

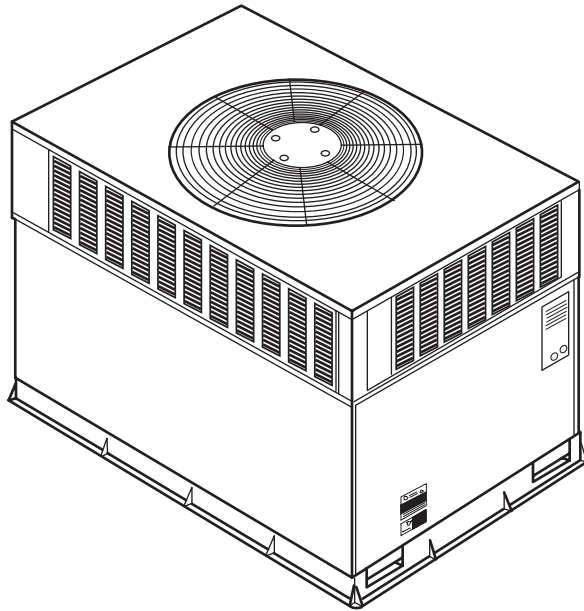


SINGLE-PACKAGED HEAT PUMP UNITS

Model 604B
Sizes 024-060
with Puron® (R-410A) Refrigerant
2 to 5 Nominal Tons



**EVOLUTION™
SYSTEM**



UNIT 604B

Single-Packaged Products with Energy-Saving Features and Puron® refrigerant.

- 13 SEER
- Up to 8.0 HSPF
- 11 EER at 95°F OD
- Low Sound Levels
- Variable Speed Blower -Standard
- Factory Installed TXV

FEATURES/BENEFITS

One-piece Heat Pump unit with optional electric heater, low installation cost, dependable performance and easy maintenance.

EFFICIENT OPERATION

High-efficiency design with SEERs (Seasonal Energy Efficiency Ratio) of 13.0.

Puron® Environmentally Sound Refrigerant is Bryant's unique refrigerant designed to help protect the environment. Puron is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. The most important advantage of Puron refrigerant is that it has not been banned in future air conditioning systems as the traditional refrigerant R-22 has been. Puron refrigerant is in service in over 100,000 systems proving highly reliable, environmentally sound performance.

Perfect Humidity™ Technology featuring Variable Speed Blower motors provides better comfort and energy efficiency. You can expect up to 30 times better dehumidification; economical constant fan for less than \$50 a year, which provides improved indoor air quality and more even temperatures from room to room; and reduced indoor noise due to lower air velocity. In addition, you'll realize improved installation flexibility with 3 different airflow

choices for best overall comfort.

EASY INSTALLATION

Factory-assembled package is a compact, fully self-contained, heat pump unit that is pre-wired, pre-piped, and pre-charged for minimum installation expense. 604B units are available in a variety of standard capacity ranges with voltage options to meet residential and light commercial requirements. Units install easily on a rooftop or at ground-level.

DURABLE, DEPENDABLE COMPONENTS

Compressors are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Vibration isolation provides quiet operation. Compressors have internal high-pressure and overcurrent protection.

Convertible duct configuration Unit is designed for easy use in either downflow or horizontal applications. Each unit is easily converted from horizontal to downflow and include horizontal duct covers.

Direct-drive variable speed blower motor is standard on all 604B models.

Direct-drive, PSC condenser-fan motors are designed to help reduce energy consumption and provide for cooling operation down to 55°F outdoor temperature. Motormaster® II low ambient kit is available as a field-installed accessory.

Corporate thermostats designed to work as a system with Bryant's small packaged product.

Refrigerant system is designed to provide dependability. Liquid refrigerant filter driers are used to promote clean, unrestricted operation. Each unit leaves the factory with a full Puron® refrigerant charge. Refrigerant service connections make checking operating pressures easier.

Indoor and Outdoor coils are computer-designed for optimum heat transfer and cooling efficiency. The indoor coil is fabricated from copper tube and aluminum fins and is located inside the unit for protection against damage. The outdoor coil is internally mounted on the top tier of the unit. Copper fin coils and pre-coated fin coils are available from the factory by special order. These coils are recommended in applications where aluminum fins are likely to be damaged due to corrosion. They are ideal for sea-coast applications.

Thermostatic Expansion Valve — A hard shutoff, balance port TXV maintains a constant superheat at the evaporator exit (cooling cycle) resulting in higher overall system efficiency.

High and Low Pressure Switches give added safety and reliability to the compressor.

Low sound ratings ensure a quiet indoor and outdoor environment with sound ratings as low as 72 dB.

(See page 3.)

Easy to service cabinets provide easy single-panel accessibility to serviceable components during maintenance and installation. The basepan with integrated drain pan provides easy ground level installation with or without a mounting pad.

Convenient handholds are provided to manipulate the unit on the jobsite. A nesting feature ensures a positive basepan to roof curb seal when the unit is roof mounted. A convenient 3/4-in. wide perimeter flange makes frame mounting on a rooftop easy.

Louvered Grille provides hail and vandalism protection for the coil.

Downflow operation is easily provided in the field to allow vertical ductwork connections. The basepan utilizes knockout style seals on the bottom openings to ensure a positive seal in the horizontal airflow mode.

Cabinets are constructed of heavy-duty, phosphated, zinc-coated prepainted steel capable of withstanding 500 hrs of salt spray. Interior surfaces of the evaporator and electric heater compartments are insulated with cleanable semi-rigid insulation board, which keeps the conditioned air from being affected by the outdoor ambient temperature and provides improved indoor air quality. (Conforms to American Society of Heating, Refrigeration and Air Conditioning Engineers No. 62P.) The sloped drain pan minimizes standing water in the drain, which is provided with an external drain.

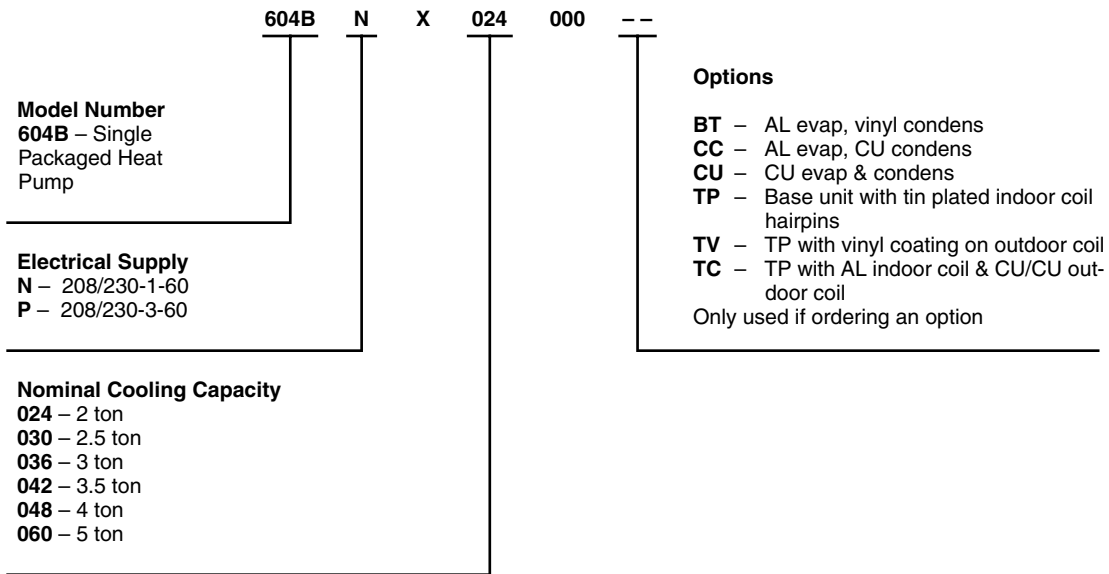
Standard metal duct covers with insulation come with the unit and cover the horizontal duct openings. These can be left in place if the units are converted to downflow.

Short-Cycling protection for the compressor is incorporated into our defrost control board ensuring a five minute delay (+/-2 minutes) before restarting compressor after shutdown for any reason.

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MODEL NUMBER NOMENCLATURE



AL — Aluminum
CU — Copper

ARI* CAPACITIES COOLING CAPACITIES AND EFFICIENCIES

UNIT 604B	NOMINAL TONS	STANDARD CFM	NET COOLING CAPACITIES (Btuh)	EER@A**	SEER†	SOUND RATINGS‡ (dB)
024	2	800	24,000	11	13.0	72
030	2-1/2	1000	28,800	11	13.0	72
036	3	1100	36,000	11	13.0	72
042	3-1/2	1450	41,000	11	13.0	72
048	4	1450	45,000	11	13.0	78
060	5	1710	57,000	11	13.0	78

HEATING CAPACITIES AND EFFICIENCIES

UNIT 604B	HIGH HEAT CAPACITY (BTUH) @ 47°F	HIGH HEAT COP @ 47°F	LOW HEAT CAPACITY (BTUH) @ 17°F	LOW HEAT COP @ 17°F	HSPF†
024	24,000	3.4	14,400	2.2	7.8
030	29,000	3.4	16,000	2.2	8.0
036	36,000	3.4	19,600	2.1	8.0
042	40,500	3.4	21,600	2.2	8.0
048	47,000	3.5	24,600	2.2	8.0
060	55,000	3.4	31,000	2.2	8.0

LEGEND

dB — Sound Levels (decibels)
db — Dry Bulb
SEER— Seasonal Energy Efficiency Ratio
wb — Wet Bulb
COP— Coefficient of Performance
HSPF— Heating Season Performance Factor
 * Air Conditioning & Refrigeration Institute.
 ** “A” Conditions— 80°F indoor db/67°F indoor wb and 95°F outdoor db.

† Rated in accordance with U.S. Government DOE (Department of Energy) test procedures and/or ARI Standard 210/240-94.
 ‡ Tested in accordance with ARI Standard 270-95 (not listed in ARI).
NOTES:
 1. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
Cooling Standard: 80°F db, 67°F wb indoor entering-air temperature and 95°F db outdoor entering-air temperature.
 2. Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

PHYSICAL DATA

UNIT SIZE 604B	024	030	036	042	048	060
NOMINAL CAPACITY (ton)	2	2-1/2	3	3-1/2	4	5
OPERATING WEIGHT (lb)	350	350	373	440	463	499
COMPRESSOR	Scroll					
REFRIGERANT (R-410A) Quantity (lb)	7.5	8.0	9.5	10.8	11.5	14.0
REFRIGERANT METERING DEVICE Orifice ID TXV Orifice OD (in.)	OD-AccuRater® Piston ID-TXV					
	TXV 2@0.035	TXV 2@0.035	TXV 2@0.038	TXV 2@0.038	TXV 0.038 Left 0.046 Right	TXV 0.042 Left 0.052 Right
OUTDOOR COIL Rows—Fins/in. Face Area (sq ft)	2—21 12.3	2—21 12.0	2—21 13.6	2—21 15.4	2—21 17.4	2—21 19.3
OUTDOOR FAN Nominal Cfm Diameter (in.) Motor Hp (Rpm)	2700 22 1/8 (825)	2700 22 1/8 (825)	2800 22 1/8 (825)	2800 22 1/8 (825)	3300 22 1/4 (1100)	3300 22 1/4 (1100)
INDOOR COIL Rows—Fins/in. Face Area (sq ft)	3—15 3.7	3—15 3.7	4—15 3.7	3—15 4.7	4—15 4.7	4—15 5.7
STANDARD INDOOR BLOWER Nominal Airflow (Cfm) Size (in.) Motor (Hp)	800 10 x 10 1/2	1000 10 x 10 1/2	1100 11 x 10 3/4	1400 11 x 10 3/4	1450 11 x 10 3/4	1750 11 x 10 1.0
HIGH-PRESSURE SWITCH (psig) Cutout Reset (Auto.)	610 ± 15 420 ± 25					
LOSS-OF-CHARGE/LOW-PRESSURE SWITCH (Liquid Line) (psig) Cutout Reset (Auto.)	20 ± 5 45 ± 10					
RETURN-AIR FILTERS (in.)* Throwaway	20 x 20 x 1	20 x 20 x 1	20 x 24 x 1	24 x 30 x 1	24 x 30 x 1	24 x 30 x 1

* Required filter sizes shown are based on the larger of the ARI (Air Conditioning & Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for throwaway type or 450 ft/minute for high-capacity type. Air filter pressure drop for non-standard filters must not exceed 0.08 in. wg.



OUTDOOR SOUND: OCTAVE BAND DATA—DECIBELS (L w(A))

MODEL NO.	604B					
	024	030	036	042	048	060
Frequency (Hz)						
125	58.8	58.8	60.7	56.7	62.4	63.5
250	63.5	63.5	63.3	62.8	69.9	67.6
500	67.2	67.2	66.8	67.8	71.3	71.8
1000	66.9	66.9	66.5	67.4	73.4	75.5
2000	63.7	63.7	64.2	63.7	70.0	71.0
4000	58.3	58.3	60.3	57.7	66.3	68.1
8000	50.0	50.0	53.0	50.8	60.1	59.9

OPTIONS AND ACCESSORIES

Factory-installed options

Coil options include Tin-Plated* indoor hairpins, copper/copper and vinyl-coated construction for refrigerant coils. Units are shipped standard with copper tube/aluminum fin construction. See model number nomenclature for coil options.

*Tin-Plated indoor coils are built with special hairpins that are designed to resist both general pitting corrosion and excessive indoor corrosion (Formicary Corrosion).

Field-installed accessories

Economizer with Solid-State Controls and Barometric Relief Dampers
Manual Air Damper (25% open)
Electric Heaters
Filter Rack
Flat Roof Curbs (8-in. and 14-in.)
Square-to-Round Duct Transition Kit
Thermostats
Crankcase Heater
Low Ambient Kit (Motormaster® II Control)
Lifting Kit
Compressor Hard Start Kit

Economizer with solid-state controls and barometric relief dampers includes filter racks and provide outdoor air during cooling and reduce compressor operation.

Manual outside air damper includes hood and filter rack with adjustable damper blade for up to 25% outdoor air.

Electric heaters provide additional heat in the unit when required. Each package has a heater module that slides into the controls compartment. Heater sizes range from 5.0 to 20.0 kw. The electric heater design allows the use of a single-point power supply for the entire unit, resulting in lower installed costs.

Flat roof curbs in both 8 in. and 14 in. sizes are available for roof mounted applications.

Square-to-round duct transition kit enables 024-048 size units to be fitted to 14 in. round ductwork.

Thermostats provide control for the system heating and cooling functions. Thermostat models are available in both programmable and non-programmable versions.

Lifting kit includes 4 metal brackets that are used to assist in lifting this product onto a roof application.

Crankcase heater provides anti-floodback protection for low-load cooling applications.

Low-ambient kit (Motormaster II control) allows the use of mechanical cooling down to outdoor temperatures as low as 0°F.

Filter rack features easy installation, serviceability, and high-filtering performance for vertical or horizontal applications.

Compressor hard start kit assists compressor start-up by providing additional starting torque on single phase units and prolongs compressor motor life.

ELECTRIC HEATERS

ODS CATALOG ORDERING NO.	NOMINAL CAPACITY (kW)	USED WITH SIZES					
		024	030	036	042	048	060
ELECTRIC HEATERS (208/230 — SINGLE PHASE — 60 Hz)							
CPHEATER052A00	5.0	X	X	X	X		
CPHEATER064A00	5.0					X	X
CPHEATER070A00	7.5	X	X	X	X	X	X
CPHEATER050A00	10.0	X	X	X	X	X	X
CPHEATER066A00	15.0			X	X	X	X
CPHEATER054A00	20.0				X	X	X
ELECTRIC HEATERS (208/230 — 3 PHASE — 60 Hz)							
CPHEATER055A00	5.0			X	X	X	X
CPHEATER056A00	10.0			X	X	X	
CPHEATER068A00	10.0						X
CPHEATER058A00	15.0			X	X	X	X
CPHEATER067A00	20.0				X	X	X

LEGEND

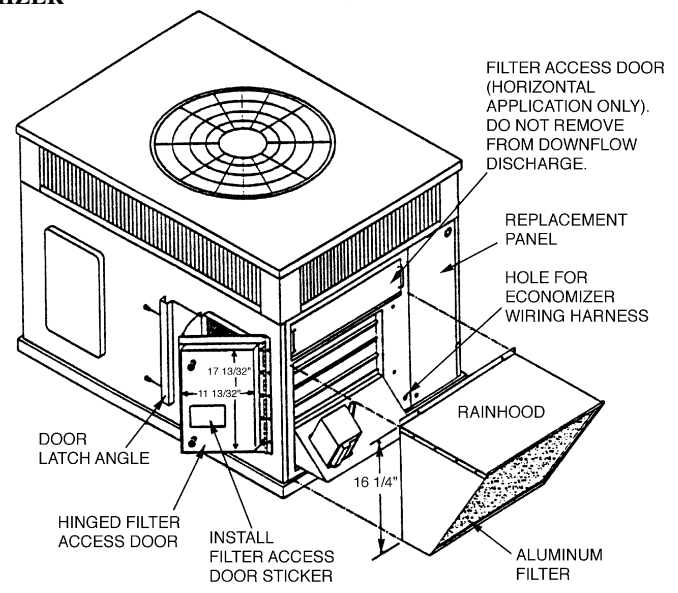
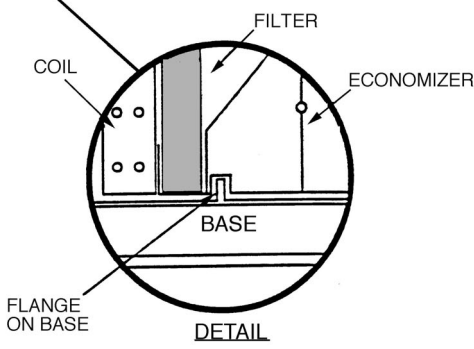
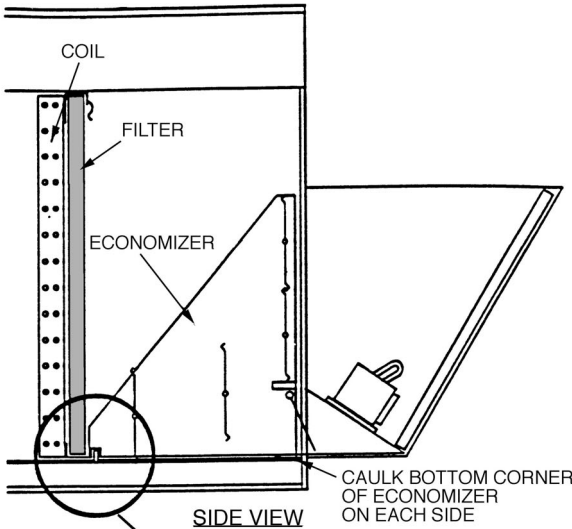
ODS — Order Distribution System

NOTE: Electric heaters are rated at 240v. Refer to Multiplication Factors table for other voltages.

MINIMUM AIRFLOW FOR RELIABLE ELECTRIC HEATER OPERATION

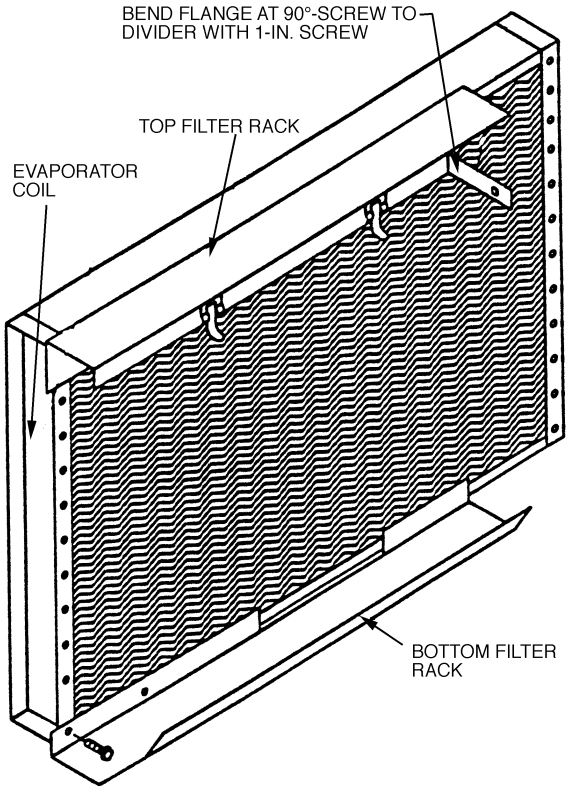
UNIT-604B	024	030	036	042	048	060
AIRFLOW	750	1025	1250	1285	1710	1800

ECONOMIZER

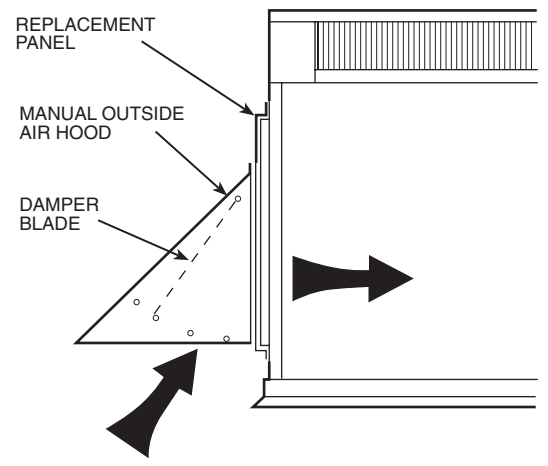


FILTER RACK

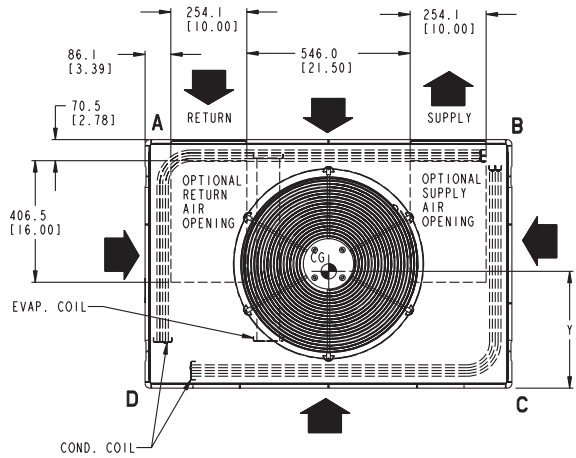
BEND FLANGE AT 90°-SCREW TO DIVIDER WITH 1-IN. SCREW



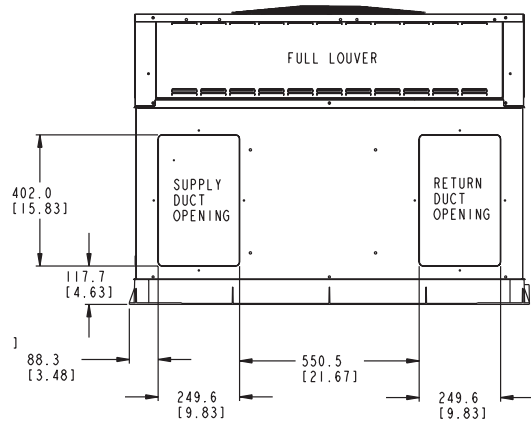
MANUAL OUTSIDE AIR DAMPER



BASE UNIT DIMENSIONS—604B024-036



TOP VIEW



REAR VIEW

REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

	MILLIMETERS [IN]
TOP OF UNIT	355.6 [14.00]
DUCT SIDE OF UNIT	50.8 [2.00]
SIDE OPPOSITE DUCTS	355.6 [14.00]
BOTTOM OF UNIT	12.7 [0.50]
ELECTRIC HEAT PANEL	914.4 [36.00]

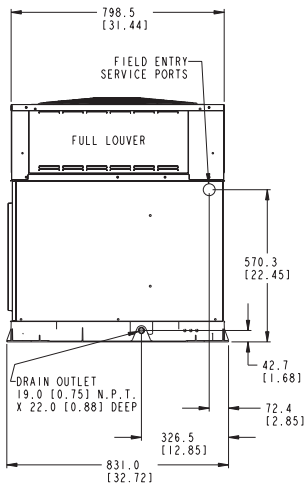
NEC. REQUIRED CLEARANCES.

	MILLIMETERS [IN]
BETWEEN UNITS, POWER ENTRY SIDE	1066.8 [42.00]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	914.0 [36.00]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	1066.8 [42.00]

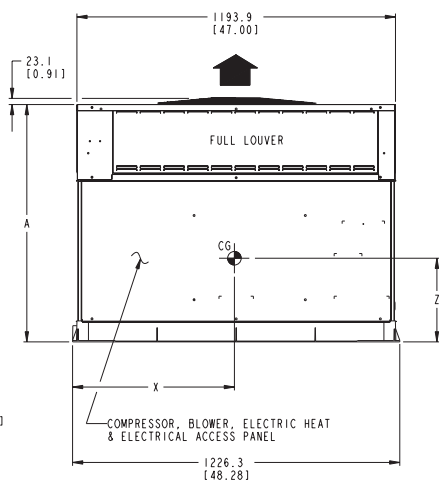
REQUIRED CLEARANCE FOR OPERATION AND SERVICING

	MILLIMETERS [IN]
EVAP. COIL ACCESS SIDE	914.0 [36.00]
POWER ENTRY SIDE (EXCEPT FOR NEC REQUIREMENTS)	914.0 [36.00]
UNIT TOP	914.0 [36.00]
SIDE OPPOSITE DUCTS	914.0 [36.00]
DUCT PANEL	304.8 [12.00]

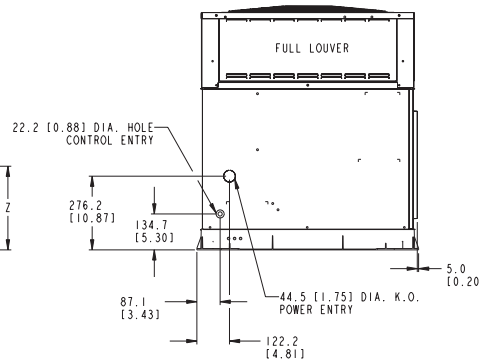
*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 304.8 [12.00] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.



LEFT SIDE VIEW



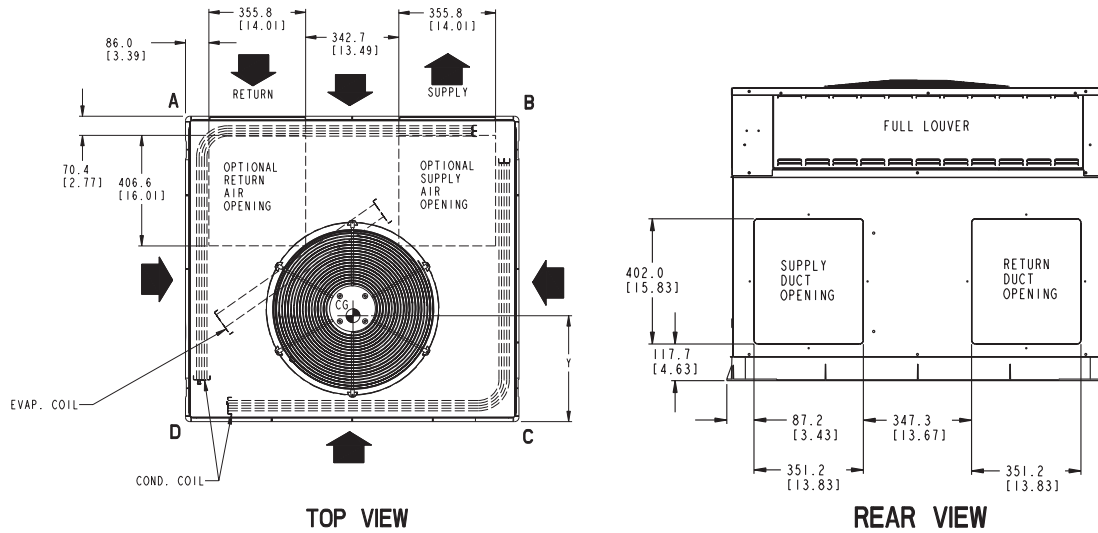
FRONT VIEW



RIGHT SIDE VIEW

UNIT	ELECTRICAL CHARACTERISTICS	UNIT WEIGHT		UNIT HEIGHT in. [mm] "A"	CENTER OF GRAVITY in. [mm]		
		lb	kg		X	Y	Z
604B024	208/230-1-60	350	159	37.02 [940.3]	20.0 [508.0]	19.3 [489.0]	17.6 [447.0]
604B030	208/230-1-60	350	159	39.02 [991.1]	20.0 [508.0]	19.3 [489.0]	17.6 [447.0]
604B036	208/230-1-60, 208/230-3-60	373	169	41.02 [1041.9]	20.0 [508.0]	14.0 [355.6]	13.0 [33.2]

BASE UNIT DIMENSIONS—604B042-060



REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

	MILLIMETERS [IN]
TOP OF UNIT.....	355.6 [14.00]
DUCT SIDE OF UNIT.....	50.8 [2.00]
SIDE OPPOSITE DUCTS.....	355.6 [14.00]
BOTTOM OF UNIT.....	12.7 [0.50]
ELECTRIC HEAT PANEL.....	914.4 [36.00]

NEC. REQUIRED CLEARANCES.

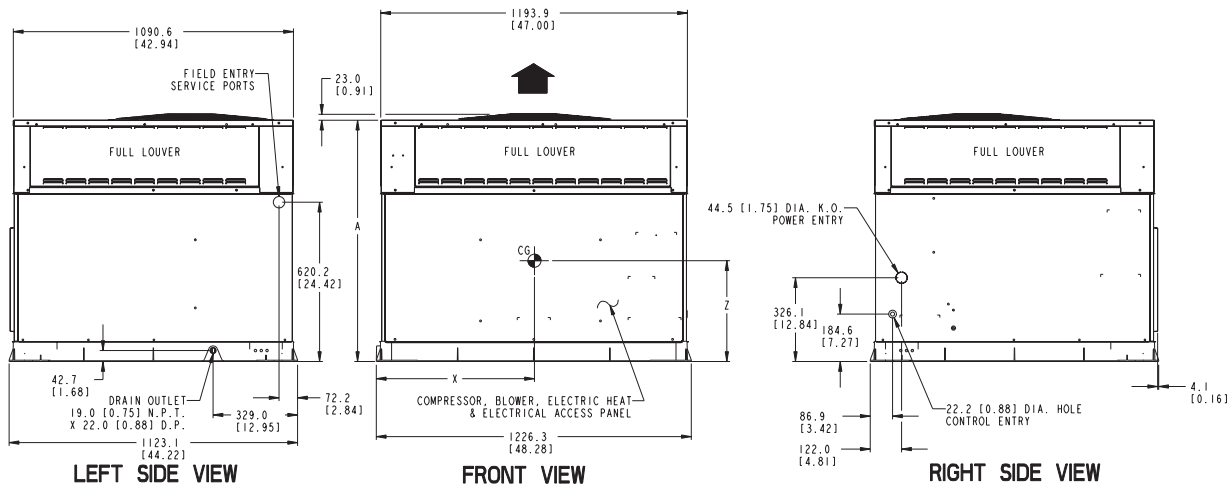
	MILLIMETERS [IN]
BETWEEN UNITS, POWER ENTRY SIDE.....	1066.8 [42.00]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE.....	914.0 [36.00]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE.....	1066.8 [42.00]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

	MILLIMETERS [IN]
EVAP. COIL ACCESS SIDE.....	914.0 [36.00]
POWER ENTRY SIDE.....	914.0 [36.00]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP.....	914.0 [36.00]
SIDE OPPOSITE DUCTS.....	914.0 [36.00]
DUCT PANEL.....	304.8 [12.00]

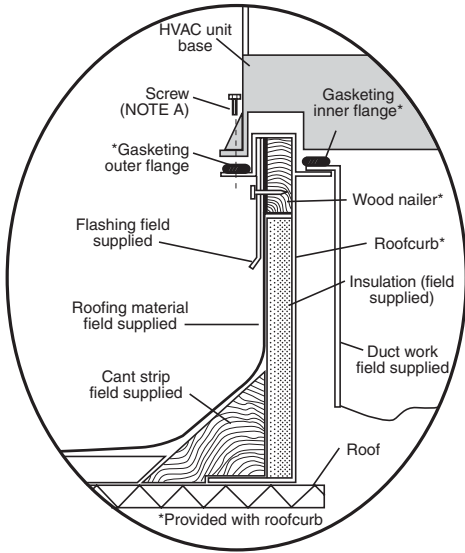
*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 304.8 [12.00] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

DIMENSIONS IN [] ARE IN INCHES



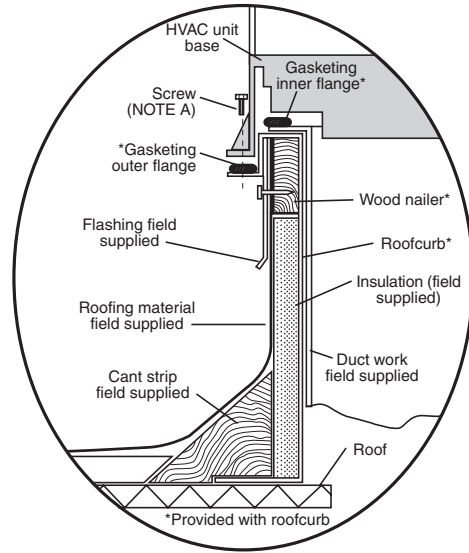
UNIT	ELECTRICAL CHARACTERISTICS	UNIT WEIGHT		UNIT HEIGHT in. [mm] "A"	CENTER OF GRAVITY in. [mm]		
		lb	kg		X	Y	Z
604B042	208/230-1-60, 208/230-3-60	440	200	42.98 [1091.7]	21 [533.4]	20.5 [520.7]	16.6 [421.6]
604B048	208/230-1-60, 208/230-3/60	463	210	44.98 [1142.5]	19.5 [495.3]	17.6 [447.6]	18.0 [457.2]
604B060	208/230-1-60, 208/230-3-60	499	226	46.98 [1193.3]	21.0 [533.4]	20.0 [508.0]	17.6 [442.0]

ACCESSORY DIMENSIONS



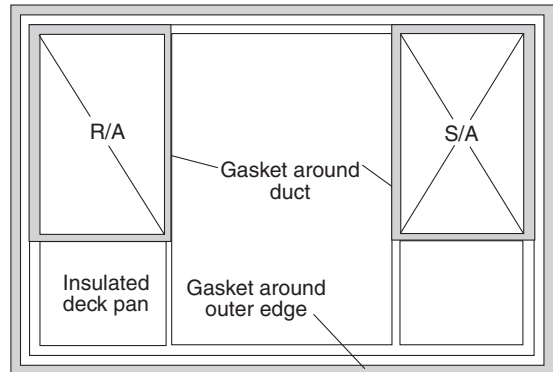
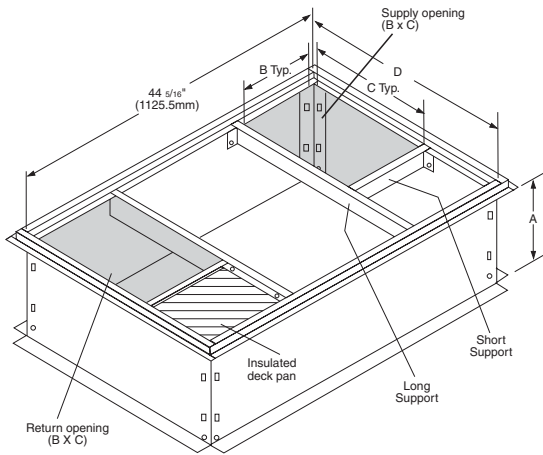
Roof Curb for Small Cabinet

Note A: When unit mounting screw is used, retainer bracket must also be used.



Roof Curb for Large Cabinet

Note A: When unit mounting screw is used, retainer bracket must also be used.



**Roof Curb Dimensions
Side View**

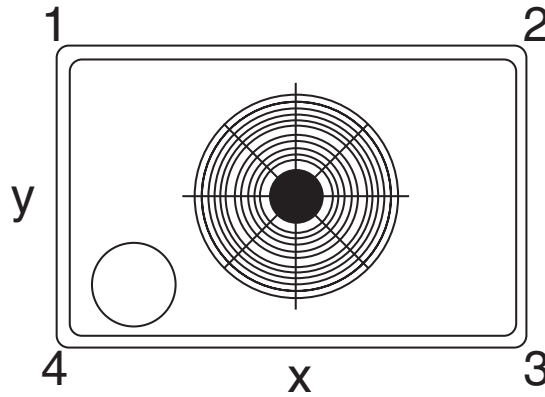
C00076

	UNIT SIZE	ODS ORDER NO.	A in. [mm]	B in. [mm]	C in. [mm]	D in. [mm]
ROOF CURB	024-036	CPRFCURB006A00	8 [203]	11 [279]	16-1/2 [419]	28-3/4 [730]
		CPRFCURB007A00	14 [356]	11 [279]	16-1/2 [419]	28-3/4 [730]
	042-060	CPRFCURB008A00	8 [203]	16-3/16 [411]	17-3/8 [441]	40-1/4 [1022]
		CPRFCURB009A00	14 [356]	16-3/16 [411]	17-3/8 [441]	40-1/4 [1022]

Notes:

1. Roof curb must be set up for unit being installed.
2. Seal strip must be applied, as required, to unit being installed.
3. Dimensions in [] are in millimeters.
4. Roof curb is made of 16-gage steel.
5. Table lists only the dimensions, per part number, that have changed.
6. Attach ductwork to curb (flanges of duct rest on curb).
7. Insulated panels: 1-in. thick fiberglass 1 lb. density.
8. Dimensions are in inches.
9. When unit mounting screw is used (Note A), a retainer bracket must be used as well. This bracket must also be used when required by code for hurricane or seismic conditions. This bracket is available through Micrometl.

604B CORNER WEIGHTS (IN POUNDS)



C00071

CORNER WEIGHTS (SMALL CABINET)				CORNER WEIGHTS (LARGE CABINET)					
Model 604B	Unit	024	030	036	Model 604B	Unit	042	048	060
	Total Weight	350	350	373		Total Weight	440	463	499
	Corner Weight 1	70	70	75		Corner Weight 1	88	98	107
	Corner Weight 2	54	54	58		Corner Weight 2	68	61	70
	Corner Weight 3	84	84	90		Corner Weight 3	106	127	136
	Corner Weight 4	141	141	150		Corner Weight 4	177	177	186

SELECTION PROCEDURE

I DETERMINE COOLING AND HEATING REQUIREMENTS AT DESIGN CONDITIONS:

Given:

Required Cooling Capacity (TC)34,500 Btuh
 Sensible Heat Capacity (SHC)26,000 Btuh
 Required Heating Capacity36,000 Btuh
 Condenser Entering Air Temperature 95°F
 Indoor-Air Temperature 80°F edb 67°F ewb
 Evaporator Air Quantity 1225 CFM
 External Static Pressure0.2 in. wg
 Electrical Characteristics230-1-60

II SELECT UNIT BASED ON REQUIRED COOLING CAPACITY.

Enter Net Cooling Capacities table at condenser entering temperature of 95°F. The 036 unit at 1225 cfm and 67°F ewb (entering wet bulb) will provide a total capacity of 36,500 Btuh and a SHC of 27,600 Btuh. Calculate SHC correction, if required, using Note 4 under Cooling Capacities tables.

III SELECT ELECTRIC HEAT.

Enter the 036 unit Heating Extended Performance table at 1225 cfm. At 70°F return indoor air and 20°F air entering outdoor coil, the integrated heating capacity is 20,300 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 36,000 Btuh. Therefore, 15,700 Btuh (36,000 – 20,300) additional electric heat is required

Determine additional electric heat capacity in kW.

$$\frac{15,700 \text{ Btuh}}{3414 \text{ Btuh/kW}} = 4.6 \text{ kW of heat required}$$

Enter the Electric Heater table on page 5 for 208/230 v, single-phase, unit. The 5-kW heater at 240v most closely satisfies the heating required. To calculate kw at 230v, multiply the heater kw by multiplication factor 0.92 found in the Multiplication Factors table on page 17.

$$5 \text{ kW} \times 0.92 = 4.6 \text{ kW}$$

$$4.6 \text{ kW} \times 3414 \text{ Btuh/kW} = 15,704 \text{ Btuh}$$

Total unit heating capacity is 36,004 Btuh (20,300 + 15,704).

IV DETERMINE FAN SPEED AND POWER REQUIREMENTS AT DESIGN CONDITIONS.

Before entering the air delivery tables, calculate the total static pressure required. From the given, Filter Pressure Drop Table, Electrical Heat Pressure Drop table, and the Wet Coil Pressure Drop table, find:

External static pressure	0.200 in. wg
Wet Coil Pressure Drop	0.032 in. wg
Filter	0.130 in. wg
Electric Heaters	0.000 in. wg
Total static pressure	0.362 in. wg

Enter the table for Wet Coil Air Delivery — At 0.362 in. wg external static pressure and high speed, the motor delivers 1235 cfm.

V SELECT UNIT THAT CORRESPONDS TO POWER SOURCE AVAILABLE.

The Electrical Data table shows that the unit is designed to operate at 208/230-1-60.

PERFORMANCE DATA—STANDARD ECM INDOOR MOTOR

COOLING EXTENDED PERFORMANCE TABLE

604B024 COOLING PERFORMANCE TABLE													
Temp (F) Outdoor Air Entering Condenser		Evaporator Air—CFM/BF											
		800/0.026				900/0.032				1000/0.04			
		Evaporator Air — Ewb (F)											
		62	63*	67	72	62	63*	67	72	62	63*	67	72
75	TC	24.0	24.5	26.5	29.1	24.6	25.1	27.1	29.8	25.1	25.5	27.4	30.4
	SHC kW	21.9 1.7	21.3 1.7	18.7 1.8	15.4 1.8	23.5 1.8	22.8 1.8	19.8 1.8	16.1 1.8	25.0 1.8	24.2 1.8	20.8 1.8	16.7 1.9
85	TC	22.9	23.3	25.3	27.9	23.5	23.9	25.8	28.5	23.9	24.3	26.2	28.9
	SHC kW	21.4 1.9	20.7 1.9	18.1 2.0	14.9 2.0	22.9 2.0	22.2 2.0	19.2 2.0	15.6 2.0	24.3 2.0	23.6 2.0	20.3 2.1	16.2 2.1
95	TC	21.8	22.2	24.0	26.5	22.3	22.6	24.5	27.0	22.7	23.0	24.8	27.4
	SHC kW	20.8 2.2	20.2 2.2	17.6 2.2	14.3 2.2	22.3 2.2	21.6 2.2	18.7 2.2	15.0 2.2	23.6 2.2	22.9 2.2	19.7 2.3	15.6 2.3
105	TC	20.5	20.9	22.6	25.0	21.0	21.3	23.0	25.4	21.6	21.7	23.3	25.7
	SHC kW	20.2 2.4	19.5 2.4	16.9 2.4	13.7 2.4	21.6 2.4	20.9 2.4	18.0 2.5	14.3 2.5	22.5 2.5	22.2 2.5	19.0 2.5	14.9 2.5
115	TC	19.2	19.5	21.1	23.3	19.8	19.9	21.5	23.7	20.7	20.4	21.7	23.6
	SHC kW	19.4 2.7	18.8 2.7	16.3 2.7	13.0 2.7	20.6 2.7	20.2 2.7	17.3 2.7	13.7 2.7	21.5 2.7	21.2 2.7	18.3 2.8	14.1 2.8
125	TC	17.8	18.0	19.4	21.4	18.5	18.5	19.5	21.7	19.0	19.0	19.9	21.9
	SHC kW	18.5 2.9	18.1 2.9	15.5 3.0	12.3 3.0	19.2 3.0	19.2 3.0	16.5 3.0	12.9 3.0	19.8 3.0	19.7 3.0	17.6 3.1	13.5 3.1

HEATING EXTENDED PERFORMANCE TABLE -10-20

604B024													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		-10		0		10		17		20			
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW		
60	800	TC	7.05	6.52	9.38	8.63	11.68	10.72	27.90	25.44	14.58	13.22	
		kW	1.49		1.56		1.63		1.69		1.71		
	900	TC	7.27	6.73	9.55	8.79	11.92	10.94	13.67	12.46	14.81	13.43	
		kW	1.51		1.57		1.64		1.69		1.70		
	1000	TC	7.44	6.88	9.74	8.96	12.11	11.11	13.90	12.67	15.02	13.62	
		kW	1.53		1.59		1.65		1.70		1.70		
70	800	TC	6.20	5.73	8.57	7.89	11.05	10.15	12.80	11.67	13.93	12.63	
		kW	1.63		1.71		1.80		1.86		1.88		
	900	TC	6.37	5.89	8.78	8.08	11.24	10.32	13.07	11.91	14.19	12.86	
		kW	1.65		1.72		1.80		1.86		1.88		
	1000	TC	6.56	6.07	8.98	8.26	11.49	10.55	13.28	12.10	14.43	13.08	
		kW	1.68		1.75		1.82		1.87		1.89		
80	800	TC	5.19	4.80	7.66	7.05	10.24	9.40	12.05	10.99	13.23	12.00	
		kW	1.77		1.87		1.97		2.04		2.06		
	900	TC	5.35	4.95	7.85	7.23	10.47	9.61	12.31	11.23	13.49	12.23	
		kW	1.79		1.88		1.98		2.04		2.06		
	1000	TC	5.53	5.12	8.06	7.41	10.70	9.82	12.55	11.44	13.71	12.44	
		kW	1.83		1.91		2.00		2.05		2.07		

HEATING EXTENDED PERFORMANCE TABLE 30-60

604B024													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		30		40		47		50		60			
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW		
60	800	TC	18.93	16.58	22.27	22.27	23.82	23.82	23.82	23.82	25.12	25.12	
		kW	1.77		1.80		1.79		1.79		1.81		
	900	TC	19.10	16.74	22.23	22.23	23.74	23.74	24.09	24.09	24.29	24.29	
		kW	1.75		1.77		1.76		1.77		1.76		
	1000	TC	19.27	16.89	21.64	21.64	23.46	23.46	23.61	23.61	23.83	23.83	
		kW	1.75		1.75		1.75		1.75		1.75		
70	800	TC	18.39	16.11	22.24	22.24	23.80	23.80	23.94	23.94	24.42	24.42	
		kW	1.95		1.99		1.99		1.99		1.99		
	900	TC	18.69	16.38	22.08	22.08	27.70	27.70	23.67	23.67	24.20	24.20	
		kW	1.93		1.97		2.09		1.96		1.96		
	1000	TC	18.86	16.53	21.85	21.85	23.43	23.43	23.40	23.40	24.27	24.27	
		kW	1.94		1.95		1.94		1.94		1.95		
80	800	TC	17.52	15.35	22.02	22.02	23.88	23.88	23.98	23.98	24.58	24.58	
		kW	2.14		2.20		2.21		2.21		2.22		
	900	TC	17.79	15.59	22.09	22.09	23.62	23.62	23.81	23.81	24.34	24.34	
		kW	2.11		2.17		2.17		2.17		2.18		
	1000	TC	18.17	15.92	21.92	21.92	23.55	23.55	23.73	23.73	24.38	24.38	
		kW	2.11		2.17		2.16		2.16		2.16		

*At 75°F entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F entering dry bulb. See Legend and Notes on page 17.

PERFORMANCE DATA (CONT)—STANDARD ECM INDOOR MOTOR

COOLING EXTENDED PERFORMANCE TABLE

604B030 COOLING PERFORMANCE TABLE													
Temp (F) Outdoor Air Entering Condenser		Evaporator Air—CFM/BF											
		875/0.06				1000/0.07				1125/0.08			
		Evaporator Air — Ewb (F)											
		62	63*	67	72	62	63*	67	72	62	63*	67	72
75	TC	27.9	28.6	30.7	33.6	28.8	29.4	31.6	34.5	29.3	30.0	32.2	35.2
	SHC	24.1	20.0	20.6	16.8	26.0	21.2	22.1	17.8	27.0	22.6	23.5	18.7
	kW	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2
85	TC	26.9	27.5	29.5	32.3	27.6	28.1	30.2	33.1	28.3	28.7	30.8	33.7
	SHC	23.8	19.5	20.3	16.4	25.6	20.8	21.7	17.4	26.5	22.1	23.1	18.3
	kW	2.3	2.3	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4
95	TC	25.6	26.2	28.2	30.8	26.3	26.8	28.8	31.5	27.0	27.3	29.3	32.0
	SHC	23.1	19.1	19.9	16.0	24.7	20.5	21.3	16.9	26.2	21.7	22.6	17.8
	kW	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
105	TC	24.3	24.7	26.6	29.2	25.1	25.3	27.2	29.7	25.9	25.7	27.5	30.1
	SHC	22.4	18.6	19.3	15.4	23.8	19.9	20.8	16.3	24.4	21.1	22.1	17.2
	kW	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
115	TC	22.8	23.2	24.9	27.3	23.8	23.6	25.3	27.7	24.5	24.0	25.7	28.1
	SHC	21.7	18.0	18.8	14.8	22.3	19.3	20.2	15.7	23.7	20.5	21.5	16.6
	kW	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
125	TC	21.4	21.4	24.9	27.3	23.8	23.6	25.3	27.7	24.5	24.0	25.7	28.1
	SHC	20.7	17.3	18.8	14.8	22.3	19.3	20.2	15.7	23.7	20.5	21.5	16.6
	kW	3.5	3.5	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2

HEATING EXTENDED PERFORMANCE TABLE -10–20

604B030													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		-10		0		10		17		20			
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW		
60	875	TC	9.4	8.7	11.9	10.9	14.4	13.2	16.3	14.9	17.2	15.6	
		kW	1.74		1.81		1.89		1.97		2.00		
	1000	TC	9.6	8.9	11.8	10.8	14.5	13.3	16.3	14.9	17.3	15.7	
		kW	1.72		1.84		1.86		1.92		1.96		
	1125	TC	9.6	8.9	12.0	11.1	14.5	13.3	16.4	15.0	17.5	15.9	
		kW	1.70		1.76		1.82		1.91		1.94		
70	875	TC	8.9	8.2	11.4	10.5	14.0	12.8	15.9	14.5	16.5	15.0	
		kW	1.92		2.01		2.10		2.17		2.20		
	1000	TC	9.0	8.3	11.5	10.5	14.1	12.9	16.0	14.6	16.8	15.2	
		kW	1.91		1.98		2.06		2.13		2.16		
	1125	TC	9.0	8.4	11.5	10.6	14.9	13.7	16.4	15.0	17.5	15.9	
		kW	1.89		1.96		2.03		2.09		2.12		
80	875	TC	8.2	7.6	10.8	9.9	13.5	12.4	15.3	13.9	15.7	14.3	
		kW	2.11		2.21		2.32		2.39		2.41		
	1000	TC	8.3	7.7	10.9	10.0	13.5	12.4	15.4	14.1	15.9	14.4	
		kW	2.09		2.19		2.28		2.35		2.37		
	1125	TC	8.2	7.6	10.9	10.0	13.6	12.5	15.6	14.2	16.2	14.7	
		kW	2.07		2.16		2.25		2.31		2.34		

HEATING EXTENDED PERFORMANCE TABLE 30–60

604B030													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		30		40		47		50		60			
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW		
60	875	TC	20.3	17.8	26.0	26.0	29.4	29.4	30.6	30.6	34.7	34.7	
		kW	2.13		2.27		2.35		2.38		2.51		
	1000	TC	20.6	18.1	26.1	26.1	29.4	29.4	30.7	30.7	34.8	34.8	
		kW	2.08		2.19		2.26		2.29		2.40		
	1125	TC	21.3	18.7	26.2	26.2	29.4	29.4	30.7	30.7	34.8	34.8	
		kW	2.05		2.13		2.20		2.23		2.31		
70	875	TC	18.6	16.3	24.4	24.4	28.9	28.9	30.1	30.1	34.1	34.1	
		kW	2.29		2.49		2.59		2.62		2.76		
	1000	TC	19.4	17.0	25.5	25.5	29.0	29.0	30.2	30.2	34.2	34.2	
		kW	2.27		2.43		2.50		2.53		2.65		
	1125	TC	21.5	18.8	26.2	26.2	30.2	30.2	34.2	34.2	34.2	34.2	
		kW	2.22		2.36		2.43		2.46		2.56		
80	875	TC	17.3	15.2	22.9	22.9	28.3	28.3	29.5	29.5	33.6	33.6	
		kW	2.50		2.71		2.86		2.88		3.04		
	1000	TC	17.6	15.4	23.6	23.6	28.5	28.5	29.7	29.7	33.7	33.7	
		kW	2.45		2.65		2.76		2.78		2.92		
	1125	TC	18.2	16.0	24.3	24.3	28.6	28.6	29.8	29.8	33.6	33.6	
		kW	2.43		2.60		2.68		2.71		2.83		

*At 75°F entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F entering dry bulb.
See Legend and Notes on page 17.

PERFORMANCE DATA (CONT)—STANDARD ECM INDOOR MOTOR

COOLING EXTENDED PERFORMANCE TABLE

604B036 COOLING PERFORMANCE TABLE													
Temp (F) Outdoor Air Entering Condenser		Evaporator Air—CFM/BF											
		1100/0.06				1225/0.07				1400/0.08			
		Evaporator Air — Ewb (F)											
		62	63*	67	72	62	63*	67	72	62	63*	67	72
75	TC	36.2	36.8	39.7	43.8	36.9	37.4	40.3	44.4	37.9	38.1	41.0	45.1
	SHC	33.2	26.7	27.8	22.3	34.7	27.9	29.0	23.1	36.9	29.6	30.9	24.2
	KW	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.9
85	TC	34.6	35.1	37.9	41.8	35.3	35.6	38.4	42.4	36.4	36.3	39.1	43.1
	SHC	32.4	26.0	27.1	21.6	34.0	27.1	28.3	22.4	35.6	28.9	30.2	23.6
	KW	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.2
95	TC	33.0	33.4	36.0	39.7	33.7	33.8	36.5	40.2	34.8	34.4	37.0	40.8
	SHC	31.6	25.3	26.4	20.9	32.9	26.4	27.6	21.7	34.4	28.1	29.4	22.8
	KW	3.2	3.2	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.5
105	TC	31.3	31.5	34.0	37.5	32.1	31.9	34.3	37.9	33.1	32.4	34.9	38.4
	SHC	30.6	24.5	25.6	20.1	31.5	25.7	26.8	20.9	32.8	27.3	28.6	22.0
	KW	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.7	3.8	3.7	3.8	3.8
115	TC	29.6	29.4	31.8	35.0	30.4	29.8	32.1	35.4	31.3	30.3	32.6	35.8
	SHC	29.3	23.7	24.8	19.3	30.0	24.8	26.0	20.0	31.0	26.4	27.7	21.1
	KW	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.2
125	TC	27.8	27.2	29.4	32.4	28.4	27.5	29.7	32.7	29.3	28.0	30.1	33.0
	SHC	27.5	22.8	23.9	18.4	28.2	23.8	25.0	19.1	29.0	25.4	26.7	20.2
	KW	4.4	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.5	4.5	4.5	4.5

HEATING EXTENDED PERFORMANCE TABLE -10-20

604B036													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		-10		0		10		17		20			
		TC	KW	TC	KW	TC	KW	TC	KW	TC	KW		
60	1100	TC	12.1	11.2	15.1	13.9	18.5	16.9	21.4	19.5	22.8	20.7	
		KW	2.25		2.34		2.43		2.49		2.51		
	1225	TC	12.3	11.4	15.4	14.2	18.7	17.2	21.7	19.7	22.9	20.7	
		KW	2.28		2.37		2.44		2.50		2.53		
	1400	TC	12.8	11.8	15.8	14.6	19.3	17.7	22.0	20.1	23.2	21.0	
		KW	2.37		2.44		2.53		2.56		2.59		
70	1100	TC	11.1	10.3	14.3	13.1	17.6	16.1	20.6	18.8	21.9	19.9	
		KW	2.43		2.55		2.65		2.74		2.77		
	1225	TC	11.4	10.5	14.5	13.4	17.9	16.4	20.6	18.8	22.4	20.3	
		KW	2.47		2.58		2.67		2.76		2.78		
	1400	TC	11.8	10.9	15.0	13.8	18.4	16.9	21.2	19.3	23.0	20.8	
		KW	2.51		2.65		2.73		2.82		2.82		
80	1100	TC	10.0	9.2	13.2	12.2	16.7	15.3	19.3	17.6	20.8	18.8	
		KW	2.61		2.75		2.89		2.97		3.01		
	1225	TC	10.2	9.5	13.5	12.5	17.0	15.6	19.6	17.9	21.2	19.2	
		KW	2.65		2.79		2.91		2.99		3.03		
	1400	TC	10.7	9.9	14.1	13.0	17.5	16.1	20.1	18.4	21.7	19.7	
		KW	2.73		2.87		2.97		3.05		3.08		

HEATING EXTENDED PERFORMANCE TABLE 30-60

604B036													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		30		40		47		50		60			
		TC	KW	TC	KW	TC	KW	TC	KW	TC	KW		
60	1100	TC	27.3	23.9	32.6	32.6	36.6	36.6	37.8	37.8	42.1	42.1	
		KW	2.59		2.68		2.74		2.77		2.86		
	1225	TC	27.6	24.2	32.8	32.8	36.8	36.8	37.9	37.9	42.2	42.2	
		KW	2.60		2.67		2.72		2.75		2.83		
	1400	TC	28.0	24.5	33.0	33.0	37.0	37.0	38.2	38.2	42.2	42.2	
		KW	2.65		2.71		2.75		2.77		2.84		
70	1100	TC	26.9	23.6	32.1	32.1	36.0	36.0	37.1	37.1	41.2	41.2	
		KW	2.84		2.94		3.01		3.04		3.14		
	1225	TC	27.1	23.7	32.3	32.3	36.2	36.2	37.3	37.3	41.4	41.4	
		KW	2.85		2.94		3.00		3.03		3.12		
	1400	TC	27.5	24.1	32.5	32.5	36.4	36.4	37.5	37.5	41.6	41.6	
		KW	2.90		2.97		3.02		3.04		3.11		
80	1100	TC	26.7	23.4	31.6	31.6	35.5	35.5	36.5	36.5	40.4	40.4	
		KW	3.13		3.23		3.30		3.33		3.44		
	1225	TC	26.9	23.5	31.8	31.8	35.6	35.6	36.7	36.7	40.6	40.6	
		KW	3.13		3.23		3.29		3.32		3.42		
	1400	TC	27.2	23.9	32.3	32.3	35.9	35.9	37.0	37.0	40.8	40.8	
		KW	3.17		3.25		3.30		3.33		3.40		

*At 75°F entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F entering dry bulb. See Legend and Notes on page 17.

PERFORMANCE DATA (CONT)—STANDARD ECM INDOOR MOTOR

COOLING EXTENDED PERFORMANCE TABLE

604B042 COOLING PERFORMANCE TABLE													
Temp (F) Outdoor Air Entering Condenser		Evaporator Air—CFM/BF											
		1100/0.06				1225/0.07				1400/0.08			
		Evaporator Air — Ewb (F)											
		62	63*	67	72	62	63*	67	72	62	63*	67	72
75	TC	39.6	40.4	43.4	47.6	40.5	41.2	44.2	48.4	41.5	42.1	45.1	49.4
	SHC kW	33.5 3.0	27.6 3.0	28.6 3.0	23.4 3.1	35.4 3.0	29.0 3.0	30.0 3.0	24.3 3.1	37.9 3.0	30.8 3.0	31.9 3.0	25.6 3.1
85	TC	37.9	38.7	41.5	45.5	38.7	39.4	42.3	46.3	39.7	40.2	43.2	47.2
	SHC kW	32.8 3.3	26.9 3.3	27.8 3.4	22.7 3.4	34.6 3.3	28.2 3.3	29.2 3.4	23.6 3.4	37.0 3.3	30.0 3.3	31.1 3.4	24.8 3.4
95	TC	36.2	36.8	39.6	43.4	36.9	37.5	40.3	44.1	37.8	38.2	41.0	44.9
	SHC kW	32.0 3.7	26.1 3.7	27.0 3.7	21.9 3.8	33.8 3.7	27.4 3.7	28.4 3.7	22.8 3.8	35.9 3.7	29.1 3.7	30.3 3.7	24.0 3.8
105	TC	34.2	34.8	37.4	41.0	34.9	35.4	38.0	41.6	36.0	36.0	38.7	42.3
	SHC kW	31.0 4.1	25.2 4.1	26.2 4.1	21.1 4.1	32.7 4.1	26.5 4.1	27.6 4.1	22.0 4.1	34.3 4.1	28.3 4.1	29.4 4.1	23.2 4.1
115	TC	32.1	32.6	35.0	38.4	32.8	33.1	35.5	38.9	34.0	33.7	36.1	39.5
	SHC kW	30.0 4.5	24.3 4.5	25.2 4.5	20.2 4.5	31.4 4.5	25.6 4.5	26.6 4.5	21.0 4.6	32.8 4.5	27.3 4.5	28.5 4.5	22.2 4.6
125	TC	29.8	30.1	32.3	35.3	30.6	30.5	32.7	35.7	31.7	31.0	33.2	36.2
	SHC kW	28.6 4.9	23.2 4.9	24.2 4.9	19.1 5.0	29.6 4.9	24.5 4.9	25.5 4.9	20.0 5.0	30.6 4.9	26.1 4.9	27.3 4.9	21.1 5.0

HEATING EXTENDED PERFORMANCE TABLE -10-20

604B042													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		-10		0		10		17		20			
60	1225	TC	13.6	12.5	16.6	15.3	19.7	18.1	22.2	20.2	23.7	21.5	
		kW	2.42		2.51		2.64		2.76		2.81		
	1400	TC	13.6	12.6	16.7	15.3	19.8	18.2	22.3	20.3	23.7	21.5	
		kW	2.39		2.48		2.60		2.70		2.75		
	1575	TC	13.7	12.7	16.8	15.5	19.8	18.2	22.3	20.4	23.8	21.6	
		kW	2.36		2.24		2.54		2.63		2.68		
70	1225	TC	13.0	12.1	16.1	14.9	19.4	17.8	21.8	19.9	23.3	21.1	
		kW	2.70		2.80		2.93		3.05		3.11		
	1400	TC	13.2	12.2	16.2	14.9	19.4	17.8	21.9	20.0	23.4	21.2	
		kW	2.67		2.76		2.88		2.99		3.05		
	1575	TC	13.2	12.2	16.3	15.0	19.5	17.9	22.0	20.1	23.5	21.3	
		kW	2.64		2.72		2.82		2.93		2.98		
80	1225	TC	12.8	11.9	16.0	14.7	19.0	17.4	21.4	19.6	22.9	20.8	
		kW	3.02		3.13		3.25		3.37		3.43		
	1400	TC	12.9	11.9	15.9	14.6	19.0	17.4	21.5	19.6	23.0	20.9	
		kW	2.99		2.97		2.83		3.31		3.37		
	1575	TC	13.0	12.0	15.8	14.6	19.1	17.6	21.6	19.7	23.1	21.0	
		kW	2.96		3.04		3.14		3.24		3.30		

HEATING EXTENDED PERFORMANCE TABLE 30-60

604B042													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		30		40		47		50		60			
60	1225	TC	29.2	25.6	35.6	35.6	40.8	40.8	42.0	42.0	49.8	49.8	
		kW	2.99		3.20		3.35		3.40		3.70		
	1400	TC	29.3	25.7	35.8	35.8	41.0	41.0	43.0	43.0	50.2	50.2	
		kW	2.91		3.09		3.24		3.31		3.55		
	1575	TC	29.4	25.8	36.0	36.0	41.3	41.3	43.2	43.2	50.6	50.6	
		kW	2.82		2.99		3.13		3.18		3.41		
70	1225	TC	28.8	25.2	35.1	35.1	40.1	40.1	41.9	41.9	48.8	48.8	
		kW	3.32		3.57		3.74		3.81		4.11		
	1400	TC	28.9	25.3	35.3	35.3	40.3	40.3	42.1	42.1	49.1	49.1	
		kW	3.24		3.46		3.62		3.68		3.95		
	1575	TC	29.0	25.4	35.4	35.4	40.5	40.5	42.4	42.4	49.5	49.5	
		kW	3.16		3.35		3.49		3.56		3.79		
80	1225	TC	28.4	24.9	34.6	34.6	39.5	39.5	41.3	41.3	47.9	47.9	
		kW	3.68		3.97		4.14		4.22		4.55		
	1400	TC	28.5	25.0	34.7	34.7	39.7	39.7	41.5	41.5	48.2	48.2	
		kW	3.59		3.85		4.01		4.08		4.38		
	1575	TC	28.6	25.1	34.9	34.9	39.9	39.9	41.7	41.7	48.6	48.6	
		kW	3.51		3.73		3.88		3.94		4.21		

*At 75°F entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F entering dry bulb.
See Legend and Notes on page 17.

PERFORMANCE DATA (CONT)—STANDARD ECM INDOOR MOTOR

COOLING EXTENDED PERFORMANCE TABLE

604B048 COOLING PERFORMANCE TABLE													
Temp (F) Outdoor Air Entering Condenser		Evaporator Air—CFM/BF											
		1260/0.06				1400/0.06				1600/0.08			
		Evaporator Air — Ewb (F)											
		62	63*	67	72	62	63*	67	72	62	63*	67	72
75	TC	45.0	45.8	49.6	54.7	46.7	47.3	51.2	56.3	48.1	48.7	52.5	57.8
	SHC	39.3	32.0	33.4	27.2	42.6	34.3	35.8	28.9	45.8	36.8	38.4	30.6
	kW	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.4	3.5
85	TC	42.8	43.6	47.2	52.1	44.3	44.9	48.6	53.5	45.6	46.1	49.9	54.8
	SHC	38.2	30.9	32.3	26.2	41.3	33.2	34.7	27.7	44.3	35.5	37.3	29.4
	kW	3.7	3.7	3.8	3.8	3.7	3.7	3.8	3.8	3.8	3.8	3.8	3.8
95	TC	40.6	41.3	44.7	49.4	41.8	42.4	46.0	50.7	44.2	43.7	47.0	51.8
	SHC	36.9	29.8	31.2	25.2	39.9	32.0	33.6	26.7	43.0	34.6	36.1	28.3
	kW	4.1	4.1	4.2	4.2	4.1	4.1	4.2	4.2	4.2	4.1	4.2	4.2
105	TC	38.2	38.9	42.1	46.4	39.6	39.8	43.1	47.6	41.5	40.8	44.0	48.5
	SHC	35.7	28.7	30.1	24.0	38.3	30.7	32.3	25.5	40.0	33.2	34.8	27.0
	kW	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.7	4.6	4.6	4.6	4.7
115	TC	35.7	36.3	39.3	43.3	38.2	37.1	40.1	44.2	38.7	37.9	40.8	45.0
	SHC	34.4	27.5	28.9	22.9	35.7	29.5	31.0	24.3	38.2	31.8	33.5	25.8
	kW	5.0	5.0	5.1	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.1	5.1
125	TC	33.4	33.4	36.2	39.4	34.6	34.1	36.9	40.5	36.1	34.8	37.5	41.2
	SHC	32.1	26.2	27.6	21.5	33.8	28.2	29.7	22.9	35.6	30.2	31.9	24.4
	kW	5.6	5.6	5.6	5.7	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6

HEATING EXTENDED PERFORMANCE TABLE -10-20

604B048													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		-10		0		10		17		20			
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW		
60	1400	TC	15.10	14.00	18.60	17.10	22.40	20.50	25.20	23.00	26.90	24.40	
		kW	2.66		2.76		2.87		2.95		3.00		
	1600	TC	15.40	14.30	18.90	17.40	22.70	20.90	25.60	23.30	27.30	24.80	
		kW	2.70		2.79		2.89		2.96		3.03		
	1800	TC	15.70	14.50	19.20	17.70	23.00	21.10	25.80	23.60	27.60	25.00	
		kW	2.67		2.79		2.88		2.94		3.01		
70	1400	TC	14.40	13.30	17.90	16.50	21.80	20.00	24.60	22.50	26.40	23.90	
		kW	2.94		3.03		3.16		3.25		3.31		
	1600	TC	14.70	13.60	18.20	16.80	22.10	20.30	25.00	22.80	26.70	24.20	
		kW	2.97		3.05		3.17		3.26		3.31		
	1800	TC	15.00	13.90	18.60	17.10	22.40	20.60	25.30	23.00	27.00	24.50	
		kW	2.97		3.05		3.16		3.24		3.28		
80	1400	TC	13.50	12.50	17.20	15.80	21.00	19.30	24.00	21.90	25.70	23.30	
		kW	3.23		3.34		3.47		3.58		3.66		
	1600	TC	13.90	12.80	17.50	16.10	21.40	19.70	24.40	22.20	26.10	23.70	
		kW	3.26		3.36		3.48		3.58		3.65		
	1800	TC	14.20	13.20	17.80	16.40	21.70	19.90	24.70	22.50	25.90	23.50	
		kW	3.26		3.35		3.46		3.56		3.36		

HEATING EXTENDED PERFORMANCE TABLE 30-60

604B048													
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)											
		30		40		47		50		60			
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW		
60	1400	TC	33.30	29.20	40.50	40.50	46.60	46.60	48.80	48.80	56.60	56.60	
		kW	3.15		3.32		3.48		3.54		3.78		
	1600	TC	33.70	29.50	41.00	41.00	47.10	47.10	49.30	49.30	57.30	57.30	
		kW	3.14		3.30		3.45		3.50		3.72		
	1800	TC	34.00	29.80	41.40	41.40	47.50	47.50	49.70	49.70	57.70	57.70	
		kW	3.11		3.25		3.38		3.43		3.61		
70	1400	TC	32.60	28.60	39.70	39.70	45.50	45.50	47.60	47.60	55.50	55.50	
		kW	3.50		3.69		3.85		3.91		4.17		
	1600	TC	33.00	28.90	40.10	40.10	46.00	46.00	48.20	48.20	56.10	56.10	
		kW	3.48		3.65		3.80		3.86		4.10		
	1800	TC	33.30	29.20	40.50	40.60	46.50	46.50	48.80	48.80	56.60	56.60	
		kW	3.34		3.59		3.72		3.79		3.99		
80	1400	TC	31.90	28.00	38.90	38.90	44.50	44.50	46.60	46.60	54.40	54.40	
		kW	3.87		4.09		4.26		4.33		4.60		
	1600	TC	32.30	26.30	39.30	39.30	45.10	45.10	47.10	47.10	55.00	55.00	
		kW	3.85		4.05		4.20		4.26		4.51		
	1800	TC	32.60	28.60	39.70	39.70	45.50	45.50	47.60	47.60	55.50	55.50	
		kW	3.80		3.98		4.12		4.17		4.40		

*At 75°F entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F entering dry bulb.

PERFORMANCE DATA (CONT)—STANDARD ECM INDOOR MOTOR

COOLING EXTENDED PERFORMANCE TABLE

604B060 COOLING PERFORMANCE TABLE													
Temp (F) Outdoor Air Entering Condenser		Evaporator Air—CFM/BF											
		1500/0.004				1750/0.007				2000/0.01			
		Evaporator Air — Ewb (F)											
		62	63*	67	72	62	63*	67	72	62	63*	67	72
75	TC	57.2	58.2	62.4	68.1	58.8	59.7	64.0	69.8	60.0	60.8	64.9	70.8
	SHC	49.4	47.9	41.6	33.8	53.6	51.8	44.5	35.4	57.6	55.4	47.1	36.8
	kW	4.1	4.1	4.2	4.2	4.2	4.3	4.3	4.4	4.4	4.4	4.5	4.6
85	TC	54.7	55.6	59.7	65.2	56.2	57.0	61.1	66.6	57.4	58.1	61.9	67.4
	SHC	48.2	46.7	40.4	32.6	52.4	50.5	43.2	34.2	56.3	54.2	45.8	35.6
	kW	4.5	4.5	4.6	4.7	4.7	4.7	4.8	4.9	4.8	4.9	5.0	5.0
95	TC	52.2	53.0	56.9	62.0	53.5	54.3	58.0	63.2	55.0	55.3	58.7	64.1
	SHC	47.0	45.4	39.2	31.4	51.1	49.2	41.9	32.9	55.0	52.9	44.5	34.4
	kW	5.0	5.0	5.1	5.2	5.1	5.2	5.3	5.3	5.2	5.3	5.5	5.5
105	TC	49.4	50.2	53.8	58.7	50.7	51.4	54.8	59.6	52.5	52.4	55.4	60.2
	SHC	45.7	44.1	37.9	30.1	49.8	47.9	40.6	31.6	52.5	51.6	43.2	33.0
	kW	5.5	5.6	5.6	5.7	5.7	5.7	5.8	5.9	5.8	5.8	6.0	6.1
115	TC	46.5	47.2	50.5	55.0	48.1	48.3	51.3	56.8	49.7	49.7	51.8	57.0
	SHC	44.3	42.7	36.4	28.7	48.1	46.6	39.2	30.6	49.7	49.7	41.8	31.7
	kW	6.1	6.2	6.2	6.3	6.2	6.3	6.4	6.4	6.4	6.4	6.6	6.6
125	TC	43.3	43.9	46.7	52.2	45.2	45.1	47.4	52.5	46.4	46.4	47.9	52.2
	SHC	42.8	41.2	34.9	27.8	45.2	45.1	37.6	28.9	46.4	46.4	40.2	29.7
	kW	6.7	6.8	6.8	6.8	6.8	6.9	7.0	7.0	7.0	7.0	7.2	7.2

HEATING EXTENDED PERFORMANCE TABLE -10-20

604B060												
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)										
		-10		0		10		17		20		
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW	
60	1500	TC	17.89	16.55	22.37	20.58	27.39	25.14	27.90	25.44	33.30	30.20
		kW	3.14		3.33		3.56		3.71		3.76	
	1750	TC	18.44	17.06	22.91	21.08	28.07	25.77	32.32	29.47	34.25	31.06
		kW	3.23		3.39		3.60		3.74		3.78	
	2000	TC	19.03	17.60	23.49	21.62	28.75	26.38	33.08	30.16	35.08	31.81
		kW	3.36		3.50		3.70		3.82		3.86	
70	1500	TC	16.20	14.98	21.25	19.55	26.32	24.16	30.28	27.61	32.03	29.05
		kW	3.36		3.66		3.89		4.09		4.14	
	1750	TC	16.82	15.56	21.85	20.11	26.96	24.74	31.00	28.26	32.81	29.76
		kW	3.48		3.74		3.96		4.12		4.16	
	2000	TC	17.49	16.17	22.50	20.71	27.85	25.56	31.74	28.94	33.60	30.47
		kW	3.62		3.86		4.07		4.21		4.25	
80	1500	TC	13.77	12.73	19.62	18.05	25.11	23.05	28.93	26.37	30.64	27.79
		kW	3.50		3.94		4.24		4.47		4.54	
	1750	TC	14.42	13.34	20.32	18.69	25.79	23.67	29.68	27.06	31.43	28.50
		kW	3.63		4.04		4.31		4.52		4.57	
	2000	TC	15.10	13.96	21.01	19.33	26.48	24.31	30.45	27.76	32.22	29.22
		kW	3.79		4.19		4.42		4.62		4.67	

HEATING EXTENDED PERFORMANCE TABLE 30-60

604B060												
Return Air (F db)	CFM (Standard Air)	Air Temperature Entering Outdoor Coil (F db at 70% rh)										
		30		40		47		50		60		
		TC	kW	TC	kW	TC	kW	TC	kW	TC	kW	
60	1500	TC	40.88	35.82	49.46	49.46	54.82	54.82	58.83	58.83	63.53	63.53
		kW	3.98		4.26		4.47		4.53		4.71	
	1750	TC	42.02	36.82	50.89	50.89	56.64	56.64	58.34	58.34	61.76	61.76
		kW	3.97		4.25		4.33		4.38		4.51	
	2000	TC	43.05	37.72	52.52	52.52	56.01	56.01	57.04	57.04	60.19	60.19
		kW	4.03		4.26		4.30		4.34		4.46	
70	1500	TC	39.08	34.24	47.32	47.32	52.27	52.27	53.85	53.85	58.08	58.08
		kW	4.36		4.64		4.80		4.86		4.99	
	1750	TC	40.15	35.18	48.73	48.73	56.00	56.00	58.71	58.71	66.11	66.11
		kW	4.35		4.60		4.82		4.88		5.08	
	2000	TC	41.14	36.05	49.89	49.89	56.89	56.89	58.64	58.64	62.11	62.11
		kW	4.40		4.65		4.79		4.84		4.97	
80	1500	TC	37.15	32.55	39.76	39.76	41.79	41.79	42.85	42.85	46.59	46.59
		kW	4.77		4.80		4.82		4.87		5.01	
	1750	TC	38.40	33.64	45.36	45.36	47.19	47.19	48.68	48.68	52.98	52.98
		kW	4.78		4.95		4.96		5.01		5.15	
	2000	TC	39.35	34.48	47.88	47.88	52.12	52.12	53.40	53.40	59.14	59.14
		kW	4.84		5.06		5.13		5.16		5.32	

*At 75°F entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F entering dry bulb.
See Legend and Notes on page 17.

PERFORMANCE DATA (CONT)

ECONOMIZER 1-IN. FILTER PRESSURE DROP (in. wg)

UNIT604B	PRESSURE DROP
024-036	0.20
042-060	0.25

MULTIPLICATION FACTORS

HEATER kW RATING	VOLTAGE DISTRIBUTION V/3/60	MULTIPLICATION FACTOR
240	200	.69
	208	.75
	230	.92
	240	1.00

Example: 15.0 kW (at 240v) heater on 208v
 = 15.0 (.75 mult factor)
 = 11.25 capacity at 208v

LEGEND

BF —Bypass Factor
Ewb —Entering Wet-Bulb
kW —Total Unit Power Input
SHC —Sensible Heat Capacity (1000 Btuh)
TC —Total Capacity (1000 Btuh) (net)
PSC —Permanent Split Capacitor
Edb —Entering Dry-Bulb
rh —Relative Humidity
 —Indicates Integrated Ratings

NOTES:

1. Ratings are net; they account for the effects of the evaporator-fan motor power and heat.
2. Direct interpolation is permissible. Do not extrapolate.
3. The following formulas may be used:

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb})

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil

4. The SHC is based on 80°F edb temperature of air entering evaporator coil. Below 80°F edb, subtract (corr factor x cfm) from SHC. Above 80°F edb, add (corr factor x cfm) to SHC. Correction Factor = $1.10 \times (1 - BF) \times (edb - 80)$.
5. Integrated capacity is maximum (instantaneous) capacity less the effect of frost on the outdoor coil and the heat required to defrost it.

ELECTRIC HEAT PRESSURE DROP TABLES

SMALL CABINET: 024-036

STATIC	CFM											
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
5 kW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07
7.5 kW	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.05	0.07	0.08	0.09
10 kW	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07	0.09	0.10	0.11
15 kW*	0.00	0.00	0.00	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18

*Not for use with 604B024

LARGE CABINET: 042-060

STATIC	CFM														
	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
5 kW	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12
7.5 kW	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
10 kW	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
15 kW	0.00	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15
20 kW	0.02	0.03	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

604B ECM DRY COIL AIRFLOW—SMALL CABINET

UNIT SIZE	CFM ADJUST PIN SELECT	LO PIN			NOM PIN			HI PIN		
	EXTERNAL STATIC PRESSURE RANGE	0.0–0.39	0.4–0.69	0.7–1.0	0.0–0.39	0.4–0.69	0.7–1.0	0.0–0.39	0.4–0.69	0.7–1.0
024	COOLING†	800	725	—	885	805	730	990	930	855
	COOLING DEHUMIDIFY	715	670	—	715	695	645	795	775	745
	HEAT PUMP COMFORT	720	660	—	790	745	685	890	850	785
030	COOLING†	1010	920	825	1105	1030	930	1255	1160	1050
	COOLING DEHUMIDIFY	890	845	795	890	865	825	1010	980	925
	HEAT PUMP COMFORT	945	850	765	1020	965	895	1140	1105	995
036	COOLING†	1110	1025	970	1235	1175	1115	1400	1355	1280
	COOLING DEHUMIDIFY	990	960	910	990	975	940	1125	1110	1085
	HEAT PUMP COMFORT	1035	975	910	1160	1080	1020	1305	1275	1220

† Heat Pump Efficiency and Cooling pin selections deliver equal airflow

604B ECM DRY COIL AIRFLOW—LARGE CABINET

UNIT SIZE	CFM ADJUST PIN SELECT	LO PIN	NOM PIN	HI PIN
	EXTERNAL STATIC PRESSURE RANGE	0.1–1.0	0.1–1.0	0.1–1.0
042	COOLING†	1100	1225	1410
	COOLING DEHUMIDIFY	980	980	1125
	HEAT PUMP COMFORT	990	1100	1265
048	COOLING†	1260	1400	1610
	COOLING DEHUMIDIFY	1120	1120	1290
	HEAT PUMP COMFORT	1135	1260	1450
060	COOLING†	1575	1750	2010
	COOLING DEHUMIDIFY	1400	1400	1610
	HEAT PUMP COMFORT	1415	1575	1810

† Heat Pump Efficiency and Cooling pin selections deliver equal airflow

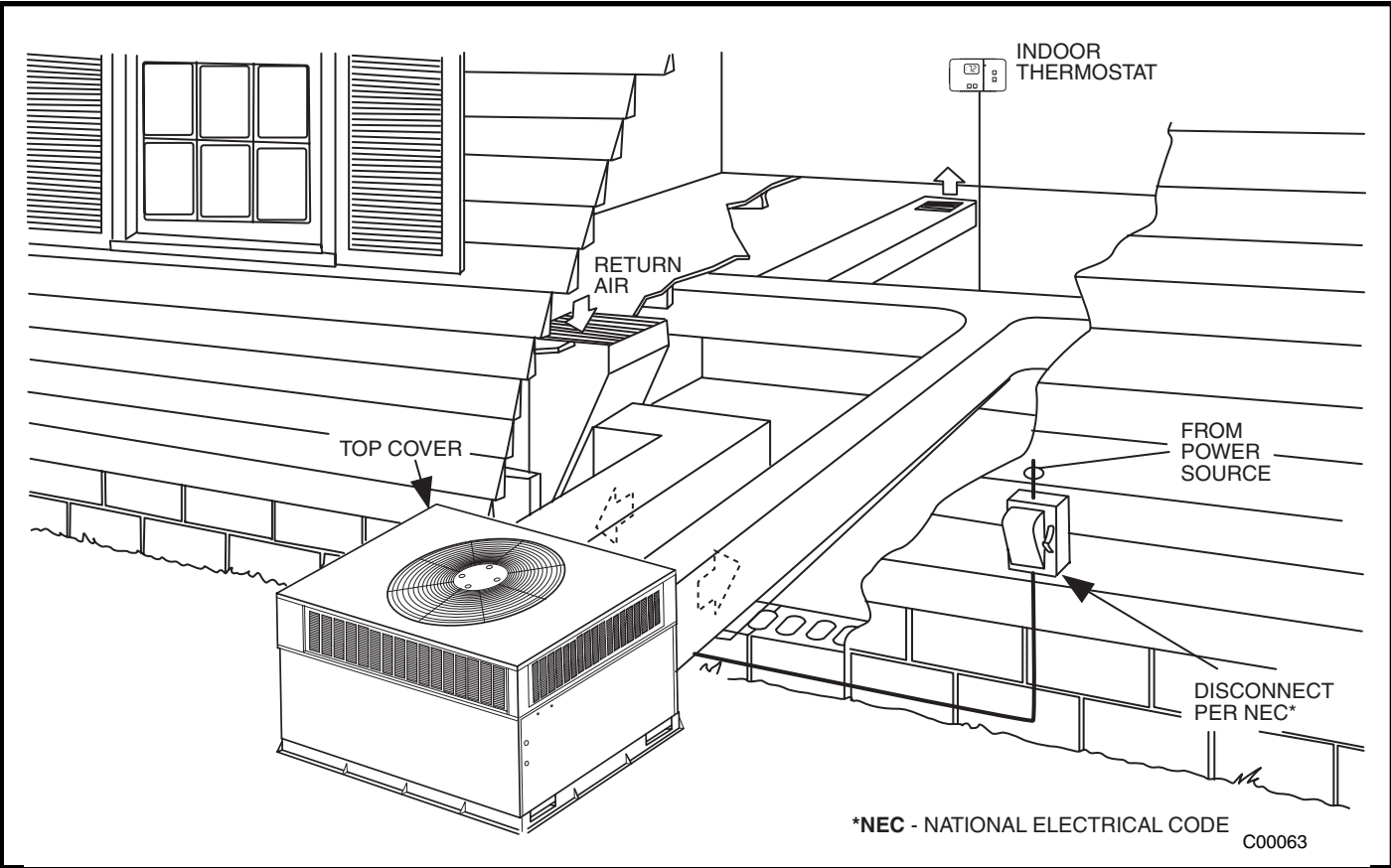
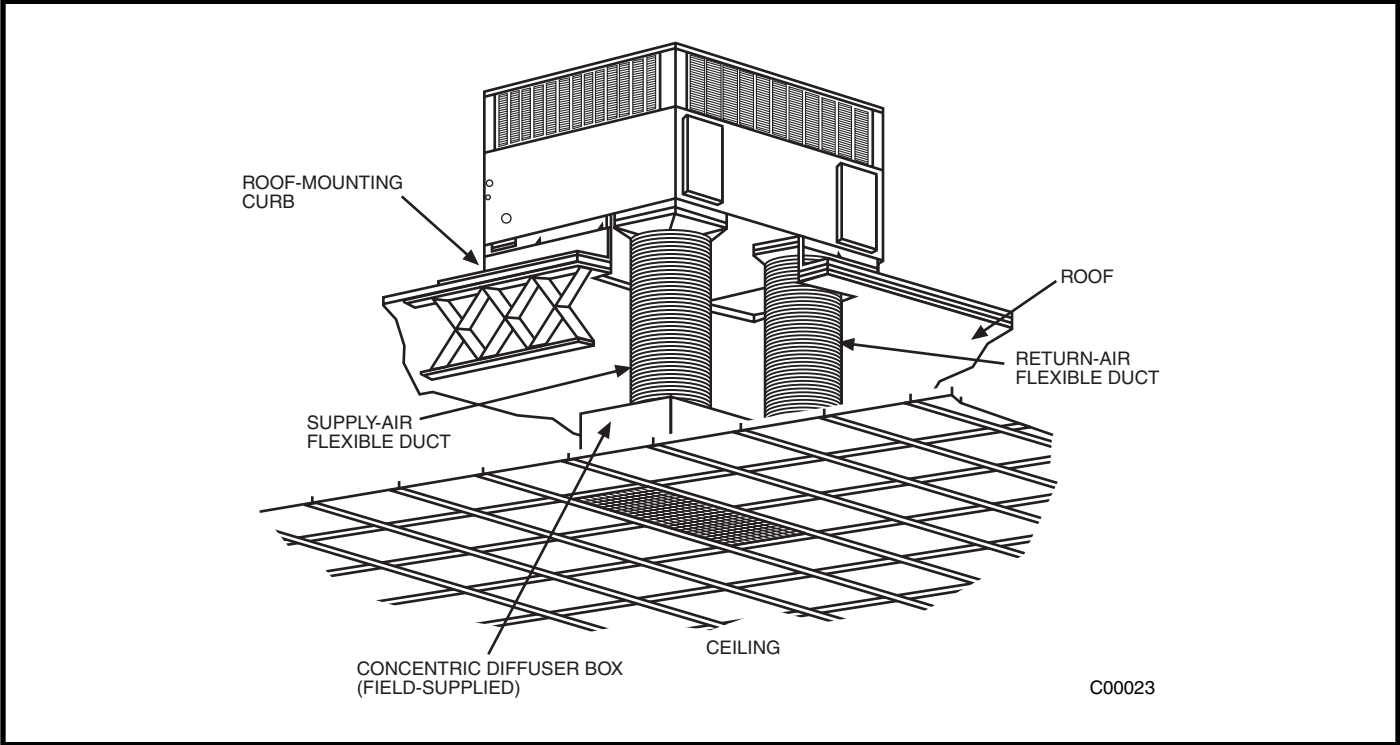
604B ECM WET COIL PRESSURE DROP

UNIT SIZE	STANDARD CFM															
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
024	0.005	0.007	0.010	0.012	0.015	—	—	—	—	—	—	—	—	—	—	—
030	—	0.007	0.010	0.012	0.015	0.018	0.021	0.024	—	—	—	—	—	—	—	—
036	—	—	—	0.019	0.023	0.027	0.032	0.037	0.042	0.047	—	—	—	—	—	—
042	—	—	—	—	0.014	0.017	0.020	0.024	0.027	0.031	0.035	0.039	0.043	—	—	—
048	—	—	—	—	—	—	0.027	0.032	0.036	0.041	0.046	0.052	0.057	0.063	0.068	—
060	—	—	—	—	—	—	—	—	—	0.029	0.032	0.036	0.040	0.045	0.049	0.053

FILTER PRESSURE DROP (In. wg)

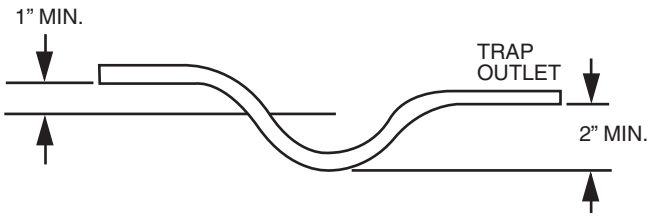
UNIT SIZE 604B	FILTER SIZE	CFM																		
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
024, 030	20 X 20 X 1	0.05	0.07	0.08	0.10	0.12	0.13	0.14	0.15	—	—	—	—	—	—	—	—	—	—	—
36	20 X 24 X 1	—	—	—	—	0.09	0.10	0.11	0.13	0.14	0.15	0.16	—	—	—	—	—	—	—	—
042, 048, 060	24 X 30 X 1	—	—	—	—	—	—	—	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18

TYPICAL PIPING AND WIRING



APPLICATION DATA

Condensate trap — A 2-in. condensate trap must be field supplied.



Ductwork — Secure downflow discharge ductwork to roof curb. For horizontal discharge applications, attach ductwork to unit with flanges.

To convert a unit to downflow discharge — Units are equipped with factory-installed inserts in the downflow openings. Remove the inserts similar to removing an

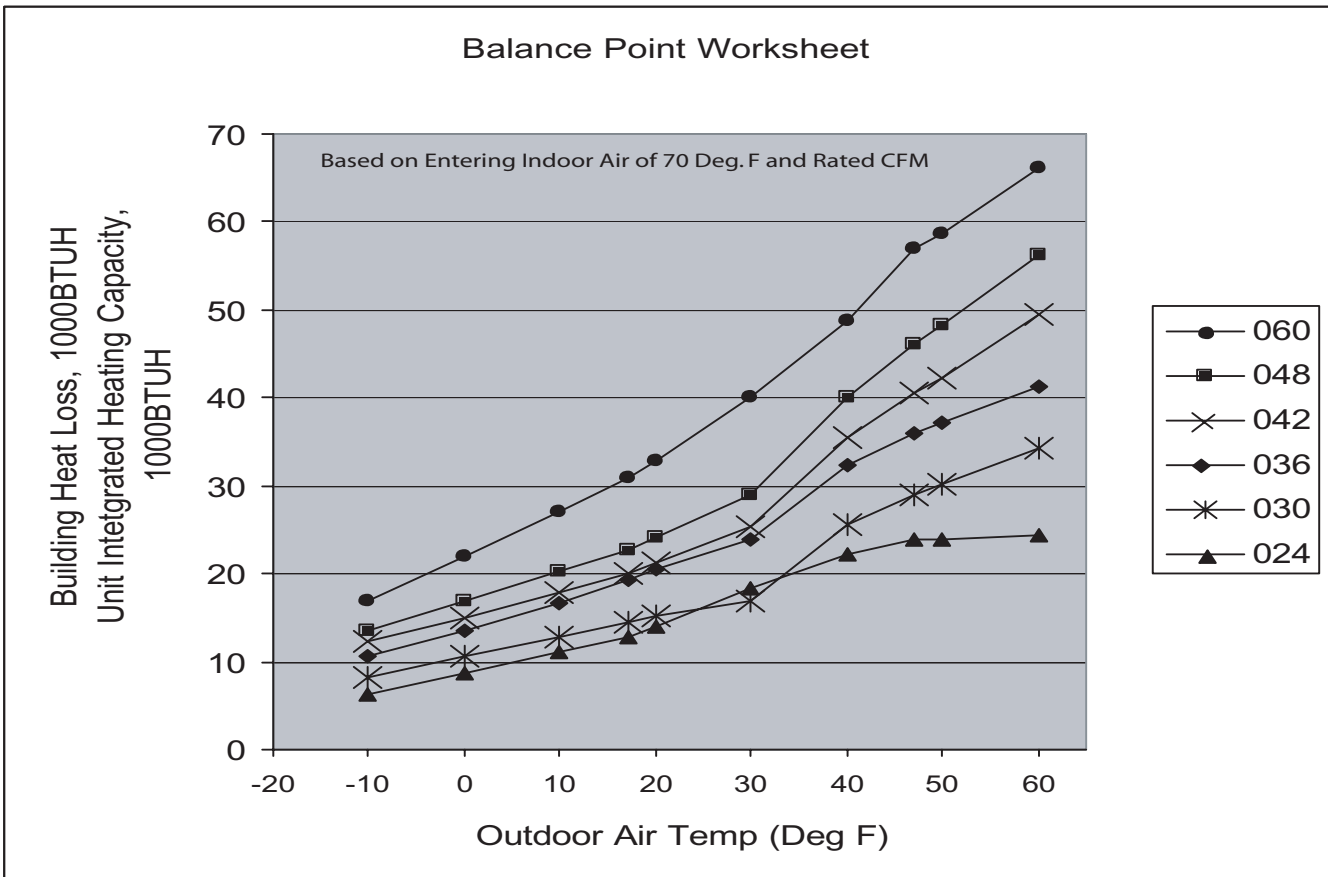
electrical knock-out. Leave on duct covers to seal the horizontal discharge openings in the unit. Units installed in horizontal discharge orientation do not require duct covers.

Maximum cooling airflow — To minimize the possibility of condensate blow-off from the evaporator, airflow through the units should not exceed 450 cfm/ton.

Minimum cooling airflow — The minimum airflow is 350 cfm/ton for cooling mode. Airflow can be lower in certain modes when humidity removal is an issue.

Minimum cooling ambient operating temperature — All standard units have a minimum ambient operating temperature of 55°F. With accessory low ambient temperature kit, units can operate at temperatures down to 0°F.

Maximum operating outdoor air temperature — Maximum outdoor operating air temperature for cooling is 125°F.



ELECTRICAL DATA

UNIT 604B SIZE	V-PH-HZ	VOLTAGE RANGE		COMPRESSOR		ODFM FLA	IDFM FLA	ELECTRIC HEAT		SINGLE POINT POWER SUPPLY		
		Min	Max	RLA	LRA			Nominal kW*	FLA	UNIT MCA	MAX FUSE OR CKT BKR	MOCP
024	208/230-1-60	187	253	13.5	61.0	0.9	4.3	-/-	-/-	22.1/22.1	30/30	—
								3.8/5.0	18.1/20.8	44.6/48.1	60/60	—
								5.4/7.2	26/30	54.6/59.6	—	70/70
								7.5/10.0	36.1/41.7	67.2/74.2	—	80/80
030	208/230-1-60	187	253	15.9	73.0	0.9	4.3	-/-	-/-	25.1/25.1	30/30	—
								3.8/5.0	18.1/20.8	47.6/51.1	—	60/70
								5.4/7.2	26/30	57.6/62.6	—	70/80
								7.5/10.0	36.1/41.7	70.2/77.2	—	80/90
								11.3/15.0	54.2/62.5	92.8/103.2	—	100/110
036	208/230-1-60	187	253	16.9	83.0	0.9	6.8	-/-	-/-	28.8/28.8	35/35	—
								3.8/5.0	18.1/20.8	51.4/54.9	—	70/70
								5.4/7.2	26/30	61.3/66.3	—	80/80
								7.5/10.0	36.1/41.7	74.0/80.9	—	90/90
	208/230-3-60	187	253	12.2	77.0	1.6	6.8	-/-	-/-	23.7/23.7	30/30	—
								3.8/5.0	10.4/12.0	36.7/38.7	50/50	—
								7.5/10.0	20.8/24.1	49.7/53.7	60/60	—
								11.3/15.0	31.3/36.1	62.7/68.8	—	70/80
042	208/230-1-60	187	253	22.4	105.0	0.9	6.8	-/-	-/-	35.7/35.7	45/45	—
								3.8/5.0	18.1/20.8	58.3/61.7	—	80/80
								5.4/7.2	26/30	68.2/73.2	—	90/90
								7.5/10.0	36.1/41.7	80.8/87.8	—	100/100
	208/230-3-60	187	253	15.4	88.0	0.9	6.8	-/-	-/-	27.0/27.0	35/35	—
								3.8/5.0	10.4/12.0	40.0/42.0	60/60	—
								7.5/10.0	20.8/24.1	53.0/57.0	—	70/70
								11.3/15.0	31.3/36.1	66.0/72.1	—	80/80
								15.0/20.0	41.6/48.0	78.9/86.9	—	90/100
048	208/230-1-60	187	253	21.3	109.0	1.6	6.8	-/-	-/-	35.0/35.0	45/45	—
								3.8/5.0	18.1/20.8	57.6/61.1	—	80/80
								5.4/7.2	26/30	67.5/72.5	—	90/90
								7.5/10.0	36.1/41.7	80.2/87.1	—	100/100
	208/230-3-60	187	253	14.7	91.0	1.6	6.8	-/-	-/-	26.8/26.8	35/35	—
								3.8/5.0	10.4/12.0	39.8/41.8	60/60	—
								7.5/10.0	20.8/24.1	52.8/56.8	—	70/70
								11.3/15.0	31.3/36.1	65.9/71.9	—	80/80
								15.0/20.0	41.6/48.0	78.7/86.7	—	90/90
060	208/230-1-60	187	253	26.9	145.0	1.5	9.1	-/-	-/-	44.2/44.2	60/60	—
								3.8/5.0	18.1/20.8	66.8/70.3	—	90/100
								5.4/7.2	26/30	76.7/81.7	—	100/110
								7.5/10.0	36.1/41.7	89.4/96.3	—	110/125
	208/230-3-60	187	253	17.6	123.0	1.5	9.1	-/-	-/-	32.6/32.6	40/40	—
								3.8/5.0	10.4/12.0	58.7/62.7	60/60	—
								7.5/10.0	20.8/24.1	58.7/62.7	—	70/70
								11.3/15.0	31.3/36.1	71.7/77.7	—	80/80
								15.0/20.0	41.6/48.0	84.6/92.6	—	90/90

See Legend and Notes on p. 23

LEGEND

- FLA -- Full Load Amps
- LRA -- Locked Rotor Amps
- MCA -- Minimum Circuit Amps
- MOCP -- Maximum Overcurrent Protection
- RLA -- Rated Load Amps



NOTES:

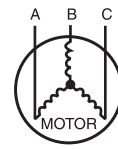
1. In compliance with NEC (National Electrical Code) requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be Power Supply fuse. The CGA (Canadian Gas Association) units may be fuse or circuit breaker.
2. Minimum wire size is based on 60 C copper wire. If other than 60 C wire is used, or if length exceeds wire length in table, determine size from NEC.
3. 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

% Voltage imbalance

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

- * Heater capacity (kW) based on heater voltage of 208v & 240v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

EXAMPLE: Supply voltage is 230-3-60.



- AB = 228 v
- BC = 231 v
- AC = 227 v

$$\begin{aligned} \text{Average Voltage} &= \frac{228 + 231 + 227}{3} \\ &= \frac{686}{3} \\ &= 229 \end{aligned}$$

Determine maximum deviation from average voltage.

- (AB) 229 - 228 = 1 v
- (BC) 231 - 229 = 2 v
- (AC) 229 - 227 = 2 v

Maximum deviation is 2 v.

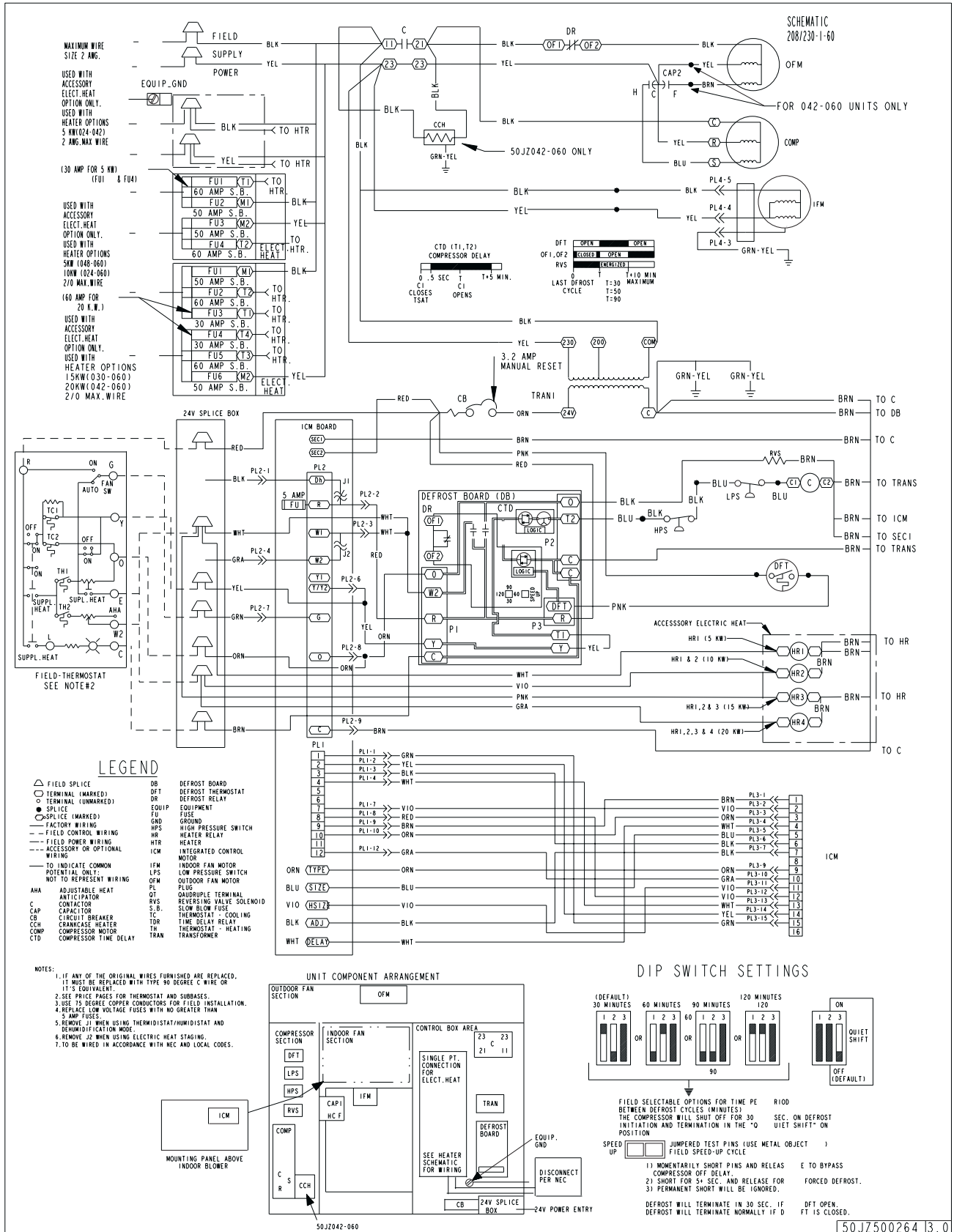
Determine percent of voltage imbalance

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{2}{229} \\ &= 0.8\% \end{aligned}$$

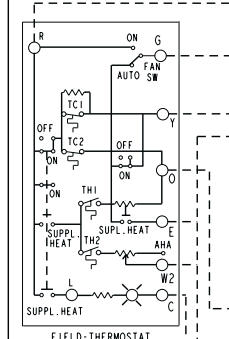
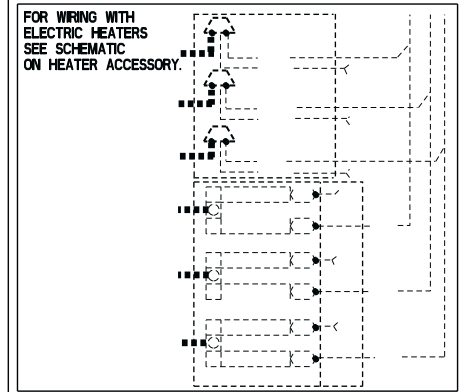
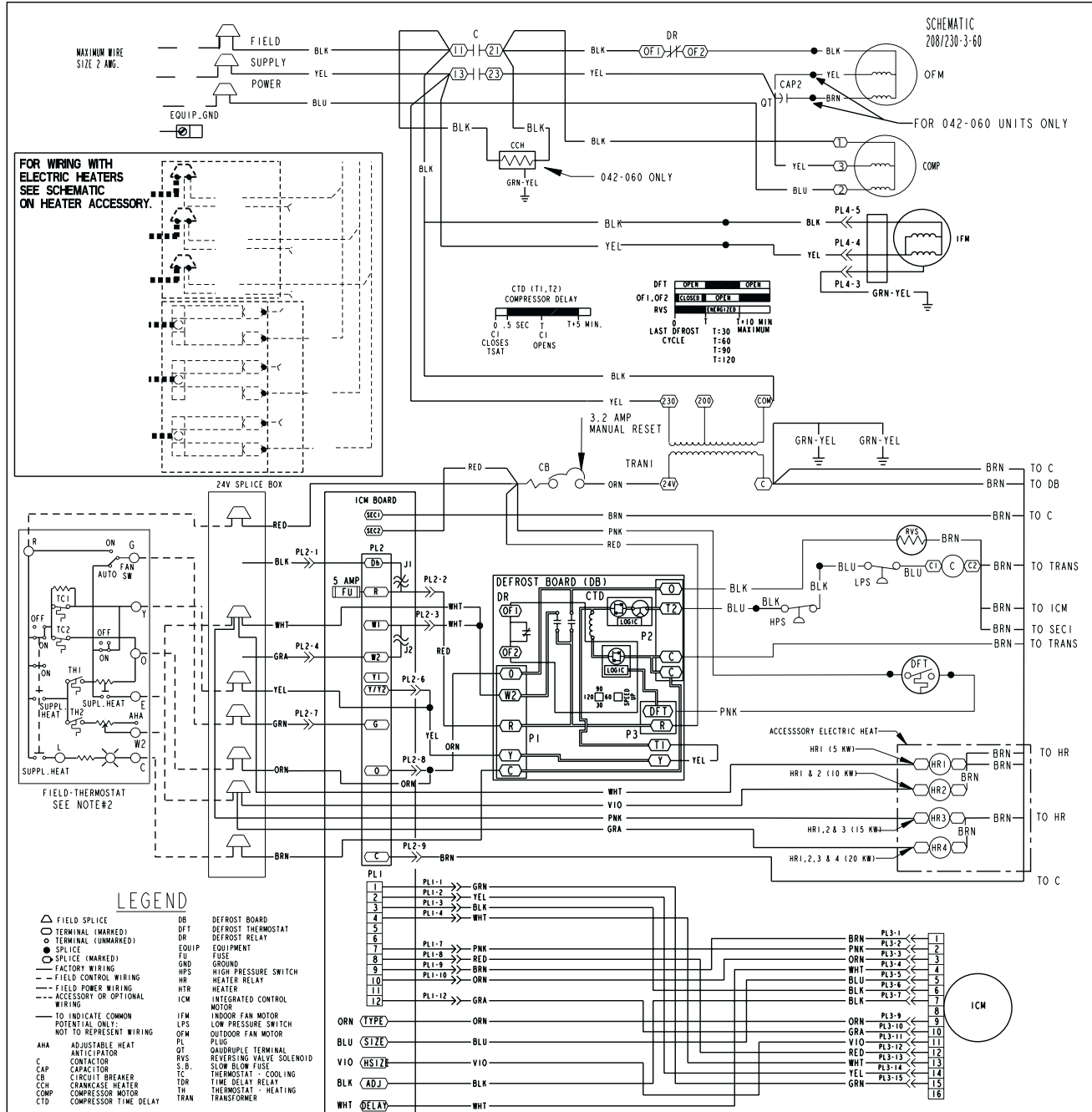
This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

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

TYPICAL WIRING SCHEMATIC — 230-1-60 SHOWN

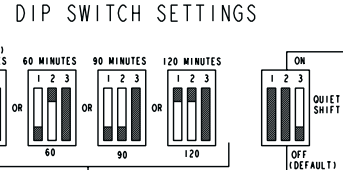
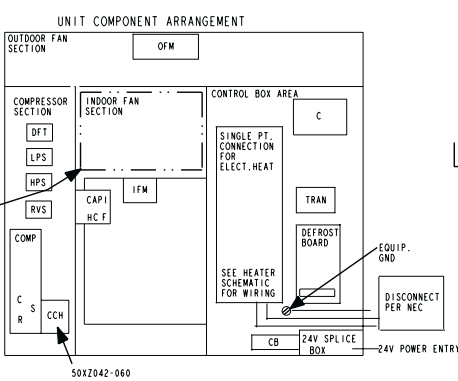


TYPICAL WIRING SCHEMATIC — 208/230-3-60 SHOWN



- ### LEGEND
- FIELD SPLICE
 - TERMINAL (MARKED)
 - TERMINAL (UNMARKED)
 - SPLICE (MARKED)
 - SPLICE (UNMARKED)
 - FACTORY WIRING
 - - - FIELD CONTROL WIRING
 - - - FIELD POWER WIRING
 - - - ACCESSORY OR OPTIONAL WIRING
 - TO INDICATE COMMON POTENTIAL ONLY; NOT TO REPRESENT WIRING
 - ANA ANTICIPATOR
 - CAP CAPACITOR
 - CB CIRCUIT BREAKER
 - CCH CRANKCASE HEATER
 - COMP COMPRESSOR MOTOR
 - CTD COMPRESSOR TIME DELAY
 - DB DEFROST BOARD
 - DFT DEFROST THERMOSTAT
 - DR DEFROST RELAY
 - EQUIP EQUIPMENT
 - FU FUSE
 - GND GROUND
 - HPS HIGH PRESSURE SWITCH
 - HR HEATER
 - HTR HEATER
 - ICM INTEGRATED CONTROL MOTOR
 - IFM INDOOR FAN MOTOR
 - LPS LOW PRESSURE SWITCH
 - OFM OUTDOOR FAN MOTOR
 - PL PLUG
 - QT QUADRUPEL TERMINAL
 - RVS REVERSING VALVE SOLENOID
 - S.B. SLOW BLOW FUSE
 - TOR THERMOSTAT - COOLING
 - TDR TIME DELAY RELAY
 - TH THERMOSTAT - HEATING
 - TRAN TRANSFORMER

- ### NOTES:
- IF ANY OF THE ORIGINAL WIRES FURNISHED ARE REPLACED, IT MUST BE REPLACED WITH TYPE 90 DEGREE C WIRE OR ITS EQUIVALENT.
 - SEE PRICE PAGES FOR THERMOSTAT AND SUBBASES.
 - USE 18 GAUGE COPPER CONDUCTORS FOR FIELD INSTALLATION.
 - REPLACE LOW VOLTAGE FUSES WITH NO GREATER THAN 5 AMP FUSES.
 - REMOVE J1 WHEN USING THERMISTAT/HUMIDISTAT AND DEHUMIDIFICATION MODE.
 - REMOVE J2 WHEN USING ELECTRIC HEAT STAGING.
 - TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.



- SPEED UP JUMPED TEST PINS (USE METAL OBJECT FIELD SPEED-UP CYCLE)
- MOMENTARILY SHORT PINS AND RELEASE TO BYPASS COMPRESSOR OFF DELAY.
 - SHORT FOR 5+ SEC. AND RELEASE FOR FORCED DEFROST.
 - PERMANENT SHORT WILL BE IGNORED.
- DEFROST WILL TERMINATE IN 30 SEC. IF DFT OPEN.
DEFROST WILL TERMINATE NORMALLY IF DFT IS CLOSED.

50XZ042-060 50XZ500159 3.0

CONTROLS

SEQUENCE OF OPERATION

When power is supplied to unit, the transformer (TRAN) is energized.

On units with crankcase heater, heater is also energized.

Cooling — With the thermostat subbase in the cooling position, the thermostat makes circuit R-O. This energizes the reversing valve solenoid (RVS) and places the unit in standby condition for cooling.

As the space temperature rises, the thermostat makes, closing circuit R-Y. A circuit is made to contactor (C), starting the compressor (COMP) and outdoor-fan motor (OFM). Circuit R-G is made at the same time, energizing and starting the indoor-fan motor (IFM).

When the thermostat is satisfied, contacts open, deenergizing C. The COMP and OFM stop, and the IFM stops after a preselected time delay.

Heating — On a call for heat, thermostat makes circuits R-Y and R-G.

A circuit is made to C, starting COMP and OFM. Circuit R-G also is completed, energizing IFR and starting IFM after the selected time delay.

Should room temperature continue to fall, circuit R-W is made through second-stage thermostat bulb. If optional electric heat package is used, a relay is energized, bringing on first bank of supplemental electric heat. When thermostat is satisfied,

contacts open, deenergizing contactor and relay; motors and heaters deenergize. The IFM is controlled by the Easy Select™ board.

Defrost — Defrost board (DB) is a time and temperature control, which includes a field-selectable time period (Dip switch 1 and 2 on the board) between checks for defrost (30, 60, 90, or 120 minutes). Electronic timer and defrost cycle start only when contactor is energized and defrost thermostat (DFT) is closed.

The defrost board is also equipped with a 3rd dip switch for selecting Quiet Shift operation. The Quiet Shift operation turns compressor off at defrost initiation and termination. Unit is factory shipped with quiet shift turned off.

Defrost mode is identical to cooling mode, except outdoor fan motor stops and a bank of optional electric heat turns on to warm air supplying the conditioned space.

NOTES:

1. Compressor time delay occurs through the defrost control board.
2. Defrost control board has built in 5 minute compressor delay: once the compressor has started and then stopped, it cannot be restarted again until 5 minutes have elapsed.
3. Variable Speed Blower — The indoor blower operation with a call for fan operation (G) in either cooling or heat pump heating (compressor) modes will perform by the on/off delay profile selected at start up on the Easy Select™ board.

GUIDE SPECIFICATIONS

PACKAGED HEAT PUMP UNITS CONSTANT VOLUME APPLICATION

HVAC GUIDE SPECIFICATIONS

SIZE RANGE: 2 TO 5 TONS, NOMINAL COOLING

BRYANT MODEL NUMBER: 604B

PART 1—GENERAL

SYSTEM DESCRIPTION

Outdoor rooftop or ground mounted, heat pump unit utilizing a hermetic compressor for heating and cooling duty and optional electric heating. Unit shall discharge supply air vertically or horizontally as shown on contract drawings. Outdoor fan/coil section shall have a draw-thru design with vertical discharge for minimum sound levels.

QUALITY ASSURANCE

- A. Unit shall be rated in accordance with ARI Standards 210/240-94 and 270-95.
- B. Unit shall be designed in accordance with UL Standard 1995.
- C. Unit shall be manufactured in a facility registered to ISO 9001 manufacturing quality standard.
- D. Unit shall be UL listed and c-UL certified as a total package for safety requirements.
- E. Roof curb shall be designed to conform to NRCA Standards.
- F. Insulation and adhesives shall meet NFPA 90A requirements for flame spread and smoke generation.
- G. Cabinet insulation shall meet ASHRAE Standard 62P.

DELIVERY, STORAGE AND HANDLING

Unit shall be stored and handled per manufacturer's recommendations.

PART 2 — PRODUCTS

EQUIPMENT

A. General:

Factory-assembled, single-piece, heat pump unit. Contained within the enclosure shall be all factory wiring, piping, controls, refrigerant charge (R-410A), and special features required prior to field start-up.

B. Unit Cabinet:

1. Unit cabinet shall be constructed of phosphated, zinc-coated, pre-painted steel capable of withstanding 500 hrs of salt spray.
2. Normal service shall be through a single removable cabinet panel.
3. The unit shall be constructed on a rust proof unit base that has an externally trapped, integrated sloped drain pan.
4. Indoor fan compartment top surface shall be insulated with a minimum 1/2-in. thick, flexible fiberglass insulation, coated on the air side and retained by adhesive and mechanical means. The indoor wall sections will be insulated with a minimum semi-rigid foil-faced board capable of being wiped clean. Aluminum foil-faced fiberglass insulation shall be used in the entire indoor air cavity section.
5. Unit shall have a field-supplied condensate trap.

C. Fans:

1. The indoor fan shall be variable speed motor and control, as shown on equipment drawings.
2. Fan wheel shall be made from steel, and shall be double-inlet type with forward curved blades with corrosion resistant finish. Fan wheel shall be dynamically balanced.
3. Outdoor fan shall be direct drive propeller type with aluminum blades riveted to corrosion resistant steel spiders, be dynamically balanced, and discharge air vertically.

D. Compressor:

1. Fully hermetic compressors with factory-installed vibration isolation.
2. Scroll compressors shall be standard on all units.
3. Compressor Protection:
Defrost control shall protect compressor by preventing "short cycling."

E. Coils:

Indoor and outdoor coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. (Copper/copper and vinyl-coated construction available as option.) Tube sheet openings shall be belled to prevent tube wear.

F. Refrigerant Metering Device:

Refrigerant metering device shall be of the single body fixed orifice feed type (outdoor) and TXV (indoor).

G. Filters:

Filter section shall consist of field-installed, throwaway, 1-in. thick fiberglass filters of commercially available sizes.

H. Controls and Safeties:

1. Unit controls shall be complete with a self-contained low voltage control circuit.
2. Units shall incorporate an internal compressor protector that provides reset capability.
3. Unit shall provide High and Low/Loss-of-Charge Pressure Safety Protection.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 125°F ambient outdoor temperature, exceeding maximum load criteria of ARI Standard 240-94.
2. Compressor with standard controls shall be capable of operation down to 55° F ambient outdoor temperature in cooling and -10°F in heating.
3. Fan on/off delay profile is selected (for compressor modes) on the Easy Select™ board.

J. Electrical Requirements:

All unit power wiring shall enter the unit cabinet at a single location.

K. Motors:

1. Compressor motors shall be of the refrigerant-cooled type with line-break thermal and current overload protection.
2. All fan motors shall have permanently lubricated bearings, and inherent, automatic reset, thermal overload protection.
3. Outdoor fan motor shall be totally enclosed.

GUIDE SPECIFICATIONS (CONT)

- L. Grille
 - 1. Louvered Grille:
Louvered grille shall be standard on all units.
- M. Special Features Available
 - 1. Coil Options:
Shall include factory-installed optional tin-plated indoor, copper/copper and vinyl-coated refrigerant coils.
 - 2. Economizer:
 - a. Economizer controls capable of providing free cooling using outside air.
 - b. Equipped with low leakage dampers not to exceed 3% leakage, at 1.0 in. wg pressure differential.
 - c. Spring return motor shuts off outdoor damper on power failure.
 - 3. Flat Roof Curb:
Curbs shall have seal strip and a wood nailer for flashing and shall be installed per manufacturer's instructions.
 - 4. Manual Outdoor Air Damper:
Package shall consist of damper, birdscreen, and rainhood which can be preset to admit outdoor air for year-round ventilation.
 - 5. Thermostat:
To provide for two-stage heating and one-stage cooling in addition manual or automatic changeover and indoor fan control.
 - 6. Low Ambient Package:
Shall consist of a solid-state control and outdoor coil temperature sensor for controlling outdoor fan motor operation, which shall allow unit to operate down to 0° F outdoor ambient temperature in cooling.
 - 7. Filter Rack Kit:
Shall provide filter mounting for downflow and horizontal applications.
 - 8. Square-To-Round Duct Transitions:
Shall have the ability to convert the supply and return openings from rectangular to round. (024-048 only)
 - 9. Crankcase Heater:
Shall provide anti-floodback protection for low-load cooling applications. (Standard on 042-060 sizes)
 - 10. Electric heaters:
 - a. Electric heater shall be available as a field-installed option.
 - b. Heater elements shall be open wire type, adequately supported and insulated with ceramic bushings.
 - c. Electric heater packages must provide **single point** power connection capability.
 - 11. Compressor Hard start kit:
Shall be available to give a boost to the compressor motor at each start-up.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE
WITH INSTALLATION INSTRUCTIONS

Cancels: PDS 604B.24.1

Form PDS 604B.24.2