		14.0	16.8	34.8	35	33	99	35.8	40	34	100
		23.0	27.7	48.5	50	46	137	49.5	50	47	138
		25.5	30.7	52.2	60	49	143	53.2	60	50	144
575–3–60	DD–STD	–	–	11.9	15	12	45	13.8	20	14	47
	MED	–	–	9.9	15	10	52	11.8	15	12	54
	HIGH	–	–	10.7	15	11	63	12.6	15	13	65

See Notes Page 75.

MCA/MOCP (cont.)

TABLE 73 – RHS072 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.**
SINGLE STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR

Nom. Volts—Ph—Hz	IFM TYPE	ELECTRIC HEATER		WITHOUT C.O. or UNPWR C.O.							
				WITHOUT P.E.				WITH P.E.			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/230—3—60	STD	—	—	30.5	45	30	146	32.4	50	32	148
		4.9/6.5	13.6/15.6	47.5/50.0	60/60	45/47	160/162	49.4/51.9	60/60	47/50	162/164
		7.9/10.5	21.9/25.3	57.8/62.1	60/70	55/59	168/171	59.7/64.0	60/70	57/61	170/173
		12.0/16.0	33.4/38.5	72.2/78.6	80/80	68/74	179/185	74.1/80.5	80/90	70/76	181/187
		15.8/21.0	43.8/50.5	85.2/93.6	90/100	80/88	234/247	87.1/95.5	90/100	82/90	236/249
		19.9/26.5	55.2/63.8	99.5/110.2	100/125	93/103	256/274	101.4/112.1	110/125	95/105	258/276
	MED	—	—	32.8	50	32	183	34.7	50	34	185
		4.9/6.5	13.6/15.6	49.8/52.3	60/60	48/50	197/199	51.7/54.2	60/60	50/52	199/201
		7.9/10.5	21.9/25.3	60.1/64.4	70/70	57/61	205/208	62.0/66.3	70/70	60/63	207/210
		12.0/16.0	33.4/38.5	74.5/80.9	80/90	71/76	216/222	76.4/82.8	80/90	73/79	218/224
		15.8/21.0	43.8/50.5	87.5/95.9	90/100	83/90	271/284	89.4/97.8	90/100	85/92	273/286
		19.9/26.5	55.2/63.8	101.8/112.5	110/125	96/106	293/311	103.7/114.4	110/125	98/108	295/313
	HIGH	—	—	32.8	50	32	183	34.7	50	34	185
		4.9/6.5	13.6/15.6	49.8/52.3	60/60	48/50	197/199	51.7/54.2	60/60	50/52	199/201
		7.9/10.5	21.9/25.3	60.1/64.4	70/70	57/61	205/208	62.0/66.3	70/70	60/63	207/210
		12.0/16.0	33.4/38.5	74.5/80.9	80/90	71/76	216/222	76.4/82.8	80/90	73/79	218/224
		15.8/21.0	43.8/50.5	87.5/95.9	90/100	83/90	271/284	89.4/97.8	90/100	85/92	273/286
		19.9/26.5	55.2/63.8	101.8/112.5	110/125	96/106	293/311	103.7/114.4	110/125	98/108	295/313
460—3—60	STD	—	—	15.5	25	15	73	16.5	25	16	74
		6.0	7.2	24.5	30	23	80	25.5	30	24	81
		11.5	13.8	32.8	35	31	87	33.8	40	32	88
		14.0	16.8	36.5	40	34	90	37.5	40	36	91
		23.0	27.7	50.2	60	47	128	51.2	60	48	129
		25.5	30.7	53.9	60	50	134	54.9	60	52	135
	MED	—	—	16.3	25	16	92	17.3	25	17	93
		6.0	7.2	25.3	30	24	99	26.3	30	25	100
		11.5	13.8	33.6	35	32	106	34.6	40	33	107
		14.0	16.8	37.3	40	35	109	38.3	40	36	110
		23.0	27.7	51.0	60	48	147	52.0	60	49	148
		25.5	30.7	54.7	60	51	153	55.7	60	52	154
	HIGH	—	—	16.3	25	16	92	17.3	25	17	93
		6.0	7.2	25.3	30	24	99	26.3	30	25	100
		11.5	13.8	33.6	35	32	106	34.6	40	33	107
		14.0	16.8	37.3	40	35	109	38.3	40	36	110
		23.0	27.7	51.0	60	48	147	52.0	60	49	148
		25.5	30.7	54.7	60	51	153	55.7	60	52	154
575—3—60	STD	—	—	12.3	15	12	59	14.2	20	14	61
	MED	—	—	12.7	20	12	74	14.6	20	15	76
	HIGH	—	—	12.7	20	12	74	14.6	20	15	76

See Notes Page 75.

MCA/MOCP (cont.)

TABLE 74 – RHS090 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.**
2–STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR

Nom. Volt–Ph–Hz	IFM TYPE	ELECTRIC HEATER		WITHOUT C.O. or UNPWR C.O.							
				WITHOUT P.E.				WITH P.E.			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/230–3–60	STD	–	–	37.7	50	40	193	41.5	50	44	197
		7.8/10.4	21.7/25.0	64.8/68.9	70/70	65/68	215/218	68.6/72.7	70/80	69/73	219/222
		12.0/16.0	33.4/38.5	79.4/85.8	80/90	78/84	226/232	83.2/89.6	90/90	82/88	230/236
		18.6/24.8	51.7/59.7	102.3/112.3	110/125	99/108	245/253	106.1/116.1	110/125	103/113	249/257
		24.0/32.0	66.7/77.0	121.1/133.9	125/150	116/128	260/270	124.9/137.7	125/150	121/132	264/274
		31.8/42.4	88.4/102.0	148.2/165.2	150/175	141/157	370/397	152.0/169.0	175/175	146/161	374/401
	MED	–	–	40.0	50	42	230	43.8	50	47	234
		7.8/10.4	21.7/25.0	67.1/71.2	70/80	67/71	252/255	70.9/75.0	80/80	72/75	256/259
		12.0/16.0	33.4/38.5	81.7/88.1	90/90	81/86	263/269	85.5/91.9	90/100	85/91	267/273
		18.6/24.8	51.7/59.7	104.6/114.6	110/125	102/111	282/290	108.4/118.4	110/125	106/115	286/294
		24.0/32.0	66.7/77.0	123.4/136.2	125/150	119/131	297/307	127.2/140.0	150/150	123/135	301/311
		31.8/42.4	88.4/102.0	150.5/167.5	175/175	144/160	407/434	154.3/171.3	175/175	148/164	411/438
	HIGH	–	–	40.0	50	42	230	43.8	50	47	234
		7.8/10.4	21.7/25.0	67.1/71.2	70/80	67/71	252/255	70.9/75.0	80/80	72/75	256/259
		12.0/16.0	33.4/38.5	81.7/88.1	90/90	81/86	263/269	85.5/91.9	90/100	85/91	267/273
		18.6/24.8	51.7/59.7	104.6/114.6	110/125	102/111	282/290	108.4/118.4	110/125	106/115	286/294
		24.0/32.0	66.7/77.0	123.4/136.2	125/150	119/131	297/307	127.2/140.0	150/150	123/135	301/311
		31.8/42.4	88.4/102.0	150.5/167.5	175/175	144/160	407/434	154.3/171.3	175/175	148/164	411/438
460–3–60	STD	–	–	17.9	20	19	95	19.7	25	21	97
		13.9	16.7	38.8	40	38	112	40.6	45	40	114
		16.5	19.8	42.7	45	42	115	44.5	45	44	117
		27.8	33.4	59.7	60	57	128	61.5	70	59	130
		33.0	39.7	67.6	70	65	135	69.4	70	67	137
		41.7	50.2	80.7	90	77	195	82.5	90	79	197
	MED	–	–	18.7	25	20	114	20.5	25	22	116
		13.9	16.7	39.6	40	39	131	41.4	45	41	133
		16.5	19.8	43.5	45	43	134	45.3	50	45	136
		27.8	33.4	60.5	70	58	147	62.3	70	60	149
		33.0	39.7	68.4	70	65	154	70.2	80	68	156
		41.7	50.2	81.5	90	78	214	83.3	90	80	216
	HIGH	–	–	18.7	25	20	114	20.5	25	22	116
		13.9	16.7	39.6	40	39	131	41.4	45	41	133
		16.5	19.8	43.5	45	43	134	45.3	50	45	136
		27.8	33.4	60.5	70	58	147	62.3	70	60	149
		33.0	39.7	68.4	70	65	154	70.2	80	68	156
		41.7	50.2	81.5	90	78	214	83.3	90	80	216
575–3–60	STD	–	–	13.5	15	14	77	17.3	20	19	81
		17.0	20.4	39.0	40	38	97	42.8	45	42	101
		34.0	40.9	64.6	70	61	118	68.4	70	66	122
	MED	–	–	13.9	20	15	92	17.7	20	19	96
		17.0	20.4	39.4	40	38	112	43.2	45	43	116
		34.0	40.9	65.0	70	62	133	68.8	70	66	137
	HIGH	–	–	13.9	20	15	92	17.7	20	19	96
		17.0	20.4	39.4	40	38	112	43.2	45	43	116
		34.0	40.9	65.0	70	62	133	68.8	70	66	137

See Notes Page 75.

MCA/MOCP (cont.)

TABLE 75 – RHS090

MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.
2–STAGE COOLING WITH 2–SPEED INDOOR FAN MOTOR

Nom. Volt–Ph–Hz	IFM TYPE	ELECTRIC HEATER		NO C.O. or UNPWR C.O.							
				NO P.E.				w/ P.E. (pwrd fr/unit)			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/230–3–60	STD	–	–	38.3/38.1	50/50	40/40	197	42.1/41.9	50/50	45/44	201
		7.8/10.4	21.7/25.0	65.4/69.3	70/70	65/69	219/222	69.2/73.1	70/80	70/73	223/226
		12.0/16.0	33.4/38.5	80.0/86.2	90/90	79/84	230/236	83.8/90.0	90/90	83/89	234/240
		18.6/24.8	51.7/59.7	102.9/112.7	110/125	100/109	249/257	106.7/116.5	110/125	104/113	253/261
		24.0/32.0	66.7/77.0	121.7/134.3	125/150	117/129	264/274	125.5/138.1	150/150	121/133	268/278
		31.8/42.4	88.4/102.0	148.8/165.6	150/175	142/157	374/401	152.6/169.4	175/175	146/162	378/405
	MED	–	–	41.1/40.3	50/50	43/43	227	44.9/44.1	50/50	48/47	231
		7.8/10.4	21.7/25.0	68.2/71.5	70/80	68/71	249/252	72.0/75.3	80/80	73/76	253/256
		12.0/16.0	33.4/38.5	82.8/88.4	90/90	82/87	260/266	86.6/92.2	90/100	86/91	264/270
		18.6/24.8	51.7/59.7	105.7/114.9	110/125	103/111	279/287	109.5/118.7	110/125	107/116	283/291
		24.0/32.0	66.7/77.0	124.5/136.5	125/150	120/131	294/304	128.3/140.3	150/150	125/135	298/308
		31.8/42.4	88.4/102.0	151.6/167.8	175/175	145/160	404/431	155.4/171.6	175/175	150/164	408/435
	HIGH	–	–	41.1/40.3	50/50	43/43	227	44.9/44.1	50/50	48/47	231
		7.8/10.4	21.7/25.0	68.2/71.5	70/80	68/71	249/252	72.0/75.3	80/80	73/76	253/256
		12.0/16.0	33.4/38.5	82.8/88.4	90/90	82/87	260/266	86.6/92.2	90/100	86/91	264/270
		18.6/24.8	51.7/59.7	105.7/114.9	110/125	103/111	279/287	109.5/118.7	110/125	107/116	283/291
		24.0/32.0	66.7/77.0	124.5/136.5	125/150	120/131	294/304	128.3/140.3	150/150	125/135	298/308
		31.8/42.4	88.4/102.0	151.6/167.8	175/175	145/160	404/431	155.4/171.6	175/175	150/164	408/435
460–3–60	STD	–	–	18.2	20	19	97	20.0	25	21	99
		13.9	16.7	39.1	40	38	114	40.9	45	40	116
		16.5	19.8	43.0	45	42	117	44.8	45	44	119
		27.8	33.4	60.0	60	58	130	61.8	70	60	132
		33.0	39.7	67.9	70	65	137	69.7	70	67	139
		41.7	50.2	81.0	90	77	197	82.8	90	79	199
	MED	–	–	19.1	25	20	113	20.9	25	22	115
		13.9	16.7	40.0	40	39	130	41.8	45	42	132
		16.5	19.8	43.9	45	43	133	45.7	50	45	135
		27.8	33.4	60.9	70	59	146	62.7	70	61	148
		33.0	39.7	68.8	70	66	153	70.6	80	68	155
		41.7	50.2	81.9	90	78	213	83.7	90	80	215
	HIGH	–	–	19.1	25	20	113	20.9	25	22	115
		13.9	16.7	40.0	40	39	130	41.8	45	42	132
		16.5	19.8	43.9	45	43	133	45.7	50	45	135
		27.8	33.4	60.9	70	59	146	62.7	70	61	148
		33.0	39.7	68.8	70	66	153	70.6	80	68	155
		41.7	50.2	81.9	90	78	213	83.7	90	80	215
575–3–60	STD	–	–	13.9	20	15	79	17.7	20	19	83
		17.0	20.4	39.4	40	38	99	43.2	45	43	103
		34.0	40.9	65.0	70	62	120	68.8	70	66	124
	MED	–	–	15.6	20	17	92	19.4	25	21	96
		17.0	20.4	41.1	45	40	112	44.9	45	45	116
		34.0	40.9	66.8	70	64	133	70.6	80	68	137
	HIGH	–	–	15.6	20	17	92	19.4	25	21	96
		17.0	20.4	41.1	45	40	112	44.9	45	45	116
		34.0	40.9	66.8	70	64	133	70.6	80	68	137

MCA/MOCP (cont.)

TABLE 76 – RHS102 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.**
2–STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR

Nom. Volt–Ph–Hz	IFM TYPE	ELECTRIC HEATER		WITHOUT C.O. or UNPWR C.O.							
				WITHOUT P.E.				WITH P.E.			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/230–3–60	STD	–	–	41.9	50	44	201	45.7	60	48	205
		7.8/10.4	21.7/25.0	69.0/73.2	70/80	69/72	223/226	72.8/77.0	80/80	73/77	227/230
		12.0/16.0	33.4/38.5	83.7/90.0	90/100	82/88	234/240	87.5/93.8	90/100	86/92	238/244
		18.6/24.8	51.7/59.7	106.5/116.5	110/125	103/112	253/261	110.3/120.3	125/125	107/117	257/265
		24.0/32.0	66.7/77.0	125.3/138.2	150/150	120/132	268/278	129.1/142.0	150/150	125/137	272/282
		31.8/42.4	88.4/102.0	152.4/169.4	175/175	145/161	378/405	156.2/173.2	175/175	150/165	382/409
	MED	–	–	44.2	60	46	238	48.0	60	51	242
		7.8/10.4	21.7/25.0	71.3/75.5	80/80	71/75	260/263	75.1/79.3	80/80	76/79	264/267
		12.0/16.0	33.4/38.5	86.0/92.3	90/100	85/91	271/277	89.8/96.1	90/100	89/95	275/281
		18.6/24.8	51.7/59.7	108.8/118.8	110/125	106/115	290/298	112.6/122.6	125/125	110/119	294/302
		24.0/32.0	66.7/77.0	127.6/140.5	150/150	123/135	305/315	131.4/144.3	150/150	127/139	309/319
		31.8/42.4	88.4/102.0	154.7/171.7	175/175	148/164	415/442	158.5/175.5	175/200	152/168	419/446
	HIGH	–	–	44.2	60	46	238	48.0	60	51	242
		7.8/10.4	21.7/25.0	71.3/75.5	80/80	71/75	260/263	75.1/79.3	80/80	76/79	264/267
		12.0/16.0	33.4/38.5	86.0/92.3	90/100	85/91	271/277	89.8/96.1	90/100	89/95	275/281
		18.6/24.8	51.7/59.7	108.8/118.8	110/125	106/115	290/298	112.6/122.6	125/125	110/119	294/302
		24.0/32.0	66.7/77.0	127.6/140.5	150/150	123/135	305/315	131.4/144.3	150/150	127/139	309/319
		31.8/42.4	88.4/102.0	154.7/171.7	175/175	148/164	415/442	158.5/175.5	175/200	152/168	419/446
460–3–60	STD	–	–	19.2	25	20	100	21.0	25	22	102
		13.9	16.7	40.0	45	39	117	41.8	45	41	119
		16.5	19.8	43.9	45	43	120	45.7	50	45	122
		27.8	33.4	60.9	70	58	133	62.7	70	60	135
		33.0	39.7	68.8	70	66	140	70.6	80	68	142
		41.7	50.2	81.9	90	78	200	83.7	90	80	202
	MED	–	–	20.0	25	21	119	21.8	25	23	121
		13.9	16.7	40.8	45	40	136	42.6	45	42	138
		16.5	19.8	44.7	45	44	139	46.5	50	46	141
		27.8	33.4	61.7	70	59	152	63.5	70	61	154
		33.0	39.7	69.6	70	67	159	71.4	80	69	161
		41.7	50.2	82.7	90	79	219	84.5	90	81	221
	HIGH	–	–	20.0	25	21	119	21.8	25	23	121
		13.9	16.7	40.8	45	40	136	42.6	45	42	138
		16.5	19.8	44.7	45	44	139	46.5	50	46	141
		27.8	33.4	61.7	70	59	152	63.5	70	61	154
		33.0	39.7	69.6	70	67	159	71.4	80	69	161
		41.7	50.2	82.7	90	79	219	84.5	90	81	221
575–3–60	STD	–	–	15.4	20	16	85	19.2	25	20	89
		17.0	20.4	40.9	45	40	105	44.7	45	44	109
		34.0	40.9	66.5	70	63	126	70.3	80	68	130
	MED	–	–	15.8	20	17	100	19.6	25	21	104
		17.0	20.4	41.3	45	40	120	45.1	50	44	124
		34.0	40.9	66.9	70	64	141	70.7	80	68	145
	HIGH	–	–	15.8	20	17	100	19.6	25	21	104
		17.0	20.4	41.3	45	40	120	45.1	50	44	124
		34.0	40.9	66.9	70	64	141	70.7	80	68	145

See Notes Page 75.

MCA/MOCP (cont.)

TABLE 77 – RHS102

MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.
2–STAGE COOLING WITH 2–SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER		NO C.O. or UNPWR C.O.							
				NO P.E.				w/ P.E. (pwrd fr/unit)			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/ 230–3–60	STD	–	–	42.5/42.3	50/50	44/44	205	46.3/46.1	60/60	49/48	209
		7.8/10.4	21.7/25.0	69.6/73.6	80/80	69/73	227/230	73.4/77.4	80/80	74/77	231/234
		12.0/16.0	33.4/38.5	84.3/90.4	90/100	83/88	238/244	88.1/94.2	90/100	87/93	242/248
		18.6/24.8	51.7/59.7	107.1/116.9	110/125	104/113	257/265	110.9/120.7	125/125	108/117	261/269
		24.0/32.0	66.7/77.0	125.9/138.6	150/150	121/133	272/282	129.7/142.4	150/150	125/137	276/286
		31.8/42.4	88.4/102.0	153.0/169.8	175/175	146/161	382/409	156.8/173.6	175/175	150/166	386/413
	MED	–	–	45.3/44.5	60/60	47/47	235	49.1/48.3	60/60	52/51	239
		7.8/10.4	21.7/25.0	72.4/75.8	80/80	72/75	257/260	76.2/79.6	80/80	77/80	261/264
		12.0/16.0	33.4/38.5	87.1/92.6	90/100	86/91	268/274	90.9/96.4	100/100	90/95	272/278
		18.6/24.8	51.7/59.7	109.9/119.1	110/125	107/115	287/295	113.7/122.9	125/125	111/120	291/299
		24.0/32.0	66.7/77.0	128.7/140.8	150/150	124/135	302/312	132.5/144.6	150/150	129/139	306/316
		31.8/42.4	88.4/102.0	155.8/172.0	175/175	149/164	412/439	159.6/175.8	175/200	154/168	416/443
	HIGH	–	–	45.3/44.5	60/60	47/47	235	49.1/48.3	60/60	52/51	239
		7.8/10.4	21.7/25.0	72.4/75.8	80/80	72/75	257/260	76.2/79.6	80/80	77/80	261/264
		12.0/16.0	33.4/38.5	87.1/92.6	90/100	86/91	268/274	90.9/96.4	100/100	90/95	272/278
		18.6/24.8	51.7/59.7	109.9/119.1	110/125	107/115	287/295	113.7/122.9	125/125	111/120	291/299
		24.0/32.0	66.7/77.0	128.7/140.8	150/150	124/135	302/312	132.5/144.6	150/150	129/139	306/316
		31.8/42.4	88.4/102.0	155.8/172.0	175/175	149/164	412/439	159.6/175.8	175/200	154/168	416/443
460–3–60	STD	–	–	19.5	25	20	102	21.3	25	22	104
		13.9	16.7	40.3	45	40	119	42.1	45	42	121
		16.5	19.8	44.2	45	43	122	46.0	50	45	124
		27.8	33.4	61.2	70	59	135	63.0	70	61	137
		33.0	39.7	69.1	70	66	142	70.9	80	68	144
		41.7	50.2	82.2	90	78	202	84.0	90	80	204
	MED	–	–	20.4	25	21	118	22.2	25	23	120
		13.9	16.7	41.2	45	41	135	43.0	45	43	137
		16.5	19.8	45.1	50	44	138	46.9	50	46	140
		27.8	33.4	62.1	70	60	151	63.9	70	62	153
		33.0	39.7	70.0	70	67	158	71.8	80	69	160
		41.7	50.2	83.1	90	79	218	84.9	90	81	220
	HIGH	–	–	20.4	25	21	118	22.2	25	23	120
		13.9	16.7	41.2	45	41	135	43.0	45	43	137
		16.5	19.8	45.1	50	44	138	46.9	50	46	140
		27.8	33.4	62.1	70	60	151	63.9	70	62	153
		33.0	39.7	70.0	70	67	158	71.8	80	69	160
		41.7	50.2	83.1	90	79	218	84.9	90	81	220
575–3–60	STD	–	–	15.8	20	17	83	19.6	25	21	87
		17.0	20.4	41.3	45	40	103	45.1	50	44	107
		34.0	40.9	66.9	70	64	124	70.7	80	68	128
	MED	–	–	17.5	20	19	96	21.3	25	23	100
		17.0	20.4	43.0	45	42	116	46.8	50	46	120
		34.0	40.9	68.6	70	66	137	72.4	80	70	141
	HIGH	–	–	17.5	20	19	96	21.3	25	23	100
		17.0	20.4	43.0	45	42	116	46.8	50	46	120
		34.0	40.9	68.6	70	66	137	72.4	80	70	141

MCA/MOCP (cont.)

TABLE 78 – RHS120 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.**
2–STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR

NOM. V–PH–Hz	IFM TYPE	ELECTRIC HEATER		WITHOUT C.O. or UNPWR C.O.							
				WITHOUT P.E.				WITH P.E.			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/ 230–3–60	STD	–	–	46.9	60	49	282	50.7	60	54	286
		7.8/10.4	21.7/25.0	74.0/78.1	80/80	74/78	304/307	77.8/81.9	80/90	79/82	308/311
		12.0/16.0	33.4/38.5	88.6/95.0	90/100	88/94	315/321	92.4/98.8	100/100	92/98	319/325
		24.0/32.0	66.7/77.0	130.3/143.1	150/150	126/138	349/359	134.1/146.9	150/150	130/142	353/363
		31.8/42.4	88.4/102.0	157.4/174.4	175/175	151/167	459/486	161.2/178.2	175/200	155/171	463/490
		37.6/50.0	104.2/120.3	177.1/167.2	200/175	169/188	490/523	180.9/171.0	200/175	174/192	494/527
	MED	–	–	51.7	60	55	325	55.5	60	59	329
		7.8/10.4	21.7/25.0	78.8/82.9	80/90	80/84	347/350	82.6/86.7	90/90	84/88	351/354
		12.0/16.0	33.4/38.5	93.4/99.8	100/100	93/99	358/364	97.2/103.6	100/110	98/104	362/368
		24.0/32.0	66.7/77.0	135.1/147.9	150/150	132/143	392/402	138.9/151.7	150/175	136/148	396/406
		31.8/42.4	88.4/102.0	162.2/179.2	175/200	157/172	502/529	166.0/183.0	175/200	161/177	506/533
		37.6/50.0	104.2/120.3	181.9/172.0	200/200	175/193	533/566	185.7/175.8	200/200	179/198	537/570
	HIGH	–	–	56.7	70	61	334	60.5	70	65	338
		7.8/10.4	21.7/25.0	83.8/87.9	90/90	86/89	356/359	87.6/91.7	90/100	90/94	360/363
		12.0/16.0	33.4/38.5	98.4/104.8	100/110	99/105	367/373	102.2/108.6	110/110	103/109	371/377
		24.0/32.0	66.7/77.0	140.1/152.9	150/175	137/149	401/411	143.9/156.7	150/175	142/154	405/415
		31.8/42.4	88.4/102.0	167.2/184.2	175/200	162/178	511/538	171.0/188.0	175/200	167/182	515/542
		37.6/50.0	104.2/120.3	186.9/177.0	200/200	180/199	542/575	190.7/180.8	200/200	185/203	546/579
460–3–60	STD	–	–	23.0	30	24	135	24.8	30	26	137
		13.9	16.7	43.9	45	43	152	45.7	50	46	154
		16.5	19.8	47.8	50	47	155	49.6	50	49	157
		33.0	39.7	72.7	80	70	175	74.5	80	72	177
		41.7	50.2	85.8	90	82	235	87.6	90	84	237
		50.0	60.1	83.1	90	93	255	84.9	90	95	257
	MED	–	–	24.8	30	26	157	26.6	30	28	159
		13.9	16.7	45.7	50	46	174	47.5	50	48	176
		16.5	19.8	49.6	50	49	177	51.4	60	51	179
		33.0	39.7	74.5	80	72	197	76.3	80	74	199
		41.7	50.2	87.6	90	84	257	89.4	90	86	259
		50.0	60.1	84.9	90	95	277	86.7	90	98	279
	HIGH	–	–	27.8	30	30	161	29.6	35	32	163
		13.9	16.7	48.7	50	49	178	50.5	60	51	180
		16.5	19.8	52.6	60	53	181	54.4	60	55	183
		33.0	39.7	77.5	80	75	201	79.3	80	78	203
		41.7	50.2	90.6	100	88	261	92.4	100	90	263
		50.0	60.1	87.9	90	99	281	89.7	100	101	283
575–3–60	STD	–	–	17.5	20	18	105	21.3	25	23	109
		17.0	20.4	43.0	45	42	125	46.8	50	46	129
		34.0	40.9	68.6	70	65	146	72.4	80	70	150
		51.0	61.3	78.8	90	89	228	82.6	90	93	232
	MED	–	–	18.3	20	19	116	22.1	25	24	120
		17.0	20.4	43.8	45	43	136	47.6	50	47	140
		34.0	40.9	69.4	70	66	157	73.2	80	71	161
		51.0	61.3	79.6	90	90	239	83.4	90	94	243
	HIGH	–	–	21.1	25	23	130	24.9	30	27	134
		17.0	20.4	46.6	50	46	150	50.4	60	50	154
		34.0	40.9	72.2	80	70	171	76.0	80	74	175
		51.0	61.3	82.4	90	93	253	86.2	90	97	257

See Notes Page 75.

MCA/MOCP (cont.)

TABLE 79 – RHS120

MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O.
2–STAGE COOLING WITH 2–SPEED INDOOR FAN MOTOR

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER		NO C.O. or UNPWR C.O.							
				NO P.E.				w/ P.E. (pwrd fr/unit)			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/ 230–3–60	STD	–	–	48.8/48.5	60/60	52/51	279	52.6/52.3	60/60	56/56	283
		7.8/10.4	21.7/25.0	75.9/79.7	80/80	76/80	301/304	79.7/83.5	80/90	81/84	305/308
		12.0/16.0	33.4/38.5	90.5/96.6	100/100	90/95	312/318	94.3/100.4	100/110	94/100	316/322
		24.0/32.0	66.7/77.0	132.2/144.7	150/150	128/140	346/356	136.0/148.5	150/150	133/144	350/360
		31.8/42.4	88.4/102.0	159.3/176.0	175/200	153/168	456/483	163.1/179.8	175/200	158/173	460/487
		37.6/50.0	104.2/120.3	179.0/168.8	200/175	171/190	487/520	182.8/172.6	200/200	176/194	491/524
	MED	–	–	52.5/51.5	60/60	56/55	329	56.3/55.3	70/60	60/59	333
		7.8/10.4	21.7/25.0	79.6/82.7	80/90	81/83	351/354	83.4/86.5	90/90	85/88	355/358
		12.0/16.0	33.4/38.5	94.2/99.6	100/100	94/99	362/368	98.0/103.4	100/110	99/103	366/372
		24.0/32.0	66.7/77.0	135.9/147.7	150/150	132/143	396/406	139.7/151.5	150/175	137/148	400/410
		31.8/42.4	88.4/102.0	163.0/179.0	175/200	157/172	506/533	166.8/182.8	175/200	162/176	510/537
		37.6/50.0	104.2/120.3	182.7/171.8	200/200	176/193	537/570	186.5/175.6	200/200	180/197	541/574
	HIGH	–	–	55.3/54.4	60/60	59/58	340	59.1/58.2	70/70	63/62	344
		7.8/10.4	21.7/25.0	82.4/85.6	90/90	84/87	362/365	86.2/89.4	90/90	88/91	366/369
		12.0/16.0	33.4/38.5	97.0/102.5	100/110	97/102	373/379	100.8/106.3	110/110	102/107	377/383
		24.0/32.0	66.7/77.0	138.7/150.6	150/175	136/147	407/417	142.5/154.4	150/175	140/151	411/421
		31.8/42.4	88.4/102.0	165.8/181.9	175/200	161/175	517/544	169.6/185.7	175/200	165/180	521/548
		37.6/50.0	104.2/120.3	185.5/174.7	200/200	179/196	548/581	189.3/178.5	200/200	183/201	552/585
460–3–60	STD	–	–	24.2	30	26	134	26.0	30	28	136
		13.9	16.7	45.1	50	45	151	46.9	50	47	153
		16.5	19.8	49.0	50	48	154	50.8	60	50	156
		33.0	39.7	73.9	80	71	174	75.7	80	73	176
		41.7	50.2	87.0	90	83	234	88.8	90	85	236
		50.0	60.1	84.3	90	95	254	86.1	90	97	256
	MED	–	–	25.3	30	27	159	27.1	30	29	161
		13.9	16.7	46.2	50	46	176	48.0	50	48	178
		16.5	19.8	50.1	60	50	179	51.9	60	52	181
		33.0	39.7	75.0	80	73	199	76.8	80	75	201
		41.7	50.2	88.1	90	85	259	89.9	90	87	261
		50.0	60.1	85.4	90	96	279	87.2	90	98	281
	HIGH	–	–	26.8	30	29	164	28.6	35	31	166
		13.9	16.7	47.7	50	48	181	49.5	50	50	183
		16.5	19.8	51.6	60	51	184	53.4	60	53	186
		33.0	39.7	76.5	80	74	204	78.3	80	76	206
		41.7	50.2	89.6	90	86	264	91.4	100	88	266
		50.0	60.1	86.9	90	98	284	88.7	100	100	286
575–3–60	STD	–	–	19.0	25	20	107	22.8	25	24	111
		17.0	20.4	44.5	45	44	127	48.3	50	48	131
		34.0	40.9	70.1	80	67	148	73.9	80	72	152
		51.0	61.3	80.3	90	91	230	84.1	90	95	234
	MED	–	–	20.0	25	21	116	23.8	30	26	120
		17.0	20.4	45.5	50	45	136	49.3	50	49	140
		34.0	40.9	71.1	80	68	157	74.9	80	73	161
		51.0	61.3	81.3	90	92	239	85.1	90	96	243
	HIGH	–	–	21.8	25	23	130	25.6	30	28	134
		17.0	20.4	47.3	50	47	150	51.1	60	51	154
		34.0	40.9	72.9	80	70	171	76.7	80	75	175
		51.0	61.3	83.1	90	94	253	86.9	90	98	257

MCA/MOCP (cont.)

TABLE 80 – RHS150 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O. 2–STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR**

NOM. V–PH–Hz	IFM TYPE	ELECTRIC HEATER		NO C.O. or UNPWR C.O.							
				NO P.E.				w/ P.E. (pwrd fr/unit)			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/ 230–3–60	STD	–	–	62.4	80.0	65.0	366.0	66.2	80.0	70.0	370.0
		12.4/16.5	34.4/39.7	105.4/112.0	110/125	105/111	400/406	109.2/115.8	110/125	109/115	404/410
		19.9/26.5	55.3/63.8	131.5/142.2	150/150	129/139	477/494	135.3/146.0	150/150	133/143	481/498
		25.2/33.5	69.9/80.6	149.8/163.2	150/175	146/158	436/447	153.6/167.0	175/175	150/162	440/451
		32.7/43.5	90.7/104.7	175.8/193.3	200/200	170/186	547/575	179.6/197.1	200/200	174/190	551/579
		37.6/50.0	104.3/120.3	192.8/182.7	200/200	185/204	575/607	196.6/186.5	200/200	190/208	579/611
	MED	–	–	62.4	80.0	65.0	366.0	66.2	80.0	70.0	370.0
		12.4/16.5	34.4/39.7	105.4/112.0	110/125	105/111	400/406	109.2/115.8	110/125	109/115	404/410
		19.9/26.5	55.3/63.8	131.5/142.2	150/150	129/139	477/494	135.3/146.0	150/150	133/143	481/498
		25.2/33.5	69.9/80.6	149.8/163.2	150/175	146/158	436/447	153.6/167.0	175/175	150/162	440/451
		32.7/43.5	90.7/104.7	175.8/193.3	200/200	170/186	547/575	179.6/197.1	200/200	174/190	551/579
		37.6/50.0	104.3/120.3	192.8/182.7	200/200	185/204	575/607	196.6/186.5	200/200	190/208	579/611
	HIGH	–	–	75.3	90	80	402	79.1	100	85	406
		12.4/16.5	34.4/39.7	118.3/124.9	125/125	120/126	436/442	122.1/128.7	125/150	124/130	440/446
		19.9/26.5	55.3/63.8	144.4/155.1	150/175	144/154	513/530	148.2/158.9	150/175	148/158	517/534
		25.2/33.5	69.9/80.6	162.7/176.1	175/200	161/173	472/483	166.5/179.9	175/200	165/177	476/487
		32.7/43.5	90.7/104.7	188.7/206.2	200/225	184/201	583/611	192.5/210.0	200/225	189/205	587/615
		37.6/50.0	104.3/120.3	205.7/195.6	225/225	200/219	611/643	209.5/199.4	225/225	204/223	615/647
460–3–60	STD	–	–	29.7	40.0	31.0	184.0	31.5	40.0	33.0	186.0
		16.5	19.9	54.5	60	54	204	56.3	60	56	206
		26.5	31.9	69.5	70	68	248	71.3	80	70	250
		33.5	40.3	80.0	90	77	224	81.8	90	79	226
		43.5	52.3	95.0	100	91	289	96.8	100	93	291
		50.0	60.2	89.9	100	100	304	91.7	100	102	306
	MED	–	–	29.7	40.0	31.0	184.0	31.5	40.0	33.0	186.0
		16.5	19.9	54.5	60	54	204	56.3	60	56	206
		26.5	31.9	69.5	70	68	248	71.3	80	70	250
		33.5	40.3	80.0	90	77	224	81.8	90	79	226
		43.5	52.3	95.0	100	91	289	96.8	100	93	291
		50.0	60.2	89.9	100	100	304	91.7	100	102	306
	HIGH	–	–	36.5	45	39	202	38.3	45	41	204
		16.5	19.9	61.3	70	62	222	63.1	70	64	224
		26.5	31.9	76.3	80	76	266	78.1	80	78	268
		33.5	40.3	86.8	90	85	242	88.6	90	87	244
		43.5	52.3	101.8	110	99	307	103.6	110	101	309
		50.0	60.2	96.7	100	108	322	98.5	110	110	324
575–3–60	STD	–	–	24.0	30.0	25.0	136.0	27.8	30.0	30.0	140.0
		16.5	15.9	43.9	45	43	152	47.7	50	48	156
		26.5	25.5	55.9	60	55	187	59.7	60	59	191
		33.5	32.2	64.3	70	62	168	68.1	70	67	172
		43.5	41.8	76.3	80	73	220	80.1	90	78	224
		50.0	48.1	72.1	80	81	232	75.9	80	85	236
	MED	–	–	24.0	30.0	25.0	136.0	27.8	30.0	30.0	140.0
		16.5	15.9	43.9	45	43	152	47.7	50	48	156
		26.5	25.5	55.9	60	55	187	59.7	60	59	191
		33.5	32.2	64.3	70	62	168	68.1	70	67	172
		43.5	41.8	76.3	80	73	220	80.1	90	78	224
		50.0	48.1	72.1	80	81	232	75.9	80	85	236
	HIGH	–	–	30.4	35	32	148	34.2	40	37	152
		16.5	15.9	50.2	60	51	164	54.0	60	55	168
		26.5	25.5	62.2	70	62	199	66.0	70	66	203
		33.5	32.2	70.6	80	69	180	74.4	80	74	184
		43.5	41.8	82.6	90	80	232	86.4	90	85	236
		50.0	48.1	78.5	90	88	244	82.3	90	92	248

See Notes Page 75.

MCA/MOCP (cont.)

TABLE 81 – RHS150 **MCA/MOCP DETERMINATION NO C.O. OR UNPWRD C.O. 2–STAGE COOLING WITH 2–SPEED INDOOR FAN MOTOR**

NOM. V–Ph–Hz	IFM TYPE	ELECTRIC HEATER		NO C.O. or UNPWR C.O.							
				NO P.E.				w/ P.E. (pwrd fr/unit)			
						DISC. SIZE				DISC. SIZE	
		Nom (kW)	FLA	MCA	MOCP	FLA	LRA	MCA	MOCP	FLA	LRA
208/ 230–3–60	STD	–	–	63.5/62.7	80/80	67/66	363	67.3/66.5	80/80	71/70	367
		12.4/16.5	34.4/39.7	106.5/112.3	110/125	106/111	397/403	110.3/116.1	125/125	111/116	401/407
		19.9/26.5	55.3/63.8	132.6/142.5	150/150	130/139	474/491	136.4/146.3	150/150	135/143	478/495
		25.2/33.5	69.9/80.6	150.9/163.5	175/175	147/158	433/444	154.7/167.3	175/175	151/163	437/448
		32.7/43.5	90.7/104.7	176.9/193.6	200/200	171/186	544/572	180.7/197.4	200/200	175/190	548/576
		37.6/50.0	104.3/120.3	193.9/183.0	200/200	187/204	572/604	197.7/186.8	200/200	191/208	576/608
	MED	–	–	63.5/62.7	80/80	67/66	363	67.3/66.5	80/80	71/70	367
		12.4/16.5	34.4/39.7	106.5/112.3	110/125	106/111	397/403	110.3/116.1	125/125	111/116	401/407
		19.9/26.5	55.3/63.8	132.6/142.5	150/150	130/139	474/491	136.4/146.3	150/150	135/143	478/495
		25.2/33.5	69.9/80.6	150.9/163.5	175/175	147/158	433/444	154.7/167.3	175/175	151/163	437/448
		32.7/43.5	90.7/104.7	176.9/193.6	200/200	171/186	544/572	180.7/197.4	200/200	175/190	548/576
		37.6/50.0	104.3/120.3	193.9/183.0	200/200	187/204	572/604	197.7/186.8	200/200	191/208	576/608
	HIGH	–	–	75.3	90	80	402	79.1	100	85	406
		12.4/16.5	34.4/39.7	118.3/124.9	125/125	120/126	436/442	122.1/128.7	125/150	124/130	440/446
		19.9/26.5	55.3/63.8	144.4/155.1	150/175	144/154	513/530	148.2/158.9	150/175	148/158	517/534
		25.2/33.5	69.9/80.6	162.7/176.1	175/200	161/173	472/483	166.5/179.9	175/200	165/177	476/487
		32.7/43.5	90.7/104.7	188.7/206.2	200/225	184/201	583/611	192.5/210.0	200/225	189/205	587/615
		37.6/50.0	104.3/120.3	205.7/195.6	225/225	200/219	611/643	209.5/199.4	225/225	204/223	615/647
460–3–60	STD	–	–	30.1	40	32	183	31.9	40	34	185
		16.5	19.9	54.9	60	54	203	56.7	60	56	205
		26.5	31.9	69.9	70	68	247	71.7	80	70	249
		33.5	40.3	80.4	90	78	223	82.2	90	80	225
		43.5	52.3	95.4	100	92	288	97.2	100	94	290
		50.0	60.2	90.3	100	101	303	92.1	100	103	305
	MED	–	–	30.1	40	32	183	31.9	40	34	185
		16.5	19.9	54.9	60	54	203	56.7	60	56	205
		26.5	31.9	69.9	70	68	247	71.7	80	70	249
		33.5	40.3	80.4	90	78	223	82.2	90	80	225
		43.5	52.3	95.4	100	92	288	97.2	100	94	290
		50.0	60.2	90.3	100	101	303	92.1	100	103	305
	HIGH	–	–	36.5	45	39	202	38.3	45	41	204
		16.5	19.9	61.3	70	62	222	63.1	70	64	224
		26.5	31.9	76.3	80	76	266	78.1	80	78	268
		33.5	40.3	86.8	90	85	242	88.6	90	87	244
		43.5	52.3	101.8	110	99	307	103.6	110	101	309
		50.0	60.2	96.7	100	108	322	98.5	110	110	324
575–3–60	STD	–	–	25.7	30	27	136	29.5	35	32	140
		16.5	15.9	45.6	50	45	152	49.4	50	50	156
		26.5	25.5	57.6	60	56	187	61.4	70	61	191
		33.5	32.2	66.0	70	64	168	69.8	70	69	172
		43.5	41.8	78.0	80	75	220	81.8	90	80	224
		50.0	48.1	73.8	80	82	232	77.6	80	87	236
	MED	–	–	25.7	30	27	136	29.5	35	32	140
		16.5	15.9	45.6	50	45	152	49.4	50	50	156
		26.5	25.5	57.6	60	56	187	61.4	70	61	191
		33.5	32.2	66.0	70	64	168	69.8	70	69	172
		43.5	41.8	78.0	80	75	220	81.8	90	80	224
		50.0	48.1	73.8	80	82	232	77.6	80	87	236
	HIGH	–	–	30.4	35	32	148	34.2	40	37	152
		16.5	15.9	50.2	60	51	164	54.0	60	55	168
		26.5	25.5	62.2	70	62	199	66.0	70	66	203
		33.5	32.2	70.6	80	69	180	74.4	80	74	184
		43.5	41.8	82.6	90	80	232	86.4	90	85	236
		50.0	48.1	78.5	90	88	244	82.3	90	92	248

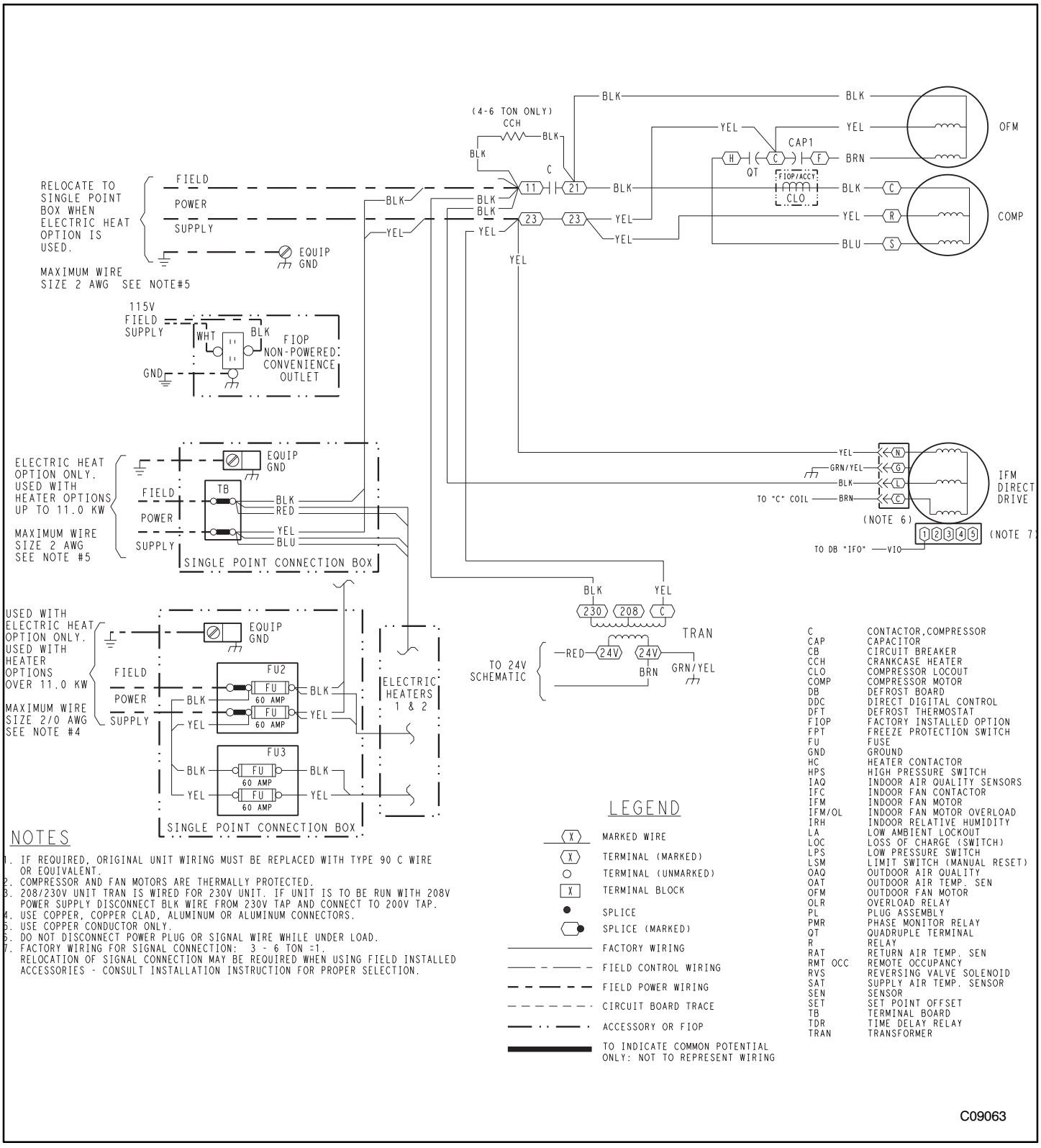
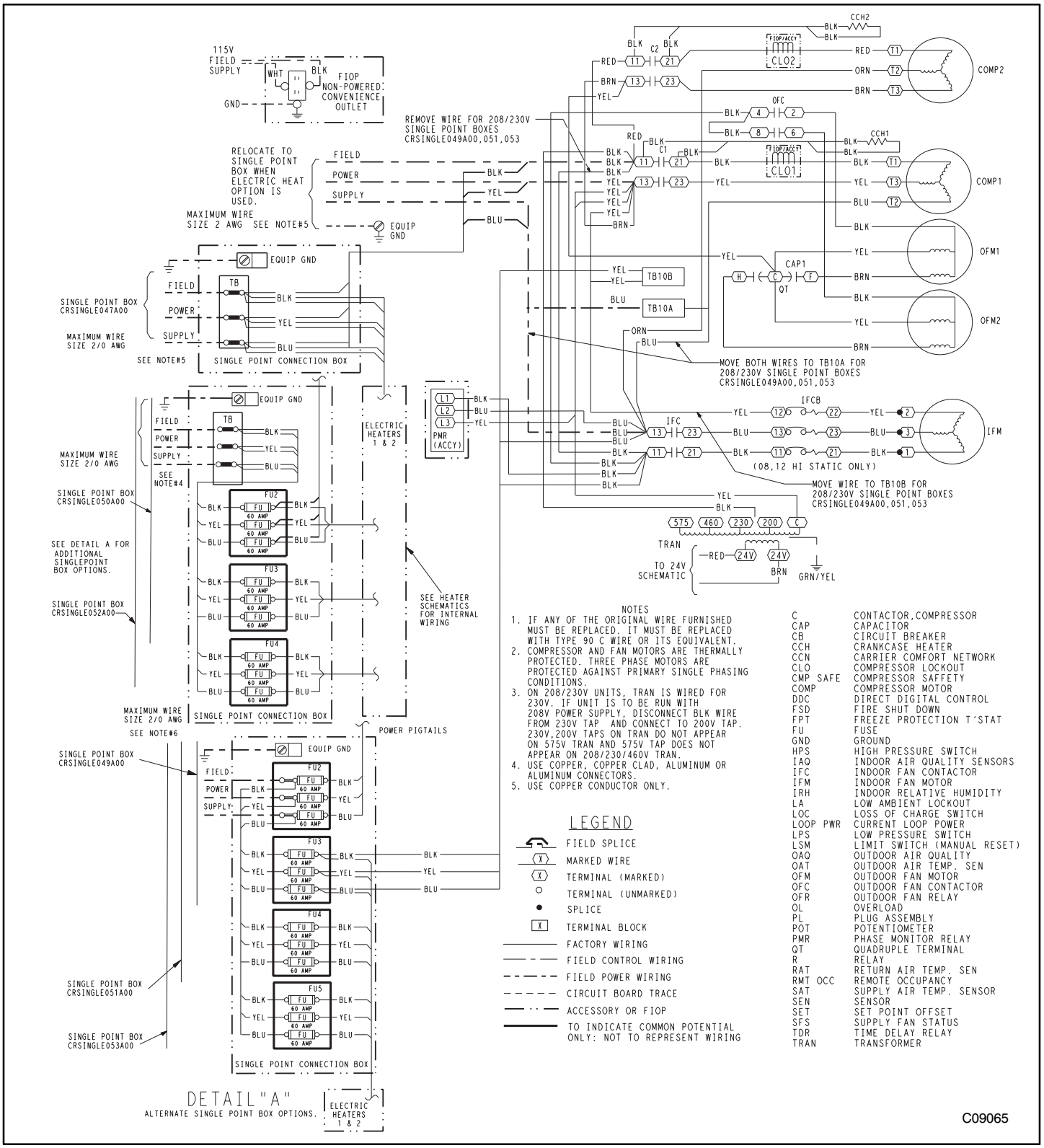


Fig. 10, 1 – Stage Cooling Typical Power Diagram



NOTES

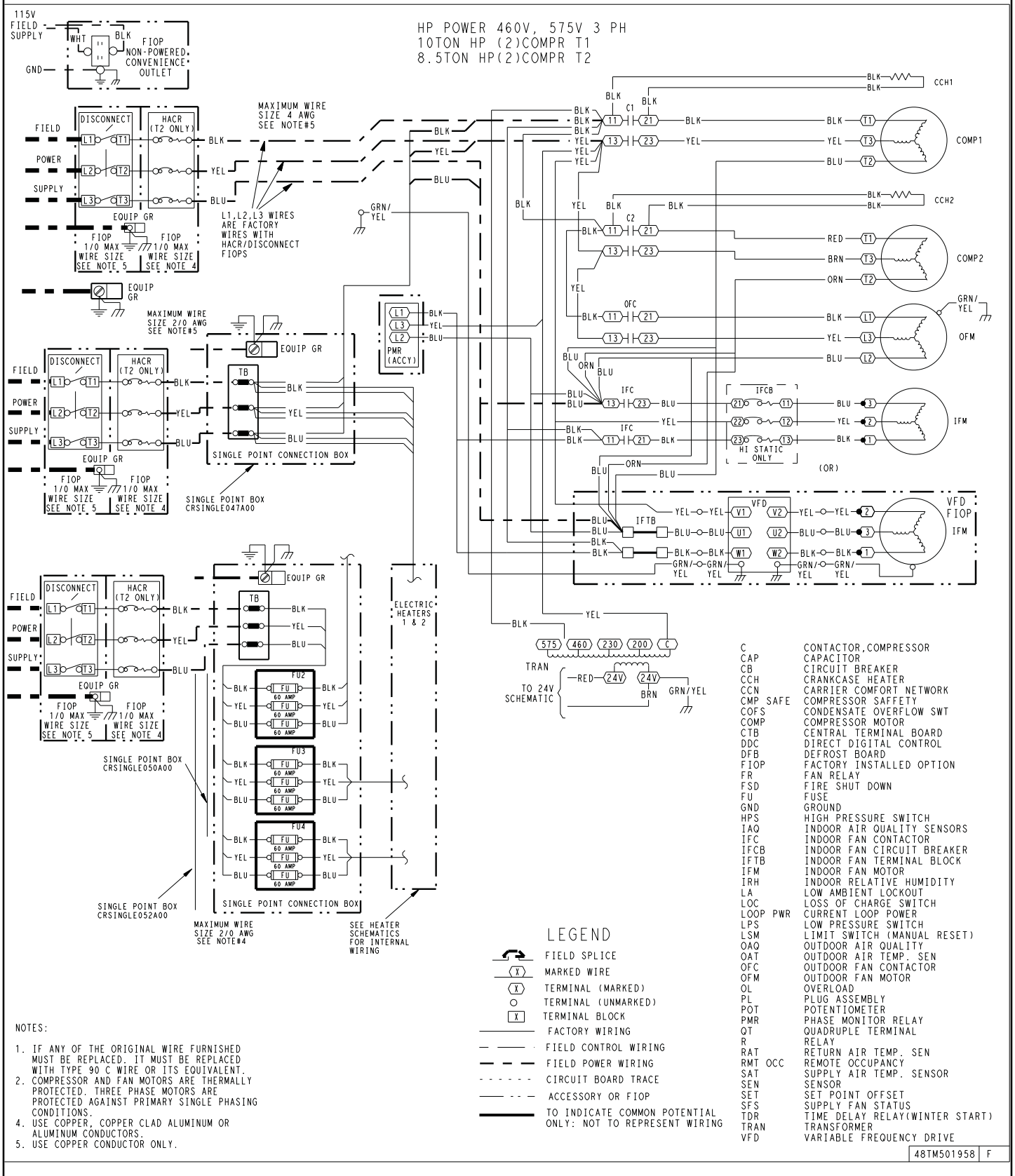
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED. IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
2. COMPRESSOR AND FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
3. ON 208/230V UNITS, TRAN IS WIRED FOR 230V. IF UNIT IS TO BE RUN WITH 208V POWER SUPPLY, DISCONNECT BLK WIRE FROM 230V TAP AND CONNECT TO 200V TAP. 230V,200V TAPS ON TRAN DO NOT APPEAR ON 575V TRAN AND 575V TAP DOES NOT APPEAR ON 208/230/460V TRAN.
4. USE COPPER, COPPER CLAD, ALUMINUM OR ALUMINUM CONNECTORS.
5. USE COPPER CONDUCTOR ONLY.

LEGEND

- FIELD Ssplice
- (X) MARKED WIRE
- (X) TERMINAL (MARKED)
- ○ TERMINAL (UNMARKED)
- ● SPLICE
- [X] TERMINAL BLOCK
- FACTORY WIRING
- FIELD CONTROL WIRING
- FIELD POWER WIRING
- CIRCUIT BOARD TRACE
- ACCESSORY OR FIOP
- TO INDICATE COMMON POTENTIAL ONLY: NOT TO REPRESENT WIRING

C	CONTACTOR,COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCN	CARRIER COMFORT NETWORK
CLO	COMPRESSOR LOCKOUT
CMP SAFE	COMPRESSOR SAFFETY
COMP	COMPRESSOR MOTOR
DDC	DIRECT DIGITAL CONTROL
FSD	FIRE SHUT DOWN
FPT	FREEZE PROTECTION T'STAT
FU	FUSE
GND	GROUND
HPS	HIGH PRESSURE SWITCH
IAQ	INDOOR AIR QUALITY SENSORS
IFC	INDOOR FAN CONTACTOR
IFM	INDOOR FAN MOTOR
IRH	INDOOR RELATIVE HUMIDITY
LA	LOW AMBIENT LOCKOUT
LOC	LOSS OF CHARGE SWITCH
LOOP PWR	CURRENT LOOP POWER
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
OAQ	OUTDOOR AIR QUALITY
OAT	OUTDOOR AIR TEMP. SEN
OFM	OUTDOOR FAN MOTOR
OFC	OUTDOOR FAN CONTACTOR
OFR	OUTDOOR FAN RELAY
OL	OVERLOAD
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PMR	PHASE MONITOR RELAY
QT	QUADRUPLE TERMINAL
R	RELAY
RAT	RETURN AIR TEMP. SEN
RMT OCC	REMOTE OCCUPANCY
SAT	SUPPLY AIR TEMP. SENSOR
SEN	SENSOR
SET	SET POINT OFFSET
SFS	SUPPLY FAN STATUS
TDR	TIME DELAY RELAY
TRAN	TRANSFORMER

Fig. 11, 2 – Stage Cooling Typical Power Diagram



NOTES:

1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED. IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
2. COMPRESSOR AND FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
4. USE COPPER, COPPER CLAD ALUMINUM OR ALUMINUM CONDUCTORS.
5. USE COPPER CONDUCTOR ONLY.

LEGEND

	FIELD SPLICE
X	MARKED WIRE
X	TERMINAL (MARKED)
	TERMINAL (UNMARKED)
X	TERMINAL BLOCK
	FACTORY WIRING
	FIELD CONTROL WIRING
	FIELD POWER WIRING
	CIRCUIT BOARD TRACE
	ACCESSORY OR FIOP
	TO INDICATE COMMON POTENTIAL ONLY: NOT TO REPRESENT WIRING

C	CONTACTOR,COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCN	CARRIER COMFORT NETWORK
CMP SAFE	COMPRESSOR SAFFETY
COFS	CONDENSATE OVERFLOW SWT
COMP	COMPRESSOR MOTOR
CTB	CENTRAL TERMINAL BOARD
DDC	DIRECT DIGITAL CONTROL
DFB	DEFROST BOARD
FIOP	FACTORY INSTALLED OPTION
FR	FAN RELAY
FSD	FIRE SHUT DOWN
FU	FUSE
GND	GROUND
HPS	HIGH PRESSURE SWITCH
IAQ	INDOOR AIR QUALITY SENSORS
IFC	INDOOR FAN CONTACTOR
IFCB	INDOOR FAN CIRCUIT BREAKER
IFTB	INDOOR FAN TERMINAL BLOCK
IFM	INDOOR FAN MOTOR
IRH	INDOOR RELATIVE HUMIDITY
LA	LOW AMBIENT LOCKOUT
LOC	LOSS OF CHARGE SWITCH
LOOP PWR	CURRENT LOOP POWER
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
OAQ	OUTDOOR AIR QUALITY
OAT	OUTDOOR AIR TEMP. SEN
OFC	OUTDOOR FAN CONTACTOR
OFM	OUTDOOR FAN MOTOR
OL	OVERLOAD
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PMR	PHASE MONITOR RELAY
QT	QUADRUPLE TERMINAL
R	RELAY
RAT	RETURN AIR TEMP. SEN
RMT OCC	REMOTE OCCUPANCY
SAT	SUPPLY AIR TEMP. SENSOR
SEN	SENSOR
SET	SET POINT OFFSET
SFS	SUPPLY FAN STATUS
TDR	TIME DELAY RELAY(WINTER START)
TRAN	TRANSFORMER
VFD	VARIABLE FREQUENCY DRIVE

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C12076

Fig. 12, 2 – Stage Unit Control Wiring Diagram with 2 Speed Indoor Fan Motor

SEQUENCE OF OPERATION

Cooling, unit without economizer

When thermostat calls for cooling, terminals G and Y1 are energized. The indoor fan contactor (IFC), reversing valve solenoid (RVS) and compressor contactor are energized and indoor fan motor, compressor, and outdoor fan starts. The outdoor fan motor runs continuously while unit is cooling.

Two-stage models: If Stage 1 cooling does not satisfy the space load, the space temperature will rise until thermostat calls for Stage 2 cooling (Y2 closes). Defrost Board activates Stage 2 Compressor. Reversing valve 2 switches to Cooling position. Compressor 2 contactor is energized; Compressor 2 starts and Circuit 2 operates in Cooling mode.

When Cooling Stage 2 is satisfied, thermostat Y2 opens. Compressor 2 contactor is de-energized; Compressor 2 stops. Reversing Valve 2 remains energized.

When Cooling Stage 1 is satisfied, thermostat Y1 opens. Compressor 1 contactor is de-energized; Compressor 1 stops. Outdoor fan relay is de-energized; outdoor fans stop. After the Fan Delay period, the Indoor fan contactor is de-energized; indoor fan stops (unless Continuous Fan operation has been selected). Reversing Valve 1 remains energized.

Reversing valve solenoids are energized in Cooling modes. Each solenoid will remain energized until the next Heating mode is initiated for this circuit.

Heating, unit without economizer

Upon a request for heating from the space thermostat, terminal W1 will be energized with 24V. The IFC, outdoor fan contactor (OFC), C1, and C2 will be energized. The indoor fan, outdoor fans, and compressor no. 1, and compressor no. 2 are energized and reversing valves are de−energized and switch position.

If the space temperature continues to fall while W1 is energized, W2 will be energized with 24V, and the heater contactor(s) (HC) will be energized, which will energize the electric heater(s).

When the space thermostat is satisfied, W2 will be de−energized first, and the electric heater(s) will be de−energized.

Upon a further rise in space temperature, W1 will be de−energized.

Two compressor models: When the thermostat calls for heating, terminal W1 is energized. Defrost Board de-energizes both reversing valve solenoids and reversing valves move to Heating position. The indoor fan contactor is energized; indoor fan motor starts. Outdoor fan relay is energized; both outdoor fan motors run. Compressor contactors C1 and C2 are energized; both refrigeration circuits operate in Heating mode.

If Stage 1 heating does not satisfy the space load, the space temperature will fall until thermostat calls for Stage 2 heating (W2 closes). Terminal W2 is energized. Defrost Board issues an output at EHEAT. Heater contactor 1 and heater contactor 2 (if installed) are energized; all electric heaters are energized.

When space heating load is partially satisfied, thermostat terminal W2 is de-energized; heater contactors are de-energized and all electric heat is terminated. Stage 1 heating continues.

When the space heating load is fully satisfied, thermostat terminal W1 is also de-energized.

Reversing valve solenoids remain de-energized until the next call for Cooling mode is initiated.

Cooling, unit with economizer

When free cooling is not available, the compressors will be controlled by the zone thermostat. When free cooling is available, the outdoor-air damper is modulated by the economizer control to provide a 50°F to 55°F (10° to 13°C) mixed-air temperature into the zone. As the mixed-air temperature fluctuates above 55°F or below 50°F (13° to 10°C), the dampers will be modulated (open or close) to bring the mixed-air temperature back within control.

If mechanical cooling is utilized with free cooling, the outdoor-air damper will maintain its current position at the time the compressor is started. If the increase in cooling capacity causes the mixed-air temperature to drop below 45°F (7°C), then the outdoor-air damper position will be decreased to the minimum position. If the mixed-air temperature continues to fall, the outdoor-air damper will close. Control returns to normal once the mixed-air temperature rises above 48°F (9°C).

If optional power exhaust is installed, as the outdoor-air damper opens and closes, the power exhaust fans will be energized and deenergized.

If field-installed accessory CO_2 sensors are connected to the economizer control, a demand controlled ventilation strategy will begin to operate. As the CO_2 level in the zone increases above the CO_2 setpoint, the minimum position of the damper will be increased proportionally. As the CO_2 level decreases because of the increase in fresh air, the outdoor-air damper will be proportionally closed.

For economizer operation, there must be a thermostat call for the fan (G). If the unit is occupied and the fan is on, the damper will operate at minimum position. Otherwise, the damper will be closed.

When the economizer control is in the occupied mode and a call for cooling exists (Y1 on the thermostat), the control will first check for indoor fan operation. If the fan is not on, then cooling will not be activated. If the fan is on, then the control will open the economizer damper to the minimum position.

On the initial power to the economizer control, it will take the damper up to $2^1/_2$ minutes before it begins to position itself. Any change in damper position will take up to 30 seconds to initiate. Damper movement from full closed to full open (or vice versa) will take between $1^1/_2$ and $2^1/_2$ minutes.

If free cooling can be used as determined from the appropriate changeover command (switch, dry bulb, enthalpy curve, differential dry bulb, or differential enthalpy), then the control will modulate the dampers open to maintain the mixed-air temperature setpoint at 50°F to 55°F (10° to 13°C).

If there is a further demand for cooling (cooling second stage — Y2 is energized), then the control will bring on compressor stage 1 to maintain the mixed-air temperature setpoint. The economizer damper will be open at maximum position. economizer operation is limited to a single compressor.

Heating, unit with economizer

When the room temperature calls for heat through terminal W1, the indoor (evaporator) fan contactor (IFC) and heater contactor no. 1 (HC1) are energized and the reversing valve(s) deenergize and switches position. On units equipped for 2 stages of heat, when additional heat is needed, heater contactor no. 2 is energized through W2. The economizer damper moves to the minimum position. When the thermostat is satisfied, the damper moves to the fully closed position.

Defrost

When the temperature of the outdoor coil drops below 28°F (–2°C) as sensed by the defrost thermostat (DFT2) and the defrost timer is at the end of a timed period (adjustable at 30, 60, 90 or 120 minutes), reversing valve solenoids (RVS1 and RVS2) are energized and the OFC is deenergized. This switches the position of the reversing values and shuts off the outdoor fan. The electric heaters (if installed) will be energized.

The unit continues to defrost until the coil temperature as measured by DFT2 reaches 65°F (18°C), or the duration of defrost cycle completes a 10-minute period.

During the Defrost mode, if circuit 1 defrosts first, RVS1 will oscillate between Heating and Cooling modes until the Defrost mode is complete.

At the end of the defrost cycle, the electric heaters (if installed) will be deenergized; the reversing values switch and the outdoor-fan motor will be energized. The unit will now operate in the Heating mode.

If the space thermostat is satisfied during a defrost cycle, the unit will continue in the Defrost mode until the time or temperature constraints are satisfied.

Automatic changeover

When the system selection switch is set at AUTO. position, unit automatically changes from heating operation to cooling operation when the temperature of the conditioned space rises to the cooling level setting. When the temperature of the conditioned space falls to the heating level setting, unit automatically changes from cooling to heating operation (with a 3°F deadband in between).

Continuous air circulation

Turn unit power on. Set system control (field supplied commercial thermostat) at OFF position. Set fan switch at ON position. The indoor-fan contactor is energized through the thermostat switch and the indoor fan runs continuously.

Emergency heat

When the switch is on (thermostat is set to the EM HT position), compressor circuit and outdoor thermostats are bypassed, and the second stage of thermostat energizes the indoor blower and the electric resistance heaters.

Rooftop Packaged Heat Pump

HVAC Guide Specifications

Size Range: **3 to 12.5 Nominal Tons**

Section **Description**

23 06 80 Schedules for Decentralized HVAC Equipment

23 06 80.13 Decentralized Unitary HVAC Equipment Schedule

23 06 80.13.A. Rooftop unit schedule

1. Schedule is per the project specification requirements.

23 07 16 HVAC Equipment Insulation

23 07 16.13 Decentralized, Rooftop Units:

23 07 16.13.A. Evaporator fan compartment:

1. Interior cabinet surfaces shall be insulated with a minimum 1/2–in. thick, minimum 1 1/2 lb density, flexible fiberglass insulation bonded with a phenolic binder, neoprene coated on the air side.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

23 07 16.13.B. Electric heat compartment:

1. Aluminum foil–faced fiberglass insulation shall be used.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

23 09 13 Instrumentation and Control Devices for HVAC

23 09 13.23 Sensors and Transmitters

23 09 13.23.A. Thermostats

1. Thermostat must
   a. have capability to energize 2 different stages of cooling, and 2 different stages of heating.
   b. include capability for occupancy scheduling.

23 09 23 Direct–digital Control system for HVAC

23 09 23.13

23 09 23.13.A.

23 09 23.13.B.

23 09 33 Electric and Electronic Control System for HVAC

23 09 33.13 Decentralized, Rooftop Units:

23 09 33.13.A. General:

1. Shall be complete with self–contained low–voltage control circuit protected by a resettable circuit breaker on the 24–v transformer side. Transformer shall have 75VA capability.
2. Shall utilize color–coded wiring.
3. Shall include a central control terminal board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, loss of charge, freeze switch, high pressure switches.
4. Unit shall include a minimum of one 8–pin screw terminal connection board for connection of control wiring.
5. Shall include integrated defrost system to prevent excessive frost accumulation during heating duty, and shall be controlled as follows:
   a. Defrost shall be initiated on the basis of time and coil temperature.
   b. A 30,60,90,120 minute timer shall activate the defrost cycle only if the coil temperature is low enough to indicate a heavy frost condition.
   c. Defrost cycle shall terminate when defrost thermostat are satisfied and shall have a positive termination time of 10 minutes.
6. Defrost system shall also include:
   a. Defrost Cycle Indicator LED.
   b. Dip switch selectable defrost time between 30,60,90 and 120 minutes. Factory set at 30 minutes.
   c. Molded plug connection to insure proper connection.

23 09 33.23.B. Safeties:

1. Compressor over–temperature, over current.
2. Loss of charge switch.
   a. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 low and high pressure switches. They shall physically prevent the cross–wiring of the safety switches between circuits 1 and 2.
   b. Loss of charge switch shall use different color wire than the high pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.

3. High−pressure switch.
   a. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 low and high pressure switches. They shall physically prevent the cross−wiring of the safety switches between circuits 1 and 2.
   b. High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
4. Freeze protection thermostat, evaporator coil (one per refrigerant circuit).
5. Automatic reset, motor thermal overload protector.

23 09 93 Sequence of Operations for HVAC Controls

23 09 93.13 Decentralized, Rooftop Units:

23 09 93.13 INSERT SEQUENCE OF OPERATION

23 40 13 Panel Air Filters

23 40 13.13 Decentralized, Rooftop Units:

23 40 13.13.A. Standard filter section

1. Shall consist of factory−installed, low velocity, throwaway 2−in. thick fiberglass filters of commercially available sizes.
2. Unit shall use only one filter size. Multiple sizes are not acceptable.
3. Filters shall be accessible through an access panel with “no−tool” removal as described in the unit cabinet section of this specification (23 81 19.13.H).

23 81 19 Self−Contained Air Conditioners

23 81 19.13 Small−Capacity Self−Contained Air Conditioners (RHS036−150)

23 81 19.13.A. General

1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a(n) hermetic scroll compressor(s) for cooling duty and heat pump for heating duty.
2. Factory assembled, single−piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start−up.
3. Unit shall use environmentally safe, R−410A refrigerant.
4. Unit shall be installed in accordance with the manufacturer’s instructions.
5. Unit must be selected and installed in compliance with local, state, and federal codes.

23 81 19.13.B. Quality Assurance

1. Unit meets ASHRAE 90.1−2004 minimum efficiency requirements.
2. Unit shall be rated in accordance with AHRI Standards 210/240 and 340/360.
3. Unit shall be designed to conform to ASHRAE 15, 2001.
4. Unit shall be UL−tested and certified in accordance with ANSI Z21.47 Standards and UL−listed and certified under Canadian standards as a total package for safety requirements.
5. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
6. Unit casing shall be capable of withstanding 500−hour salt spray exposure per ASTM B117 (scribed specimen).
7. Unit casing shall be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 5000−hour salt spray.
8. Unit shall be designed in accordance with ISO 9001:2000, and shall be manufactured in a facility registered by ISO 9001:2000.
9. Roof curb shall be designed to conform to NRCA Standards.
10. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
11. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
12. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
13. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.
14. High Efficient Motors listed shall meet Section 313 of the Energy Independence and Security Act of 2007 (EISA 2007).

23 81 19.13.C. Delivery, Storage, and Handling

1. Unit shall be stored and handled per manufacturer’s recommendations.
2. Lifted by crane requires either shipping top panel or spreader bars.
3. Unit shall only be stored or positioned in the upright position.

23 81 19.13.D. Project Conditions

1. As specified in the contract.

23 81 19.13.E. Project Conditions

1. As specified in the contract.

23 81 19.13.F. Operating Characteristics

1. Unit shall be capable of starting and running at 115°F (46°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 or 340/360 at ± 10% voltage.
2. Compressor with standard controls shall be capable of operation from 25°F (−4°C), ambient outdoor temperatures.
3. Unit shall be capable of simultaneous heating duty and defrost cycle operation when using accessory electric heaters.
4. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.

5. Unit shall be factory configured for vertical supply & return configurations.
6. Unit shall be field convertible from vertical to horizontal configuration
7. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.

23 81 19.13.G. Electrical Requirements

1. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

23 81 19.13.H. Unit Cabinet

1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre−painted baked enamel finish on all externally exposed surfaces.
2. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H−2H Pencil hardness.
3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 or 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2−in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil−faced fiberglass insulation shall be used in the heat compartment.
4. Base of unit shall have a minimum of three locations for thru−the−base electrical connections (field installed), standard.
5. Base Rail
   a. Unit shall have base rails on a minimum of 2 sides.
   b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
   c. Holes shall be provided in the base rail for moving the rooftop by fork truck.
   d. Base rail shall be a minimum of 16 gauge thickness.
6. Condensate pan and connections:
   a. Shall be a sloped condensate drain pan made of a non−corrosive material.
   b. Shall comply with ASHRAE Standard 62.
   c. Shall use a 3/4" −14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
7. Top panel:
   a. Shall be a single piece top panel on 036 thru 120 sizes.
8. Electrical Connections
   a. All unit power wiring shall enter unit cabinet at a single, factory−prepared, knockout location.
   b. Thru−the−base capability
   (1.) Standard unit shall have a thru−the−base electrical location(s) using a raised, embossed portion of the unit basepan.
   (2.) Optional, factory−approved, water−tight connection method must be used for thru−the−base electrical connections.
   (3.) No basepan penetration, other than those authorized by the manufacturer, is permitted.
9. Component access panels (standard)
   a. Cabinet panels shall be easily removable for servicing.
   b. Unit shall have one factory installed, tool−less, removable, filter access panel.
   c. Panels covering control box, indoor fan, indoor fan motor, and compressors shall have molded composite handles.
   d. Handles shall be UV modified, composite. permanently attached, and recessed into the panel.
   e. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.
   f. Collars shall be removable and easily replaceable using manufacturer recommended parts.

23 81 19.13.I. N/A

23 81 19.13.J. Coils

1. Standard Aluminum/Copper Coils: on all models.
   a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
   b. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
   c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.
2. Optional Pre−coated aluminum−fin condenser coils: on all models.
   a. Shall have a durable epoxy−phenolic coating to provide protection in mildly corrosive coastal environments.
   b. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.
   c. Epoxy−phenolic barrier shall minimize galvanic action between dissimilar metals.
3. Optional Copper−fin evaporator and condenser coils: on all models.
   a. Shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets.
   b. Galvanized steel tube sheets shall not be acceptable.
   c. A polymer strip shall prevent coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan.
4. Optional E−coated aluminum−fin evaporator and condenser coils: on all models.

a. Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins.
b. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.
c. Color shall be high gloss black with gloss per ASTM D523–89.
d. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges.
e. Superior hardness characteristics of 2H per ASTM D3363–92A and cross–hatch adhesion of 4B–5B per ASTM D3359–93.
f. Impact resistance shall be up to 160 in.–lb (ASTM D2794–93).
g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247–92 and ASTM D870–92).
h. Corrosion durability shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117–90.

23 81 19.13.K. Refrigerant Components

1. Refrigerant circuit shall include the following control, safety, and maintenance features:
   a. Fixed orifice metering system shall prevent mal–distribution of two–phase refrigerant by including multiple fixed orifice devices in each refrigeration circuit. Each orifice is to be optimized to the coil circuit it serves.
   b. Refrigerant filter drier.
   c. Service gauge connections on suction and discharge lines.
   d. Pressure gauge access through a specially designed access port in the top panel of the unit.
   e. Suction line accumulator to provide protection in all operating modes from cooling, heating and reverse cycle switching.
2. There shall be gauge line access port in the top of the rooftop, covered by a black, removable plug.
   a. The plug shall be easy to remove and replace.
   b. When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.
   c. This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
   d. The plug shall be made of a leak proof, UV–resistant, composite material.
3. Compressors
   a. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
   b. Models shall be available with single compressor designs on 036–072 models, plus additional 2 compressor (stage) models from 090–150 sizes.
   c. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
   d. Compressors shall be internally protected from high discharge temperature conditions.
   e. Compressors shall be protected from an over–temperature and over–amperage conditions by an internal, motor overload device.
   f. Compressor shall be factory mounted on rubber grommets.
   g. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
   h. Crankcase heaters shall be utilized on all models (except 036 size) to protect compressor with specific refrigerant charge.

23 81 19.13.L. Filter Section

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
3. Shall consist of factory–installed, low velocity, throw–away 2–in. thick fiberglass filters.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

23 81 19.13.M. Evaporator Fan and Motor

1. Evaporator fan motor:
   a. Shall have permanently lubricated bearings.
   b. Shall have inherent automatic–reset thermal overload protection or circuit breaker.
   c. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
2. Electric Drive (Direct Drive) High Efficiency – 5 Speed/Torque Evaporator Fan:
   a. Multi speed motor with easy quick adjustment settings.
   b. Blower fan shall be double–inlet type with forward–curved blades.
   c. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
   d. Standard on all 036–060 models with 208/230/1/60 operation
   e. Standard on all 036–060 3–phase models, with optional belt drive.
3. Belt–driven Evaporator Fan:
   a. Belt drive shall include an adjustable–pitch motor pulley.
   b. Shall use sealed, permanently lubricated ball–bearing type.
   c. Blower fan shall be double–inlet type with forward–curved blades.
   d. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
   e. Standard on all 072 – 150 size models. Optional on all 036–060 3–phase models.

23 81 19.13.N. Condenser Fans and Motors

1. Condenser fan motors:
   a. Shall be a totally enclosed motor.
   b. Shall use permanently lubricated bearings.
   c. Shall have inherent thermal overload protection with an automatic reset feature.
   d. Shall use a shaft–down design on 036 to 150 models.
2. Condenser Fans:
   a. Shall be a direct–driven propeller type fan.
   b. Shall have aluminum blades riveted to corrosion–resistant steel spiders and shall be dynamically balanced.

23 81 19.13.O. Special Features, Options (factory installed) and Accessories (field installed)

1. 2 speed indoor fan system for 2–stage cooling models only. (Not available with Hot Gas Reheat system):
   a. Evaporator fan motor:
      (1.) Shall have permanently lubricated bearings.
      (2.) Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating.
      (3.) Shall be Variable Frequency duty and 2–speed control.
      (4.) Shall contain motor shaft grounding ring to prevent electrical bearing fluting damage by safely diverting harmful shaft voltages and bearing currents to ground.
2. Variable Frequency Drive (VFD). Only available on 2–speed indoor fan motor option (SAV):
   a. Shall be installed inside the unit cabinet, mounted, wired and tested.
   b. Shall contain Electromagnetic Interference (EMI) frequency protection.
   c. Insulated Gate Bi–Polar Transistors (IGBT) used to produce the output pulse width modulated (PWM) waveform, allowing for quiet motor operation.
   d. Self diagnostics with fault and power code LED indicator. Field accessory Display Kit available for further diagnostics and special setup applications.
   e. RS485 capability standard.
   f. Electronic thermal overload protection.
   g. 5% swinging chokes for harmonic reduction and improved power factor.
   h. All printed circuit boards shall be conformal coated.
3. Standard Integrated Economizers (Factory installed on 3 Phase Models Only. Field installed on all 3 and 1 Phase Models):
   a. Integrated, gear driven parallel modulating blade design type capable of simultaneous economizer and compressor operation.
   b. Independent modules for vertical or horizontal return configurations shall be available. Vertical return modules shall be available as a factory–installed option.
   c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
   d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
   e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
   f. Standard models shall be equipped with low–leakage dampers, not to exceed 2% leakage at 1 in. wg pressure differential. Economizer controller on electromechanical units shall be Honeywell W7212 that provides:
      (1.) Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.
      (2.) Functions with solid state analog enthalpy or dry bulb changeover control sensing.
      (3.) Contain LED indicates for:
      When free cooling is available
      When module is in DCV mode
      When exhaust fan contact is closed
   g. Ultra low leak EconoMi$er X system shall be available on models with 2–speed Variable Frequency Drive (VFD) systems. Only available on 2–speed indoor fan motor systems with electromechanical controls.
      (1.) Maximum damper leakage rate to be equal to or less than 4.0 cfm/sq. ft. at 1.0 in. w.g., meeting or exceeding ASHRAE 90.1 requirements. Economizer controller on electromechanical units shall be Honeywell W7220 that provides:
      (2.) 2–line LCD interface screen for setup, configuration and troubleshooting
      (3.) On–board fault detection and diagnostics

(4.) Sensor failure loss of communication identification
(5.) Automatic sensor detection
(6.) Capabilities for use with multiple−speed indoor fan systems
(7.) Utilize digital sensors: Dry bulb and Enthalpy

h. Shall be capable of introducing up to 100% outdoor air.
i. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air.
j. Shall be designed to close damper(s) during loss−of−power situations with spring return built into motor.
k. Dry bulb outdoor air temperature sensor shall be provided as standard. Outdoor air sensor setpoint shall be adjustable and shall range from 40 to 100°F / 4 to 38°C. Additional sensor options shall be available as accessories.
l. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 100%, with a range of 0% to 100%.
m. The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy. A remote potentiometer may be used to override the damper setpoint.
n. Dampers shall be completely closed when the unit is in the unoccupied mode.
o. Economizer controller shall accept a 2−10 Vdc CO_2 sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor air damper to provide ventilation based on the sensor input.
p. Compressor lockout sensor shall open at 35°F (2°C) and close closes at 50°F (10°C).
q. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
r. Economizer controller shall provide indications when in free cooling mode, in the DCV mode, or the exhaust fan contact is closed.

4. Two−Position Damper (Factory installed on 3 Phase Models Only. Field installed on all 3 and 1 Phase Models)
   a. Damper shall be a Two−Position Motorized Damper. Damper travel shall be from the full closed position to the field adjustable %−open setpoint.
   b. Damper shall include adjustable damper travel from 25% to 100% (full open).
   c. Damper shall include single or dual blade, gear driven dampers and actuator motor.
   d. Actuator shall be direct coupled to damper gear. No linkage arms or control rods shall be acceptable.
   e. Damper will admit up to 100% outdoor air for applicable rooftop units.
   f. Damper shall close upon indoor (evaporator) fan shutoff and/or loss of power.
   g. The damper actuator shall plug into the rooftop unit's wiring harness plug. No hard wiring shall be required.
   h. Outside air hood shall include aluminum water entrainment filter
5. Manual damper
   a. Manual damper package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 50% outdoor air for year round ventilation.
6. Head Pressure Control Package
   a. Controller shall control coil head pressure by condenser fan speed modulation or condenser fan cycling and wind baffles.
   b. Shall consist of solid state control and condenser coil temperature sensor to maintain condensing temperature between 90°F (32°C) and 110°F (43°C) at outdoor ambient temperatures down to −20°F (−29°C).
7. Condenser Coil Hail Guard Assembly
   a. Shall protect against damage from hail.
   b. Shall be louvered design.
8. Unit Mounted, Non−Fused Disconnect Switch:
   a. Switch shall be factory−installed, internally mounted.
   b. National Electric Code (NEC) and UL approved non−fused switch shall provide unit power shutoff.
   c. Shall be accessible from outside the unit
   d. Shall provide local shutdown and lockout capability.
9. Convenience Outlet:
   a. Powered convenience outlet.
      (1.) Outlet shall be powered from main line power to the rooftop unit.
      (2.) Outlet shall be powered from line side or load side of disconnect by installing contractor, as required by code. If outlet is powered from load side of disconnect, unit electrical ratings shall be UL certified and rated for additional outlet amperage.
      (3.) Outlet shall be factory−installed and internally mounted with easily accessible 115−v female receptacle.
      (4.) Outlet shall include 15 amp GFI receptacles with independent fuse protection.

(5.) Voltage required to operate convenience outlet shall be provided by a factory−installed step down transformer.
(6.) Outlet shall be accessible from outside the unit.

b. Non−Powered convenience outlet.
(1.) Outlet shall be powered from a separate 115−120v power source.
(2.) A transformer shall not be included.
(3.) Outlet shall be factory−installed and internally mounted with easily accessible 115−v female receptacle.
(4.) Outlet shall include 15 amp GFI receptacles.
(5.) Outlet shall be accessible from outside the unit.

10. Thru−the−Base Connectors:
a. Kits shall provide connectors to permit electrical connections to be brought to the unit through the unit basepan.
b. Minimum of three connection locations per unit.

11. Propeller Power Exhaust:
a. Power exhaust shall be used in conjunction with an integrated economizer.
b. Independent modules for vertical or horizontal return configurations shall be available.
c. Horizontal power exhaust shall be mounted in return ductwork.
d. Power exhaust shall be controlled by economizer controller operation. Exhaust fans shall be energized when dampers open past the 0−100% adjustable setpoint on the economizer control.

12. Roof Curbs (Vertical):
a. Full perimeter roof curb with exhaust capability providing separate air streams for energy recovery from the exhaust air without supply air contamination.
b. Formed galvanized steel with wood nailer strip and shall be capable of supporting entire unit weight.
c. Permits installation and securing of ductwork to curb prior to mounting unit on the curb.

13. High Static Indoor Fan Motor(s) and Drive(s) (04−14):
a. High static motor(s) and drive(s) shall be factory−installed to provide additional performance range.

14. Thru−the−Bottom Utility Connectors:
a. Kit shall provide connectors to permit gas and electrical connections to be brought to the unit through the basepan.

15. Outdoor Air Enthalpy Sensor:
a. The outdoor air enthalpy sensor shall be used to provide single enthalpy control. When used in conjunction with a return air enthalpy sensor, the unit will provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.

16. Return Air Enthalpy Sensor:
a. The return air enthalpy sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.

17. Indoor Air Quality (CO_2) Sensor:
a. Shall be able to provide demand ventilation indoor air quality (IAQ) control.
b. The IAQ sensor shall be available in duct mount, wall mount, or wall mount with LED display. The setpoint shall have adjustment capability.

18. Smoke detectors (Factory−Installed Only Supply Air):
a. Shall be a Four−Wire Controller and Detector.
b. Shall be environmental compensated with differential sensing for reliable, stable, and drift−free sensitivity.
c. Shall use magnet activated test/reset sensor switches.
d. Shall have tool−less connection terminal access.
e. Shall have a recessed momentary switch for testing and resetting the detector.
f. Controller shall include:
(1.) One set of normally open alarm initiation contacts for connection to an initiating device circuit on a fire alarm control panel.
(2.) Two Form−C auxiliary alarm relays for interface with rooftop unit or other equipment.
(3.) One Form−C supervision (trouble) relay to control the operation of the Trouble LED on a remote test/reset station.
(4.) Capable of direct connection to two individual detector modules.
(5.) Can be wired to up to 14 other duct smoke detectors for multiple fan shutdown applications.

19. Time Guard

a. Shall prevent compressor short cycling by providing a 5−minute delay (±2 minutes) before restarting a compressor after shutdown for any reason.
b. One device shall be required per compressor.

20. Electric Heat:
    a. Heating Section
        (1.) Heater element open coil resistance wire, nickel−chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
        (2.) Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24V coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.
21. California OSHPD Seismic Certification Label
    a. Units meet the seismic requirements of the International Code Council Evaluation Service (ICC−ES) document AC156 (Acceptance Criteria for Seismic Qualification by Shake−Table Testing of Nonstructural Components and Systems) and per International Building Code (IBC 2009) at an SDS (g) value of 2.00 z/h=1.0, Ip=1.5 and certified by independent structural engineers.
    b. Units shall include a certification label that meets the CA OSHPD Special Seismic Certification pre−approval labeling requirements on the external chassis of the unit.
22. Hinged Access Panels
    a. Shall provide easy access through integrated quarter turn latches.
    b. Shall be on major panels of: filters, control box, fan motor and compressor.
23. Display Kit for Variable Frequency Drive
    a. Kit allows the ability to access the VFD controller programs to provide special setup capabilities and diagnostics.
    b. Kit contains display module, mounting bracket and communication cable.
    c. Display Kit can be permanently installed in the unit or used on any SAV system VFD controller as needed.