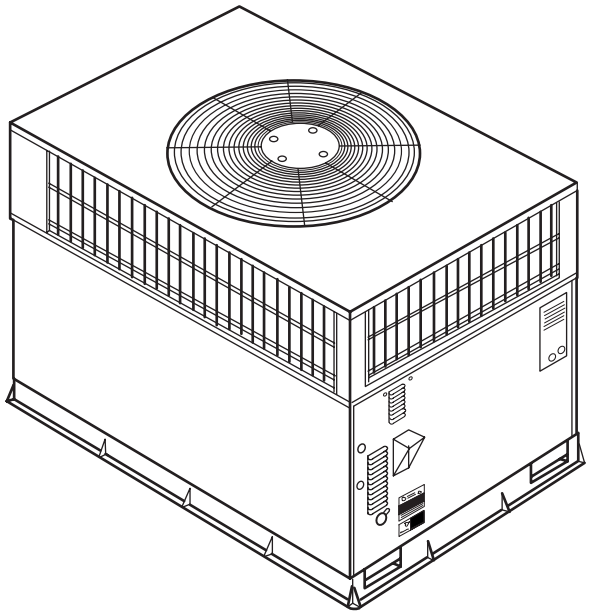
604D
SINGLE-PACKAGED HEAT PUMP UNITS WITH PURON® (R-410A) REFRIGERANT SINGLE AND 3-PHASE UNITS 2 to 5 NOM TONS (SIZES 024-060)

bryant®

Product Data



A99338

Unit 604D

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

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

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.

Comfort Heat Pump™ Technology with Perfect Humidity™ 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 prewired, pre-piped, and pre-charged for minimum installation expense. These units are available in a variety of standard capacity ranges with voltage options to meet residential and light commercial requirements. Units are lightweight and install easily on a rooftop or at ground level. The high tech composite base eliminates rust problems associated with ground level applications.

Convertible duct configuration

Unit is designed for easy use in either downflow or horizontal applications. Each unit is easily converted from horizontal to downflow with the two standard duct covers.

Durable, dependable components Compressors are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Each compressor also has vibration isolation to provide quieter operation. All compressors have internal high pressure and overcurrent protection.

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

Thermostat controls designed to work as a system with Carrier's small packaged product.

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.

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

High and Low Pressure Switches provide added reliability for the compressor.

Indoor and Outdoor coils are computer-designed for optimum heat transfer and 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 seacoast applications.

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

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

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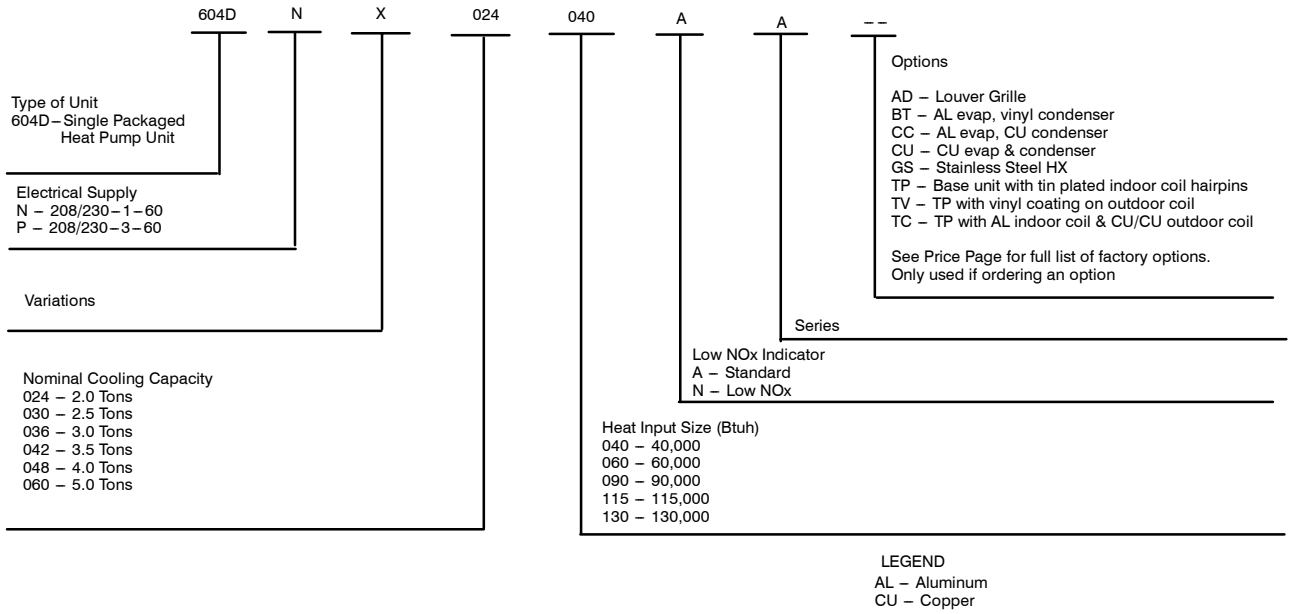
Downflow operation is easily provided in the field to allow vertical ductwork connections. The basepan utilizes knockout style seals on the bottom openings to ensure a positive seal in the horizontal airflow mode.

Cabinets are constructed of heavyduty, phosphated, zinc-coated prepainted steel capable of withstanding 500 hours in salt spray. Interior surfaces of the evaporator adn 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. An external drain is provided.

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.

MODEL NUMBER NOMENCLATURE



ISO 9001:2000

QMI REGISTERED

c UL ® US

ARI PERFORMANCE CERTIFIED ™
ARI Standard 210/240
Unitary Air Conditioners

ARI* CAPACITIES

COOLING CAPACITIES AND EFFICIENCIES

UNIT 604D	NOMINAL TONS	STANDARD CFM	NET COOLING CAPACITIES (Btuh)	EER**	SEER†
024	2	800	24,000	11.0	13.0
030	2-1/2	1000	28,800	11.0	13.0
036	3	1100	36,000	11.0	13.0
042	3-1/2	1450	41,000	11.0	13.0
048	4	1450	45,000	11.0	13.0
060	5	1710	57,000	11.0	13.0

HEAT PUMP HEATING CAPACITIES AND EFFICIENCIES

UNIT 604D	HIGH HEAT CAPACITY (Btuh) @ 47°F (8.3°C)	HIGH HEAT COP @ 47°F (8.3°C)	LOW HEAT CAPACITY (Btuh) @ 17°F (–8.3°C)	LOW HEAT COP @ 17°F (–8.3°C)	HSPF†
024	22,000	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 Conditioing & Refrigeration Institute.
**At "A" conditions–80°F (26.7°C) indoor db/67°F (19.4°C) indoor wb & 95°F (35°C) outdoor db.
† Rated in accordance with U.S. Government DOE Department of Energy) test procedures and/or ARI Standards 210/240–94.

Notes:
1. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
Cooling Standard: 80°F (26.7°C) db, 67°F (19.4°C) wb indoor entering–air temperature and 95°F (35°C) db outdoor entering–air temperature.
2. Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

PHYSICAL DATA - UNIT 604D

UNIT SIZE	604D024	604D030	604D036	604D042	604D048	604D060
NOMINAL CAPACITY (ton)	2	2.5	3	3.5	4	5
OPERATING WEIGHT (lb)	350	350	373	440	463	499
OPERATING WEIGHT (kg)	159	159	169	200	210	226
COMPRESSOR QUANTITY	1					
TYPE	SCROLL COMPRESSOR					
REFRIGERANT	R–410A					
REFRIGERANT METERING DEVICE	Indoor–TXV Outdoor–AccuRater					
Refrigerant (R–410A) Quantity (lb)	7.5	8.2	9.7	11.0	11.5	13.5
Quantity (kg)	3.4	3.7	4.4	5.0	5.2	6.1
METERING DEVICE ID	TXV	TXV	TXV	TXV	TXV	TXV
ORIFICE OD (in.)	0.035 (2)	0.035 (2)	0.038 (2)	0.038 (2)	0.038 (Left OD Coil) (.97 mm)	0.042 (Left OD Coil) (1.1 mm)
ORIFICE OD (mm)	.89	.89	.97	.97	0.046 (Right OD Coil)(1.2 mm)	0.052 (Right OD Coil)(1.3 mm)
OUTDOOR COIL						
Rows... Fins/in.	2...21	2...21	2...21	2...21	2...21	2...21
face area (sq. ft.)	12.3	12.3	13.6	15.4	17.2	19.4
OUTDOOR FAN	2350	2350	2800	2800	3300	3300
Nominal Airflow (CFM)	22	22	22	22	22	22
Diameter Motor HP (RPM)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/4 (1100)	1/4 (1100)
INDOOR COIL						
Rows... Fins/in.	3...15	3...15	4...15	3...15	4...15	4...15
face area (sq. ft.)	3.7	3.7	3.7	4.7	4.7	5.7
INDOOR BLOWER						
Nominal Airflow (CFM)	800	1000	1100	1400	1450	1750
Size (in.)	10x10	10x10	11x10	11x10	11x10	11x10
Size (mm)	254x254	254x254	279x254	279x254	279x254	279x254
Motor (HP)	1/2	1/2	3/4	3/4	3/4	1.0
HIGH–PRESSURE SWITCH (psig)	610±15					
Cutout	420±25					
Reset (Auto)						
LOSS–OF–CHARGE/LOW–PRESSURE SWITCH						
(Liquid Line) (psig)	20±5					
Cutout	45±10					
Reset (Auto)						
RETURN–AIR FILTERS (in.)*†						
throwaway	20x24x1	20x24x1	24x30x1	24x36x1	24x36x1	24x36x1

*Required filter sizes shown are based on the larger of the ARI (Air conditioning and 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. wc.
† If using accessory filter rack refer to the filter rack installation instructions for correct filter size and quantity.

OUTDOOR SOUND: OCTAVE BAND DATA-DECIBELS

UNIT	604D					
Capacity	**024**	**030**	**036**	**042**	**048**	**060**
Sound Rating* dBA	72	72	72	73	78	78
Frequency (Hz)	**dB**					
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

*Tested in accordance with ARI Standard 270−95 (not listed inARI).

OPTIONS AND ACCESSORIES

Factory-installed options

Louver grille provides hail and vandalism protection. A wire grille is standard on all models. See model number nomenclature for louver grille options.

Coil options include 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.

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
Controls Upgrade Kit
Crankcase Heater
Compressor Hard Start Kit (for use on single-phase units only)
Rigging Kit
Low Ambient Kit (Motormaster® II Control)
Solid-State Time Guard® II Device

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.

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

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.

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

Controls upgrade kit supplies high and low pressure safety protection and protects the unit from operating in unsuitable conditions.

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

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

Rigging kit includes lifting brackets which are inserted into the unit base rigging holds to lift unit for rooftop applications.

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

Solid-state Time Guard II device provides short-cycling protection for the compressor. Not required with corporate electronic thermostats.

ELECTRIC HEATERS

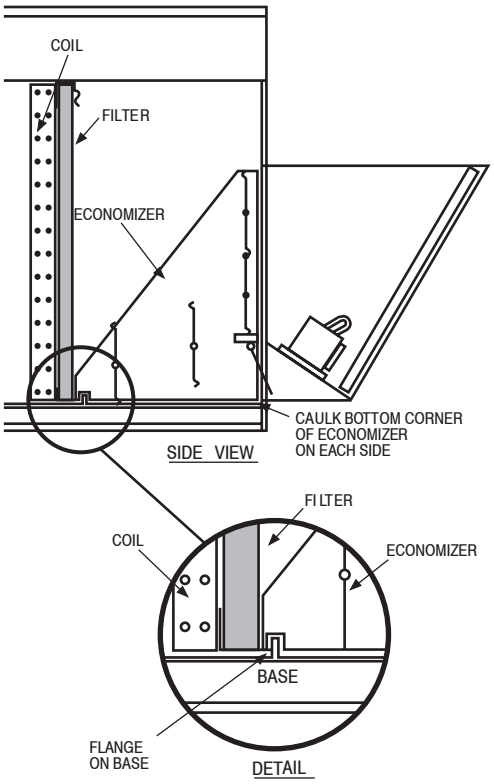
ODS CATALOG ORDERING NO.	NOMINAL CAPACITY (kW)	USED WITH SIZES					
		024	030	036	042	048	060
ELECTRIC HEATERS (208/230 — SINGLE PHASE — 60 Hz)							
CPHEATER052A00	5.0	X	X	X			
CPHEATER064A00	5.0				X	X	X
CPHEATER070A00	7.5	X	X	X	X	X	X
CPHEATER050A00	10.0	X	X	X	X	X	X
CPHEATER066A00	15.0		X	X	X	X	X
CPHEATER054A00	20.0				X	X	X
ELECTRIC HEATERS (208/230 — THREE PHASE — 60 Hz)							
CPHEATER055A00	5.0			X	X	X	X
CPHEATER056A00	10.0			X	X	X	
CPHEATER068A00	10.0						X
CPHEATER057A00	15.0						
CPHEATER058A00	15.0			X	X	X	X
CPHEATER059A00	20.0				X	X	X

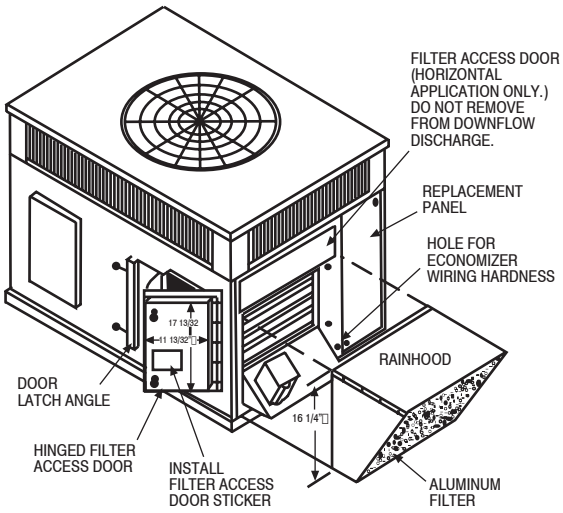
NOTE: Electric heaters are rated at 240v. Refer to Multiplication Factors table for other voltages.
LEGEND
ODS—Order Distribution System

Minimum Airflow for Reliable Electric Heater Operation (cfm)

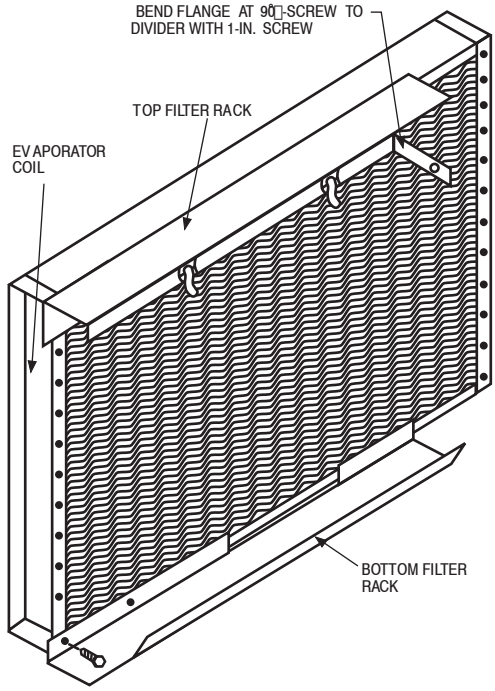
UNIT-604D	024	030	036	042	048	060
AIRFLOW	750	1025	1250	1285	1710	1800

ECONOMIZER

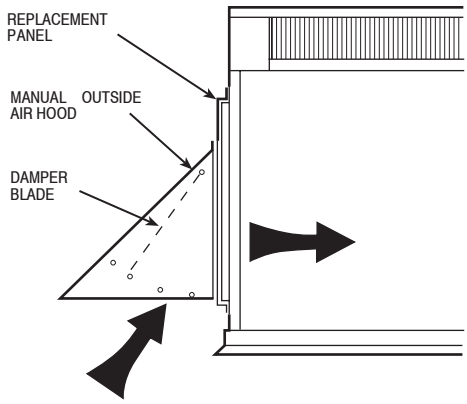




FILTER RACK



MANUAL OUTSIDE AIR DAMPER



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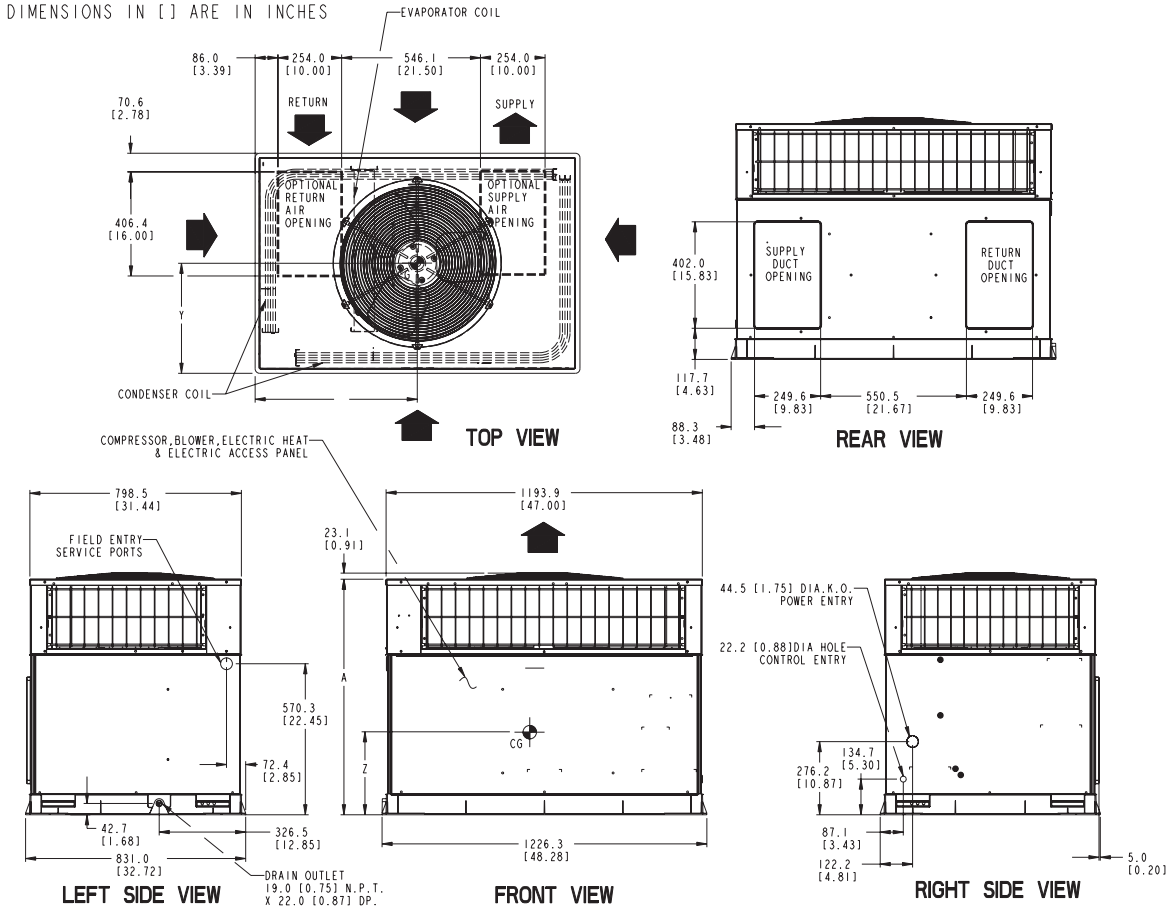
604D

UNIT DIMENSIONS - 604D024-036



REQUIRED CLEARANCE TO COMBUSTIBLE MATL
(Refer to Maximum Operating Clearances)

	INCHES [mm]
TOP OF UNIT	14.00 [355.6]
DUCT SIDE OF UNIT	2.00 [50.8]
SIDE OPPOSITE DUCTS	14.00 [355.6]
BOTTOM OF UNIT	0.50 [12.7]

NEC. REQUIRED CLEARANCES.

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

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

	INCHES [mm]
EVAP. COIL ACCESS SIDE	36.00 [914.0]
POWER ENTRY SIDE	42.00 [1066.8]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48.00 [1219.2]
SIDE OPPOSITE DUCTS	36.00 [914.0]
DUCT PANEL	12.00 [304.8] *

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

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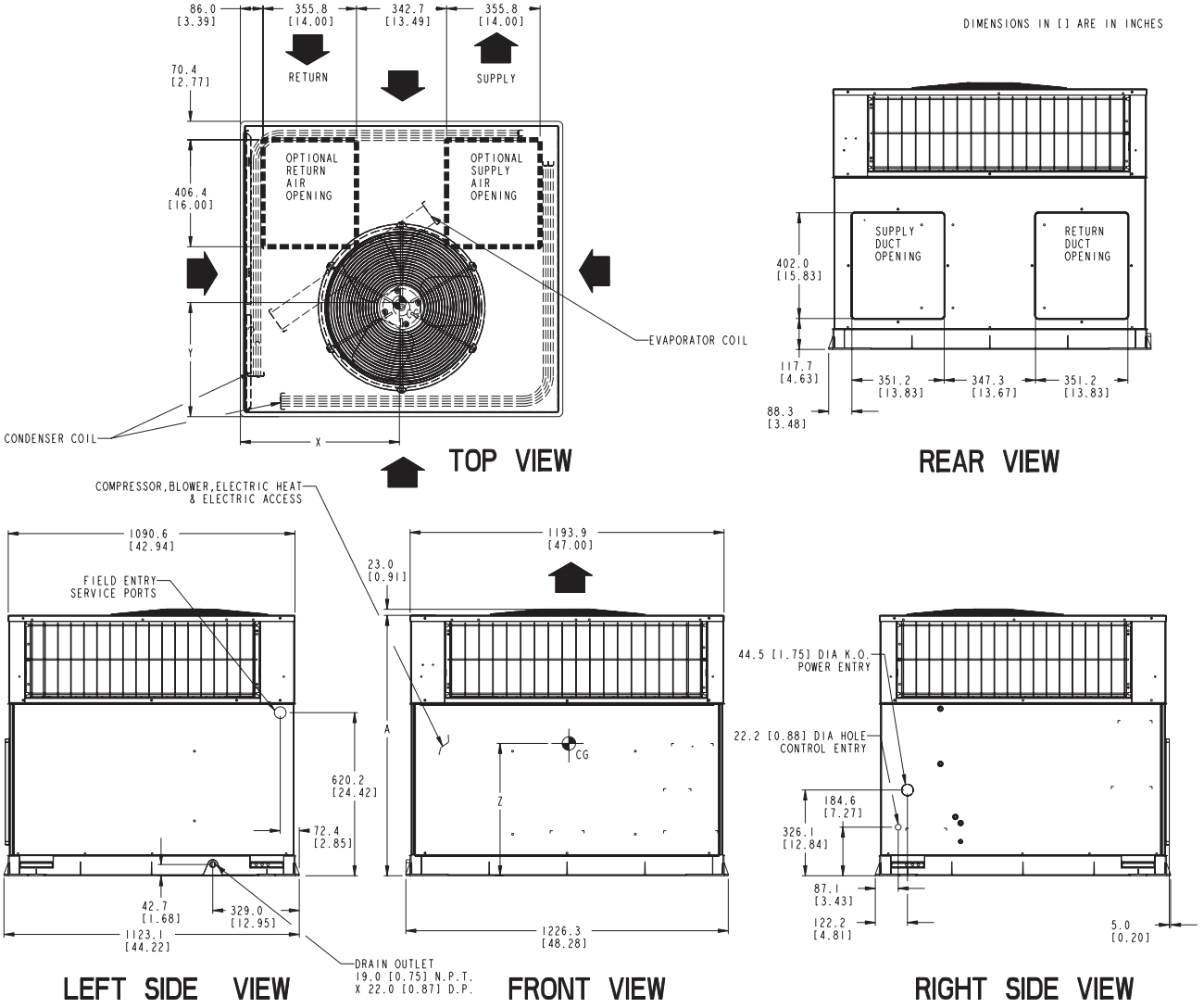
UNIT	ELECTRICAL CHARACTERISTICS	UNIT WEIGHT		UNIT HEIGHT IN. [MM] "A"	CENTER OF GRAVITY IN. [MM]		
		lb	kg		X	Y	Z
604DNX024	208/230-1-60	350	159	39.02[991.1]	20.0 [508]	19.3 [489]	17.6 [447]
604DNX030	208/230-1-60	350	159	39.02[991.1]	20.0 [508]	19.3 [489]	17.6 [447]
604D(N,P)X036	208/230-1-60, 208/230-3-60	373	169	41.02[1041.9]	20.0 [508]	14.0 [355.6]	13.0 [330.2]

UNIT DIMENSIONS - 604D042-060



REQUIRED CLEARANCE TO COMBUSTIBLE MAT'L.
(Refer to Maximum Operating Clearances)

	INCHES [mm]
TOP OF UNIT	14.00 [355.6]
DUCT SIDE OF UNIT	2.00 [50.8]
SIDE OPPOSITE DUCTS	14.00 [355.6]
BOTTOM OF UNIT	0.50 [12.7]

NEC. REQUIRED CLEARANCES.

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

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

	INCHES [mm]
EVAP. COIL ACCESS SIDE	36.00 [914.0]
POWER ENTRY SIDE	42.00 [1066.8]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48.00 [1219.2]
SIDE OPPOSITE DUCTS	36.00 [914.0]
DUCT PANEL	12.00 [304.8] *

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

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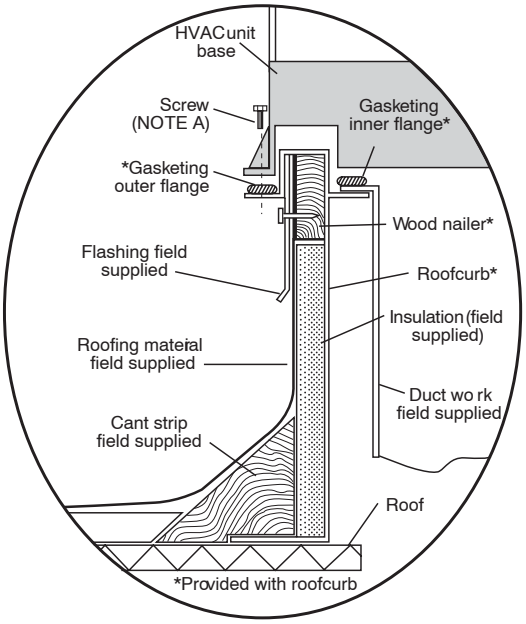
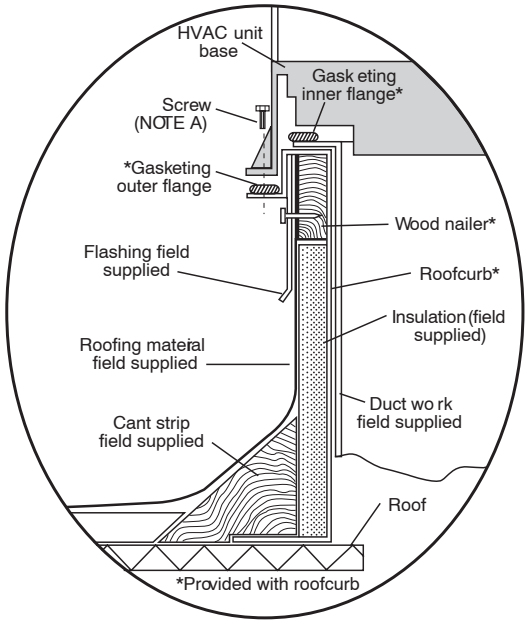
UNIT	ELECTRICAL CHARACTERISTICS	UNIT WEIGHT		UNIT HEIGHT IN. [MM] "A"	CENTER OF GRAVITY IN. [MM]		
		lb	kg		X	Y	Z
604D(N,P)X042	208/230-1-60, 208/230-3-60	440	200	42.98 [1091.7]	21.0 [533.4]	20.5 [520.7]	16.6 [421.6]
604D(N,P)X048	208/230-1-60, 208/230-3-60	463	210	44.98 [1142.5]	19.5 [495.3]	21.3 [539.8]	18.0 [457.2]
604D(N,P)X060	208/230-1-60, 208/230-3-60	499	226	46.98 [1193.3]	21.0 [533.4]	20.0 [508.0]	17.6 [447.0]

ACCESSORY DIMENSIONS



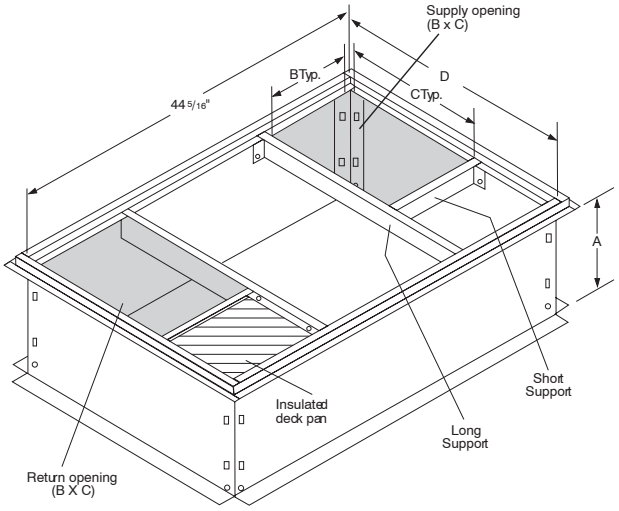
Roof Curb for Small Cabinet

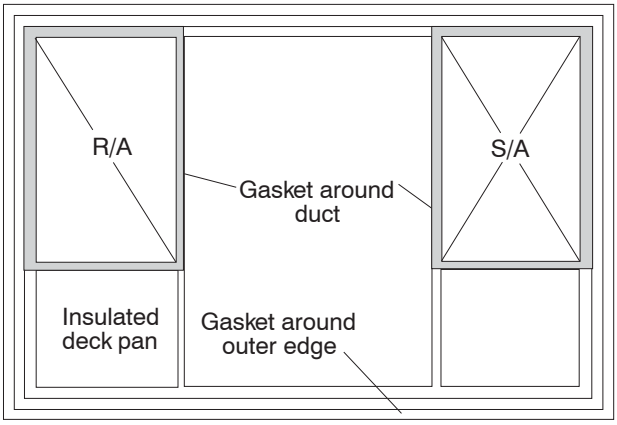
Note A: When unit mounting screw is used retainer bracket must also be used.



Roof Curb for Large Cabinet

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





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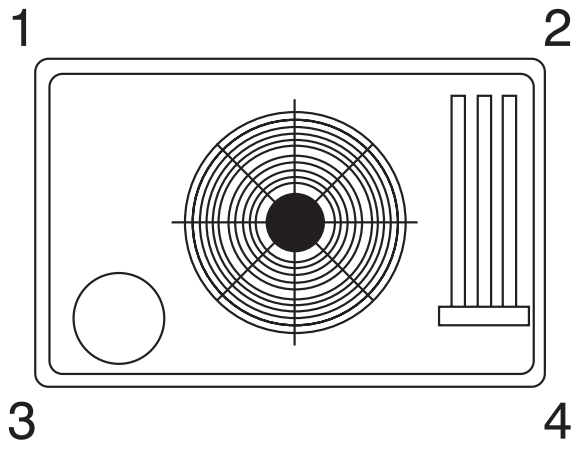
UNIT SIZE	ODS CATALOG NUMBER	A IN. (MM)	B IN. (MM)	C IN. (MM)	D IN. (MM)
604D024-036	CPRFCURB006A00	8 (203)	11 (279)	16-1/2 (419)	28-3/4 (730)
	CPRFCURB007A00	14 (356)	11 (279)	16-1/2 (419)	28-3/4 (730)
604D042-060	CPRFCURB008A00	8 (203)	16-3/16 (411)	17-3/8 (441)	40-1/4 (1022)
	CPRFCURB009A00	14 (356)	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.
4. Dimension in ( ) are in millimeters.
5. Roof curb is made of 16–gauge steel.
6. Attach ductwork to curb (flanges of duct rest on curb).
7. Insulated panels: 1–in. thick fiberglass 1 lb. density.
8. When unit mounting screw is used (see 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.



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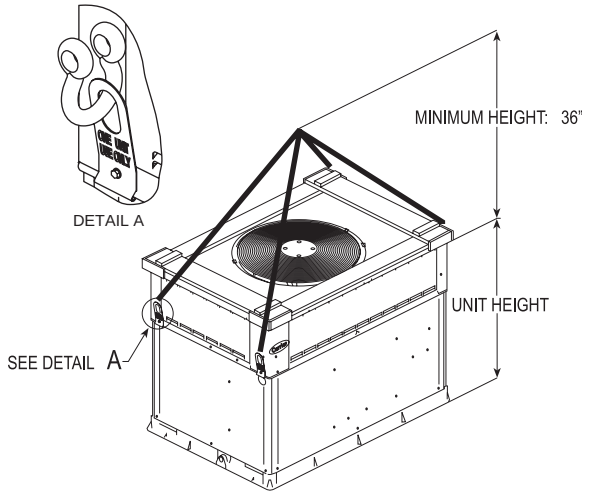

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CORNER WEIGHTS (SMALL CABINET)							CORNER WEIGHTS (LARGE CABINET)						
Unit	024		030		036		Unit	042		048		060	
	lb	kg	lb	kg	lb	kg		lb	kg	lb	kg	lb	kg
Total Weight	350	159	350	159	373	169	Total Weight	440	200	463	210	499	226
Corner Weight 1	70	32	70	32	75	34	Corner Weight 1	88	40	98	44	107	49
Corner Weight 2	54	25	54	25	58	26	Corner Weight 2	68	31	61	28	70	32
Corner Weight 3	84	38	84	38	90	41	Corner Weight 3	106	48	127	58	136	62
Corner Weight 4	141	64	141	64	150	68	Corner Weight 4	177	80	177	80	186	84
Shipping Weight	372	169	372	169	395	179	Shipping Weight	462	210	485	220	521	236

SELECTION PROCEDURE (WITH EXAMPLE)

1. 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 Capacity . . . . . 60,000 Btuh
Condenser Entering Air Temperature . . . . . 95°F
Indoor-Air Temperature . . . . . 80°F edb 67°F ewb
Evaporator Air Quantity . . . . . 1225 CFM
External Static Pressure . . . . . 0.200 in. wc
Electrical Characteristics 208-1-60

2. Select unit based on required cooling capacity.

Enter Net Cooling Capacities table at condenser entering temperature of 95°F. Unit 036 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.

3. Select heating capacity of unit to provide design condition requirement.

In the Heating Capacities and Efficiencies table, note that the unit 036090 will provide 70,000 Btuh with an input of 90,000 Btuh.

4. Determine fan speed and power requirements at design conditions.

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

External Static Pressure	0.200 in. wc
Filter	0.130 in. wc
Wet Coil Pressure Drop	0.032 in. wc
Total Static Pressure	0.362 in. wc

Enter the table for Dry Coil Air Delivery— At 0.362 in. wc ESP (external static pressure) and NOM speed PIN selection, the motor delivers 1235 cfm.

5. 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

604D024 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	21.9	21.3	18.7	15.4	23.5	22.8	19.8	16.1	25.0	24.2	20.8	16.7
	kW	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	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	21.4	20.7	18.1	14.9	22.9	22.2	19.2	15.6	24.3	23.6	20.3	16.2
	kW	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	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	20.8	20.2	17.6	14.3	22.3	21.6	18.7	15.0	23.6	22.9	19.7	15.6
	kW	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	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	20.2	19.5	16.9	13.7	21.6	20.9	18.0	14.3	22.5	22.2	19.0	14.9
	kW	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	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	19.4	18.8	16.3	13.0	20.6	20.2	17.3	13.7	21.5	21.2	18.3	14.1
	kW	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	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	18.5	18.1	15.5	12.3	19.2	19.2	16.5	12.9	19.8	19.7	17.6	13.5
	kW	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1

Heating Extended Performance Table -10-20

604D024										
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)							
			-10		0		10		17	20
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 30-20

604D024										
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)							
			30		40		47		50	60
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.

PERFORMANCE DATA (CONT)- STANDARD ECM INDOOR MOTOR

Cooling Extended Performance Table

604D030 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

604D030										
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)							
			-10		0		10		17		20	
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

604D030										
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)							
			30		40		47		50		60	
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.

PERFORMANCE DATA (CONT)- STANDARD ECM INDOOR MOTOR

Cooling Extended Performance Table

604D036 Cooling 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

604D036											
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)								
			-10		0		10		17		20	
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

604D036											
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)								
			30		40		47		50		60	
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.

PERFORMANCE DATA (CONT)- STANDARD ECM INDOOR MOTOR

Cooling Extended Performance Table

604D042 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	33.5	27.6	28.6	23.4	35.4	29.0	30.0	24.3	37.9	30.8	31.9	25.6
	kW	3.0	3.0	3.0	3.1	3.0	3.0	3.0	3.1	3.0	3.0	3.0	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	32.8	26.9	27.8	22.7	34.6	28.2	29.2	23.6	37.0	30.0	31.1	24.8
	kW	3.3	3.3	3.4	3.4	3.3	3.3	3.4	3.4	3.3	3.3	3.4	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	32.0	26.1	27.0	21.9	33.8	27.4	28.4	22.8	35.9	29.1	30.3	24.0
	kW	3.7	3.7	3.7	3.8	3.7	3.7	3.7	3.8	3.7	3.7	3.7	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	31.0	25.2	26.2	21.1	32.7	26.5	27.6	22.0	34.3	28.3	29.4	23.2
	kW	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	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	30.0	24.3	25.2	20.2	31.4	25.6	26.6	21.0	32.8	27.3	28.5	22.2
	kW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.5	4.5	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	28.6	23.2	24.2	19.1	29.6	24.5	25.5	20.0	30.6	26.1	27.3	21.1
	kW	4.9	4.9	4.9	5.0	4.9	4.9	4.9	5.0	4.9	4.9	4.9	5.0

Heating Extended Performance Table -10-20

604D042										
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

604D042										
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.

PERFORMANCE DATA (CONT)- STANDARD ECM INDOOR MOTOR

Cooling Extended Performance Table

604D048													
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

604D048											
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)									
			-10		0		10		17		20	
60	1260	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	
	1400	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	
	1600	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	1260	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	
	1400	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	
	1600	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	1260	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	
	1400	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	
	1600	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

604D048											
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)									
			30		40		47		50		60	
60	1260	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	
	1400	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	
	1600	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	1260	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	
	1400	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	
	1600	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	1260	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	
	1400	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	
	1600	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. See Legend and Notes.

PERFORMANCE DATA (CONT)- STANDARD ECM INDOOR MOTOR

Cooling Extended Performance Table

604D060													
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

604D060											
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)									
			-10		0		10		17		20	
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

604D060											
Return Air (F db)	CFM (Standard Air)		Air Temperature Entering Outdoor Coil (F db at 70% rh)									
			30		40		47		50		60	
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.

PERFORMANCE DATA (CONT)

Economizer 1-in. Filter Pressure Drop (in. wc)

UNIT604D	PRESSURE DROP
024-036	0.20
042-060	0.25

Multiplication Factors

HEATER kW RATING	VOLTAGE DISTRIBUTION V/3/60	MULTIPLICATION FACTOR
240	200	0.69
	208	.75
	230	.92
	240	1.00

LEGEND
BF — Bypass Factor
edb — Entering Dry–Bulb
Ewb — Entering Wet–Bulb
kW — Total Unit Power Input
SHC — Sensible Heat Capacity (1000 Btuh)
TC — Total Capacity (1000 Btuh) (net)
rh —Relative Humidity

COOLING 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 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 (26.6°C) edb temperature of air entering evaporator coil. Below 80° F (26.6°C) edb, subtract (corr factor x cfm) from SHC.

Above 80° F (26.6°C) edb, add (corr factor x cfm) to SHC.
Correction Factor = 1.10 x (1 + BF) x (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 Table
Small Cabinet: 024-036 cfm

	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
5kw	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
20 kw	0.00	0.00	0.02	0.04	0.06	0.08	0.09	0.11	0.13	0.15	0.17	0.19

Electric Heat Pressure Drop Table (in. wc)
Large Cabinet 042-060 cfm

	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
5kw	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

604D Cooling & Heating Dry Coil ECM Airflow
Small Cabinet

UNIT SIZE	CFM ADJUST PIN SELECT	LO PIN			NOM PIN			HI PIN		
	EXTERNAL STATIC PRESSURE RANGE (in. wc)	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

PERFORMANCE DATA (CONT)

604D Cooling & Heating Dry Coil ECM Airflow
Large Cabinet

UNIT SIZE	CFM ADJUST PIN SELECT	LO PIN	NOM PIN	HI PIN
	EXTERNAL STATIC PRESSURE RANGE (in. wc)	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

ECM Wet Coil Pressure Drop (in. wc)

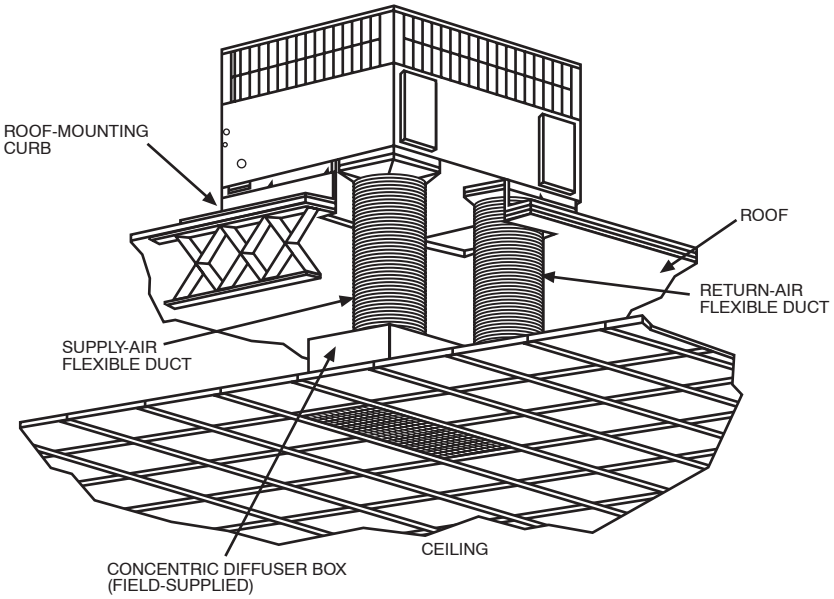
UNIT SIZE	STANDARD CFM (SCFM)															
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
024	0.005	0.007	0.010	0.012	0.015	–	–	–	–	–	–	–	–	–	–	–
030	–	0.007	0.010	0.012	0.015	0.018	0.021	0.024	–	–	–	–	–	–	–	–
036	–	–	–	0.019	0.023	0.027	0.032	0.037	0.042	0.047	–	–	–	–	–	–
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

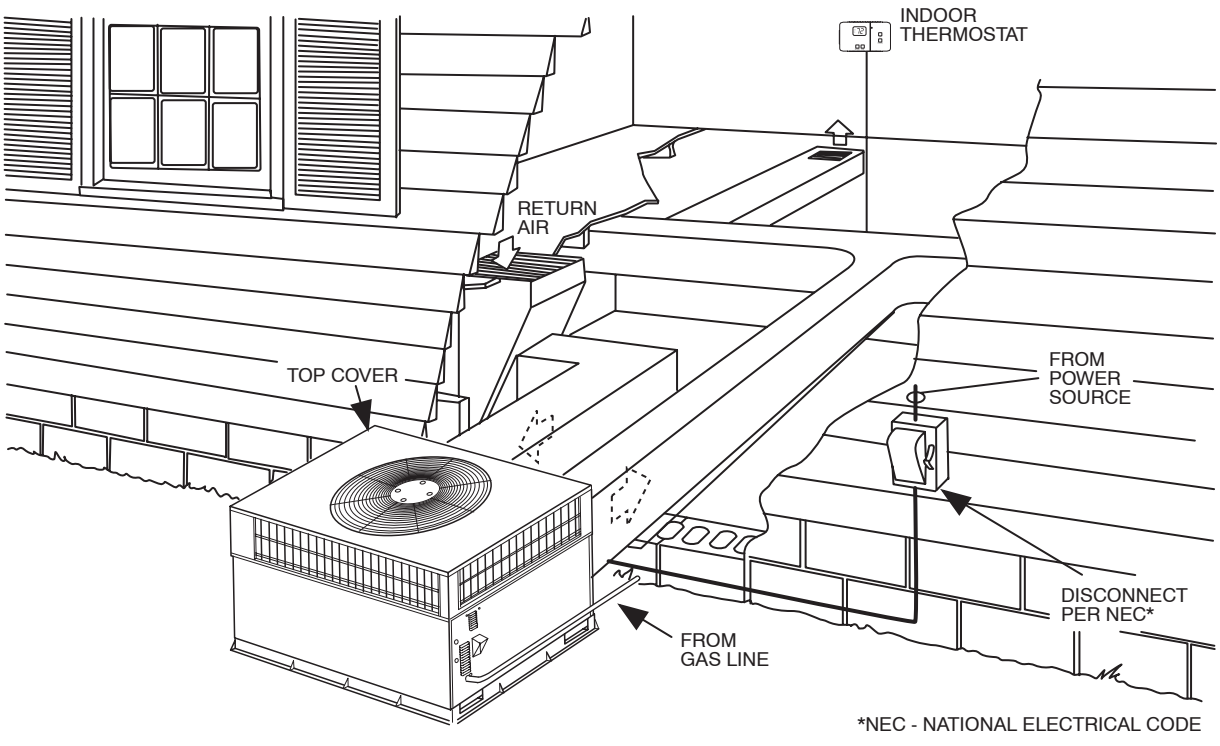
Filter Pressure Drop Table (in. wc)

FILTER SIZE	CFM																		
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
20X20X1	0.05	0.07	0.08	0.1	0.12	0.13	0.14	0.15	—	—	—	—	—	—	—	—	—	—	—
24X30X1	—	—	—	0.04	0.05	0.06	0.07	0.07	0.08	0.09	0.1	—	—	—	—	—	—	—	—
24X36X1	—	—	—	—	—	—	—	0.06	0.07	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.13	0.14	0.14

TYPICAL PIPING AND WIRING

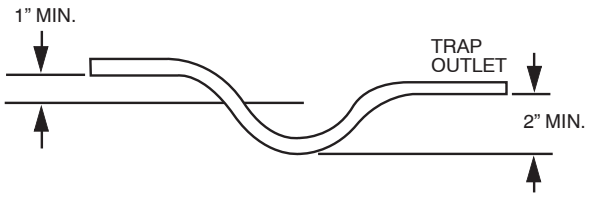
VERTICAL DISCHARGE





APPLICATION DATA

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



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

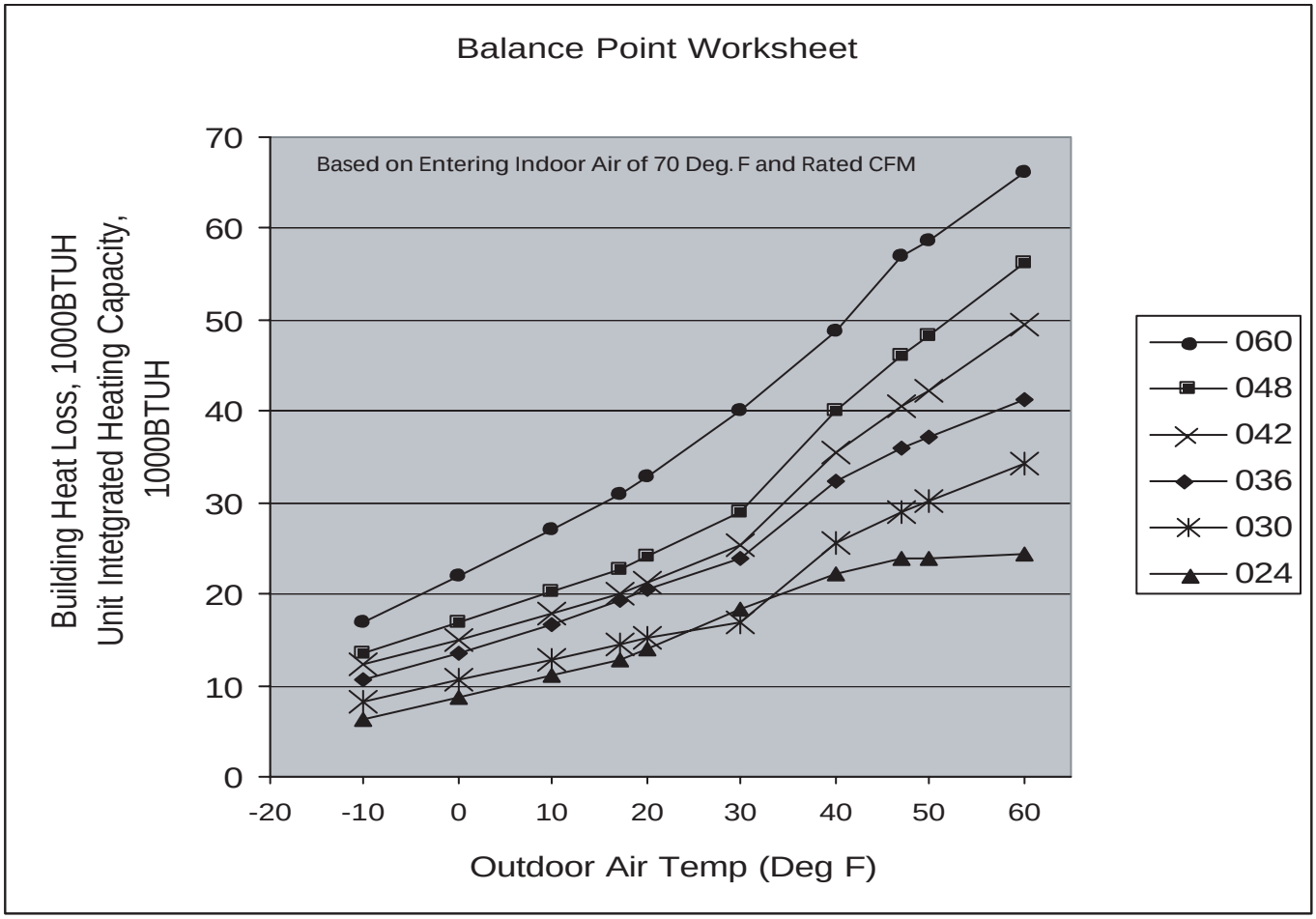
To convert a unit to downflow discharge — Units are equipped with factory-installed inserts in the downflow openings. Removal of the inserts is similar to removing an electrical knock-out. Units installed in horizontal discharge orientation do not require duct covers.

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

Minimum cooling airflow — Minimum cooling airflow is 350 cfm per ton in cooling mode. Airlow can be lower in certain modes when humidity removal is an issue.

Minimum ambient cooling operation temperature — All standard units have a minimum ambient cooling operating temperature of 55°F (12.8°C). With accessory low ambient temperature kit, units can operate at temperatures down to 0°F (17.8°C).

Maximum operating outdoor air temperature for cooling is 125°F (51.7°C).



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ELECTRICAL DATA

604D Electrical Data

604D UNIT SIZE	V-PH-Hz	VOLTAGE RANGE		COMPRESSOR		OUTDOOR FAN MOTOR	INDOOR FAN MOTOR	ELECTRIC HEAT		POWER SUPPLY		
		Min	Max	RLA	LRA	FLA	FLA	NOMI-NAL 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	-/- 3.8/5.0 5.4/7.2 7.5/10.0	-/- 18.1/20.8 26/30 36.1/41.7	22.1/22.1 44.6/48.1 54.6/59.6 67.2/74.2	30/30 60/60 - -	- - 70/70 80/80
030	208/230-1-60	187	253	15.9	73.0	0.9	4.3	-/- 3.8/5.0 5.4/7.2 7.5/10.0 11.3/15.0	-/- 18.1/20.8 26/30 36.1/41.7 54.2/62.5	25.1/25.1 47.6/51.1 57.6/62.6 70.2/77.2 92.8/103.2	30/30 - - - -	- 60/70 70/80 80/90 100/110
036	208/230-1-60	187	253	16.9	83.0	0.9	6.8	-/- 3.8/5.0 5.4/7.2 7.5/10.0 11.3/15.0	-/- 18.1/20.8 26/30 36.1/41.7 54.2/62.5	28.8/28.8 51.4/54.9 61.3/66.3 74.0/80.9 96.5/107	35/35 - - - -	- 70/70 80/80 90/90 100/110
	208/230-3-60	187	253	12.2	77.0	1.6	6.8	-/- 3.8/5.0 7.5/10.0 11.3/15.0	-/- 10.4/12.0 20.8/24.1 31.3/36.1	23.7/23./ 36.7/38.7 49.7/53.7 62.7/68.8	30/30 50/50 60/60 -	- - - 70/80
042	208/230-1-60	187	253	22.4	105.0	0.9	6.8	-/- 3.8/5.0 5.4/7.2 7.5/10.0 11.3/15.0 15.0/20.0	-/- 18.1/20.8 26/30 36.1/41.7 54.2/62.5 72.2/83.3	35.7/35.7 58.3/61.7 68.2/73.2 80.8/87.8 103.4/113.8 126.0/139.9	45/45 - - - - -	- 80/80 90/90 100/100 125/125 150/150
	208/230-3-60	187	253	15.4	88.0	0.9	6.8	-/- 3.8/5.0 7.5/10.0 11.3/15.0 15.0/20.0	-/- 10.4/12.0 20.8/24.1 31.3/36.1 41.6/48.0	27.0/27.0 40.0/42.0 53.0/57.0 66.0/72.1 78.9/86.9	35/35 60/60 - - -	- - 70/70 80/80 90/100
048	208/230-1-60	187	253	21.3	109.0	1.6	6.8	-/- 3.8/5.0 5.4/7.2 7.5/10.0 11.3/15.0 15.0/20.0	-/- 18.1/20.8 26/30 36.1/41.7 54.2/62.5 72.2/83.3	35.0/35.0 57.6/61.1 67.5/72.5 80.2/87.1 102.7/113.2 125.3/139.2	45/45 - - - - -	- 80/80 90/90 100/100 125/125 150/150
	208/230-3-60	187	253	14.7	91.0	1.6	6.8	-/- 3.8/5.0 7.5/10.0 11.3/15.0 15.0/20.0	-/- 10.4/12.0 20.8/24.1 31.3/36.1 41.6/48.0	26.8/26.8 39.8/41.8 52.8/56.8 65.9/71.9 78.7/86.7	35/35 60/60 - - -	- - 70/70 80/80 90/90
060	208/230-1-60	187	253	26.9	145.0	1.5	9.1	-/- 3.8/5.0 5.4/7.2 7.5/10.0 11.3/15.0 15.0/20.0	-/- 18.1/20.8 26/30 36.1/41.7 54.2/62.5 72.2/83.3	44.2/44.2 66.8/70.3 76.7/81.7 89.4/96.3 111.9/122.4 134.5/148.4	60/60 - - - - -	- 90/100 100/110 110/125 150/150 150/175
	208/230-3-60	187	253	17.6	123.0	1.5	9.1	-/- 3.8/5.0 7.5/10.0 11.3/15.0 15.0/20.0	-/- 10.4/12.0 20.8/24.1 31.3/36.1 41.6/48.0	32.6/32.6 45.6/47.6 58.7/62.7 71.7/77.7 84.6/92.6	40/40 60/60 - - -	- - 70/70 80/80 90/90

See Legend and Notes on next page.

LEGEND

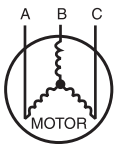
FLA	--	Full Load Amps
LRA	--	Locked Rotor Amps
MCA	--	Minimum Circuit Amps
MOCP	--	Maximum Overcurrent Protection
RLA	--	Rated Load Amps

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

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

EXAMPLE: Supply voltage is 230-3-60.



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

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

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

$$\% \text{ Voltage Imbalance} = 100 \times \frac{2}{229} = 0.8\%$$

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.

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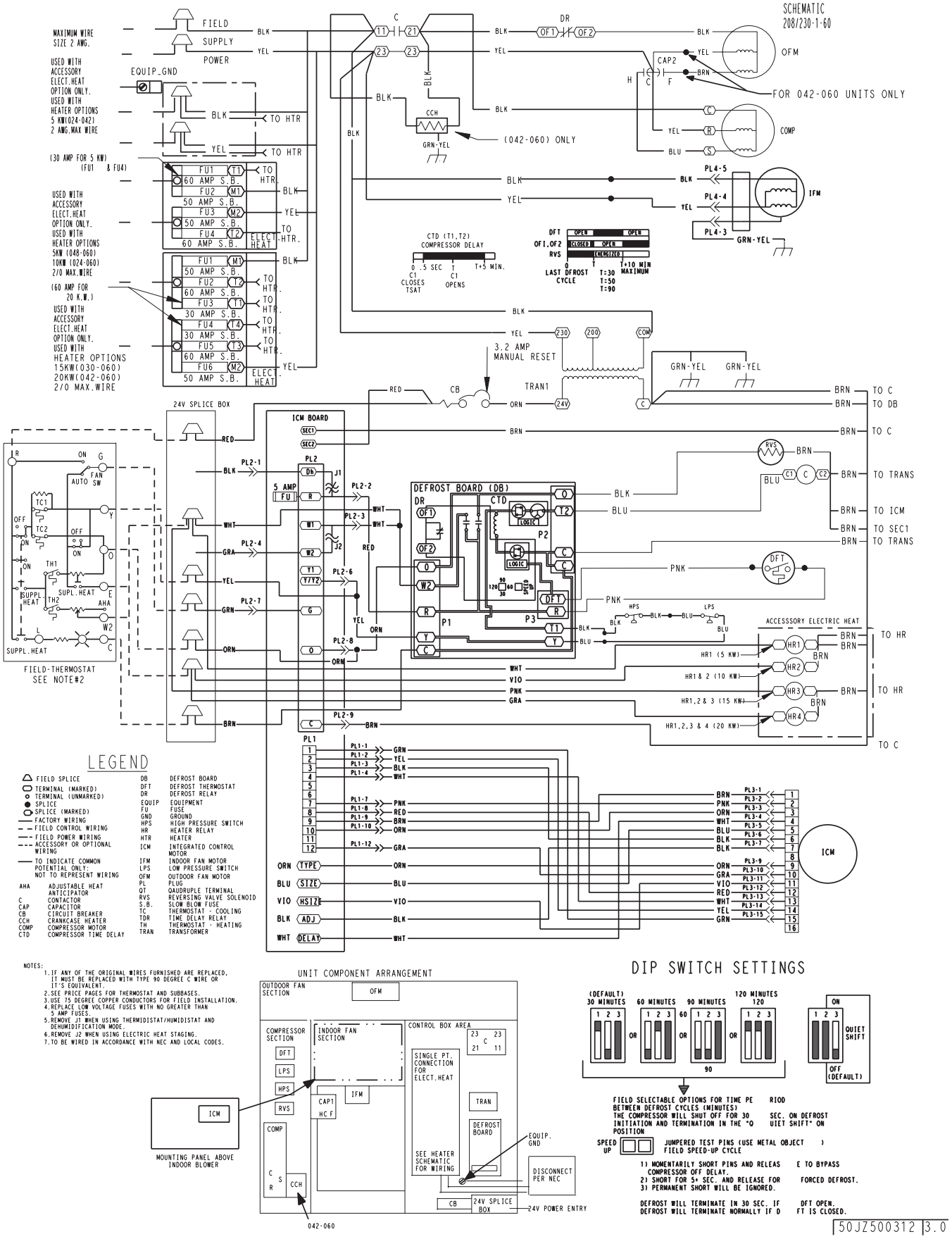
TYPICAL WIRING SCHEMATIC - 208/230-1-60



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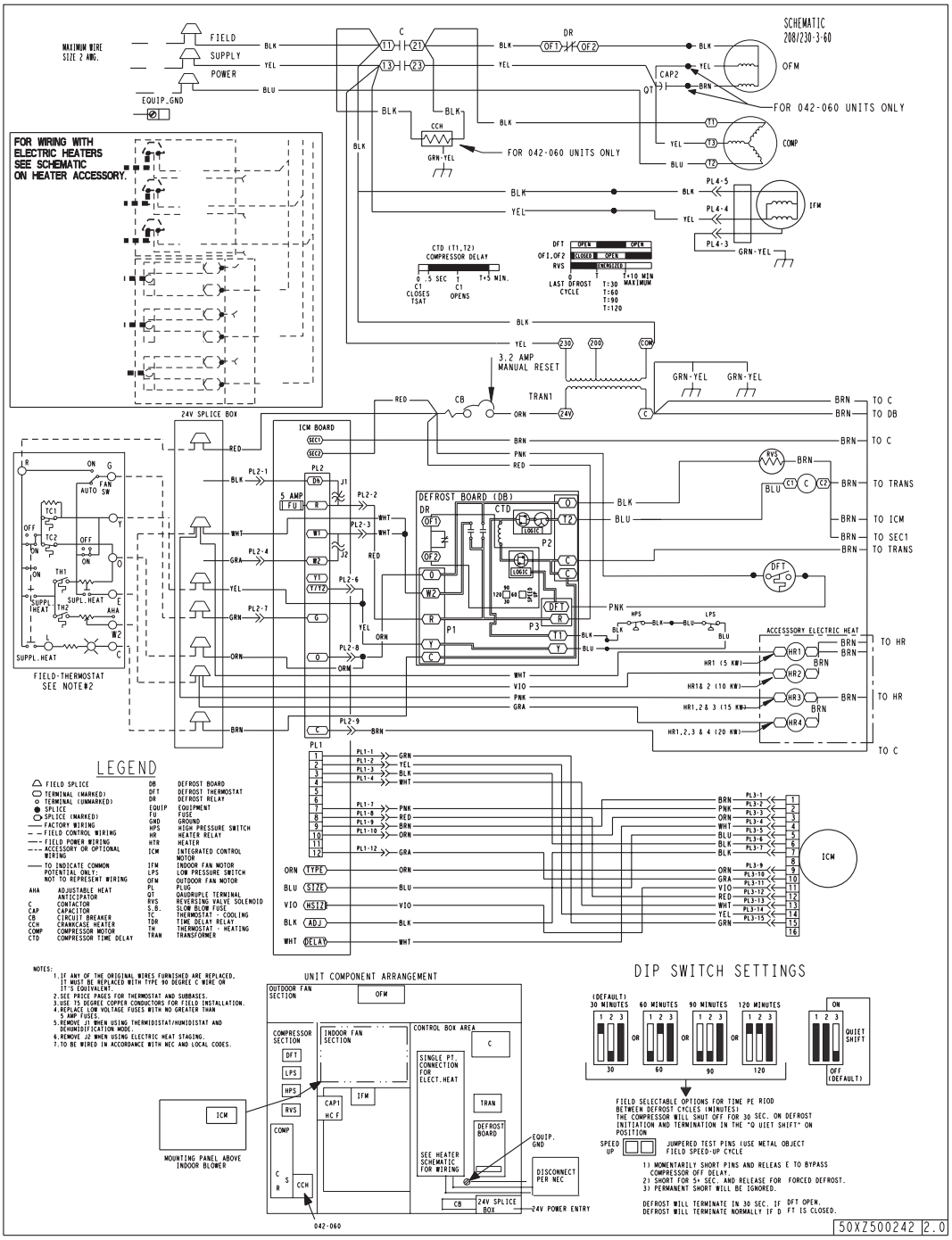
TYPICAL WIRING SCHEMATIC - 208/230-3-60



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CONTROLS

Operating sequence

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 closes 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 and starts the indoor-fan motor (IFM).

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

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

A circuit is made to C, starting COMP and OFM. Circuit R-G also is complted, 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 easy sleect™ board.

Heat Pump 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 is also completed, energizing BR and starting IFM.

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 third 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.

Note:

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 (CONT)

Packaged Heat Pumps

Constant Volume Application

HVAC Guide Specifications

Size Range: **2 to 5 Tons, Nominal Cooling**

Carrier Model Number: **604D**

Part 1—General

SYSTEM DESCRIPTION

Outdoor, packaged, air-to-air heat pump unit utilizing a hermetic scroll compressor for 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 210/240-03 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-22), and special features required prior to field start-up.

B. Unit Cabinet:

4. Unit cabinet shall be constructed of phosphated, zinc-coated, pre-painted steel capable of withstanding 500 hours of salt spray.
5. Normal service shall be through a single removable cabinet panel.
6. The unit shall be constructed on a rust proof unit base that has an externally trapped, integrated sloped drain.
7. 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.
8. Unit shall have a field-supplied condensate trap.
9. Metal Insulated Duct Covers for side discharge will be standard on all sizes.
10. Unit insulation conforms to ASHRAE 62P.

C. Fans:

1. The indoor fan shall be 3-speed, direct-drive, 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 fixed orifice feed type.

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.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 125°F (51.7°C) ambient outdoor temperature per maximum load criteria of ARI Standard 240-94.
2. Compressor with standard controls shall be capable of operation down to 40°F (4.4°C) ambient outdoor temperature in cooling mode.
3. Unit shall be provided with 30-second fan time delay after the thermostat is satisfied.

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. Condenser fan motor shall be totally enclosed.

L. Special Features Available:

1. Louver Grille:
   Wire grille shall be standard on all units. Louver grille shall be available as a factory-installed option to provide hail guard and vandalism protection.

GUIDE SPECIFICATIONS (CONT)

2. Coil Options:
   Shall include factory-installed optional copper/copper and vinyl-coated refrigerant coils.
3. 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. wc pressure differential.
   c. Spring return motor shuts off outdoor damper on power failure.
4. Flat Roof Curb:
   Curbs shall have seal strip and a wood nailer for flashing and shall be installed per manufacturer's instructions.
5. Manual Outdoor Air Damper:
   Package shall consist of damper, birdscreen, and rainhood which can be preset to admit outdoor air for year-round ventilation.
6. Thermostat:
   To provide for one-stage heating and cooling in addition manual or automatic changeover and indoor fan control.
7. 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 (-17.7°C) outdoor ambient temperature.
8. Filter Rack Kit:
   Shall provide filter mounting for downflow applications.
9. Controls Upgrade Kit:
   Shall provide high and low pressure safety protection.
10. Square-To-Round Duct Transitions (024-048):
    Shall have the ability to convert the supply and return openings from rectangular to round.
11. Crankcase Heater:
    Shall provide anti-floodback protection for lowload cooling applications.
12. Electric heaters:
    a. Electric heater shall be available as a fieldinstalled 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.

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Replaces: NEW