TEMPSTAR®
Heating and Cooling Products

PAH

Product Specifications

COMMERCIAL HIGH EFFICIENCY PACKAGE AIR CONDITIONING UNITS R−22 SINGLE PACKAGE ROOFTOP 6 − 15 TONS (3−Phase)

PAH072

PAH090−120

PAH155−180

BUILT TO LAST, EASY TO INSTALL AND SERVICE

- One−piece, high efficiency electric cooling with a low profile, prewired, tested, and charged at the factory.
- Field convertible supply and return openings (072−120) are intended for installation on a roof top or ground level.
- Hermetic−type scroll compressor, single compressor on 072 models, dual compressors on 090−180.
- Refrigeration system: loss−of−charge, freeze protection, and high pressure safety switches
- Units 090 to 180 have 2−stage cooling operation
- Refrigerant circuits contain a filter drier to trap dirt and moisture
- Non−corrosive condensate pan on 072−120 models with choice of bottom or side drain connections. All models have self draining sloping design.
- Adjustable belt drive indoor fan standard on all units, with permanently lubricated motors
- Direct−drive propeller outdoor fan totally enclosed with permanently lubricated bearings
- Prepainted, galvanized steel cabinet, primer inner panels, certified at 500−hr salt spray test and noncorrosive screws
- Easily removable panels provide ready access to unit components for rapid removal or maintenance
- Two inch disposable fiberglass type return air filters in dedicated rack with tool−less filter access door
- Outdoor temperature cooling operation down to 25°F and up to 125°F
- Fixed orifice metering devices on 072−120 units and TXV's on 155−180 units to precisely control refrigerant flow
- 24−Volt control circuit with resettable circuit breaker on 072−120 models
- Indoor and outdoor coils constructed of aluminum fins mechanically bonded to seamless copper tubes
- Thru−the−bottom power entry capability
- 25% Manual outside air damper on 155 and 180 models

WARRANTY

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

ISO 9001:2000

ASHRAE 90.1 COMPLIANT

155−180

ARI Standard 340/360

As an Energy Star® Partner, International Comfort Products has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

UNIT PERFORMANCE DATA

UNIT PAH 3−Phase	NOMINAL TONS	COOLING			Unit Dimensions H x W x L	Unit Weight
		Net Cap. (Btuh)	EER	Total kW		
PAH072*0A00AA	6	74,000	11.0	6.7	41−5/16" x 45" x 73−11/16"	540
PAH090*0A00AA	7½	90,000	11.0	8.2	41−5/16" x 57−3/4" x 87−3/8"	755
PAH102*0A00AA	8½	104,000	11.8	8.8	49−5/16" x 57−3/4" x 87−3/8"	895
PAH120*0A00AA	10	120,000	11.0	10.9	49−5/16" x 57−3/4" x 87−3/8"	915
PAH155*0A00AA	12½	152,000	10.80	14.1	45" x 86−1/8" x 87−3/8"	1575
PAH180*0A00AA	15	176,000	10.50	16.3	45" x 86−1/8" x 87−3/8"	1650

* Indicates Unit voltage: H = 208/230v, L = 460v, S = 575v

NOTE: BASE MODEL NUMBERS LISTED. SEE MODEL NOMENCLATURE LISTING FOR ADDITIONAL OPTIONS

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MODEL NOMENCLATURE

MODEL SERIES	P	A	H	090	H	0	A	00	A	A	A

P = Package

A = Air Conditioner

H = High Efficiency

072 = 72,000
090 = 90,000
102 = 102,000
120 = 120,000
155 = 155,000
180 = 180,000

NOMINAL COOLING BTU/h

H = 208/230−3−60
L = 460−3−60
S = 575−3−60

VOLTAGE

0 = No Heat

A = Standard Motor
B = High Static Motor

MOTOR OPTION

00 = No Factory Installed Options

A = Aluminum/Copper Outdoor Coil

OUTDOOR COIL

A = Initial Offering

SALES DIGIT

A = Original Design

ENGINEERING DIGIT

FEATURES/BENEFITS

Every compact one-piece unit arrives fully assembled, charged, tested, and ready to run.

QUIET, EFFICIENT OPERATION AND DEPENDABLE PERFORMANCE

Compressors have vibration isolators for quiet operation. Efficient fan and motor design permits operation at low sound levels.

Unit sizes 090−180 offer lower utility costs through part-load operation using 2 stages of cooling.

Quiet and efficient operation is provided by belt-driven evaporator fans. The belt-driven evaporator-fan is equipped with variable-pitch pulleys which allow adjustment within the rpm ranges of the factory-supplied pulleys.

Increased operating efficiency is achieved through computer-designed coils featuring staggered internally enhanced copper tubes. Fins are ripple-edged for strength, lanced, and double waved for higher heat transfer.

DURABLE, DEPENDABLE CONSTRUCTION

Designed for durability in any climate, the weather-resistant cabinets are constructed of galvanized steel and bonderized, and all exterior panels are coated with a prepainted baked enamel finish. The paint finish is non-chalking, and is capable of withstanding ASTM (American Society for Testing and Materials) B117 500-hour Salt Spray Test. All internal cabinet panels are primed, permitting longer life and a more attractive appearance for the entire unit.

In addition, all size 072−120 units are designed with a single, continuous top piece to eliminate any possible leaks at seams or gasketing. Totally enclosed condenser-fan motors and permanently lubricated bearings provide additional unit dependability.

EASY INSTALLATION AND CONVERSION

All Units are Shipped in the Vertical Duct Configuration for fit-up to standard roof curbs.

All units feature a base rail design with forklift slots and rigging holes for easier maneuvering. Durable packaging protects all units during shipment and storage.

The units can be easily converted from a vertical to a horizontal duct configuration by relocating the panels supplied with the unit (size 072−120 only).

To Convert 072−120 Units from vertical to horizontal discharge, simply relocate 2 panels. The same basic unit can be used for a variety of applications and can be quickly modified at the jobsite.

To Convert 155−180 Units from vertical to horizontal discharge, use the optional horizontal supply/return adapter roof curb (PAH155,180).

Convenient Duct Openings in the unit basepans permit side-by-side or concentric duct connections without requiring internal unit modification.

NOTE: On units using horizontal supply and return, the accessory barometric relief or power exhaust MUST be installed on the return ductwork.

Thru-The-Bottom Service Connection Capability comes standard with the rooftop unit to allow power and control wiring and gas connections to be routed through the unit's basepan, thereby minimizing roof penetrations (to prevent water leaks). Power and control connections are made on the same side of the unit to simplify installation.

The Non-Corrosive Sloped Condensate Drain Pan (**Size 072−120)** permits either an external horizontal side condensate drain (outside the roof curb) or an internal vertical bottom drain (inside the roof curb). Both options require an external, field-supplied P-trap.

Standard 2-in. Throwaway Filters are easily accessed through a removable panel located above the air intake hood. No tools are required to change unit filters.

Field-Installed Accessory Electric Heaters are available in a wide range of capacities. An available single-point wiring kit makes installation simple.

Low Voltage Wiring Connections are easily made thanks to the large terminal board which is located for quick, convenient access.

In addition, color-coded wires permit easy tracing and diagnostics.

PROVEN COMPRESSOR RELIABILITY

Design techniques feature computer-programmed balance between compressor, condenser, and evaporator. Hermetic compressors are equipped with compressor overcurrent and overtemperature protection to ensure dependability.

All units have piston (072−120) or TXV (thermostatic expansion valve) metering device (155−180) which precisely controls refrigerant flow, preventing slugging and flood-back, while maintaining optimum unit performance. Refrigerant filter driers are standard.

INTEGRATED ECONOMIZERS AND OUTDOOR-AIR DAMPERS

Available as accessories, economizers and manual outdoor-air dampers introduce outdoor air which mixes with the conditioned air, improving indoor-air quality and often reducing energy consumption.

All economizers incorporate a parallel blade, gear-driven damper system for efficient air mixing and reliable control. In addition, the standard damper actuator includes a spring return to provide reliable closure on power loss. The economizers for sizes 072−120 are equipped with up to 100% barometric relief capability for high outdoor airflow operations. Economizers for unit sizes 155−180 are compatible for vertical or horizontal return. An optional field-installed barometric relief package is available for size 155−180 units.

In addition, single-stage power exhaust is available as a field-installed accessory for Economizer to help maintain proper building pressure.

For units without economizer, year-round ventilation is enhanced by a manual outdoor-air damper. On size 072−120 units, a 50% manual damper is available as a field-installed accessory. Unit sizes 155−180 are equipped with a manual 25% damper.

INDOOR-AIR QUALITY

Sloped condensate pans minimize biological growth in rooftop units in accordance with ASHRAE Standard 62. Two-inch filters provide for greater particle reduction in the return air. The face-split evaporator coils improve the dehumidification capability of standard units, maximize building humidity control.

In addition, single-stage power exhaust is available as a field-installed accessory to help maintain proper building pressure.

For units without economizer, year-round ventilation is enhanced by an optional manual outdoor-air damper. On 072−120 units, another is available as a field-installed accessory. Unit sizes 155−180 are equipped with a manual 25% damper.

INDOOR-AIR QUALITY (IAQ)

Sloped condensate pans minimize biological growth in rooftop units in accordance with ASHRAE Standard 62. Two-inch filters provide for greater particle reduction in the return air. The face-split evaporator coils improve the dehumidification capability of standard units, maximize building humidity control.

ARI* CAPACITY RATINGS — PAH072−120

UNIT PAH	NOMINAL TONS	STANDARD CFM	NET COOLING CAP (Btuh)	TOTAL kW	EER	SOUND RATING (dB)	IPLV
072	6	2100	74,000	6.70	11.00	80	**
090	$7^1/_2$	3000	90,000	8.18	11.00	82	11.6
102	$8^1/_2$	3000	104,000	8.80	11.80	82	13.1
120	10	3200	120,000	10.91	11.00	84	11.4

LEGEND
EER — Energy Efficiency Ratio
IPLV — Integrated Part−Load Value
SEER — Seasonal Energy Efficiency Ratio
*Air−Conditioning & Refrigeration Institute.
†Applies only to units with capacity of 65,000 Btuh or less.
**The IPLV is not applicable to single-compressor units.

NOTES:
1. Rated in accordance with ARI Standard 210/240 (072−120 units) or 360 (150 units) and 270 (072−120 units).
2. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
   Cooling Standard: 80°F db, 67 wb indoor entering−air temperature and 95°F db outdoor entering−air temperature.
   IPLV Standard: 80°F db, 67°F wb indoor entering−air temperature and 80°F db outdoor entering−air temperature.

ARI Standard 210/240 UAC

Sizes 036-120 Only

3. All PAH 072−120 units are in compliance with ASHRAE 90.1−1999 Energy Standard for minimum SEER and EER requirements. Refer to state and local codes or visit the following website: http://bcap−energy.org to determine if compliance with this standard pertains to a given geographical area of the United States.
4. All PAH 072−120 units are Energy Star certified.

ARI* CAPACITY RATINGS — PAH155,180

UNIT PAH	NOMINAL TONS	NET COOLING CAPACITY (Btuh)	TOTAL WATTS	EER	SOUND RATING (decibels)	IPLV
155	12	152,000	14,074	10.80	8.8	11.8
180	15	176,000	16,296	10.80	8.8	11.7

LEGEND
db — Dry Bulb
EER — Energy Efficiency Ratio
IPLV — Integrated Part-Load Values
wb — Wet Bulb
*Air Conditioning and Refrigeration Institute.

NOTES:
1. Rated in accordance with ARI Standards 360−93 and 270−95.
2. ARI ratings are net values, reflecting the effects of circulating fan heat.
3. Ratings are based on:
   Cooling Standard: 80°F db, 67°F wb indoor entering-air temperature and 95°F db air entering outdoor unit.
   IPLV Standard: 80°F db, 67°F wb indoor entering-air temperature and 80°F db outdoor entering-air temperature.
4. All PAH155, 180 units are in compliance with ASHRAE 90.1 2001 Energy Standard for minimum SEER and EER requirements. Refer to state and local codes or visit the following website: http://bcap−energy.org to determine if compliance with this standard pertains to a given geographical area of the United States.

ARI Standard 340/360

LOW OUTDOOR AIR TEMPERATURE COOLING OPERATION LIMITS

UNIT SIZE PAH	TEMPERATURE LIMIT (F)		
	Standard Unit	Unit With Low Ambient Kit	Unit With Low Ambient Head Pressure Control Kit
155, 180	40	20	−20

OPTIONS AND ACCESSORIES
PAH 072−120

ITEM	OPTION*	ACCESSORY†
High Static Motors and Drives	X	
Copper Fins Outdoor Coil		
Economizer with Controller		X
Electric Heat		X
Electronic Programmable Thermostat**		X
Indoor Air Quality (CO_2) Sensor (For Return Air)		X
Manual Outdoor−Air Damper		X
Low Ambient Kits		X
Outdoor Air Enthalpy Sensor		X
Outdoor Coil Grille		X
Outdoor Coil Hail Guard Assembly		X
Outdoor Air/Return Air Temperature Sensor		X
Power Exhaust with Barometric Relief		X
Return Air Enthalpy Sensor		X
Return Air Temperature Sensor		X
Roof Curbs (Vertical and Horizontal Discharge)		X
Thermostats and Subbases**		X
Thru−the−Bottom Utility Connections		X
Compressor Cycle Delay		X
Unit−Mounted Non−Fused Disconnect		

PAH 155−180

ITEM	OPTION*	ACCESSORY†
High Static Motors and Drives	X	
Barometric Relief Damper (Not for use with horizontal roof curb) sizes 155, 180 only		X
Economizer with Controller		X
Electronic Programmable Thermostat**		X
Horizontal Adapter Curb		X
Indoor Air Quality (CO_2) Sensor		X
Manual Outdoor−Air Damper (Standard 155−180 models)	X	X
Low Ambient Kit		X
Outdoor Air Enthalpy Sensor		X
Power Exhaust without Barometric Relief		X
Return Air Enthalpy Sensor		X
Return Air Temperature Sensor		X
Roof Curbs (Vertical and Horizontal Discharge)		X
Thermostats and Subbases		X
Compressor Cycle Delay		X
Winter Start Time Delay		X

*Factory−installed.
†Field−installed.
**Available through FAST Parts.

NOTES:
1. Refer to unit specifications or contact your local representative for accessory and option package information.
2. Some options may increase product lead times.

Roof Curbs (Horizontal and Vertical) permit installation and securing of ductwork to curb prior to mounting unit on the curb. 8−in., 14−in. and 24−in. roof curbs are available as field−installed accessories.

Economizer is available as a field−installed accessory in vertical supply/return configuration only for unit sizes 072−120. Vertical or horizontal configuration is available for unit sizes 155 and 180. (Economizer is available as a field−installed accessory for horizontal and/or vertical supply return configurations.) The Economizer is provided with an industry standard, standalone, solid−state controller that is easy to configure and troubleshoot. The Economizer is compatible with non−DDC applications. Economizer is equipped with a barometric relief damper capable of relieving up to 100% return air. Dry bulb outdoor−air temperature sensor is provided as standard. The return air sensor, indoor enthalpy sensor, and outdoor enthalpy sensor are provided as field−installed accessories to provide enthalpy control, differential enthalpy control, and differential dry bulb temperature control.

Manual Outdoor−Air Damper accessory can be preset to admit up to 50% outdoor air for year round ventilation.

Low Ambient Control accessory package maintains condensing temperature between 90°F and 110°F at outdoor ambient temperatures down to −20°F by condenser−fan speed modulation or condenser−fan cycling and wind baffles.

Electric Resistance Heaters are UL listed and available to match heating requirements. Single point kits available for each heater when required. Heaters are field−installed accessories.

Unit−Mounted, Non−Fused Disconnect Switch provides unit power shutoff. The switch is accessible from outside the unit and provides power off lockout capability

Convenience Outlet can be installed and internally mounted with easily accessible 115−v female receptacle. Requires separate filed supplied power source.

Compressor Cycle Delay prevents unit from restarting for minimum of 5 minutes after shutdown.

Thru−the−Bottom Utility Connectors permit electrical connections to be brought to the unit through the basepan. Connectors are a field−installed accessory.

Power Exhaust accessory will provide system exhaust of up to 100% of return air (vertical only). The power exhaust is a field−installed accessory (separate vertical and horizontal design).

ACCESSORIES − PAH 072−180

FLAT ROOF CURBS		
Model Number	**Description**	**Use With Model Size**
AXB035CLA	8” High Roof Curb	072
AXB035CMA	14” High Roof Curb	072
AXB035CHA	24” High Roof Curb	072
AXB045CLA	8” High Roof Curb	090 − 120
AXB045CMA	14” High Roof Curb	090 − 120
AXB045CHA	24” High Roof Curb	090 − 120
AXB060CMA	Vertical Discharge Roof Curb − 14” High	155, 180
AXB060CHA	Vertical Discharge Roof Curb − 24” High	155, 180
AXB065CHA	Horizontal Discharge Roof Curbs − 24” High	155, 180
AXB165CHA	Horizontal Discharge Roof Curbs − 24” High with Duct	155, 180

ECONOMIZERS		
Model Number	**Description**	**Use With Model Size**
DNECOMZR020A02	Vertical 3−Position −− with W7212 controller	072
DNECOMZR021A02	Vertical 3−Position −− with W7212 controller	090 − 120
DNECOMZR024A02	Horizontal 3−Position −− with W7212 controller	072
DNECOMZR025A02	Horizontal 3−Position −− with W7212 controller	090 − 120
DNECOMZR008C00	Vertical or Horizontal 3−Position −− with W7212 controller	155 , 180
Must use the ’DN’ model power exhaust with ’DN’ economizers		

ALTERNATE ECONOMIZERS		
Model Number	**Description**	**Use With Model Size**
AXB035EMA	Fully Modulating Economizer − Downflow	072
AXB035EPA	Three Position Economizer − Downflow	072
AXB035HEA	Fully Modulating Economizer − Horizontal	072
AXB035HPA	Three Position Economizer − Horizontal	072
AXB145EMA	Fully Modulating Economizer − Downflow	090
AXB245EMA	Fully Modulating Economizer − Downflow	102, 120
AXB145EPA	Three Position Economizer − Downflow	090
AXB245EPA	Three Position Economizer − Downflow	102, 120
AXB145HEA	Fully Modulating Economizer − Horizontal	090
AXB245HEA	Fully Modulating Economizer − Horizontal	102, 120
AXB145HPA	Three Position Economizer − Horizontal	090
AXB245HPA	Three Position Economizer − Horizontal	102, 120
AXB060EMA	Fully Modulating Economizer − Horizontal/Downflow	155, 180
AXB060EPA	Three Position Economizer − Horizontal/Downflow	155, 180

POWER EXHAUST		
Model Number	**Description**	**Use With Model Size**
DNPWREXH030A01	Vertical Power Exhaust 208/230 volt	072
DNPWREXH021A01	Vertical Power Exhaust 460 volt	072
DNPWREXH022A01	Vertical Power Exhaust 208/230 volt	090 − 120
DNPWREXH023A01	Vertical Power Exhaust 460 volt	090 − 120
DNPWREXH028A01	Horizontal Power Exhaust 208/230 volt	072 − 120
DNPWREXH029A01	Horizontal Power Exhaust 460 volt	072 − 120
DNPWREXH008B00	Power Exhaust 460 volt (field convertiable to 208/230 volt)	155, 180
DNPWREXH010B00	Power Exhaust 575 volt	155, 180
ALTERNATE POWER EXHAUST		
Model Number	**Description**	**Use With Model Size**
AXB035PEH	Power Exhaust 208/230 volt	072
AXB035PEL	Power Exhaust 460 volt	072
AXB035PES	Power Exhaust 575 volt	072
AXB145PEH	Power Exhaust 208/230 volt	090
AXB145PEL	Power Exhaust 460 volt	090
AXB145PES	Power Exhaust 575 volt	090
AXB245PEH	Power Exhaust 208/230 volt	102, 120
AXB245PEL	Power Exhaust 460 volt	102, 120
AXB245PES	Power Exhaust 575 volt	102, 120
AXB060PEH	Power Exhaust 208/230 volt	155, 180
AXB060PEL	Power Exhaust 460 volt	155, 180
AXB060PES	Power Exhaust 575 volt	155, 180

MANUAL OUTDOOR AIR DAMPERS		
Model Number	**Description**	**Use With Model Size**
DNMANDPR001A03	Manual Fresh Air Damper	072
DNMANDPR002A03	Manual Fresh Air Damper	090−120
DNBARREL001A00	Barometric Relief Damper	155, 180
ALTERNATE DAMPERS		
Model Number	**Description**	**Use With Model Size**
AXB035FAA	Manual Fresh Air Damper	072
AXB035FMA	Motorized Fresh Air Damper	072
AXB145FAA	Fresh Air Damper − 35% Manual	090
AXB245FAA	Fresh Air Damper − 35% Manual	102, 120
AXB145FMA	Fresh Air Damper − 35% Motorized	90
AXB245FMA	Fresh Air Damper − 35% Motorized	102, 120

LOW AMBIENT CONTROLS		
Model Number	**Description**	**Use With Model Size**
AXB035LAA	Low Ambient Kit (0 Deg. F)	072
AXB045LAA	Low Ambient / OFM Sequencing Kit (−20 Deg. F) 208/230v	090 − 120
AXB160LAA	OFM Sequencing kit (3 fans) (10 Deg.)	155, 180

WINTER START KIT		
Model Number	**Description**	**Use With Model Size**
DNWINSTR001A00	Low pressure switch bypass (time delay)	ALL

PHASE MONITOR CONTROL		
Model Number	**Description**	**Use With Model Size**
DNPHASE3001A01	Electronic phase monitor breaks ”R” control signal if trouble is detected	ALL

THROUGH−THE−BOTTOM/CURB POWER CONNECTION		
Model Number	**Description**	**Use With Model Size**
DNBTMPWR001A01	Thru−the−bottom electrical	072
DNBTMPWR002A01	Thru−the−bottom electrical	090 − 120
DNBTMPWR003A01	Thru−the−bottom electrical (AXB035PKA)	072
AXB045PKA	Thru−the−bottom electrical	090 − 120

ACCESSORIES − PAH 072−180 (cont.)

ECONOMIZER SENSORS		
Model Number	**Description**	**Use With Model Size**
DNTEMPSN002A00	Single or Differential Temp− (dry bulb) Control	ALL Economizers With W7212 Contoller
DNCBDIOX005A00	Single or Differential Temp− (dry bulb) Control	ALL Economizers With W7212 Contoller
DNENTDIF004A00	Return Air Enthalpy Sensor	ALL Economizers With W7212 Contoller
AXB078ENT	Enthalpy Control	ALL

ANTI−CYCLE TIMER		
Model Number	**Description**	**Use With Model Size**
NRTIMEGD001A00	Five minute compressor delay	ALL

CONCENTRIC DIFFUSERS AND DUCT KITS		
Model Number	**Description**	**Use With Model Size**
AXB035CTA	20” Round Concentric Duct Kit	072
AXB445CTA	20” Round Concentric Duct Kit	090
AXB545CTA	Concentric Duct Kit 18” x 28” Rect.	102
AXB645CTA	Concentric Duct Kit 18” x 32” Rect.	120
AXB160CTA	Concentric Duct Kit 18” x 36”	155, 180
AXB040CFA	Concentric Diffuser − Flush Mount	072
	Concentric Diffuser − Flush Mount (use with AXB445CTA)	090
AXB040CSA	Concentric Diffuser − Step Down	072
	Concentric Diffuser − Step Down (use with AXB445CTA)	090
AXB045CFA	Concentric Diffuser − Flush Mount (use with AXB545CTA)	102
AXB045CSA	Concentric Diffuser − Step Down (use with AXB545CTA)	102
AXB050CFA	Concentric Diffuser − Flush Mount (use with AXB645CTA)	120
AXB050CSA	Concentric Diffuser − Step Down (use with AXB645CTA)	120
AXB055CFA	Concentric Diffuser − Flush Mount (use with AXB160CTA)	155, 180
AXB055CSA	Concentric Diffuser − Step Down (use with AXB160CTA)	155, 180

ACCESSORIES − PAH 072−180 (cont.)

ELECTRIC HEATERS for 072−120 SIZE MODELS				
Model Size	**Voltage**	**kW**	**Electric Heater Model Number(s)**	**Single Point Wiring Kits Required**
072	208/230/240 (3 phase)	4.9/ 5.8/ 6.5	AES007EHA	−
		7.8/ 9.6/ 10.5	AES009EHA	−
		12.0/ 14.7/ 16.0	AES015EHA	−**
		15.8/ 19.3/ 21.0	AES009EHA+AES009EHA	AXB002SPA
		19.9/ 24.3/ 26.5*	AES009EHA+AES015EHA	AXB002SPA
	460/480 (3 phase)	5.5/ 6.0	AES006ELA	−
		10.6/ 11.5	AES011ELA	−
		12.9/ 14.0	AES013ELA	−
		21.1/ 23.0	AES011ELA+AES011ELA	−
		23.4/ 25.5*	AES011ELA+AES013ELA	−
090	208/230/240 (3 phase)	7.8/ 9.6/ 10.4	AES010EHA	AXB006SPA
		12.0/ 14.7/ 16.0	AES016EHA	AXB006SPA
		18.6/ 22.8/ 24.8	AES024EHA	AXB007SPA
		24.0/ 29.4/ 32.0	AES032EHA	AXB007SPA
		31.8/ 39.0/ 42.4*	AES032EHA+AES010EHA	AXB009SPA
	460/480 (3 phase)	12.8/ 13.9	AES014ELA	AXB006SPA
		15.2/ 16.5	AES016ELA	AXB006SPA
		25.6/ 27.8	AES027ELA	AXB006SPA
		30.4/ 33.0	AES033ELA	AXB006SPA
		38.4/ 41.7*	AES027ELA+AES014ELA	AXB008SPA
	575 (3 phase)	17.0	AES018ESA	AXB006SPA
		34.0	AES036ESA	AXB006SPA
102	208/230/240 (3 phase)	7.8/ 9.6/ 10.4	AES010EHA	AXB011SPA
		12.0/ 14.7/ 16.0	AES016EHA	AXB011SPA
		18.6/ 22.8/ 24.8	AES024EHA	AXB012SPA
		24.0/ 29.4/ 32.0	AES032EHA	AXB012SPA
		31.8/ 39.0/ 42.4*	AES032EHA+AES010EHA	AXB015SPA
	460/480 (3 phase)	12.8/ 13.9	AES014ELA	AXB011SPA
		15.2/ 16.5	AES016ELA	AXB011SPA
		25.6/ 27.8	AES027ELA	AXB011SPA
		30.4/ 33.0	AES033ELA	AXB011SPA
		38.4/ 41.7*	AES027ELA+AES014ELA	AXB014SPA
	575 (3 phase)	17.0	AES018ESA	AXB011SPA
		34.0	AES036ESA	AXB011SPA
120	208/230/240 (3 phase)	7.8/ 9.6/ 10.4	AES010EHA	AXB011SPA
		12.0/ 14.7/ 16.0	AES016EHA	AXB012SPA
		24.0/ 29.4/ 32.0	AES032EHA	AXB012SPA
		31.8/ 38.9/ 42.4*	AES032EHA+AES010EHA	AXB015SPA
		37.5/ 46.0/ 50.0*	AES016EHA+AES032EHA	AXB015SPA
	460/480 (3 phase)	12.8/ 13.9	AES014ELA	AXB011SPA
		15.2/ 16.5	AES016ELA	AXB011SPA
		30.4/ 33.0	AES033ELA	AXB011SPA
		38.4/ 41.7*	AES027ELA+AES014ELA	AXB014SPA
		46.0/ 50.0*	AES016ELA+AES033ELA	AXB014SPA
	575 (3 phase)	17.0	AES018ESA	AXB011SPA
		34.0	AES036ESA	AXB011SPA
		51.0	AES018ESA+AES036ESA	AXB014SPA

†AXB004SPA on units with convenience outlet

** AXB002SPA on high static units with convenience outlet

NOTES:

*Two heater packages required to provide kW indicated

1. The rated heater voltage is 240 and 480 v.
   If power distribution voltage varies from rated heater voltage, heater kW will vary accordingly
2. To determine heater kW at voltages other than those shown in table, use the following formula:
   Heater kWnew = Heater kW rated x (unit power distribution voltage/rated heater voltage)2
   As an example:
   For a 16 kW heater rated at 240 v with a power distribution voltage of 215 v
   kWnew = 16 kW (215/240)2
   kWnew = 12.8 kW (rating at 215 v)
3. 575v units have UL, Canada approval only. Electric heaters are not available for 072 or 155−180.

ACCESSORIES − PAH 155−180

ELECTRIC HEATERS for 155−180 SIZE MODELS			
Model Size	**Voltage (3 Phase)**	**kW**	**Electric Heater Model Number**
155	208/240	14/19	AES140EHA
		26/34	AES034EHA
		42/56	AES056EHA
	480	15	AES136EHA
		32	AES132ELA
		55	AES055ELA
180	208/240	26/34	AES034EHA
		42/56	AES056EHA
		56/75	AES075EHA
	480	32	AES132ELA
		55	AES055ELA
		80	AES080ELA

NOTES:

1. The rated heater voltage is 240 and 480 v.
   If power distribution voltage varies from rated heater voltage, heater kW will vary accordingly
2. To determine heater kW at voltages other than those shown in table, use the following formula:
   Heater kWnew = Heater kW rated x (unit power distribution voltage/rated heater voltage)2
   As an example:
   For a 16 kW heater rated at 240 v with a power distribution voltage of 215 v
   kWnew = 16 kW (215/240)2
   kWnew = 12.8 kW (rating at 215 v)
3. No Single Point Wiring Kits required on Sizes 155−300
4. 575v units have UL, Canada approval only. Electric heaters are not available for 072 or 155−180.

PHYSICAL DATA — PAH072

UNIT PAH		**072**
NOMINAL CAPACITY (tons)		6
OPERATING WEIGHT (lb)		
Unit		540
COMPRESSOR		Scroll
Quantity		1
Oil (oz)		60
REFRIGERANT TYPE		
Expansion Device		Fixed Orifice Metering Device
Operating Charge (lb-oz)		12–8
CONDENSER FAN		Propeller Type
Quantity...Diameter (in.)		1...22
Nominal Cfm		4100
Motor Hp...Rpm		1/4...1100
Watts Input (Total)		320
CONDENSER COIL		3/8–in. OD High–Efficiency Enhanced Copper Tubes, Lanced Aluminum Fins
Rows...Fins/in.		2...17
Total Face Area (sq ft)		21.3
EVAPORATOR FAN		Centrifugal Type, Belt Drive
Quantity...Size (in.)		1...10 x 10
Nominal Cfm		2400
Maximum Continuous Bhp		
	Standard	2.40
	High Static	2.90
Motor Frame		
	Standard	56
	High Static	56
Fan Rpm Range		
	Standard	1120–1585
	High Static	1300–1685
Motor Bearing Type		Ball
Maximum Fan Rpm		2100
Motor Pulley Pitch Diameter A/B (in.)		
	Standard	2.4/3.4
	High Static	3.4/4.4
Nominal Motor Shaft Diameter (in.)		
	Standard	5/8
	High Static	7/8
Fan Pulley Pitch Diameter (in.)		
	Standard	3.7
	High Static	4.5
Belt — Quantity...Type...Length (in.)		
	Standard	1...A...38
	High Static	1...A...40
Pulley Center Line Distance (in.)		14.7–15.5
Speed Change per Full Turn of Movable Pulley Flange (rpm)		
	Standard	95
	High Static	60
Movable Pulley Maximum Full Turns From Closed Position		
	Standard	5
	High Static	5
Factory Setting — Full Turns Open		
	Standard	3
	High Static	3 1/2
Factory Speed Setting (rpm)		
	Standard	1260
	High Static	1396
Fan Shaft Diameter at Pulley (in.)		5/8
EVAPORATOR COIL		3/8 in. OD High-Efficiency Enhanced Copper Tubes, Aluminum Double-Wavy Fins
Rows...Fins/in.		4...15
Total Face Area (sq ft)		7.3
HIGH-PRESSURE SWITCH (psig)		
Standard Compressor Internal Relief (Differential)		450 ± 50
Cutout		428
Reset (Auto.)		320
LOSS-OF-CHARGE/LOW-PRESSURE SWITCH (Liquid Line) (psig)		
Cutout		7 ± 3
Reset (Auto.)		22 ± 5
FREEZE-PROTECTION THERMOSTAT		
Opens (F)		30
Closes (F)		45
OUTDOOR-AIR INLET SCREENS		Cleanable. Screen size and quantity varies by option selected.
RETURN-AIR FILTERS		
Quantity...Size (in.)		**2...16 x 16 x 2**

LEGEND

Bhp — Brake Horsepower

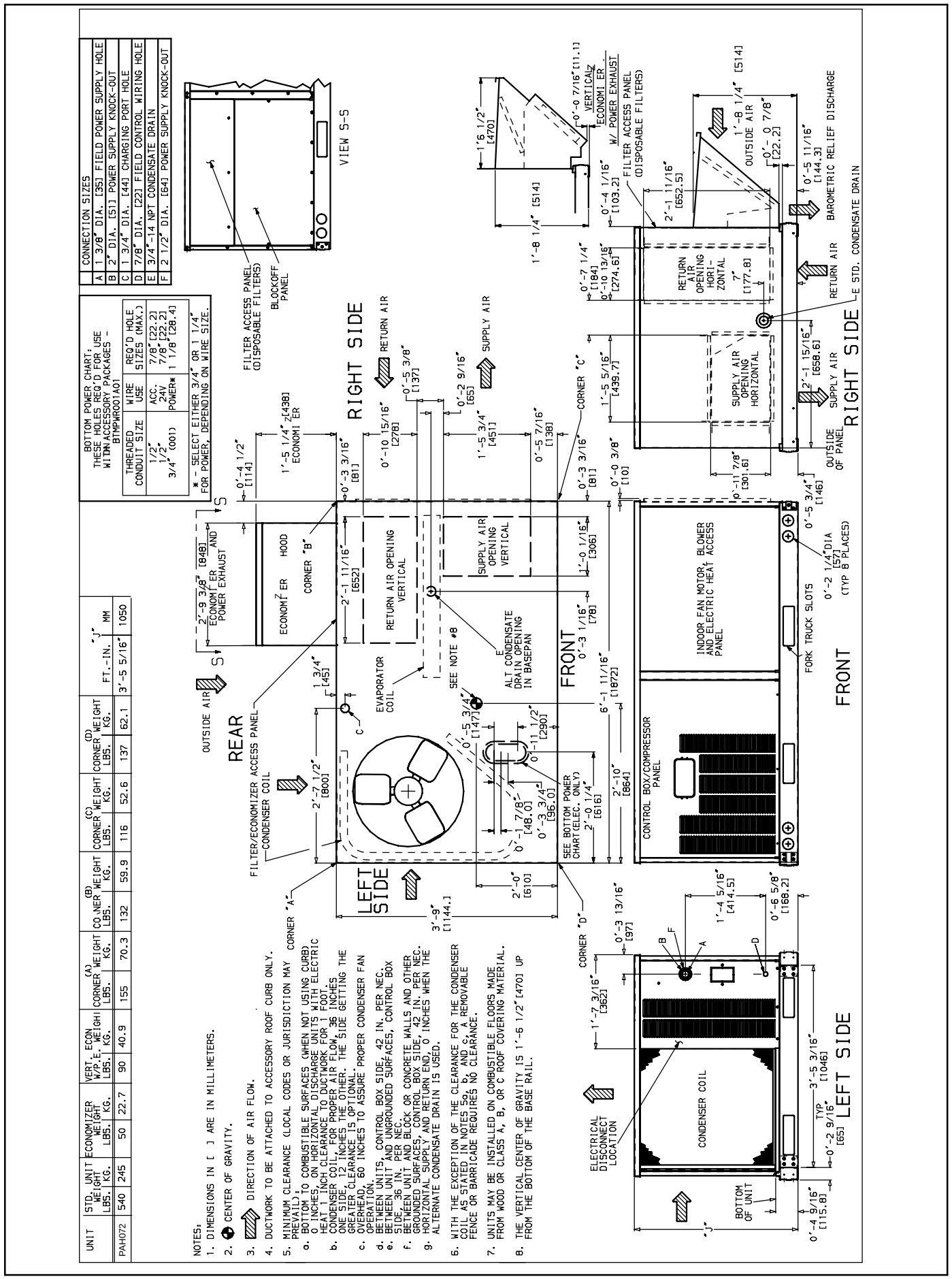
PHYSICAL DATA — PAH090−120

UNIT PAH		090	102	120
NOMINAL CAPACITY (tons)		7 1/2	8 1/2	10
OPERATING WEIGHT (lb)				
Unit		755	895	915
COMPRESSOR			Scroll	
Quantity		2	2	2
Oil (oz) (each compressor)		53	53	50
REFRIGERANT TYPE			R−22	
Expansion Device			Fixed Orifice Metering Device	
Operating Charge (lb-oz)				
Circuit 1 (first stage)		7−10	9−8	9−6
Circuit 2 (second stage)		8−2	8−13	10−9
CONDENSER FAN			Propeller Type	
Quantity...Diameter (in.)		2...22	2...22	2...22
Nominal Cfm		6500	6500	7000
Motor Hp...Rpm		1/4...1100	1/4...1100	1/4...1100
Watts Input (Total)		650	650	650
CONDENSER COIL			3/8-in. OD High-Efficiency Enhanced Copper Tubes, Lanced Aluminum Fins	
Rows...Fins/in.		2...17	2...17	2...17
Total Face Area (sq ft)		20.5	25.0	25.0
EVAPORATOR FAN			Centrifugal Type, Belt Drive	
Size (in.)		15 x 15	15 x 15	15 x 15
Nominal Cfm — Standard		3000	3400	4000
Maximum Continuous Bhp				
	Standard	2.90	2.90	3.70
	High Static	4.20	4.20	5.25
Motor Frame		56	56	56
Fan Rpm Range				
	Standard	840−1085	840−1085	860−1080
	High Static	860−1080	860−1080	830−1130
Motor Bearing Type		Ball	Ball	Ball
Maximum Fan Rpm		2100	2100	2100
Motor Pulley Pitch Diameter A/B (in.)				
	Standard	3.4/4.4	3.4/4.4	4.0/5.0
	High Static	4.0/5.0	4.0/5.0	2.8/3.8
Nominal Motor Shaft Diameter (in.)		7/8	7/8	7/8
Fan Pulley Pitch Diameter (in.)				
	Standard	7.0	7.0	8.0
	High Static	8.0	8.0	5.8
Belt — Quantity...Type...Length (in.)				
	Standard	1...A...48	1...A...51	1...A...53
	High Static	1...A...53	1...A...53	1...BX...45
Pulley Center Line Distance (in.)		16.75−19.25	16.75−19.25	15.85−17.50
Speed Change per Full Turn of Movable Pulley Flange (rpm)				
	Standard	50	50	45
	High Static	60	60	60
Movable Pulley Maximum Full Turns From Closed Position				
	Standard	5	5	5
	High Static	5	5	6
Factory Setting — Full Turns Open		5	5	5
Factory Speed Setting (rpm)				
	Standard	840	840	860
	High Static	860	860	890
Fan Shaft Diameter at Pulley (in.)		1	1	1
EVAPORATOR COIL			3/8-in. OD High-Efficiency Enhanced Copper Tubes, Aluminum Double-Wavy Fins, Face Split	
Rows...Fins/in.		3...15	4...15	4...15
Total Face Area (sq ft)		8.9	11.1	11.1
HIGH-PRESSURE SWITCH (psig)				
Standard Compressor Internal Relief (Differential)			450 ± 50	
Cutout			428	
Reset (Auto.)			320	
LOSS-OF-CHARGE/LOW-PRESSURE SWITCH (Liquid Line) (psig)				
Cutout			7 ± 3	
Reset (Auto.)			22 ± 5	
FREEZE-PROTECTION THERMOSTAT				
Opens (F)			30 ± 5	
Closes (F)			45 ± 5	
OUTDOOR-AIR INLET SCREENS			Cleanable. Screen size and quantity varies with option selected.	
RETURN-AIR FILTERS			Throwaway	
Quantity...Size (in.)		4...16 x 20 x 2	4...20 x 20 x 2	4...20 x 20 x 2

LEGEND

Bhp — Brake Horsepower

BASE UNIT DIMENSIONS — PAH072



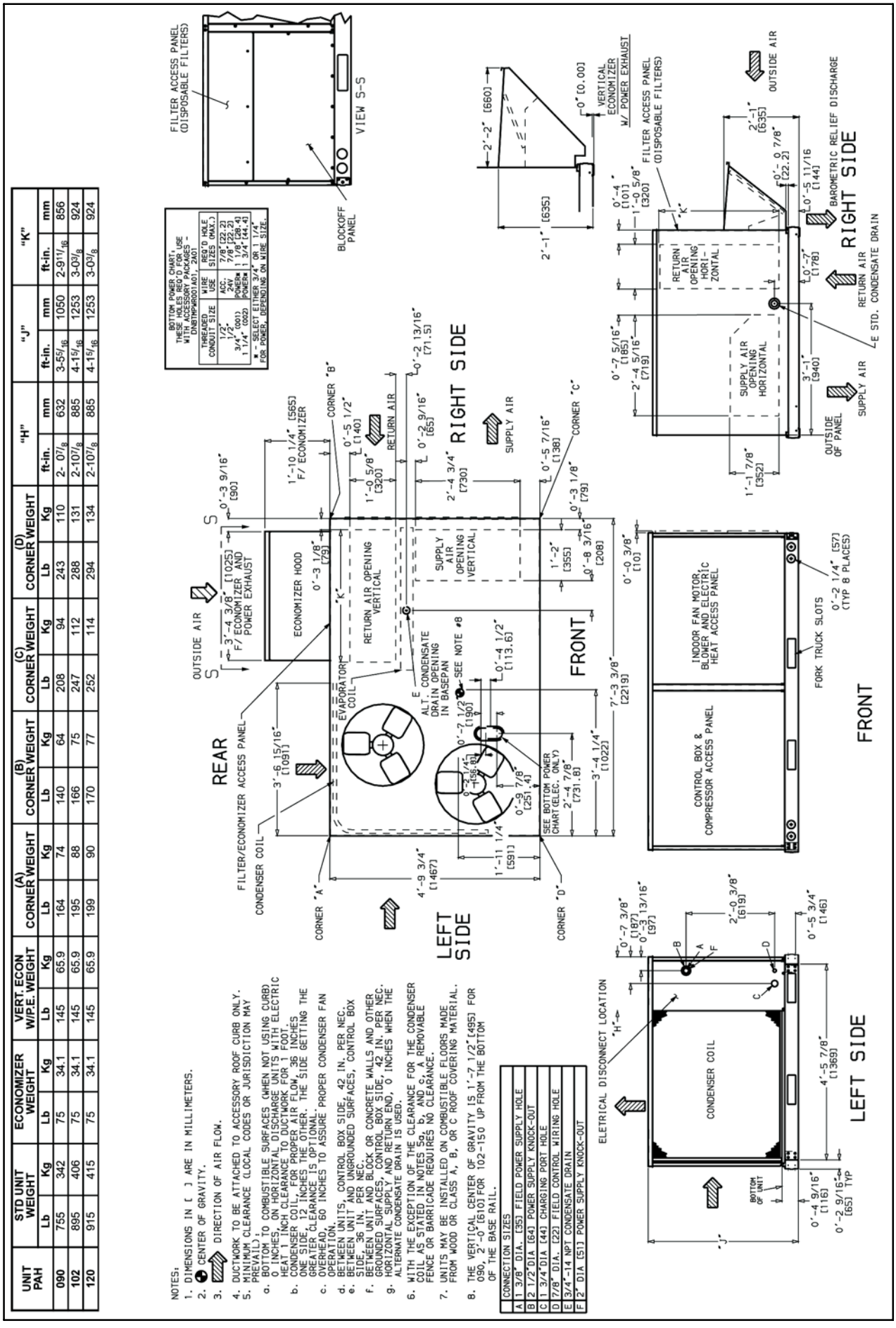
UNIT	STD. UNIT WEIGHT LBS. KG.	ECONOMIZER WEIGHT LBS. KG.	VERT. ECON W/P.E. WEIGHT LBS. KG.	(A) CORNER WEIGHT LBS. KG.	(B) CORNER WEIGHT LBS. KG.	(C) CORNER WEIGHT LBS. KG.	(D) CORNER WEIGHT LBS. KG.	"J" FT.-IN. MM
PAH072	540 245	50 22.7	90 40.9	155 70.3	132 59.9	116 52.6	137 62.1	3'-5 5/16" 1050

BASE UNIT DIMENSIONS — PAH090−120

UNIT PAH	STD UNIT WEIGHT		ECONOMIZER WEIGHT		VERT. ECON W/P.E. WEIGHT		(A) CORNER WEIGHT		(B) CORNER WEIGHT		(C) CORNER WEIGHT		(D) CORNER WEIGHT		"H"		"J"		"K"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	ft-in.	mm	ft-in.	mm	ft-in.	mm
090	755	342	75	34.1	145	65.9	164	74	140	64	208	94	243	110	2- $0^{7}/_{8}$	632	3-$5^{5}/_{16}$	1050	2-$9^{11}/_{16}$	856
102	895	406	75	34.1	145	65.9	195	88	166	75	247	112	288	131	2-$10^{7}/_{8}$	885	4-$1^{5}/_{16}$	1253	3-$0^{3}/_{8}$	924
120	915	415	75	34.1	145	65.9	199	90	170	77	252	114	294	134	2-$10^{7}/_{8}$	885	4-$1^{5}/_{16}$	1253	3-$0^{3}/_{8}$	924

NOTES:
1. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. ◐ CENTER OF GRAVITY.
3. ▨ DIRECTION OF AIR FLOW.
4. DUCTWORK TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY.
5. MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
   a. BOTTOM TO COMBUSTIBLE SURFACES (WHEN NOT USING CURB) 0 INCHES, ON HORIZONTAL DISCHARGE UNITS WITH ELECTRIC HEAT 1 INCH CLEARANCE TO DUCTWORK FOR 1 FOOT.
   b. CONDENSER COIL, FOR PROPER AIR FLOW, 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
   c. OVERHEAD, 60 INCHES TO ASSURE PROPER CONDENSER FAN OPERATION.
   d. BETWEEN UNITS, CONTROL BOX SIDE, 42 IN. PER NEC.
   e. BETWEEN UNIT AND UNGROUNDED SURFACES, CONTROL BOX SIDE, 36 IN. PER NEC.
   f. BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, CONTROL BOX SIDE, 42 IN. PER NEC.
   g. HORIZONTAL SUPPLY AND RETURN END, 0 INCHES WHEN THE ALTERNATE CONDENSATE DRAIN IS USED.
6. WITH THE EXCEPTION OF THE CLEARANCE FOR THE CONDENSER COIL AS STATED IN NOTES 5g, b, AND c, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
7. UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B, OR C ROOF COVERING MATERIAL.
8. THE VERTICAL CENTER OF GRAVITY IS 1'-7 1/2" [495] FOR 090, 2'-0" [610] FOR 102−150 UP FROM THE BOTTOM OF THE BASE RAIL.

CONNECTION SIZES	
A	1 3/8" DIA. [35] FIELD POWER SUPPLY HOLE
B	2 1/2" DIA [64] POWER SUPPLY KNOCK-OUT
C	1 3/4" DIA [44] CHARGING PORT HOLE
D	7/8" DIA. [22] FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
F	2" DIA [51] POWER SUPPLY KNOCK-OUT



PERFORMANCE DATA − PAH

COOLING CAPACITIES (cont)

PAH072 (6 TONS)

Temp (F) Air Ent Condenser (Edb)		Air Entering Evaporator — Cfm/BF											
		1800/0.05			2100/0.06			2400/0.06			3000/0.08		
		Air Entering Evaporator — Ewb (F)											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	86.7	80.7	74.4	88.8	82.7	76.6	90.5	84.4	78.2	92.6	86.3	81.0
	SHC	43.0	53.7	63.8	45.0	57.4	68.9	47.2	61.2	73.6	51.2	67.4	80.7
	kW	4.58	4.46	4.33	4.63	4.50	4.38	4.67	4.55	4.41	4.72	4.58	4.47
85	TC	84.1	78.2	72.0	86.4	80.3	74.1	88.2	81.7	75.7	90.2	84.0	78.8
	SHC	42.0	52.6	62.7	44.5	56.6	68.0	46.8	60.2	72.5	50.6	67.4	78.7
	kW	5.10	4.97	4.85	5.16	5.03	4.90	5.21	5.06	4.93	5.26	5.12	4.99
95	TC	81.3	75.3	69.2	83.4	77.3	71.3	85.1	78.9	72.9	87.2	80.6	76.2
	SHC	41.0	51.4	61.4	43.4	55.3	66.6	45.8	59.2	71.2	50.2	65.8	76.2
	kW	5.65	5.52	5.39	5.71	5.57	5.44	5.77	5.62	5.48	5.83	5.66	5.55
105	TC	77.9	72.0	66.1	80.0	73.8	68.0	81.6	75.3	69.6	83.4	77.1	73.2
	SHC	39.7	50.2	60.0	42.2	54.0	65.2	44.6	57.8	69.3	49.0	64.5	73.2
	kW	6.22	6.08	5.94	6.29	6.13	6.00	6.34	6.17	6.04	6.40	6.22	6.12
115	TC	74.7	68.4	61.8	75.9	70.0	64.1	77.6	71.3	66.5	78.7	73.0	70.1
	SHC	38.7	48.8	58.1	40.8	52.6	63.2	43.3	56.4	66.4	46.9	63.2	70.0
	kW	6.84	6.68	6.49	6.87	6.71	6.56	6.93	6.75	6.63	6.96	6.80	6.72
125	TC	70.3	63.6	57.2	71.8	65.5	59.1	72.9	66.8	61.9	74.0	68.6	66.4
	SHC	37.2	47.0	55.8	39.5	51.0	59.1	41.7	55.0	61.9	45.4	61.8	66.3
	kW	7.43	7.25	7.03	7.48	7.30	7.13	7.51	7.35	7.22	7.54	7.41	7.33

PAH090 (7 1/2 TONS)

Temp (F) Air Ent Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		2250/0.10			3000/0.11			3750/0.14		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	105.5	96.9	87.6	107.3	99.6	90.7	110.3	101.9	93.8
	SHC	50.6	63.6	75.7	53.3	69.2	83.7	58.0	76.6	92.2
	kW	5.15	5.07	5.04	5.16	5.11	5.06	5.20	5.13	5.07
85	TC	102.5	93.6	83.6	105.1	96.5	87.5	107.7	99.0	90.6
	SHC	49.7	62.4	73.9	52.8	68.4	82.2	57.3	75.9	90.0
	kW	5.86	5.79	5.73	5.89	5.82	5.77	5.93	5.86	5.78
95	TC	98.9	90.1	79.3	101.6	92.9	83.5	103.8	95.3	87.4
	SHC	48.5	61.2	71.9	51.9	67.2	80.2	56.2	74.9	87.3
	kW	6.65	6.58	6.49	6.69	6.61	6.53	6.72	6.64	6.57
105	TC	95.3	86.2	75.7	97.6	88.8	79.6	100.0	91.0	84.1
	SHC	47.3	59.6	70.2	50.7	65.9	78.0	55.3	73.6	84.1
	kW	7.51	7.44	7.31	7.55	7.48	7.36	7.59	7.50	7.41
115	TC	91.0	82.0	71.6	93.2	84.5	75.4	95.6	86.6	80.7
	SHC	45.9	58.0	68.1	49.3	64.2	75.3	54.2	72.1	80.7
	kW	8.43	8.33	8.20	8.46	8.37	8.27	8.52	8.42	8.34
125	TC	86.2	77.8	68.1	88.3	80.0	71.9	90.0	81.9	77.2
	SHC	44.1	56.4	66.3	47.5	62.6	71.8	52.1	70.1	77.2
	kW	9.38	9.29	9.14	9.43	9.34	9.24	9.47	9.38	9.32

PAH102 (8 1/2 TONS)

Temp (F) Air Ent Condenser (Edb)		Air Entering Evaporator — Cfm/BF															
		2550/0.11				3000/0.12				3400/0.13				4250/0.17			
		Air Entering Evaporator — Ewb (F)															
		57	62	67	72	57	62	67	57	62	67	72	57	62	67	72	57
75	TC	94.6	101.0	110.0	119.2	100.4	104.4	113.4	121.8	104.2	106.8	115.8	123.4	109.8	111.0	119.0	125.8
	SHC	94.6	84.4	69.4	54.4	100.4	92.4	75.0	57.2	104.2	99.0	80.0	59.8	109.8	110.4	89.4	64.2
	kW	5.72	5.76	5.76	5.82	5.74	5.76	5.80	5.86	5.74	5.76	5.82	5.88	5.76	5.78	5.84	5.90
85	TC	91.0	97.4	106.8	115.8	97.4	101.0	110.0	119.6	101.2	103.0	112.0	121.6	108.0	108.0	116.0	123.4
	SHC	91.0	83.0	68.8	53.2	97.4	91.2	74.2	57.0	101.2	97.6	78.8	59.6	108.0	108.0	89.4	64.2
	kW	6.46	6.5	6.52	6.58	6.50	6.52	6.54	6.60	6.50	6.52	6.54	6.64	6.54	6.54	6.60	6.64
95	TC	85.2	91.4	103.0	112.8	93.4	96.6	106.2	116.0	98.2	99.2	108.4	117.8	104.6	104.6	111.6	121.2
	SHC	85.2	80.4	67.2	52.6	93.4	89.4	73.0	55.8	98.2	96.2	78.2	58.8	104.6	104.6	88.0	64.6
	kW	7.24	7.28	7.36	7.42	7.30	7.32	7.38	7.44	7.34	7.36	7.4	7.46	7.36	7.36	7.42	7.50
105	TC	80.0	82.2	98.6	108.6	87.0	87.8	101.6	111.8	93.4	93.6	103.8	114.0	101.0	100.8	106.8	116.6
	SHC	80.0	76.6	65.6	51.2	87.0	85.6	71.6	54.8	93.4	93.2	76.6	57.8	101.0	100.8	86.8	63.6
	kW	8.08	8.12	8.26	8.32	8.16	8.16	8.28	8.36	8.20	8.20	8.3	8.38	8.28	8.28	8.30	8.40
115	TC	73.6	74.6	89.4	103.4	81.0	81.2	95.2	106.4	86.2	86.2	98.4	108.4	96.4	96.4	101.6	111.8
	SHC	73.6	73.0	62.2	49.6	81.0	81.2	69.4	53.0	86.2	86.2	75.0	56.4	96.4	96.4	85.4	62.8
	kW	9.00	9.00	9.16	9.28	9.08	9.08	9.22	9.30	9.14	9.14	9.26	9.34	9.22	9.22	9.30	9.38
125	TC	68.6	68.6	80.2	98.2	74.4	74.4	84.0	101.0	79.2	79.2	86.8	102.8	88.0	88.0	93.8	105.6
	SHC	68.6	68.6	59.0	48.0	74.4	74.4	65.4	51.6	79.2	79.2	71.0	54.6	88.0	88.0	82.8	61.0
	kW	9.98	9.98	10.14	10.32	10.06	10.06	10.18	10.36	10.14	10.14	10.22	10.38	10.24	10.24	10.28	10.42

See legends and notes on next page

PERFORMANCE DATA − PAH (cont)

COOLING CAPACITIES (cont)

PAH120 (10 TONS)													
Temp (F) Air Ent Condenser (Edb)		Air Entering Evaporator — Cfm/BF											
		3000/0.03			3200/0.03			4000/0.04			5000/0.04		
		Air Entering Evaporator — Ewb											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	140.3	129.4	115.0	141.2	130.4	118.1	145.2	134.0	122.1	147.5	136.6	125.3
	SHC	65.6	82.2	97.4	66.7	84.4	101.5	71.3	93.1	113.5	77.9	103.7	124.7
	kW	7.35	7.21	7.12	7.37	7.23	7.13	7.46	7.31	7.17	7.51	7.37	7.22
85	TC	137.7	125.3	110.0	138.9	126.6	113.6	142.6	130.6	117.7	144.6	133.3	122.3
	SHC	65.0	81.2	95.2	66.3	83.6	99.7	71.0	92.8	112.0	76.9	103.1	122.2
	kW	8.29	8.13	8.02	8.32	8.16	8.03	8.40	8.24	8.09	8.45	8.31	8.16
95	TC	133.8	120.7	103.0	135.1	121.9	107.2	138.8	125.8	112.8	141.7	128.5	118.5
	SHC	63.9	79.6	92.2	65.2	82.0	97.0	70.6	91.5	109.7	76.9	102.5	118.4
	kW	9.33	9.16	8.98	9.35	9.18	9.00	9.44	9.27	9.07	9.51	9.33	9.19
105	TC	128.7	115.4	96.5	129.8	116.6	99.7	133.7	120.3	107.1	136.7	122.8	114.5
	SHC	62.3	77.6	89.4	63.6	80.2	93.5	69.4	89.6	106.8	76.0	100.6	114.3
	kW	10.46	10.28	10.00	10.47	10.30	10.07	10.57	10.38	10.21	10.66	10.43	10.31
115	TC	123.2	109.1	90.8	124.3	110.3	92.2	127.9	114.4	100.8	130.9	116.8	110.1
	SHC	60.4	75.1	86.6	61.9	77.8	90.0	67.6	87.6	100.7	74.6	98.7	109.9
	kW	11.66	11.47	11.20	11.68	11.51	11.25	11.77	11.60	11.41	11.89	11.66	11.58
125	TC	117.5	101.8	86.2	118.5	103.0	87.4	121.6	107.1	96.0	124.1	110.3	104.8
	SHC	58.5	72.5	84.5	60.0	75.0	87.3	65.8	85.1	96.0	72.5	96.9	104.8
	kW	12.99	12.77	12.50	13.02	12.81	12.55	13.10	12.92	12.74	13.19	13.01	12.91

– Standard Ratings

LEGEND
BF — Bypass Factor
Edb — Entering Dry Bulb
Ewb — Entering Wet Bulb
kW — Compressor Motor Power Input
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. 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.

3. 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 x (1 – BF) x (edb – 80).

PERFORMANCE DATA − PAH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH072 (6 TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	**907**	**0.63**	**558**	**1006**	**0.80**	**708**	**1092**	**0.97**	**860**	1169	1.14	1015	1239	1.32	1174
1900	**945**	**0.72**	**638**	**1042**	**0.90**	**796**	1126	1.08	956	1201	1.26	1119	1271	1.45	1285
2000	**984**	**0.82**	**727**	**1078**	**1.00**	**892**	1160	1.19	1060	1235	1.39	1230	1303	1.58	1403
2100	**1024**	**0.93**	**823**	**1115**	**1.12**	**997**	1195	1.32	1173	1268	1.52	1350	1335	1.72	1531
2200	**1063**	**1.05**	**929**	1152	1.25	1111	1230	1.46	1294	1302	1.67	1480	1368	1.88	1668
2300	**1103**	**1.18**	**1044**	1189	1.39	1234	1266	1.60	1425	1337	1.82	1618	1402	2.04	1814
2400	1143	1.32	1168	1227	1.54	1367	1302	1.76	1566	1371	1.99	1767	1435	2.22	1970
2500	1183	1.47	1303	1265	1.70	1510	1339	1.93	1717	1406	2.17	1926	—	—	—
2600	1224	1.63	1448	1303	1.87	1663	1375	2.12	1878	1442	2.36	2095	—	—	—
2700	1264	1.81	1604	1342	2.06	1828	1412	2.31	2051	—	—	—	—	—	—
2800	1305	1.99	1772	1381	2.26	2003	—	—	—	—	—	—	—	—	—
2900	1346	2.20	1951	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

PAH072 (6 TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	1304	1.51	1337	1365	1.69	1503	1422	1.88	1674	1477	2.08	1848	1528	2.28	2025
1900	1335	1.64	1454	1395	1.83	1627	1452	2.03	1804	1506	2.23	1984	—	—	—
2000	1366	1.78	1580	1426	1.98	1760	1482	2.19	1943	1535	2.40	2130	—	—	—
2100	1398	1.93	1715	1457	2.14	1901	1512	2.35	2091	—	—	—	—	—	—
2200	1430	2.09	1858	1488	2.31	2052	—	—	—	—	—	—	—	—	—
2300	1462	2.27	2012	—	—	—	—	—	—	—	—	—	—	—	—
2400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 1120 to 1585 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.40.
3. See general fan performance notes.

PAH072 (6 TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	**907**	**0.63**	**558**	**1006**	**0.80**	**708**	**1092**	**0.97**	**860**	**1169**	**1.14**	**1015**	**1239**	**1.32**	**1174**
1900	**945**	**0.72**	**638**	**1042**	**0.90**	**796**	**1126**	**1.08**	**956**	**1201**	**1.26**	**1119**	**1271**	**1.45**	**1285**
2000	**984**	**0.82**	**727**	**1078**	**1.00**	**892**	**1160**	**1.19**	**1060**	**1235**	**1.39**	**1230**	1303	1.58	1403
2100	**1024**	**0.93**	**823**	**1115**	**1.12**	**997**	**1195**	**1.32**	**1173**	**1268**	**1.52**	**1350**	1335	1.72	1531
2200	**1063**	**1.05**	**929**	**1152**	**1.25**	**1111**	**1230**	**1.46**	**1294**	1302	1.67	1480	1368	1.88	1668
2300	**1103**	**1.18**	**1044**	**1189**	**1.39**	**1234**	**1266**	**1.60**	**1425**	1337	1.82	1618	1402	2.04	1814
2400	**1143**	**1.32**	**1168**	**1227**	**1.54**	**1367**	1302	1.76	1566	1371	1.99	1767	1435	2.22	1970
2500	**1183**	**1.47**	**1303**	**1265**	**1.70**	**1510**	1339	1.93	1717	1406	2.17	1926	1470	2.41	2136
2600	**1224**	**1.63**	**1448**	1303	1.87	1663	1375	2.12	1878	1442	2.36	2095	1504	2.60	2313
2700	**1264**	**1.81**	**1604**	1342	2.06	1828	1412	2.31	2051	1478	2.56	2275	1539	2.82	2501
2800	1305	1.99	1772	1381	2.26	2003	1450	2.52	2235	1514	2.78	2467	—	—	—
2900	1346	2.20	1951	1420	2.47	2191	1488	2.74	2431	—	—	—	—	—	—
3000	1387	2.41	2142	1459	2.69	2391	—	—	—	—	—	—	—	—	—

PAH072 (6 TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	**1304**	**1.51**	**1337**	**1365**	**1.69**	**1503**	**1422**	**1.88**	**1674**	**1477**	**2.08**	**1848**	**1528**	**2.28**	**2025**
1900	**1335**	**1.64**	**1454**	**1395**	**1.83**	**1627**	**1452**	**2.03**	**1804**	**1506**	**2.23**	**1984**	**1557**	**2.44**	**2168**
2000	**1366**	**1.78**	**1580**	**1426**	**1.98**	**1760**	**1482**	**2.19**	**1943**	**1535**	**2.40**	**2130**	**1586**	**2.61**	**2319**
2100	**1398**	**1.93**	**1715**	**1457**	**2.14**	**1901**	**1512**	**2.35**	**2091**	**1565**	**2.57**	**2284**	**1616**	**2.79**	**2481**
2200	**1430**	**2.09**	**1858**	**1488**	**2.31**	**2052**	**1543**	**2.53**	**2249**	**1596**	**2.76**	**2449**	—	—	—
2300	**1462**	**2.27**	**2012**	**1520**	**2.49**	**2212**	**1574**	**2.72**	**2416**	—	—	—	—	—	—
2400	**1495**	**2.45**	**2175**	**1552**	**2.68**	**2383**	—	—	—	—	—	—	—	—	—
2500	**1529**	**2.64**	**2349**	**1585**	**2.89**	**2564**	—	—	—	—	—	—	—	—	—
2600	**1562**	**2.85**	**2533**	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 1300 to 1685 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH090 ($7^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**511**	**0.53**	**492**	**591**	**0.73**	**680**	**660**	**0.95**	**885**	**722**	**1.19**	**1106**	**779**	**1.44**	**1342**
2300	**519**	**0.56**	**518**	**597**	**0.76**	**709**	**666**	**0.98**	**916**	**727**	**1.22**	**1140**	**784**	**1.48**	**1378**
2400	**534**	**0.61**	**571**	**611**	**0.82**	**768**	**678**	**1.05**	**982**	**739**	**1.30**	**1210**	**795**	**1.56**	**1453**
2500	**550**	**0.67**	**629**	**624**	**0.89**	**832**	**690**	**1.13**	**1051**	**750**	**1.38**	**1285**	**805**	**1.64**	**1533**
2550	**558**	**0.71**	**660**	**631**	**0.93**	**866**	**697**	**1.17**	**1088**	**756**	**1.42**	**1324**	**811**	**1.69**	**1574**
2600	**565**	**0.74**	**691**	**638**	**0.97**	**901**	**703**	**1.21**	**1125**	**762**	**1.46**	**1365**	**816**	**1.73**	**1617**
2700	**581**	**0.81**	**758**	**652**	**1.04**	**974**	**716**	**1.29**	**1204**	**774**	**1.55**	**1449**	**828**	**1.83**	**1707**
2800	**597**	**0.89**	**829**	**667**	**1.13**	**1051**	**729**	**1.38**	**1287**	**786**	**1.65**	**1538**	**839**	**1.93**	**1801**
2900	**613**	**0.97**	**905**	**681**	**1.22**	**1133**	**742**	**1.48**	**1376**	**799**	**1.75**	**1632**	851	2.04	1900
3000	**630**	**1.06**	**985**	**696**	**1.31**	**1220**	**756**	**1.58**	**1469**	**811**	**1.86**	**1731**	863	2.15	2004
3100	**646**	**1.15**	**1071**	**711**	**1.41**	**1313**	**770**	**1.68**	**1568**	**824**	**1.97**	**1835**	875	2.27	2114
3200	**663**	**1.25**	**1162**	**726**	**1.51**	**1411**	**784**	**1.79**	**1672**	**837**	**2.09**	**1944**	888	2.39	2229
3300	**679**	**1.35**	**1259**	**741**	**1.62**	**1514**	**798**	**1.91**	**1781**	851	2.21	2060	900	2.52	2351
3400	**696**	**1.46**	**1361**	**756**	**1.74**	**1623**	**812**	**2.03**	**1896**	864	2.34	2181	913	2.66	2478
3500	**713**	**1.58**	**1469**	**772**	**1.86**	**1737**	**827**	**2.16**	**2017**	878	2.48	2308	926	2.80	2610
3600	**729**	**1.70**	**1583**	**787**	**1.99**	**1857**	841	2.30	2144	892	2.62	2441	—	—	—
3700	**746**	**1.83**	**1703**	**803**	**2.13**	**1985**	856	2.44	2277	906	2.77	2580	—	—	—
3750	**755**	**1.89**	**1766**	**811**	**2.20**	**2051**	864	2.52	2346	913	2.84	2653	—	—	—

PAH090 ($7^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**832**	**1.71**	**1592**	882	1.99	1855	928	2.29	2131	973	2.59	2420	—	—	—
2300	**837**	**1.75**	**1630**	886	2.03	1896	933	2.33	2174	977	2.64	2463	—	—	—
2400	847	1.83	1710	896	2.12	1980	942	2.43	2262	986	2.74	2556	—	—	—
2500	857	1.92	1794	905	2.22	2069	951	2.52	2355	995	2.84	2653	—	—	—
2550	862	1.97	1838	910	2.27	2114	956	2.58	2403	999	2.90	2704	—	—	—
2600	867	2.02	1884	915	2.32	2162	961	2.63	2453	—	—	—	—	—	—
2700	878	2.12	1978	926	2.42	2261	971	2.74	2556	—	—	—	—	—	—
2800	889	2.23	2077	936	2.54	2365	981	2.86	2664	—	—	—	—	—	—
2900	900	2.34	2181	947	2.65	2474	—	—	—	—	—	—	—	—	—
3000	912	2.46	2290	958	2.78	2588	—	—	—	—	—	—	—	—	—
3100	923	2.58	2406	969	2.90	2708	—	—	—	—	—	—	—	—	—
3200	935	2.71	2526	—	—	—	—	—	—	—	—	—	—	—	—
3300	947	2.84	2652	—	—	—	—	—	—	—	—	—	—	—	—
3400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See general fan performance notes.

PAH090 ($7^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**511**	**0.53**	**492**	**591**	**0.73**	**680**	**660**	**0.95**	**885**	**722**	**1.19**	**1106**	**779**	**1.44**	**1342**
2300	**519**	**0.56**	**518**	**597**	**0.76**	**709**	**666**	**0.98**	**916**	**727**	**1.22**	**1140**	**784**	**1.48**	**1378**
2400	**534**	**0.61**	**571**	**611**	**0.82**	**768**	**678**	**1.05**	**982**	**739**	**1.30**	**1210**	**795**	**1.56**	**1453**
2500	**550**	**0.67**	**629**	**624**	**0.89**	**832**	**690**	**1.13**	**1051**	**750**	**1.38**	**1285**	**805**	**1.64**	**1533**
2550	**558**	**0.71**	**660**	**631**	**0.93**	**866**	**697**	**1.17**	**1088**	**756**	**1.42**	**1324**	**811**	**1.69**	**1574**
2600	**565**	**0.74**	**691**	**638**	**0.97**	**901**	**703**	**1.21**	**1125**	**762**	**1.46**	**1365**	**816**	**1.73**	**1617**
2700	**581**	**0.81**	**758**	**652**	**1.04**	**974**	**716**	**1.29**	**1204**	**774**	**1.55**	**1449**	**828**	**1.83**	**1707**
2800	**597**	**0.89**	**829**	**667**	**1.13**	**1051**	**729**	**1.38**	**1287**	**786**	**1.65**	**1538**	**839**	**1.93**	**1801**
2900	**613**	**0.97**	**905**	**681**	**1.22**	**1133**	**742**	**1.48**	**1376**	**799**	**1.75**	**1632**	**851**	**2.04**	**1900**
3000	**630**	**1.06**	**985**	**696**	**1.31**	**1220**	**756**	**1.58**	**1469**	**811**	**1.86**	**1731**	863	2.15	2004
3100	**646**	**1.15**	**1071**	**711**	**1.41**	**1313**	**770**	**1.68**	**1568**	**824**	**1.97**	**1835**	875	2.27	2114
3200	**663**	**1.25**	**1162**	**726**	**1.51**	**1411**	**784**	**1.79**	**1672**	**837**	**2.09**	**1944**	888	2.39	2229
3300	**679**	**1.35**	**1259**	**741**	**1.62**	**1514**	**798**	**1.91**	**1781**	**851**	**2.21**	**2060**	900	2.52	2351
3400	**696**	**1.46**	**1361**	**756**	**1.74**	**1623**	**812**	**2.03**	**1896**	864	2.34	2181	913	2.66	2478
3500	**713**	**1.58**	**1469**	**772**	**1.86**	**1737**	**827**	**2.16**	**2017**	878	2.48	2308	926	2.80	2610
3600	**729**	**1.70**	**1583**	**787**	**1.99**	**1857**	**841**	**2.30**	**2144**	892	2.62	2441	939	2.95	2749
3700	**746**	**1.83**	**1703**	**803**	**2.13**	**1985**	**856**	**2.44**	**2277**	906	2.77	2580	953	3.10	2894
3750	**755**	**1.89**	**1766**	**811**	**2.20**	**2051**	864	2.52	2346	913	2.84	2653	959	3.18	2969

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH090 ($7^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**832**	**1.71**	**1592**	882	1.99	1855	928	2.29	2131	973	2.59	2420	1015	2.92	2720
2300	**837**	**1.75**	**1630**	886	2.03	1896	933	2.33	2174	977	2.64	2463	1020	2.97	2766
2400	**847**	**1.83**	**1710**	896	2.12	1980	942	2.43	2262	986	2.74	2556	1028	3.07	2861
2500	**857**	**1.92**	**1794**	905	2.22	2069	951	2.52	2355	995	2.84	2653	1037	3.18	2962
2550	862	1.97	1838	910	2.27	2114	956	2.58	2403	999	2.90	2704	1041	3.23	3014
2600	867	2.02	1884	915	2.32	2162	961	2.63	2453	1004	2.95	2755	1045	3.29	3068
2700	878	2.12	1978	926	2.42	2261	971	2.74	2556	1013	3.07	2862	1055	3.41	3180
2800	889	2.23	2077	936	2.54	2365	981	2.86	2664	1023	3.19	2975	1064	3.54	3297
2900	900	2.34	2181	947	2.65	2474	991	2.98	2778	1033	3.32	3094	1073	3.67	3419
3000	912	2.46	2290	958	2.78	2588	1001	3.11	2897	1043	3.45	3217	**1083**	**3.80**	**3547**
3100	923	2.58	2406	969	2.90	2708	1012	3.24	3022	1053	3.59	3347	**1093**	**3.95**	**3682**
3200	935	2.71	2526	980	3.04	2834	1023	3.38	3152	1064	3.73	3482	**1103**	**4.10**	**3821**
3300	947	2.84	2652	992	3.18	2966	1034	3.53	3289	1075	3.89	3623	—	—	—
3400	959	2.99	2785	1003	3.33	3103	1045	3.68	3432	**1086**	**4.04**	**3771**	—	—	—
3500	972	3.13	2923	1015	3.48	3246	1057	3.84	3581	—	—	—	—	—	—
3600	984	3.29	3068	1027	3.64	3396	1068	4.01	3736	—	—	—	—	—	—
3700	997	3.45	3218	1040	3.81	3553	1080	4.18	3897	—	—	—	—	—	—
3750	1004	3.54	3296	1046	3.90	3633	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH102 ($8^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**489**	**0.41**	**386**	**564**	**0.54**	**506**	**629**	**0.67**	**625**	**688**	**0.80**	**745**	**741**	**0.93**	**866**
2600	**502**	**0.45**	**424**	**576**	**0.59**	**548**	**640**	**0.72**	**672**	**697**	**0.85**	**797**	**750**	**0.99**	**923**
2700	**515**	**0.50**	**465**	**587**	**0.64**	**594**	**650**	**0.77**	**723**	**707**	**0.91**	**852**	**760**	**1.05**	**982**
2800	**529**	**0.55**	**508**	**599**	**0.69**	**642**	**661**	**0.83**	**776**	**718**	**0.98**	**910**	**769**	**1.12**	**1044**
2900	**542**	**0.59**	**555**	**611**	**0.74**	**693**	**672**	**0.89**	**832**	**728**	**1.04**	**970**	**779**	**1.19**	**1109**
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	**831**	**1.59**	**1483**
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	841	1.68	1567
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	852	1.78	1656
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	840	1.88	1758	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	852	1.99	1857	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	**830**	**2.00**	**1866**	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	843	2.12	1973	889	2.34	2179	932	2.56	2384

PAH102 ($8^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**791**	**1.06**	**988**	**837**	**1.19**	**1112**	881	1.33	1236	922	1.46	1362	962	1.60	1490
2600	**799**	**1.12**	**1049**	845	1.26	1177	889	1.40	1306	930	1.54	1436	969	1.68	1568
2700	**808**	**1.19**	**1113**	854	1.34	1245	897	1.48	1378	938	1.62	1513	977	1.77	1648
2800	**817**	**1.26**	**1179**	863	1.41	1316	905	1.56	1454	946	1.71	1592	985	1.86	1732
2900	**827**	**1.34**	**1249**	872	1.49	1390	914	1.64	1532	954	1.80	1675	993	1.95	1819
3000	**836**	**1.42**	**1322**	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	846	1.50	1398	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	856	1.58	1477	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	—	—	—
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	—	—	—
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	—	—	—	—	—	—
4100	951	2.52	2351	991	2.73	2547	—	—	—	—	—	—	—	—	—
4200	962	2.65	2468	1002	2.86	2668	—	—	—	—	—	—	—	—	—
4300	973	2.78	2589	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH102 ($8^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**489**	**0.41**	**386**	**564**	**0.54**	**506**	**629**	**0.67**	**625**	**688**	**0.80**	**745**	**741**	**0.93**	**866**
2600	**502**	**0.45**	**424**	**576**	**0.59**	**548**	**640**	**0.72**	**672**	**697**	**0.85**	**797**	**750**	**0.99**	**923**
2700	**515**	**0.50**	**465**	**587**	**0.64**	**594**	**650**	**0.77**	**723**	**707**	**0.91**	**852**	**760**	**1.05**	**982**
2800	**529**	**0.55**	**508**	**599**	**0.69**	**642**	**661**	**0.83**	**776**	**718**	**0.98**	**910**	**769**	**1.12**	**1044**
2900	**542**	**0.59**	**555**	**611**	**0.74**	**693**	**672**	**0.89**	**832**	**728**	**1.04**	**970**	**779**	**1.19**	**1109**
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	**831**	**1.59**	**1483**
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	**841**	**1.68**	**1567**
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	**852**	**1.78**	**1656**
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	**840**	**1.88**	**1758**	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	**852**	**1.99**	**1857**	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	**830**	**2.00**	**1866**	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	**843**	**2.12**	**1973**	889	2.34	2179	932	2.56	2384

PAH102 ($8^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**791**	**1.06**	**988**	**837**	**1.19**	**1112**	881	1.33	1236	922	1.46	1362	962	1.60	1490
2600	**799**	**1.12**	**1049**	**845**	**1.26**	**1177**	889	1.40	1306	930	1.54	1436	969	1.68	1568
2700	**808**	**1.19**	**1113**	**854**	**1.34**	**1245**	897	1.48	1378	938	1.62	1513	977	1.77	1648
2800	**817**	**1.26**	**1179**	863	1.41	1316	905	1.56	1454	946	1.71	1592	985	1.86	1732
2900	**827**	**1.34**	**1249**	872	1.49	1390	914	1.64	1532	954	1.80	1675	993	1.95	1819
3000	**836**	**1.42**	**1322**	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	**846**	**1.50**	**1398**	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	**856**	**1.58**	**1477**	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	1073	2.95	2755
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	**1082**	**3.09**	**2877**
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	1056	3.02	2812	**1092**	**3.22**	**3004**
4100	951	2.52	2351	991	2.73	2547	1029	2.94	2743	1066	3.15	2939	**1102**	**3.36**	**3136**
4200	962	2.65	2468	1002	2.86	2668	1040	3.08	2869	1076	3.29	3070	**1112**	**3.51**	**3271**
4300	973	2.78	2589	1013	3.00	2794	1050	3.22	2999	**1087**	**3.44**	**3205**	**1122**	**3.66**	**3411**

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH120 (10 TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	**831**	**1.59**	**1483**
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	**841**	**1.68**	**1567**
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	**852**	**1.78**	**1656**
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	**840**	**1.88**	**1758**	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	**852**	**1.99**	**1857**	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	**830**	**2.00**	**1866**	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	**843**	**2.12**	**1973**	889	2.34	2179	932	2.56	2384
4400	**755**	**1.78**	**1660**	**807**	**2.01**	**1873**	**856**	**2.23**	**2084**	901	2.46	2295	944	2.69	2505
4500	**770**	**1.89**	**1766**	**821**	**2.13**	**1984**	869	2.36	2200	914	2.59	2415	956	2.82	2630
4600	**785**	**2.01**	**1876**	**835**	**2.25**	**2099**	882	2.49	2320	926	2.72	2541	968	2.96	2760
4700	**800**	**2.14**	**1991**	**849**	**2.38**	**2219**	895	2.62	2445	939	2.86	2670	980	3.10	2895
4800	**815**	**2.26**	**2111**	863	2.51	2344	909	2.76	2575	952	3.01	2805	993	3.25	3034
4900	**829**	**2.40**	**2235**	877	2.65	2473	922	2.91	2709	965	3.16	2944	1005	3.41	3178
5000	**844**	**2.54**	**2365**	891	2.80	2608	936	3.06	2849	978	3.31	3089	1018	3.57	3328

PAH120 (10 TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**836**	**1.42**	**1322**	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	**846**	**1.50**	**1398**	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	**856**	**1.58**	**1477**	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	1073	2.95	2755
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	**1082**	**3.09**	**2877**
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	1056	3.02	2812	**1092**	**3.22**	**3004**
4100	951	2.52	2351	991	2.73	2547	1029	2.94	2743	1066	3.15	2939	**1102**	**3.36**	**3136**
4200	962	2.65	2468	1002	2.86	2668	1040	3.08	2869	1076	3.29	3070	**1112**	**3.51**	**3271**
4300	973	2.78	2589	1013	3.00	2794	1050	3.22	2999	**1087**	**3.44**	**3205**	**1122**	**3.66**	**3411**
4400	985	2.91	2715	1024	3.14	2924	1061	3.36	3134	**1097**	**3.59**	**3345**	—	—	—
4500	996	3.05	2845	1035	3.28	3059	1072	3.51	3274	—	—	—	—	—	—
4600	1008	3.20	2979	1046	3.43	3199	**1083**	**3.67**	**3418**	—	—	—	—	—	—
4700	1020	3.34	3119	1058	3.58	3343	—	—	—	—	—	—	—	—	—
4800	1032	3.50	3263	—	—	—	—	—	—	—	—	—	—	—	—
4900	1044	3.66	3413	—	—	—	—	—	—	—	—	—	—	—	—
5000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 3.70.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH120 (10 TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	831	1.59	1483
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	841	1.68	1567
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	852	1.78	1656
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	840	1.88	1758	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	852	1.99	1857	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	830	2.00	1866	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	843	2.12	1973	889	2.34	2179	932	2.56	2384
4400	**755**	**1.78**	**1660**	**807**	**2.01**	**1873**	856	2.23	2084	901	2.46	2295	944	2.69	2505
4500	**770**	**1.89**	**1766**	**821**	**2.13**	**1984**	869	2.36	2200	914	2.59	2415	956	2.82	2630
4600	**785**	**2.01**	**1876**	835	2.25	2099	882	2.49	2320	926	2.72	2541	968	2.96	2760
4700	**800**	**2.14**	**1991**	849	2.38	2219	895	2.62	2445	939	2.86	2670	980	3.10	2895
4800	**815**	**2.26**	**2111**	863	2.51	2344	909	2.76	2575	952	3.01	2805	993	3.25	3034
4900	**829**	**2.40**	**2235**	877	2.65	2473	922	2.91	2709	965	3.16	2944	1005	3.41	3178
5000	844	2.54	2365	891	2.80	2608	936	3.06	2849	978	3.31	3089	1018	3.57	3328

PAH120 (10 TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	836	1.42	1322	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	846	1.50	1398	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	856	1.58	1477	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	1073	2.95	2755
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	1082	3.09	2877
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	1056	3.02	2812	1092	3.22	3004
4100	951	2.52	2351	991	2.73	2547	1029	2.94	2743	1066	3.15	2939	1102	3.36	3136
4200	962	2.65	2468	1002	2.86	2668	1040	3.08	2869	1076	3.29	3070	1112	3.51	3271
4300	973	2.78	2589	1013	3.00	2794	1050	3.22	2999	1087	3.44	3205	1122	3.66	3411
4400	985	2.91	2715	1024	3.14	2924	1061	3.36	3134	1097	3.59	3345	**1132**	**3.81**	**3555**
4500	996	3.05	2845	1035	3.28	3059	1072	3.51	3274	1108	3.74	3489	**1142**	**3.97**	**3704**
4600	1008	3.20	2979	1046	3.43	3199	1083	3.67	3418	1118	3.90	3638	**1152**	**4.14**	**3857**
4700	1020	3.34	3119	1058	3.58	3343	1094	3.83	3567	1129	4.07	3792	**1163**	**4.31**	**4016**
4800	1032	3.50	3263	1069	3.74	3492	1105	3.99	3721	**1140**	**4.24**	**3950**	**1174**	**4.48**	**4179**
4900	1044	3.66	3413	1081	3.91	3646	1117	4.16	3880	**1151**	**4.41**	**4113**	**1184**	**4.66**	**4347**
5000	1056	3.82	3566	1093	4.08	3805	1128	4.34	4044	**1162**	**4.59**	**4282**	**1195**	**4.85**	**4520**

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 830 to 1130 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 5.25.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PAH072 (6 TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	**822**	**0.51**	**455**	**927**	**0.66**	**589**	**1018**	**0.82**	**728**	**1100**	**0.98**	**873**	1174	1.15	1024
1900	**855**	**0.59**	**520**	**957**	**0.74**	**659**	**1046**	**0.91**	**805**	1127	1.08	956	1200	1.25	1113
2000	**889**	**0.66**	**591**	**988**	**0.83**	**737**	**1075**	**1.00**	**888**	1154	1.18	1045	1226	1.36	1208
2100	**923**	**0.75**	**668**	**1019**	**0.92**	**821**	**1104**	**1.10**	**979**	1182	1.29	1142	1253	1.48	1310
2200	**957**	**0.85**	**753**	**1051**	**1.03**	**912**	1134	1.21	1077	1210	1.40	1245	1280	1.60	1419
2300	**992**	**0.95**	**845**	**1083**	**1.14**	**1011**	1164	1.33	1182	1239	1.53	1357	1308	1.73	1537
2400	**1026**	**1.06**	**945**	**1115**	**1.26**	**1118**	1195	1.46	1295	1268	1.66	1476	1336	1.87	1662
2500	**1061**	**1.19**	**1053**	1148	1.39	1233	1226	1.59	1416	1297	1.81	1604	1364	2.02	1796
2600	**1097**	**1.32**	**1169**	1181	1.53	1356	1257	1.74	1546	1327	1.96	1740	1393	2.18	1938
2700	1132	1.46	1294	1214	1.67	1487	1289	1.90	1684	1358	2.12	1885	1422	2.35	2089
2800	1168	1.61	1428	1247	1.83	1629	1320	2.06	1832	1388	2.30	2039	—	—	—
2900	1204	1.77	1572	1281	2.00	1779	1353	2.24	1989	—	—	—	—	—	—
3000	1240	1.94	1725	1315	2.18	1939	—	—	—	—	—	—	—	—	—

PAH072 (6 TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	1244	1.33	1182	1308	1.51	1345	1369	1.70	1513	1427	1.90	1687	1483	2.10	1867
1900	1268	1.44	1275	1332	1.63	1443	1393	1.82	1617	1450	2.02	1796	1505	2.23	1979
2000	1294	1.55	1376	1357	1.74	1549	1417	1.95	1727	1474	2.15	1911	1528	2.36	2100
2100	1320	1.67	1483	1382	1.87	1662	1441	2.08	1845	1498	2.29	2034	—	—	—
2200	1346	1.80	1598	1408	2.01	1782	1466	2.22	1971	—	—	—	—	—	—
2300	1372	1.94	1721	1434	2.15	1911	1491	2.37	2105	—	—	—	—	—	—
2400	1400	2.09	1852	1460	2.31	2047	—	—	—	—	—	—	—	—	—
2500	1427	2.24	1992	—	—	—	—	—	—	—	—	—	—	—	—
2600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 1120 to 1585 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.40.
3. See general fan performance notes.

PAH072 (6 TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	**822**	**0.51**	**455**	**927**	**0.66**	**589**	**1018**	**0.82**	**728**	**1100**	**0.98**	**873**	**1174**	**1.15**	**1024**
1900	**855**	**0.59**	**520**	**957**	**0.74**	**659**	**1046**	**0.91**	**805**	**1127**	**1.08**	**956**	**1200**	**1.25**	**1113**
2000	**889**	**0.66**	**591**	**988**	**0.83**	**737**	**1075**	**1.00**	**888**	**1154**	**1.18**	**1045**	**1226**	**1.36**	**1208**
2100	**923**	**0.75**	**668**	**1019**	**0.92**	**821**	**1104**	**1.10**	**979**	**1182**	**1.29**	**1142**	**1253**	**1.48**	**1310**
2200	**957**	**0.85**	**753**	**1051**	**1.03**	**912**	**1134**	**1.21**	**1077**	**1210**	**1.40**	**1245**	**1280**	**1.60**	**1419**
2300	**992**	**0.95**	**845**	**1083**	**1.14**	**1011**	**1164**	**1.33**	**1182**	**1239**	**1.53**	**1357**	1308	1.73	1537
2400	**1026**	**1.06**	**945**	**1115**	**1.26**	**1118**	**1195**	**1.46**	**1295**	**1268**	**1.66**	**1476**	1336	1.87	1662
2500	**1061**	**1.19**	**1053**	**1148**	**1.39**	**1233**	**1226**	**1.59**	**1416**	**1297**	**1.81**	**1604**	1364	2.02	1796
2600	**1097**	**1.32**	**1169**	**1181**	**1.53**	**1356**	**1257**	**1.74**	**1546**	1327	1.96	1740	1393	2.18	1938
2700	**1132**	**1.46**	**1294**	**1214**	**1.67**	**1487**	**1289**	**1.90**	**1684**	1358	2.12	1885	1422	2.35	2089
2800	**1168**	**1.61**	**1428**	**1247**	**1.83**	**1629**	1320	2.06	1832	1388	2.30	2039	1452	2.53	2249
2900	**1204**	**1.77**	**1572**	**1281**	**2.00**	**1779**	1353	2.24	1989	1419	2.48	2202	1482	2.72	2419
3000	**1240**	**1.94**	**1725**	1315	2.18	1939	1385	2.43	2156	1451	2.68	2376	—	—	—

PAH072 (6 TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	**1244**	**1.33**	**1182**	1308	1.51	1345	1369	1.70	1513	1427	1.90	1687	1483	2.10	1867
1900	**1268**	**1.44**	**1275**	1332	1.63	1443	1393	1.82	1617	1450	2.02	1796	1505	2.23	1979
2000	**1294**	**1.55**	**1376**	1357	1.74	1549	1417	1.95	1727	1474	2.15	1911	1528	2.36	2100
2100	1320	1.67	1483	1382	1.87	1662	1441	2.08	1845	1498	2.29	2034	1552	2.51	2227
2200	1346	1.80	1598	1408	2.01	1782	1466	2.22	1971	1522	2.44	2165	1575	2.66	2363
2300	1372	1.94	1721	1434	2.15	1911	1491	2.37	2105	1547	2.59	2304	1600	2.82	2507
2400	1400	2.09	1852	1460	2.31	2047	1517	2.53	2247	1572	2.76	2451	—	—	—
2500	1427	2.24	1992	1487	2.47	2192	1543	2.70	2398	—	—	—	—	—	—
2600	1455	2.41	2140	1514	2.64	2346	1570	2.88	2557	—	—	—	—	—	—
2700	1483	2.59	2297	1541	2.83	2509	—	—	—	—	—	—	—	—	—
2800	1512	2.77	2463	—	—	—	—	—	—	—	—	—	—	—	—
2900	1541	2.97	2640	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 1300 to 1685 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PAH090 ($7^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**465**	**0.43**	**402**	**555**	**0.64**	**596**	**629**	**0.86**	**802**	**694**	**1.10**	**1021**	**753**	**1.34**	**1252**
2300	**471**	**0.45**	**421**	**560**	**0.66**	**618**	**634**	**0.89**	**828**	**699**	**1.13**	**1050**	**757**	**1.38**	**1283**
2400	**483**	**0.49**	**461**	**571**	**0.71**	**665**	**644**	**0.94**	**881**	**708**	**1.19**	**1109**	**766**	**1.45**	**1348**
2500	**495**	**0.54**	**503**	**581**	**0.77**	**715**	**654**	**1.01**	**937**	**717**	**1.26**	**1171**	**775**	**1.52**	**1416**
2550	**501**	**0.56**	**526**	**587**	**0.79**	**740**	**659**	**1.04**	**967**	**722**	**1.29**	**1204**	**779**	**1.56**	**1452**
2600	**507**	**0.59**	**549**	**592**	**0.82**	**767**	**664**	**1.07**	**996**	**727**	**1.33**	**1237**	**784**	**1.60**	**1488**
2700	**519**	**0.64**	**597**	**603**	**0.88**	**823**	**674**	**1.14**	**1059**	**737**	**1.40**	**1306**	**793**	**1.68**	**1563**
2800	**532**	**0.70**	**649**	**614**	**0.95**	**882**	**684**	**1.21**	**1125**	**746**	**1.48**	**1378**	**803**	**1.76**	**1641**
2900	**544**	**0.75**	**703**	**625**	**1.01**	**944**	**695**	**1.28**	**1194**	**756**	**1.56**	**1453**	**812**	**1.85**	**1723**
3000	**557**	**0.82**	**761**	**637**	**1.08**	**1009**	**705**	**1.36**	**1266**	**766**	**1.64**	**1533**	**822**	**1.94**	**1808**
3100	**570**	**0.88**	**823**	**648**	**1.16**	**1079**	**716**	**1.44**	**1342**	**776**	**1.73**	**1615**	**831**	**2.03**	**1897**
3200	**583**	**0.95**	**888**	**660**	**1.23**	**1151**	**727**	**1.53**	**1422**	**787**	**1.82**	**1702**	841	2.13	1991
3300	**596**	**1.03**	**957**	**672**	**1.32**	**1228**	**738**	**1.61**	**1506**	**797**	**1.92**	**1792**	851	2.24	2088
3400	**609**	**1.10**	**1030**	**684**	**1.40**	**1308**	**749**	**1.71**	**1593**	**808**	**2.02**	**1887**	861	2.35	2188
3500	**622**	**1.19**	**1106**	**696**	**1.49**	**1392**	**760**	**1.81**	**1685**	**818**	**2.13**	**1985**	872	2.46	2294
3600	**635**	**1.27**	**1187**	**708**	**1.59**	**1481**	**771**	**1.91**	**1781**	**829**	**2.24**	**2088**	882	2.58	2403
3700	**649**	**1.36**	**1272**	**720**	**1.69**	**1573**	**783**	**2.02**	**1881**	840	2.35	2195	892	2.70	2517
3750	**655**	**1.41**	**1316**	**726**	**1.74**	**1621**	**789**	**2.07**	**1932**	845	2.41	2250	897	2.76	2575

PAH090 ($7^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**806**	**1.60**	**1494**	856	1.87	1747	903	2.15	2009	947	2.45	2282	988	2.75	2564
2300	**811**	**1.64**	**1528**	860	1.91	1784	907	2.20	2048	950	2.49	2323	992	2.80	2607
2400	**819**	**1.71**	**1599**	868	1.99	1859	915	2.28	2129	958	2.58	2410	1000	2.89	2698
2500	**828**	**1.79**	**1672**	877	2.08	1938	923	2.37	2214	966	2.68	2499	—	—	—
2550	**832**	**1.83**	**1710**	881	2.12	1979	927	2.42	2258	971	2.73	2545	—	—	—
2600	**836**	**1.88**	**1749**	885	2.17	2021	931	2.47	2302	975	2.78	2592	—	—	—
2700	845	1.96	1830	894	2.26	2107	940	2.57	2394	983	2.88	2689	—	—	—
2800	854	2.05	1914	903	2.36	2197	948	2.67	2488	—	—	—	—	—	—
2900	864	2.15	2002	912	2.46	2290	957	2.77	2587	—	—	—	—	—	—
3000	873	2.24	2093	921	2.56	2388	966	2.89	2691	—	—	—	—	—	—
3100	882	2.35	2189	930	2.67	2489	—	—	—	—	—	—	—	—	—
3200	892	2.45	2288	939	2.78	2595	—	—	—	—	—	—	—	—	—
3300	901	2.56	2391	948	2.90	2704	—	—	—	—	—	—	—	—	—
3400	911	2.68	2499	—	—	—	—	—	—	—	—	—	—	—	—
3500	921	2.80	2610	—	—	—	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PAH090 ($7^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**465**	**0.43**	**402**	**555**	**0.64**	**596**	**629**	**0.86**	**802**	**694**	**1.10**	**1021**	**753**	**1.34**	**1252**
2300	**471**	**0.45**	**421**	**560**	**0.66**	**618**	**634**	**0.89**	**828**	**699**	**1.13**	**1050**	**757**	**1.38**	**1283**
2400	**483**	**0.49**	**461**	**571**	**0.71**	**665**	**644**	**0.94**	**881**	**708**	**1.19**	**1109**	**766**	**1.45**	**1348**
2500	**495**	**0.54**	**503**	**581**	**0.77**	**715**	**654**	**1.01**	**937**	**717**	**1.26**	**1171**	**775**	**1.52**	**1416**
2550	**501**	**0.56**	**526**	**587**	**0.79**	**740**	**659**	**1.04**	**967**	**722**	**1.29**	**1204**	**779**	**1.56**	**1452**
2600	**507**	**0.59**	**549**	**592**	**0.82**	**767**	**664**	**1.07**	**996**	**727**	**1.33**	**1237**	**784**	**1.60**	**1488**
2700	**519**	**0.64**	**597**	**603**	**0.88**	**823**	**674**	**1.14**	**1059**	**737**	**1.40**	**1306**	**793**	**1.68**	**1563**
2800	**532**	**0.70**	**649**	**614**	**0.95**	**882**	**684**	**1.21**	**1125**	**746**	**1.48**	**1378**	**803**	**1.76**	**1641**
2900	**544**	**0.75**	**703**	**625**	**1.01**	**944**	**695**	**1.28**	**1194**	**756**	**1.56**	**1453**	**812**	**1.85**	**1723**
3000	**557**	**0.82**	**761**	**637**	**1.08**	**1009**	**705**	**1.36**	**1266**	**766**	**1.64**	**1533**	**822**	**1.94**	**1808**
3100	**570**	**0.88**	**823**	**648**	**1.16**	**1079**	**716**	**1.44**	**1342**	**776**	**1.73**	**1615**	**831**	**2.03**	**1897**
3200	**583**	**0.95**	**888**	**660**	**1.23**	**1151**	**727**	**1.53**	**1422**	**787**	**1.82**	**1702**	**841**	**2.13**	**1991**
3300	**596**	**1.03**	**957**	**672**	**1.32**	**1228**	**738**	**1.61**	**1506**	**797**	**1.92**	**1792**	**851**	**2.24**	**2088**
3400	**609**	**1.10**	**1030**	**684**	**1.40**	**1308**	**749**	**1.71**	**1593**	**808**	**2.02**	**1887**	861	2.35	2188
3500	**622**	**1.19**	**1106**	**696**	**1.49**	**1392**	**760**	**1.81**	**1685**	**818**	**2.13**	**1985**	872	2.46	2294
3600	**635**	**1.27**	**1187**	**708**	**1.59**	**1481**	**771**	**1.91**	**1781**	**829**	**2.24**	**2088**	882	2.58	2403
3700	**649**	**1.36**	**1272**	**720**	**1.69**	**1573**	**783**	**2.02**	**1881**	**840**	**2.35**	**2195**	892	2.70	2517
3750	**655**	**1.41**	**1316**	**726**	**1.74**	**1621**	**789**	**2.07**	**1932**	**845**	**2.41**	**2250**	897	2.76	2575

PAH090 ($7^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**806**	**1.60**	**1494**	**856**	**1.87**	**1747**	903	2.15	2009	947	2.45	2282	988	2.75	2564
2300	**811**	**1.64**	**1528**	860	1.91	1784	907	2.20	2048	950	2.49	2323	992	2.80	2607
2400	**819**	**1.71**	**1599**	868	1.99	1859	915	2.28	2129	958	2.58	2410	1000	2.89	2698
2500	**828**	**1.79**	**1672**	877	2.08	1938	923	2.37	2214	966	2.68	2499	1008	3.00	2793
2550	**832**	**1.83**	**1710**	881	2.12	1979	927	2.42	2258	971	2.73	2545	1012	3.05	2842
2600	**836**	**1.88**	**1749**	885	2.17	2021	931	2.47	2302	975	2.78	2592	1016	3.10	2891
2700	**845**	**1.96**	**1830**	894	2.26	2107	940	2.57	2394	983	2.88	2689	1024	3.21	2993
2800	**854**	**2.05**	**1914**	903	2.36	2197	948	2.67	2488	991	2.99	2790	1032	3.32	3099
2900	864	2.15	2002	912	2.46	2290	957	2.77	2587	1000	3.10	2894	1041	3.44	3209
3000	873	2.24	2093	921	2.56	2388	966	2.89	2691	1008	3.22	3003	1049	3.56	3323
3100	882	2.35	2189	930	2.67	2489	975	3.00	2798	1017	3.34	3115	1057	3.69	3441
3200	892	2.45	2288	939	2.78	2595	984	3.12	2909	1026	3.47	3233	1066	3.82	3564
3300	901	2.56	2391	948	2.90	2704	993	3.24	3024	1035	3.60	3353	1075	3.96	3690
3400	911	2.68	2499	958	3.02	2817	1002	3.37	3144	1044	3.73	3479	**1084**	**4.10**	**3821**
3500	921	2.80	2610	967	3.15	2935	1011	3.50	3268	1053	3.87	3608	—	—	—
3600	931	2.92	2726	977	3.28	3057	1021	3.64	3396	1062	4.01	3743	—	—	—
3700	941	3.05	2847	987	3.41	3184	1030	3.78	3529	1071	4.16	3882	—	—	—
3750	946	3.12	2908	992	3.48	3249	1035	3.86	3597	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PAH102 ($8^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**462**	**0.37**	**348**	**541**	**0.50**	**467**	**614**	**0.64**	**594**	**681**	**0.78**	**728**	**744**	**0.93**	**868**
2600	**474**	**0.41**	**381**	**551**	**0.54**	**505**	**622**	**0.68**	**635**	**688**	**0.83**	**773**	**750**	**0.98**	**916**
2700	**486**	**0.45**	**417**	**561**	**0.58**	**545**	**630**	**0.73**	**679**	**695**	**0.88**	**820**	**756**	**1.04**	**967**
2800	**498**	**0.49**	**456**	**571**	**0.63**	**587**	**639**	**0.78**	**725**	**702**	**0.93**	**870**	**762**	**1.09**	**1020**
2900	**510**	**0.53**	**497**	**581**	**0.68**	**632**	**648**	**0.83**	**774**	**710**	**0.99**	**922**	**768**	**1.15**	**1076**
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	**832**	**1.75**	**1629**
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	**841**	**1.84**	**1712**
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	850	1.93	1799
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	**833**	**2.02**	**1880**	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	844	2.12	1979	890	2.34	2184

PAH102 ($8^1/_2$ TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**804**	**1.09**	**1013**	861	1.25	1164	915	1.41	1319	967	1.59	1479	1017	1.76	1642
2600	**809**	**1.14**	**1065**	864	1.31	1219	918	1.48	1378	969	1.65	1541	1018	1.83	1708
2700	**813**	**1.20**	**1119**	869	1.37	1277	921	1.54	1439	972	1.72	1606	1021	1.90	1776
2800	**819**	**1.26**	**1176**	873	1.43	1337	925	1.61	1503	975	1.79	1673	1023	1.98	1847
2900	**824**	**1.32**	**1235**	878	1.50	1400	929	1.68	1569	978	1.87	1742	1026	2.06	1920
3000	**830**	**1.39**	**1298**	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	**837**	**1.46**	**1363**	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	843	1.53	1431	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	850	1.61	1502	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	858	1.69	1576	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	—	—	—
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	—	—	—
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	—	—	—	—	—	—
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	—	—	—	—	—	—
4200	925	2.45	2289	969	2.68	2500	—	—	—	—	—	—	—	—	—
4300	934	2.57	2395	978	2.80	2610	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PAH102 ($8^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**462**	**0.37**	**348**	**541**	**0.50**	**467**	**614**	**0.64**	**594**	**681**	**0.78**	**728**	**744**	**0.93**	**868**
2600	**474**	**0.41**	**381**	**551**	**0.54**	**505**	**622**	**0.68**	**635**	**688**	**0.83**	**773**	**750**	**0.98**	**916**
2700	**486**	**0.45**	**417**	**561**	**0.58**	**545**	**630**	**0.73**	**679**	**695**	**0.88**	**820**	**756**	**1.04**	**967**
2800	**498**	**0.49**	**456**	**571**	**0.63**	**587**	**639**	**0.78**	**725**	**702**	**0.93**	**870**	**762**	**1.09**	**1020**
2900	**510**	**0.53**	**497**	**581**	**0.68**	**632**	**648**	**0.83**	**774**	**710**	**0.99**	**922**	**768**	**1.15**	**1076**
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	**832**	**1.75**	**1629**
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	**841**	**1.84**	**1712**
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	850	1.93	1799
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	**833**	**2.02**	**1880**	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	**844**	**2.12**	**1979**	890	2.34	2184

PAH102 ($8^1/_2$ TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**804**	**1.09**	**1013**	861	1.25	1164	915	1.41	1319	967	1.59	1479	1017	1.76	1642
2600	**809**	**1.14**	**1065**	864	1.31	1219	918	1.48	1378	969	1.65	1541	1018	1.83	1708
2700	**813**	**1.20**	**1119**	869	1.37	1277	921	1.54	1439	972	1.72	1606	1021	1.90	1776
2800	**819**	**1.26**	**1176**	873	1.43	1337	925	1.61	1503	975	1.79	1673	1023	1.98	1847
2900	**824**	**1.32**	**1235**	878	1.50	1400	929	1.68	1569	978	1.87	1742	1026	2.06	1920
3000	**830**	**1.39**	**1298**	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	**837**	**1.46**	**1363**	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	**843**	**1.53**	**1431**	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	**850**	**1.61**	**1502**	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	**858**	**1.69**	**1576**	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	1068	2.91	2716
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	1074	3.03	2821
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	1038	2.91	2713	1080	3.14	2930
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	1046	3.03	2822	**1087**	**3.26**	**3042**
4200	925	2.45	2289	969	2.68	2500	1011	2.91	2716	1053	3.15	2935	**1094**	**3.39**	**3159**
4300	934	2.57	2395	978	2.80	2610	1020	3.03	2828	1061	3.27	3052	**1101**	**3.52**	**3279**

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PAH120 (10 TONS) STANDARD MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	**832**	**1.75**	**1629**
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	**841**	**1.84**	**1712**
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	**850**	**1.93**	**1799**
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	**833**	**2.02**	**1880**	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	**844**	**2.12**	**1979**	890	2.34	2184
4400	**710**	**1.59**	**1482**	**760**	**1.80**	**1677**	**808**	**2.01**	**1876**	**855**	**2.23**	**2081**	900	2.46	2290
4500	**723**	**1.69**	**1577**	**773**	**1.90**	**1775**	**820**	**2.12**	**1978**	866	2.35	2187	910	2.57	2400
4600	**737**	**1.80**	**1675**	**785**	**2.01**	**1877**	**832**	**2.24**	**2085**	877	2.46	2297	921	2.70	2514
4700	**751**	**1.91**	**1778**	**798**	**2.13**	**1984**	**844**	**2.35**	**2195**	889	2.59	2412	932	2.82	2633
4800	**765**	**2.02**	**1885**	**812**	**2.25**	**2095**	**856**	**2.48**	**2310**	900	2.71	2531	942	2.95	2756
4900	**779**	**2.14**	**1996**	**825**	**2.37**	**2210**	869	2.61	2430	912	2.85	2654	953	3.09	2883
5000	**793**	**2.26**	**2112**	**838**	**2.50**	**2330**	881	2.74	2554	923	2.98	2782	965	3.23	3014

PAH120 (10 TONS) STANDARD MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**830**	**1.39**	**1298**	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	**837**	**1.46**	**1363**	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	**843**	**1.53**	**1431**	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	**850**	**1.61**	**1502**	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	**858**	**1.69**	**1576**	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	1068	2.91	2716
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	1074	3.03	2821
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	1038	2.91	2713	1080	3.14	2930
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	1046	3.03	2822	**1087**	**3.26**	**3042**
4200	925	2.45	2289	969	2.68	2500	1011	2.91	2716	1053	3.15	2935	**1094**	**3.39**	**3159**
4300	934	2.57	2395	978	2.80	2610	1020	3.03	2828	1061	3.27	3052	**1101**	**3.52**	**3279**
4400	944	2.69	2504	986	2.92	2723	1028	3.16	2946	1068	3.40	3173	**1108**	**3.65**	**3403**
4500	954	2.81	2618	996	3.05	2840	1037	3.29	3067	1076	3.54	3297	—	—	—
4600	963	2.93	2736	1005	3.18	2962	1045	3.42	3192	**1085**	**3.67**	**3426**	—	—	—
4700	974	3.07	2858	1014	3.31	3088	1054	3.56	3322	—	—	—	—	—	—
4800	984	3.20	2985	1024	3.45	3219	—	—	—	—	—	—	—	—	—
4900	994	3.34	3116	1034	3.60	3353	—	—	—	—	—	—	—	—	—
5000	1005	3.49	3251	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan

Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 3.70.
3. See general fan performance notes.

FAN PERFORMANCE DATA — PAH

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PAH120 (10 TONS) HIGH-STATIC MOTOR (BELT DRIVE)*

Airflow Cfm	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	832	1.75	1629
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	841	1.84	1712
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	850	1.93	1799
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	833	2.02	1880	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	844	2.12	1979	890	2.34	2184
4400	**710**	**1.59**	**1482**	**760**	**1.80**	**1677**	**808**	**2.01**	**1876**	855	2.23	2081	900	2.46	2290
4500	**723**	**1.69**	**1577**	**773**	**1.90**	**1775**	**820**	**2.12**	**1978**	866	2.35	2187	910	2.57	2400
4600	**737**	**1.80**	**1675**	**785**	**2.01**	**1877**	832	2.24	2085	877	2.46	2297	921	2.70	2514
4700	**751**	**1.91**	**1778**	**798**	**2.13**	**1984**	844	2.35	2195	889	2.59	2412	932	2.82	2633
4800	**765**	**2.02**	**1885**	**812**	**2.25**	**2095**	856	2.48	2310	900	2.71	2531	942	2.95	2756
4900	**779**	**2.14**	**1996**	**825**	**2.37**	**2210**	869	2.61	2430	912	2.85	2654	953	3.09	2883
5000	**793**	**2.26**	**2112**	838	2.50	2330	881	2.74	2554	923	2.98	2782	965	3.23	3014

PAH120 (10 TONS) HIGH-STATIC MOTOR (BELT DRIVE)* (cont)

Airflow Cfm	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	830	1.39	1298	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	837	1.46	1363	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	843	1.53	1431	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	850	1.61	1502	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	858	1.69	1576	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	1068	2.91	2716
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	1074	3.03	2821
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	1038	2.91	2713	1080	3.14	2930
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	1046	3.03	2822	1087	3.26	3042
4200	925	2.45	2289	969	2.68	2500	1011	2.91	2716	1053	3.15	2935	1094	3.39	3159
4300	934	2.57	2395	978	2.80	2610	1020	3.03	2828	1061	3.27	3052	1101	3.52	3279
4400	944	2.69	2504	986	2.92	2723	1028	3.16	2946	1068	3.40	3173	1108	3.65	3403
4500	954	2.81	2618	996	3.05	2840	1037	3.29	3067	1076	3.54	3297	1115	3.79	3531
4600	963	2.93	2736	1005	3.18	2962	1045	3.42	3192	1085	3.67	3426	1123	3.93	3664
4700	974	3.07	2858	1014	3.31	3088	1054	3.56	3322	1093	3.82	3560	**1131**	**4.08**	**3801**
4800	984	3.20	2985	1024	3.45	3219	1063	3.71	3456	1102	3.96	3697	**1139**	**4.23**	**3943**
4900	994	3.34	3116	1034	3.60	3353	1073	3.85	3594	1111	4.12	3839	**1148**	**4.38**	**4088**
5000	1005	3.49	3251	1044	3.74	3492	1082	4.01	3737	1119	4.27	3986	**1156**	**4.55**	**4238**

LEGEND
Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor
*Motor drive range: 830 to 1130 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 5.25.
3. See general fan performance notes.

GENERAL FAN PERFORMANCE NOTES

NOTES:
1. Values include losses for filters, unit casing, and wet coils. See accessory/factory-installed option static pressure information.
2. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. See Evaporator-Fan Motor Performance tables for additional information.
3. Use of a field-supplied motor may affect wire sizing.
4. Interpolation is permissible. Do not extrapolate.

PERFORMANCE DATA − PAH (cont)

EVAPORATOR-FAN MOTOR PERFORMANCE — STANDARD MOTOR

UNIT PAH	UNIT PHASE	MAXIMUM CONTINUOUS BHP*	MAXIMUM OPERATING WATTS*	UNIT VOLTAGE	MAXIMUM AMP DRAW
072	Three	2.40	2120	208/230	6.7
				460	3.0
				575	3.0
090,102	Three	2.90	2615	208/230	8.6
				460	3.9
				575	3.9
120	Three	3.70	3775	208/230	12.2
				460	5.5
				575	5.5

LEGEND

Bhp — Brake Horsepower

*Extensive motor and electrical testing on these units ensures that the full horsepower and watts range of the motors can be utilized with confidence. Using your fan motors up to the ratings shown in this table will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

EVAPORATOR-FAN MOTOR PERFORMANCE — HIGH-STATIC MOTORS

UNIT PAH	UNIT PHASE	MAXIMUM CONTINUOUS BHP*	MAXIMUM OPERATING WATTS*	UNIT VOLTAGE	MAXIMUM AMP DRAW
072	Three	2.90	2615	208/230	8.6
				460	3.9
				575	3.9
090,102	Three	4.20	3775	208/230	12.2
				460	5.5
				575	5.5
120	Three	5.25	4400	208/230	17.3
				460	8.5
				575	8.5

LEGEND

Bhp — Brake Horsepower

*Extensive motor and electrical testing on these units ensures that the full horsepower and watts range of the motors can be utilized with confidence. Using your fan motors up to the ratings shown in this table will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

ACCESSORY ELECTRIC HEATERS STATIC PRESSURE DROP (in. wg) PAH072

COMPONENT	CFM								
	900	1200	1400	1600	1800	2000	2200	2400	2600
1 Heater	0.05	0.07	0.09	0.09	0.10	0.11	0.11	0.12	0.13
2 Heater	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18

LEGEND

ACCESSORY ELECTRIC HEATERS STATIC PRESSURE DROP (in. wg) PAH090—120

COMPONENT	CFM								
	2200	2500	3000	3500	4000	4500	5000	5500	6000
1 Heater	0.02	0.03	0.05	0.065	0.08	0.10	0.12	0.14	0.155
2 Heater	0.03	0.05	0.07	0.09	0.12	0.14	0.16	0.19	0.21

EVAPORATOR-FAN MOTOR EFFICIENCY

MOTOR PAH	EFFICIENCY
072	84
090,102	80
120	85

*Single-phase/3-phase.

NOTE: Convert watts to bhp using the following formula:

$$bhp = \frac{\text{watts input x motor efficiency}}{746}$$

ACCESSORY ECONOMIZER STATIC PRESSURE* (in. wg) — PAH072

COMPONENT	CFM							
	1250	1500	1750	2000	2250	2500	2750	3000
Vertical Economizer	0.045	0.065	0.08	0.12	0.145	0.175	0.22	0.255
Horizontal Economizer	—	—	0.1	0.125	0.15	0.18	0.225	0.275

LEGEND

NOTE: Performance is for DN series economizer.

*The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should be used in conjunction with the Fan Performance tables to determine indoor blower rpm and watts.

ACCESSORY ECONOMIZER STATIC PRESSURE* (in. wg) — PAH090—120

COMPONENT	CFM													
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	6250
Vertical Economizer	0.06	0.075	0.09	0.115	0.13	0.15	0.17	0.195	0.22	0.25	0.285	0.325	0.36	—
Horizontal Economizer	—	0.1	0.125	0.15	0.18	0.21	0.25	0.275	0.3	0.34	0.388	—	—	—

LEGEND

NOTE: Performance is for DN series economizer.

*The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should be used in conjunction with the Fan Performance tables to determine indoor blower rpm and watts.

FAN RPM AT MOTOR PULLEY SETTING*; STANDARD MOTOR/DRIVE

UNIT PAH	MOTOR PULLEY TURNS OPEN												
	0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
072	1585	1490	1445	1400	1350	1305	1260	1210	1165	1120	—	—	—
090,102	1085	1060	1035	1010	985	960	935	910	890	865	840	—	—
120	1080	1060	1035	1015	990	970	950	925	905	880	860	—	—

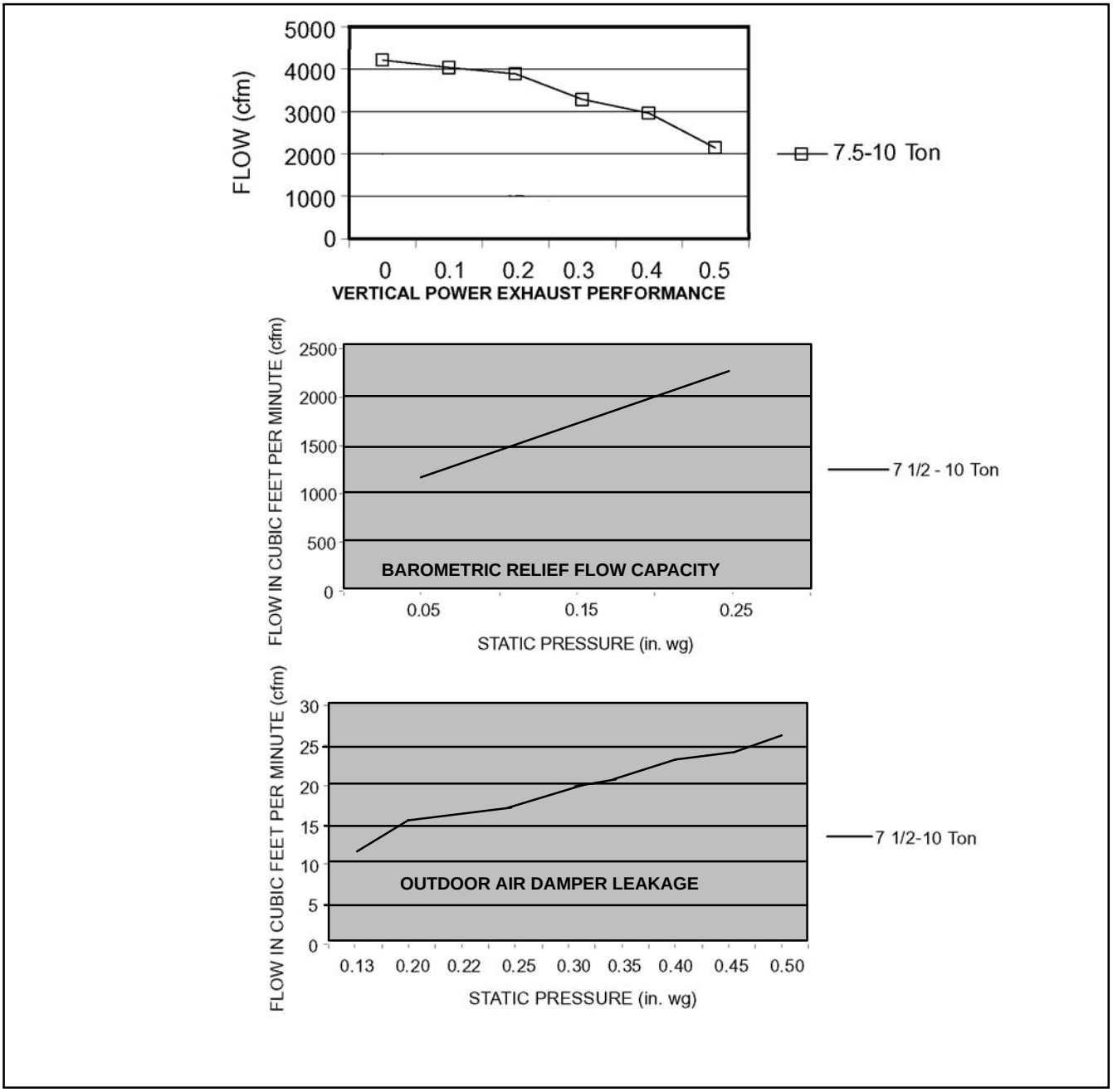
FAN RPM AT MOTOR PULLEY SETTING*; HIGH-STATIC MOTOR/DRIVE

UNIT PAH	MOTOR PULLEY TURNS OPEN												
	0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
072	1685	1589	1557	1525	1493	1460	1428	1396	1364	1332	1300	—	—
090	1080	1025	1007	988	970	952	933	915	897	878	860	—	—
102	1080	1025	1007	988	970	952	933	915	897	878	860	—	—
120	1130	1112	1087	1062	1037	1212	987	962	937	912	887	862	830

*Approximate fan rpm shown.

PERFORMANCE DATA − PAH (cont)

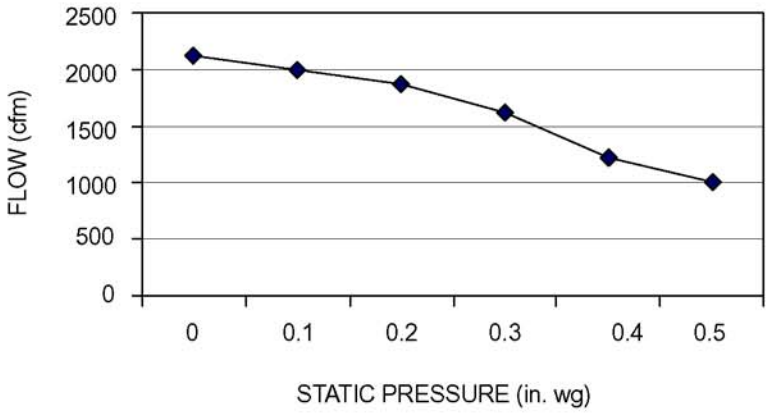
Vertical Economizer
Performance Data (PAH072−120)



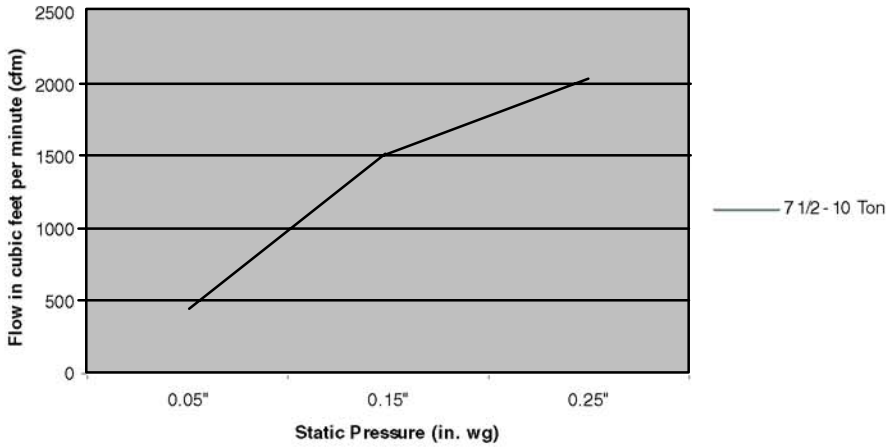
NOTE: Performance is for DN series economizer.

PERFORMANCE DATA − PAH (cont)

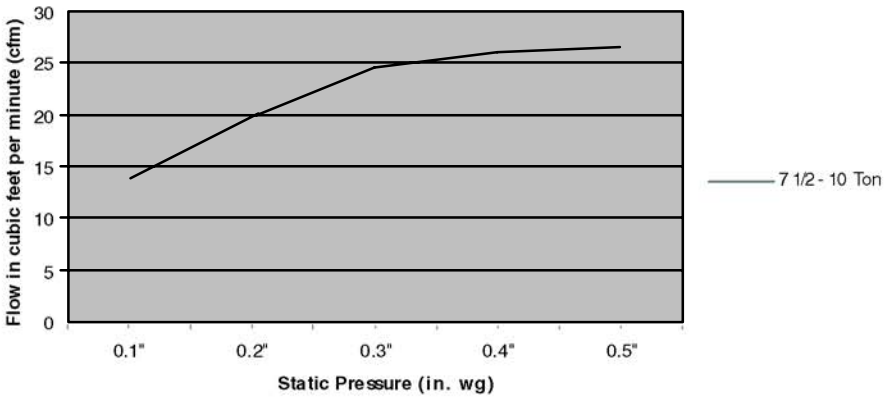
Horizontal Economizer
Performance Data (PAH072−120)



HORIZONTAL POWER EXHAUST PERFORMANCE



BAROMETRIC RELIEF CAPACITY



OUTDOOR AIR DAMPER LEAKAGE

NOTE: Performance is for DN series economizer.

PERFORMANCE DATA − PAH (cont)

POWER EXHAUST POWER REQUIREMENTS

POWER EXHAUST SIZE	AMPS (2 Fans Running)	MOCP	
		230 VAC	460 VAC
7 1/2 to 10 Ton	3.04 Amps at 60 Hz	15.0 amps	15.0 amps

LEGEND
MOCP — Maximum Overcurrent Protection

OUTDOOR SOUND POWER (TOTAL UNIT)

UNIT PAH	ARI RATING (dB)	OCTAVE BANDS							
		63	125	250	500	1000	2000	4000	8000
072	80	59.1	68.9	68.7	71.9	74.0	68.9	65.7	59.0
090,102	82	62.2	69.3	71.5	74.7	76.2	72.9	68.7	61.5
120	84	64.6	71.1	73.3	76.9	77.6	73.7	70.6	63.7

LEGEND
ARI — Air Conditioning and Refrigeration Institute
dB — Sound Levels (decibels)
NOTES: Indoor sound power is available in the Electronic Catalog program (ECAT) for specific operating parameters.

POWER EXHAUST OPTIONS

VERTICAL — MOUNTED IN ECONOMIZER HOOD				
POWER EXHAUST PART NO.	POWER EXHAUST DESCRIPTION	Application USAGE	POWER OUTPUT (Hp per fan)	NO. FANS
DNPWREXH030A01	Power Exhaust System (208/230−1−60)	072	0.23	2
DNPWREXH021A01	Power Exhaust System (460−3−60)	072	0.24	2
DNPWREXH022A01	Power Exhaust System (208/230−1−60)	090−120	0.47	2
DNPWREXH023A01	Power Exhaust System (460−3−60)	090−120	0.37	2

HORIZONTAL — MOUNTED IN RETURN DUCTWORK				
POWER EXHAUST PART NO.	POWER EXHAUST DESCRIPTION	APPLICATION USAGE	POWER OUTPUT (Hp per fan)	NO. FANS
DNPWREXH028A01	Horizontal Power Exhaust (208/230−1−60)	All*	0.48	1
DNPWREXH029A01	Horizontal Power Exhaust (460−3−60)	All	0.48	1

ELECTRICAL DATA

PAH072−120 UNITS

Unit Size	NOMINAL V−PH−Hz	IFM Type	Voltage Range		Compressor (each)			OFM (each)		IFM FLA	Electric Heat		Power Supply*		Diconnect Size	
			Min	Max	Qty	RLA	LRA	Qty	FLA		Actual kW†	FLA	MCA	MOCP	FLA	LRA
072	208/230−3−60	STD	187	254	1	20.5	156	1	1.4	5.8	—/—	—/—	32.8/32.8	40/40	32/32	200/200
											4.9/5.8	13.6/15.6	32.8/32.8	40/40	32/32	200/200
											7.9/9.6	21.9/25.3	34.6/38.8	40/40	32/36	200/200
											12.0/14.7	33.4/38.5	48.9/55.4	50/50	45/51	200/200
											15.8/19.3	43.8/50.5	62.0/70.4	70/80	57/65	200/200
		HIGH	187	254	1	20.5	156	1	1.4	7.5	—/—	—/—	34.5/34.5	40/40	34/34	219/219
											4.9/5.8	13.6/15.6	34.5/34.5	40/40	34/34	219/219
											7.9/9.6	21.9/25.3	36.7/40.9	40/45	34/38	219/219
											12.0/14.7	33.4/38.5	51.1/57.5	60/60	47/53	219/219
											15.8/19.3	43.8/50.5	64.1/72.5	70/80	59/67	219/219
											19.9/24.3	55.2/63.8	78.4/89.1	80/90	72/82	219/219
	460−3−60	STD	414	508	1	9.6	75	1	0.6	2.6	—	—	15.2	20	15	97
											5.5	7.2	15.2	20	15	97
											10.6	13.8	20.5	25	19	97
											12.9	16.8	24.3	25	22	97
											21.1	27.7	37.8	40	35	97
											23.4	30.7	41.6	45	38	97
		HIGH	414	508	1	9.6	75	1	0.6	3.4	—	—	16.0	20	16	106
											5.5	7.2	16.0	20	16	107
											10.6	13.8	21.5	25	20	107
											12.9	16.8	25.3	30	23	107
											21.1	27.7	38.8	40	36	107
											23.4	30.7	42.6	45	39	107
	575−3−60	STD	518	632	1	7.7	56	1	0.6	2.0	—	—	11.5	15	11	63
		HIGH	518	632	1	7.7	56	1	0.6	2.0	—	—	12.3	15	12	72

ELECTRICAL DATA — PAH090−102

UNIT SIZE	NOMINAL V−PH−Hz	IFM TYPE	VOLTAGE RANGE		COMPRESSOR (each)			OFM (each)		IFM FLA	ELECTRIC HEAT		POWER SUPPLY*		DISCONNECT SIZE	
			Min	Max	Qty	RLA	LRA	Qty	FLA		Actual kW†	FLA	MCA	MOCP	FLA	LRA
090	208/230−3−60	STD	187	254	2	12.4	88	2	1.4	7.5	—/—	—/—	38.2/38.2	45/45	40/40	242/242
											7.8/9.6	21.7/25.0	38.2/40.6	45/45	40/40	242/242
											12.0/14.7	33.4/38.5	51.1/57.5	60/60	47/53	242/242
											18.6/22.8	51.7/59.7	74.0/84.0	80/90	68/77	242/242
											24.0/29.4	66.7/77.0	92.8/105.6	100/110	85/97	242/242
											31.8/38.9	88.4/102.0	119.9/136.9	125/150	110/126	242/242
		HIGH	187	254	2	12.4	88	2	1.4	10.6	—/—	—/—	41.3/41.3	45/45	44/44	267/267
											7.8/9.6	21.7/25.0	41.3/44.5	50/50	44/44	267/267
											12.0/14.7	33.4/38.5	54.9/61.4	60/70	51/56	267/267
											18.6/22.8	51.7/59.7	77.9/87.8	80/90	72/81	267/267
											24.0/29.4	66.7/77.0	96.6/109.5	100/110	89/101	267/267
											31.8/38.9	88.4/102.0	123.7/140.8	125/150	114/129	267/267
	460−3−60	STD	414	508	2	6.4	44	2	0.7	3.4	—	—	19.2	20	20	121
											12.8	16.7	25.1	20	23	121
											15.2	19.8	29.1	20	27	121
											25.5	33.4	46.0	50	42	121
											30.3	39.7	53.9	60	50	121
											38.3	50.2	66.9	70	62	121
		HIGH	414	508	2	6.4	44	2	0.7	4.8	—	—	20.6	20	22	133
											12.8	16.7	26.9	20	25	134
											15.2	19.8	30.8	35	28	134
											25.5	33.4	47.8	50	44	134
											30.3	39.7	55.6	60	51	134
											38.3	50.2	68.7	70	63	134
	575−3−60	STD	518	632	2	4.8	34	2	0.6	2.8	—	—	14.8	20	16	91
											17.0	16.4	23.9	25	22	91
											34.0	32.7	44.4	45	41	91
		HIGH	518	632	2	4.8	34	2	0.6	3.3	—	—	15.3	20	16	101
											17.0	16.4	24.6	25	23	101
											34.0	32.7	45.0	50	42	101
102	208/230−3−60	STD	187	254	2	13.4	105	2	1.4	7.5	—/—	—/—	40.2/40.2	45/45	42/42	276/276
											7.8/9.6	21.7/25.0	40.2/40.6	45/45	42/42	276/276
											12.0/14.7	33.4/38.5	51.1/57.5	60/60	47/53	276/276
											18.6/22.8	51.7/59.7	74.0/84.0	80/90	68/77	276/276
											24.0/29.4	66.7/77.0	92.8/105.6	100/110	85/97	276/276
											31.8/38.9	88.4/102.0	119.9/136.9	110/150	110/126	276/276
		HIGH	187	254	2	13.4	105	2	1.4	10.6	—/—	—/—	43.3/43.3	50/50	46/46	301/301
											7.8/9.6	21.7/25.0	43.3/44.5	50/50	46/46	301/301
											12.0/14.7	33.4/38.5	54.9/61.4	60/70	51/56	301/301
											18.6/22.8	51.7/59.7	77.9/87.8	80/90	72/81	301/301
											24.0/29.4	66.7/77.0	96.6/109.5	100/110	89/101	301/301
											31.8/38.9	88.4/102.0	123.7/140.8	125/150	114/129	301/301
	460−3−60	STD	414	508	2	7.4	55	2	0.7	3.4	—	—	21.5	20	23	143
											12.8	16.7	25.1	20	23	143
											15.2	19.8	29.1	20	27	143
											25.5	33.4	46.0	50	42	143
											30.3	39.7	53.9	60	50	143
											38.3	50.2	66.9	70	62	143
		HIGH	414	508	2	7.4	55	2	0.7	4.8	—	—	22.9	20	24	155
											12.8	16.7	26.9	20	25	156
											15.2	19.8	30.8	35	28	156
											25.5	33.4	47.8	50	44	156
											30.3	39.7	55.6	60	51	156
											38.3	50.2	68.7	70	63	156
	575−3−60	STD	518	632	2	6.4	44	2	0.6	2.8	—	—	18.4	25	19	111
											17.0	16.4	23.9	25	22	111
											34.0	32.7	44.4	45	41	111
		HIGH	518	632	2	6.4	44	2	0.6	3.3	—	—	48.9	25	20	121
											17.0	16.4	24.6	25	23	121
											34.0	32.7	45.0	50	41	121

ELECTRICAL DATA — PAH120

UNIT SIZE	NOMINAL V–PH–Hz	IFM TYPE	VOLTAGE RANGE		COMPRESSOR (each)			OFM (each)		IFM FLA	ELECTRIC HEAT		POWER SUPPLY*		DISCONNECT SIZE	
			Min	Max	Qty	RLA	LRA	Qty	FLA	IFM FLA	Actual kW†	FLA	MCA	MOCP	FLA	LRA
120	208–3–60	STD	187	254	2	17.6	125	2	1.4	10.6	—/—	—/—	53.0/53.0	60/60	56/56	341/341
			187	254	2	17.6	125	2	1.4	10.6	7.8/9.6	21.7/25.0	53.0/53.0	60/60	56/56	341/341
			187	254	2	17.6	125	2	1.4	10.6	12.0/14.7	33.4/38.5	54.9/61.4	60/70	56/56	341/341
			187	254	2	17.6	125	2	1.4	10.6	24.0/29.4	66.7/77.0	96.6/109.5	100/110	89/101	341/341
			187	254	2	17.6	125	2	1.4	10.6	31.8/38.9	88.4/102.0	123.7/140.8	125/150	114/129	341/341
			187	254	2	17.6	125	2	1.4	10.6	37.5/45.9	104.2/104.2	143.5/133.5	150/150	132/151	341/341
		HIGH	187	254	2	17.6	125	2	1.4	15	—/—	—/—	57.4/57.4	70/70	61/61	364/364
			187	254	2	17.6	125	2	1.4	15	7.8/9.6	21.7/25.0	57.4/57.4	70/70	62/62	364/364
			187	254	2	17.6	125	2	1.4	15	12.0/14.7	33.4/38.5	60.4/66.9	70/80	61/62	364/364
			187	254	2	17.6	125	2	1.4	15	24.0/29.4	66.7/77.0	102.1/115.0	110/125	94/106	364/364
			187	254	2	17.6	125	2	1.4	15	31.8/38.9	88.4/102.0	129.2/146.3	150/150	119/135	364/364
			187	254	2	17.6	125	2	1.4	15	37.5/45.9	104.2/120.3	149.0/139.0	150/175	137/156	364/364
	460–3–60	STD	414	508	2	8.3	62.5	2	0.7	4.8	—	—	24.9	30	26	170
			414	508	2	8.3	62.5	2	0.7	4.8	12.8	16.7	26.9	30	26	171
			414	508	2	8.3	62.5	2	0.7	4.8	15.2	19.8	30.8	35	28	171
			414	508	2	8.3	62.5	2	0.7	4.8	30.3	39.7	55.6	60	51	171
			414	508	2	8.3	62.5	2	0.7	4.8	38.3	50.2	68.7	70	63	171
			414	508	2	8.3	62.5	2	0.7	4.8	45.9	60.1	66.1	80	75	171
		HIGH	414	508	2	8.3	62.5	2	0.7	7.4	—	—	27.5	30	29	182
			414	508	2	8.3	62.5	2	0.7	7.4	12.8	16.7	30.1	35	29	182
			414	508	2	8.3	62.5	2	0.7	7.4	15.2	19.8	34.1	40	31	182
			414	508	2	8.3	62.5	2	0.7	7.4	30.3	39.7	58.9	60	54	182
			414	508	2	8.3	62.5	2	0.7	7.4	38.3	50.2	71.9	80	66	182
			414	508	2	8.3	62.5	2	0.7	7.4	45.9	60.1	69.4	80	78	182
	575–3–60	STD	518	632	2	6.3	50	2	0.6	3.3	—	—	18.7	25	20	133
			518	632	2	6.3	50	2	0.6	3.3	17.0	16.4	24.6	25	23	133
			518	632	2	6.3	50	2	0.6	3.3	34.0	32.7	45.0	50	41	133
			518	632	2	6.3	50	2	0.6	3.3	51.0	49.1	53.2	60	60	133
		HIGH	518	632	2	6.3	50	2	0.6	5.6	—	—	21.0	25	22	139
			518	632	2	6.3	50	2	0.6	5.6	17.0	16.4	27.4	30	25	139
			518	632	2	6.3	50	2	0.6	5.6	34.0	32.7	47.9	50	44	139
			518	632	2	6.3	50	2	0.6	5.6	51.0	49.1	56.1	70	63	139

LEGEND

CONV — Convenience Outlet
FLA — Full Load Amps
HACR — Heating, Air Conditioning and Refrigeration
IFM — Indoor (Evaporator) Fan Motor
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
NEC — National Electrical Code
OFM — Outdoor (Condenser) Fan Motor
PH — Dehumidification System
RLA — Rated Load Amps

*Used to determine minimum disconnect per NEC.

†Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v or 600 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

NOTES:

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

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

Example: Supply voltage is 460–3–60.

AB = 452 v
BC = 464 v
AC = 455 v

$$\text{Average Voltage} = \frac{452 + 464 + 455}{3}$$

$$= \frac{1371}{3}$$

$$= 457$$

Determine maximum deviation from average voltage.
(AB) 457 – 452 = 5 v
(BC) 464 – 457 = 7 v
(AC) 457 – 455 = 2 v
Maximum deviation is 7 v.
Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{457}$$

$$= 1.53\%$$

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.

3. Non-fused disconnect switch cannot be used when rooftop unit electrical ratings exceed 80 amps.
4. For units with power exhaust: If a single power source is to be used, size wire to include power exhaust MCA and MOCP.
   Check MCA and MOCP when power exhaust is powered through the unit. Determine the new MCA including the power exhaust using the following formula:
   MCA New = MCA unit only + MCA of Power Exhaust
   If the new MCA does not exceed the published MOCP, then MOCP would not change. The MOCP in this example is 35 amps, the MCA New is below 35, therefore the MOCP is acceptable. If "MCA New" is larger than the published MOCP, raise the MOCP to the next larger size. For separate power, the MOCP for the power exhaust will be 15 amps per NEC.

POWER EXHAUST ELECTRICAL DATA

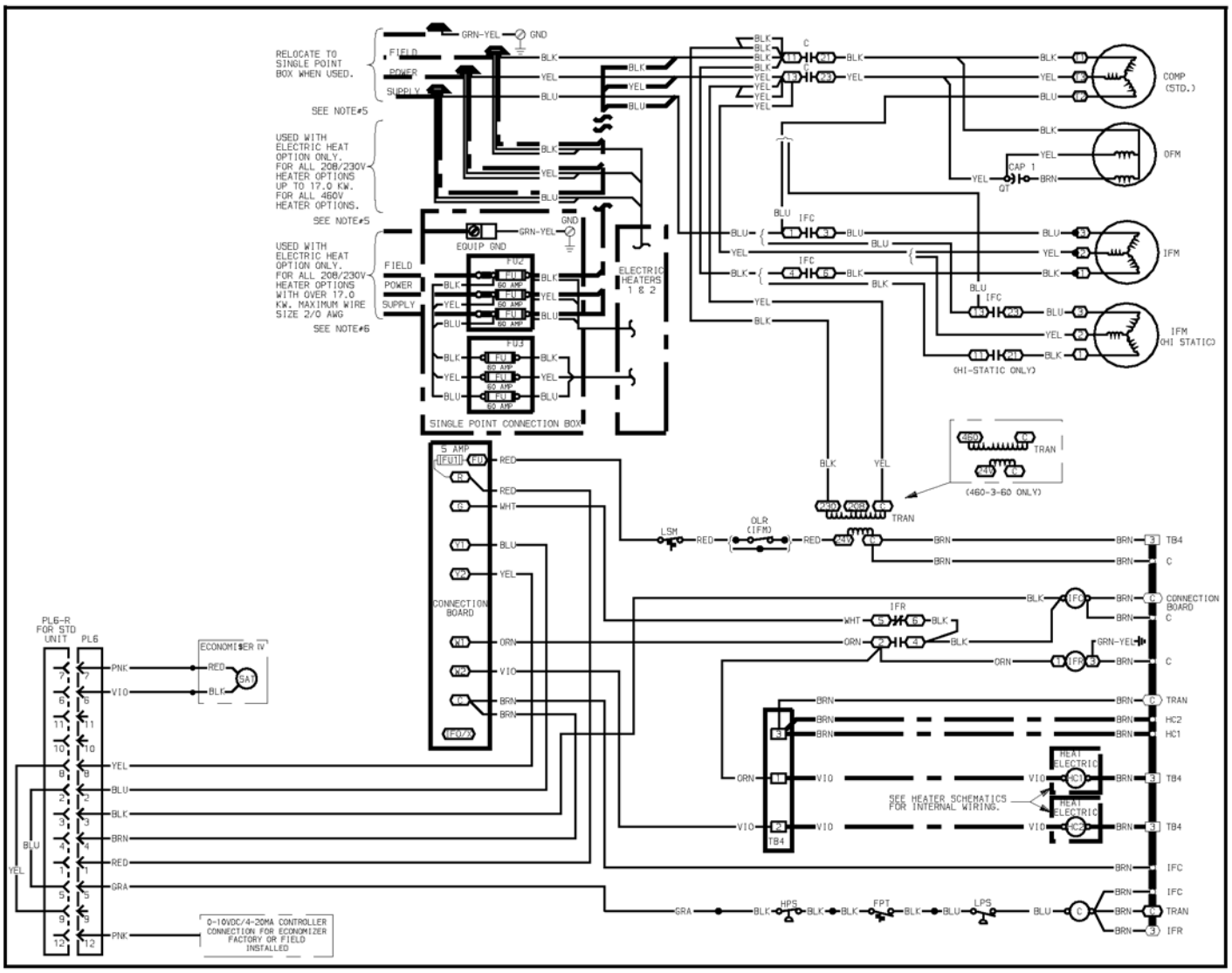
POWER EXHAUST PART NO.	APPLICATION USAGE	MCA (230v)	MCA (460v)	MCA (575v)	MOCP (separate power source only)
DNPWREXH030A01	072	1.6	N/A	0.64	15
DNPWREXH021A01		N/A	0.68	N/A	15
DNPWREXH022A01	090—120	3.4	N/A	1.32	15
DNPWREXH023A01		N/A	1.4	N/A	15
DNPWREXH028A01	ALL	1.7	N/A	0.68	15
DNPWREXH029A01	ALL	N/A	0.7	N/A	15

Model	Volt/Phase/Hertz	Application Useage	Unit			
			LRA	FLA	MCA	Fuse Size
AXB035PEH	208/230/1/60	072	10.2	4.3	5.4	10
AXB035PEL	460/1/60	072	4.1	1.7	2.2	4
AXB035PES	575/1/60	072	4.1	1.7	2.2	4
AXB145PEH	208–230/1/60	090–102	10.2	4.3	5.4	8
AXB145PEL	460/1/60	090–102	4.1	1.7	2.2	5
AXB145PES	575/1/60	090–102	4.1	1.7	2.2	5
AXB245PEH	208–230/1/60	120	24.9	5.0	6.3	10
AXB245PEL	460/1/60	120	N/A	2.2	2.8	5
AXB245PES	575/1/60	120	N/A	1.5	1.9	4

NOTE: AXB power exhaust is wired single phase, drop third leg when installing.

NOTE: If a single power source is to be used, size wire to include power exhaust MCA and MOCP.

TYPICAL WIRING SCHEMATICS — PAH



PAH072 Shown

LEGEND AND NOTES

AWG — American Wire Gage
C — Contactor, Compressor
CAP — Capacitor
COMP — Compressor Motor
EQUIP — Equipment
FPT — Freeze Protection Thermostat
FU — Fuse
GND — Ground
HPS — High-Pressure Switch
IFC — Indoor (Evaporator) Fan Contactor
IFM — Indoor (Evaporator) Fan Motor
IFR — Indoor (Evaporator) Fan Relay
LPS — Low-Pressure Switch
LSM — Limit Switch (Manual Reset)
OFM — Outdoor (Condenser) Fan Motor
OLR — Overload Relay
P — Plug
PL — Plug Assembly
QT — Quadruple Terminal

RAT — Return Air Temperature Sensor
SAT — Supply-Air Thermostat
TB — Terminal Block
TRAN — Transformer

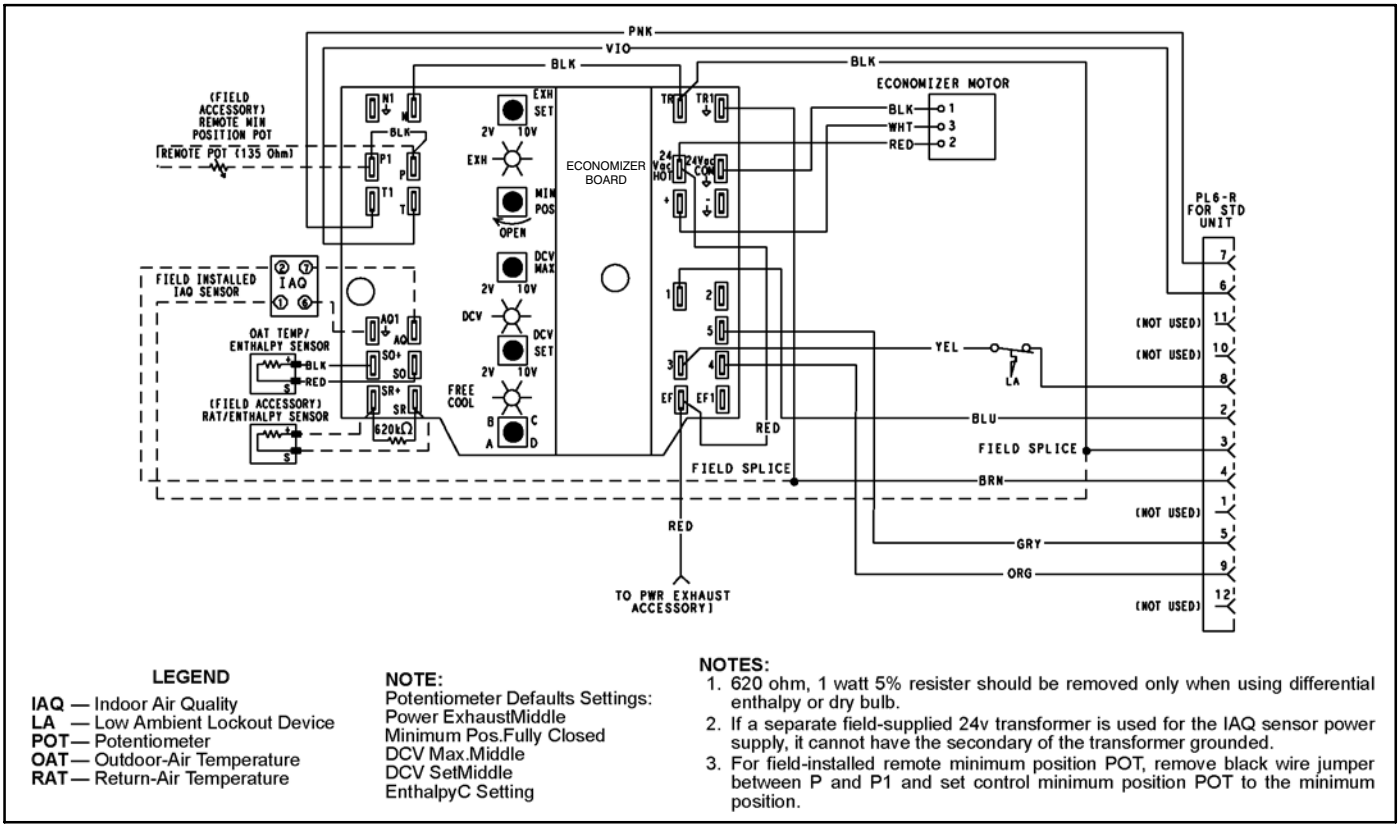
Field Splice
Marked Wire
Terminal (Marked)
Terminal (Unmarked)
Terminal Block
Splice
Splice (Marked)
Factory Wiring

Field Control Wiring
Field Power Wiring
Accessory or Optional Wiring
To indicate common potential only. Not to represent wiring.

NOTES:
1. If any of the original wire furnished must be replaced, it must be replaced with type 90° C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
5. Use copper conductors only.
6. Use copper, copper clad aluminum or aluminum conductors.

TYPICAL WIRING SCHEMATICS — PAH (cont)

Economizer Wiring − PAH072−120 Units



LEGEND

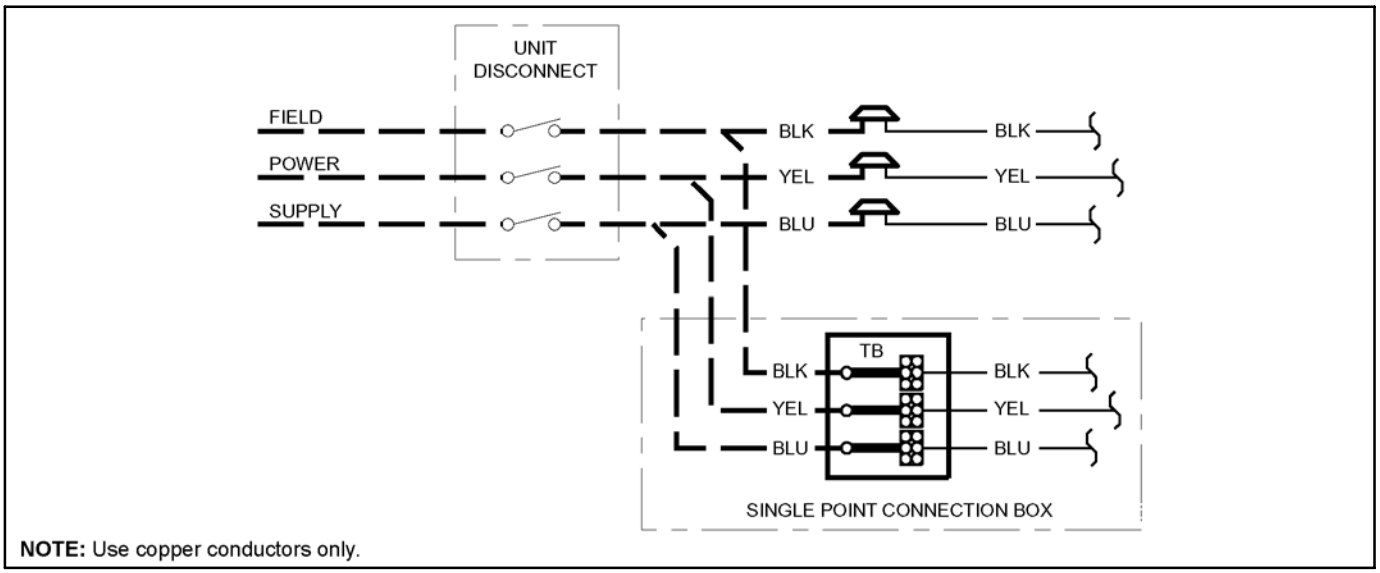
IAQ — Indoor Air Quality
LA — Low Ambient Lockout Device
POT — Potentiometer
OAT — Outdoor-Air Temperature
RAT — Return-Air Temperature

NOTE:
Potentiometer Defaults Settings:
Power ExhaustMiddle
Minimum Pos.Fully Closed
DCV Max.Middle
DCV SetMiddle
EnthalpyC Setting

NOTES:
1. 620 ohm, 1 watt 5% resister should be removed only when using differential enthalpy or dry bulb.
2. If a separate field-supplied 24v transformer is used for the IAQ sensor power supply, it cannot have the secondary of the transformer grounded.
3. For field-installed remote minimum position POT, remove black wire jumper between P and P1 and set control minimum position POT to the minimum position.

NOTE: Electrical wiring is for DN series economizer.

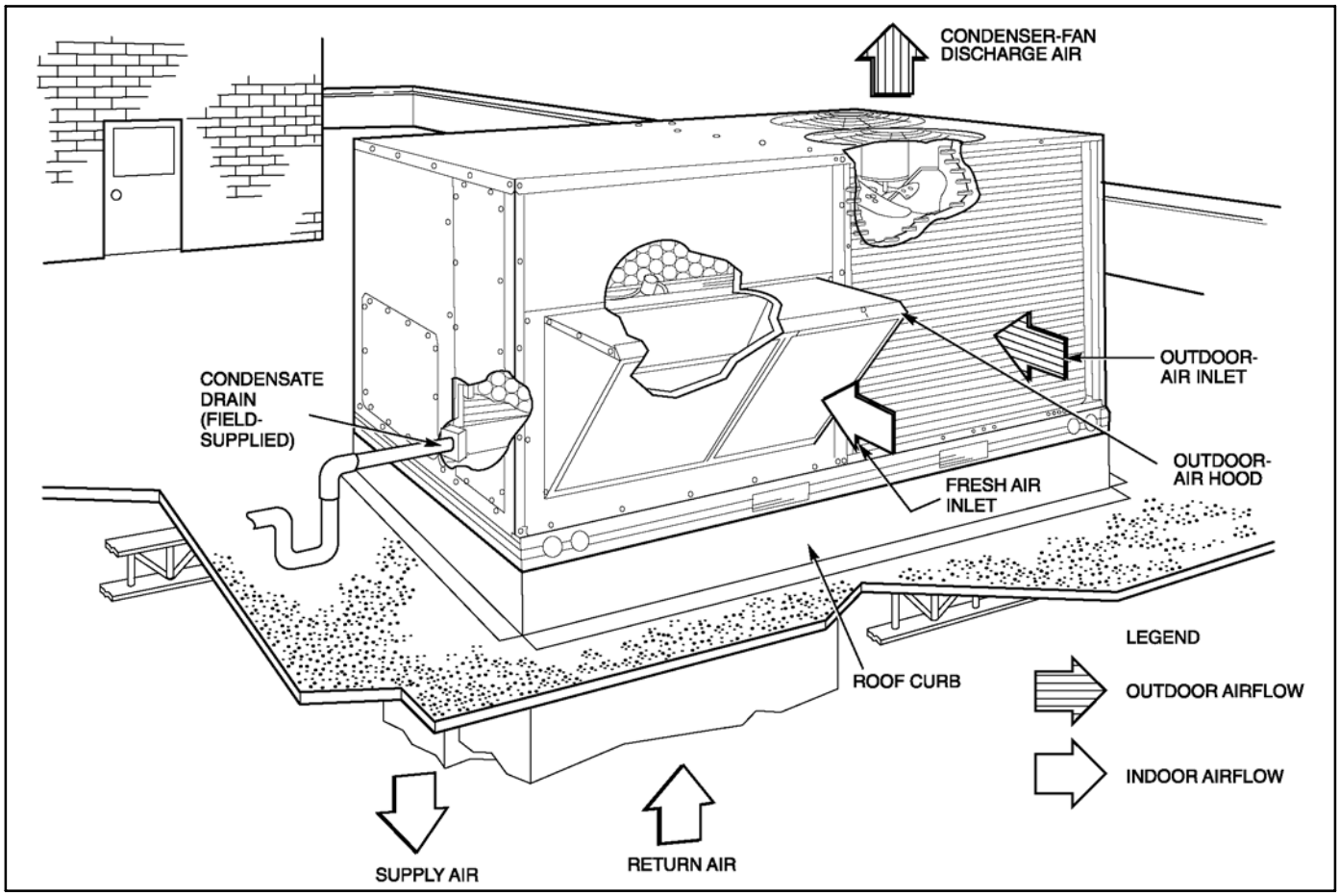
Non-Fused Disconnect (Optional) − PAH072−120



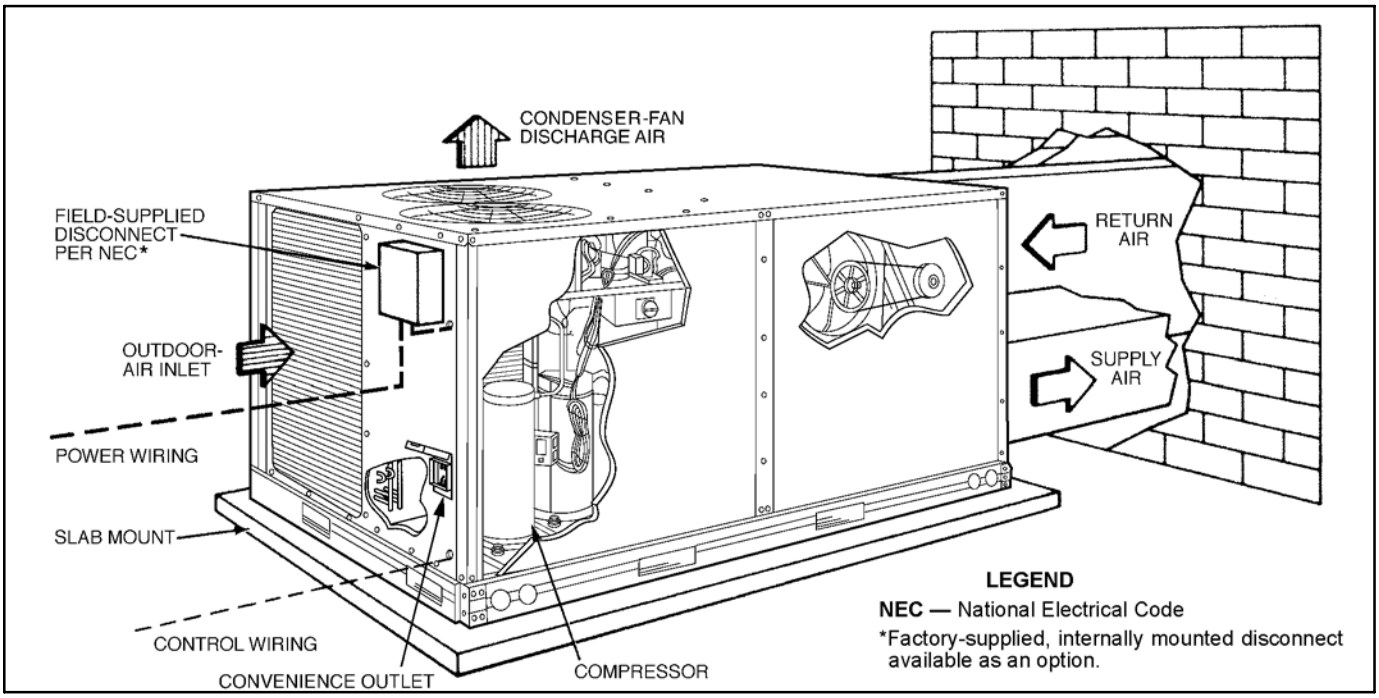
NOTE: Use copper conductors only.

TYPICAL PIPING AND WIRING — PAH072−120

Vertical Discharge Ducting



Horizontal Discharge Ducting



GUIDE SPECIFICATIONS — PAH072−120

PACKAGED ROOFTOP ELECTRIC COOLING UNIT — CONSTANT VOLUME APPLICATIONS
HVAC GUIDE SPECIFICATIONS
SIZE RANGE: 6 TO 10 TONS, NOMINAL (COOLING)
4.4 to 51 kW, NOMINAL
(ACCESSORY ELECTRIC HEATING)

MODEL NUMBERS :
PAH

PAH072−120 UNITS ARE ENERGY STAR QUALIFIED

PART 1 − GENERAL

1.01 SYSTEM DESCRIPTION

Outdoor rooftop mounted, electrically controlled heating and cooling unit utilizing a hermetic compressor(s) for cooling duty. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.

1.02 QUALITY ASSURANCE

A. Unit shall well exceed ASHRAE 90.1−2001 Energy Standards. PAH072−120 units are Energy Star qualified.
B. Unit shall be rated in accordance with ARI Standards 210 or 360. Designed in accordance with UL Standard 1995.
C. Unit shall be designed to conform to ASHRAE 15, latest revision.
D. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
E. Roof curb shall be designed to conform to NRCA Standards.
F. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
G. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
H. Unit shall be designed in accordance with ISO 9001:2000, and shall be manufactured in a facility registered to ISO 9001:2000.
I. Each unit shall be subjected to a completely automated run testing on the assembly line. A factory-supplied printout indicating tested pressures, amperages, data, and inspectors; providing certification of the unit status at the time of manufacture shall be available upon request.

1.03 DELIVERY, STORAGE, AND HANDLING

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

PART 2 − PRODUCTS

2.01 EQUIPMENT (STANDARD)

A. General:

Factory assembled, single-piece heating and cooling unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, refrigerant charge (R−22), and special features required prior to field start-up.

B. Unit Cabinet:
1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a prepainted baked enamel finish on all externally exposed surfaces.
2. Evaporator fan compartment interior cabinet surfaces shall be insulated with a minimum $^{1}/_{2}$-in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side.
3. Cabinet panels shall be easily removable for servicing.
4. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
5. Unit shall have a factory-installed, sloped condensate drain pan made of a non-corrosive material, providing a minimum $^{3}/_{4}$-in.−14 NPT. connection with both vertical and horizontal drains, and shall comply with ASHRAE Standard 62.
6. Unit shall have a factory-installed filter access panel to provide filter access with tool-less removal.
7. Unit shall have standard thru-the-bottom power connection capability (accessory kit is required).

C. Fans:
1. Evaporator Fan:
a. Fan shall be belt driven as shown on the equipment drawings. Belt drive shall include an adjustable-pitch motor pulley.
b. Fan wheel shall be double-inlet type with forward-curved blades.
c. Bearings shall be sealed, permanently lubricated ball-bearing type for longer life and lower maintenance.
2. Evaporator fan shall be made from steel with a corrosion-resistant finish and shall be dynamically balanced.
3. Rooftop evaporator fan motors smaller than 5 hp are designed and rated in maximum continuous Bhp or maximum continuous watts. The motors do not have a hp rating on the nameplate.
4. Condenser fan shall be of the direct-driven (with totally enclosed motors) propeller type and shall discharge air vertically.
5. Condenser fan shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

D. Compressor(s):
1. Fully hermetic type, internally protected scroll-type.
2. Factory mounted on rubber grommets and internally spring mounted for vibration isolation.
3. On dual electrically and mechanically independent circuits (090−120).

E. Coils:
1. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved, $^{3}/_{8}$-in. OD copper tubes with all joints brazed.
2. Dual compressor models (090−120), evaporator coils are face-split design (circuit no. 1 on bottom).
3. Testing:
a. Evaporator and condenser coils shall be qualified to UL 1995 burst test at 2,200 psi.
b. Evaporator and condenser coils shall be leak tested to 150 psig and pressure tested to 400 psig. deg. F 60. Hardness of paint film: H−2H pencil hardness. Gloss (per ASTM 0523, 60).

F. Refrigerant Components:

Refrigerant circuit components shall include:

1. Fixed orifice metering system.
2. Refrigerant filter drier.
3. Service gage connections on suction, discharge, and liquid lines.

G. Filter Section:
1. Standard filter section shall consist of factory-installed, low velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
2. Filter face velocity shall not exceed 320 fpm at nominal airflows.
3. Filter section should use only one size filter.
4. Filters shall be accessible through an access panel with "no-tool" removal.

H. Controls and Safeties:
1. Unit Controls:

Unit shall be complete with self-contained low- voltage control circuit protected by a fuse on the 24-v transformer side (090−120 units have a resettable circuit breaker).

2. Safeties:
a. Unit shall incorporate a solid-state compressor protector which provides anti-cycle reset capability at the space thermostat, should any of the following standard safety devices trip and shut off compressor.
(1.) Compressor overtemperature, overcurrent.
(2.) Loss-of-charge/low-pressure switch.
(3.) Freeze-protection thermostat, evaporator coil.
(4.) High-pressure switch.
(5.) Automatic reset motor thermal overload protector.

The lockout protection shall be easily disconnected at the control board, if necessary.

GUIDE SPECIFICATIONS — PAH072−120

I. Operating Characteristics:
   1. Unit shall be capable of starting and running at 125°F ambient outdoor temperature, meeting maximum load criteria of ARI Standard 210/240 or 360 at + 10% voltage.
   2. Compressor with standard controls shall be capable of operation down to 25°F ambient outdoor temperature.

J. Electrical Requirements:
   All unit power wiring shall enter unit cabinet at a single factory-predrilled location.

K. Motors:
   1. Compressor motors shall be cooled by refrigerant gas passing through motor windings and shall have line break thermal and current overload protection.
   2. Evaporator-fan motor shall have permanently lubricated bearings and inherent automatic-reset thermal overload protection. Evaporator motors do NOT have conventional horsepower (HP) ratings listed on the motor nameplate. Motors are designed and qualified in the “air-over” location downstream of the cooling coil and carry a “maximum continuous bhp” rating that is the maximum application bhp rating for the motor; no “safety factors” above that rating may be applied.
   3. Totally enclosed condenser-fan motor shall have permanently lubricated bearings, and inherent automatic-reset thermal overload protection.

L. Special Features
   1. Integrated Economizers
      a. Integrated integral modulating type capable of simultaneous economizer and compressor operation.
      b. Available as a field−installed accessory in vertical supply/return configuration and dedicated horizontal and/or vertical supply return configurations.
      c. Includes all hardware and controls to provide cooling with outdoor air.
      d. Equipped with low−leakage dampers, not to exceed 2% leakage at 1 in. wg pressure differential.
      e. Capable of introducing up to 100% outdoor air.
      f. Economizer shall be equipped with a barometric relief damper capable of relieving up to 100% return air.
      g. Designed to close damper(s) during loss−of power situations with spring return built into motor.
      h. Dry bulb outdoor−air temperature sensor shall be provided as standard. Outdoor air sensor set point is adjustable and shall range from 40° to 100° F. For the economizer, the return air sensor, indoor enthalpy sensor, and outdoor enthalpy sensor shall be provided as field installed accessories to provide enthalpy control, differential enthalpy control, and differential dry bulb temperature control.
      i. Economizer controller shall use a mixed air thermistor mounted on the evaporator fan housing to control economizer operation to a supply air temperature of 55° F.
      j. The economizer shall have a gear−driven parallel blade design.
      k. Economizer controller shall provide control of internal building pressure through its accessory power exhaust function. Factory set at 100%, with a range of 0% to 100%.
      l. Economizer Controller Occupied Minimum Damper Position Setting maintains the minimum airflow into the building during occupied period providing design ventilation rate for full occupancy (damper position during heating). A remote potentiometer may be used to override the set point.
      m. Economizer Controller Unoccupied Minimum Damper Position Setting − The economizer damper shall be completely closed when the unit is in the occupied mode.
      n. Economizer Controller IAQ/DCV Maximum Damper Position Setting − Setting the maximum position of the damper prevents the introduction of large amounts of hot or cold air into the space. This position is intended to satisfy the base minimum ventilation rate.
      o. Economizer controller IAQ/DCV control modulates the outdoor−air damper to provide ventilation based on the optional 2 to 10 vdc CO2 sensor input.
      p. Compressor lockout sensor (opens at 35° F, closes at 50° F).
      q. Actuator shall be direct coupled to economizer gear, eliminating linkage arms and rods.
      r. Control LEDs:
         1. When the outdoor−air damper is capable of providing free cooling, the “Free Cool” LED shall illuminate.
         2. The IAQ LED indicates when the module is on the DCV mode.
         3. The EXH LED indicates when the exhaust fan contact is closed.
      s. Remote Minimum Position Control − A field−installed accessory remote potentiometer shall allow the outdoor−air damper to be opened or closed beyond the minimum position in the occupied mode for modified ventilation.

PHYSICAL DATA — PAH155,180

OPERATING AND RIGGING WEIGHTS — PAH155,180

UNIT	BASE UNIT OPERATING WEIGHTS*			
	155		180	
	lb	kg	lb	kg
PAH	1575	714	1650	748

*Base unit weight does not include electric heaters, economizer, power exhaust, barometric relief or crating.

NOTE: For 155 and 180 unit sizes add 75 lb (34 kg) for domestic crating.

PHYSICAL DATA — PAH155,180

UNIT PAH		155			180		
UNIT VOLTAGE		208/230	460	575	208/230	460	575
NOMINAL CAPACITY (tons)		12			15		
OPERATING WEIGHT (lb)							
Unit		1725			1800		
COMPRESSOR							
Quantity...Model (Ckt 1, Ckt 2)		2...ZR72KC			1...ZR94KC, 1...ZR72KC		
Number of Refrigerant Circuits		2			2		
Crankcase Heater Watts		70			70		
Loading (% of Full Capacity)		0, 53, 100			0, 60, 100		
Oil (oz) (Ckt 1, Ckt 2)		60, 60			85, 60		
REFRIGERANT TYPE		R-22					
Expansion Device		TXV					
Operating Charge (lb)**	Circuit 1	20.7			19.5		
	Circuit 2	13.4			13.45		
CONDENSER FAN		Propeller Type					
Nominal Cfm		10,500			10,500		
Quantity...Diameter (in.)		3...22			3...22		
Motor Hp...Rpm		1/2...1050			1/2...1050		
Watts Input (Total)		1100			1100		
CONDENSER COIL		Cross-Hatched 3/8-in. Copper Tubes, Aluminum Lanced, Aluminum Pre-Coated, or Copper Plate Fins					
Rows...Fins/in.		4...15			4...15		
Total Face Area (sq ft)		21.7			21.7		
EVAPORATOR FAN		Centrifugal Type					
Quantity...Size (in.)		2...12 x 12			2...12 x 12		
Type Drive		Belt			Belt		
Nominal Cfm		5200			6000		
Std Motor Hp		2.9		3.0	5		
Opt Motor Hp		3.7		N/A			
Motor Nominal Rpm		1725			1745		
Std Maximum Continuous Bhp		3.13		3.38	6.13		
Opt Maximum Continuous Bhp		4.26		N/A	N/A		
Motor Frame Size		56H			184T		
Fan Rpm Range	Low-Medium Static	895–1147		895–1147	873–1021		
	High Static	1040–1315			1025–1200		
Motor Bearing Type		Ball			Ball		
Maximum Allowable Rpm		1,550			1,550		
Motor Pulley Pitch Dia.	Low-Medium Static	3.1/4.1		3.1/4.1	4.9/5.9		
	High Static	3.7/4.7		N/A	4.9/5.9		
Nominal Motor Shaft Diameter (in.)		7/8		7/8	1 1/8		
Fan Pulley Pitch Diameter (in.)	Low-Medium Static	6.0		6.0	9.4		
	High Static	6.0		6.0	8.0		
Nominal Fan Shaft Diameter (in.)		1 3/16		1 3/16	1 7/16		
Belt, Quantity...Type...Length (in.)	Low-Medium Static	1...BX...45		1...BX...45	1...BX...50		
	High Static	1...BX...45		1...BX...45	1...BX...48		
Pulley Center Line Distance (in.)		14.5-16.0		14.5–16.0	13.3-14.8		
Speed Change per Full Turn of Movable	Low-Medium Static	45		45	37		
Pulley Flange (Rpm)	High Static	45		N/A	44		
Movable Pulley Maximum Full Turns From Closed Position		6		6	4††		
Factory Speed		3.5		3.5	3.5		
Factory Speed Setting (Rpm)	Low-Medium Static	987		987	965		
	High Static	1155		N/A	1134		
EVAPORATOR COIL		Cross-Hatched 3/8-in. Copper Tubes, Aluminum Lanced or Copper Plate Fins, Face Split					
Rows...Fins/in.		4...15			4...15		
Total Face Area (sq ft)		17.5			17.5		
HIGH-PRESSURE SWITCH (psig)							
Cutout		426					
Reset (Auto.)		320					
LOW-PRESSURE SWITCH (psig)							
Cutout		27					
Reset (Auto.)		44					
FREEZE PROTECTION THERMOSTAT (F)							
Opens		30 ± 5					
Closes		45 ± 5					
OUTDOOR-AIR INLET SCREENS		Cleanable					
Quantity...Size (in.)		2...20 x 25 x 1					
		1...20 x 20 x 1					
RETURN-AIR FILTERS		Throwaway					
Quantity...Size (in.)		4...20 x 20 x 2					
		4...16 x 20 x 2					

LEGEND

Bhp — Brake Horsepower

TXV — Thermostatic Expansion Valve

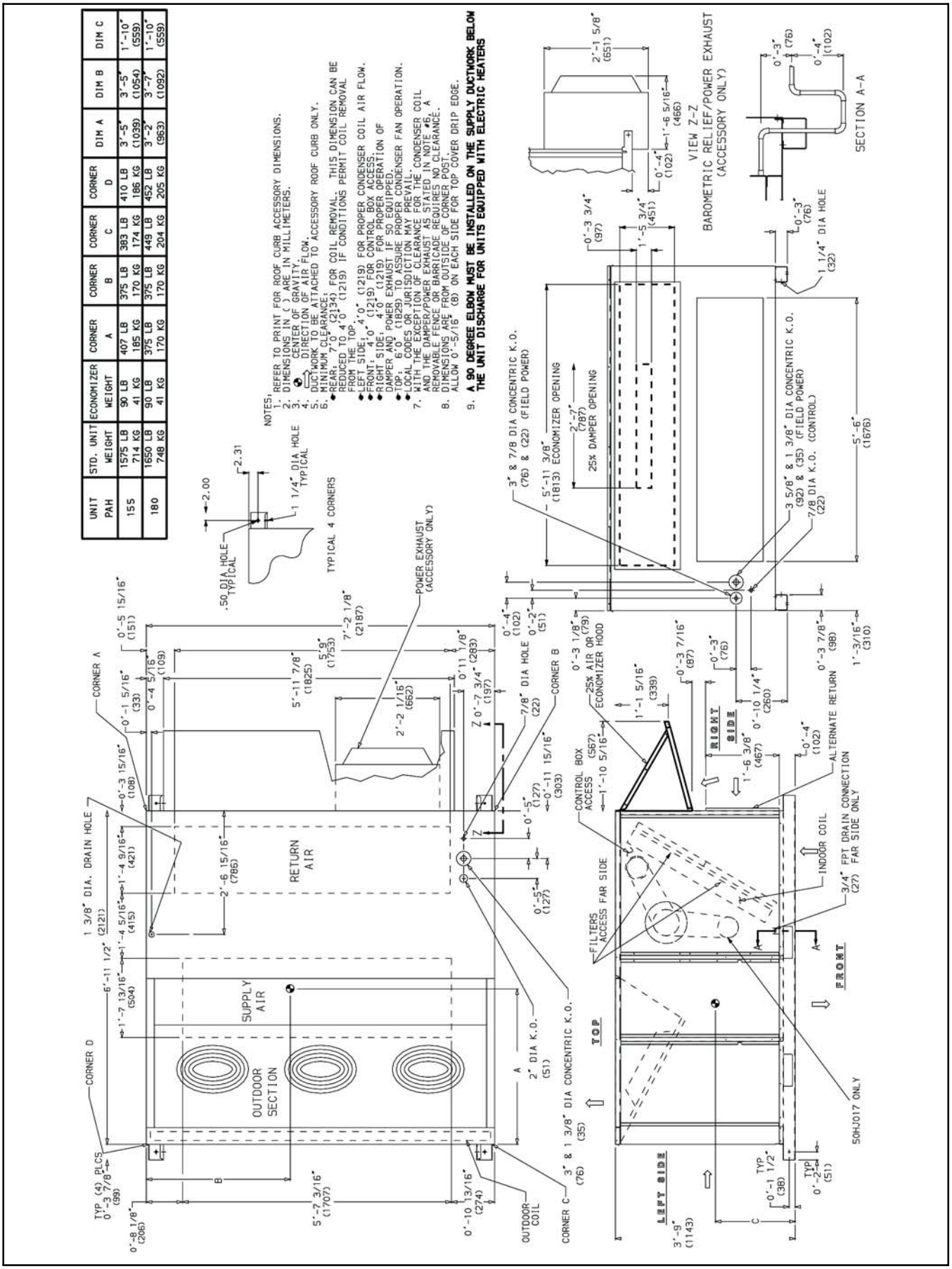
**Circuit 1 uses the lower portion of condenser coil and lower portion of evaporator coils, and Circuit 2 uses the upper portion of both coils.

††Due to belt and pulley style, pulley cannot be set from 0 to 1 1/2 turns open.

BASE UNIT DIMENSIONS: PAH155−180

UNIT PAH	STD. UNIT WEIGHT	ECONOMIZER WEIGHT	CORNER A	CORNER B	CORNER C	CORNER D	DIM A	DIM B	DIM C
155	1575 LB 714 KG	90 LB 41 KG	407 LB 185 KG	375 LB 170 KG	383 LB 174 KG	410 LB 186 KG	3'-5" (1039)	3'-5" (1054)	1'-10" (559)
180	1650 LB 748 KG	90 LB 41 KG	375 LB 170 KG	375 LB 170 KG	449 LB 204 KG	452 LB 205 KG	3'-2" (963)	3'-7" (1092)	1'-10" (559)

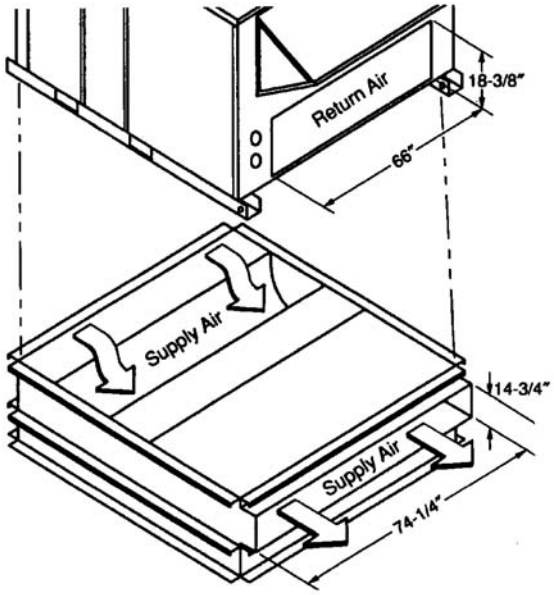
NOTES:
1. REFER TO PRINT FOR ROOF CURB ACCESSORY DIMENSIONS.
2. DIMENSIONS IN ( ) ARE IN MILLIMETERS.
3. ⊕ CENTER OF GRAVITY.
4. ⇨ DIRECTION OF AIR FLOW.
5. DUCTWORK TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY.
6. MINIMUM CLEARANCE:
   - REAR: 7'0" (2134) FOR COIL REMOVAL. THIS DIMENSION CAN BE REDUCED TO 4'0" (1219) IF CONDITIONS PERMIT COIL REMOVAL FROM THE TOP.
   - LEFT SIDE; 4'0" (1219) FOR PROPER CONDENSER COIL AIR FLOW.
   - FRONT; 4'0" (1219) FOR CONTROL BOX ACCESS.
   - RIGHT SIDE; 4'0" (1219) FOR PROPER OPERATION OF DAMPER AND POWER EXHAUST IF SO EQUIPPED.
   - TOP; 6'0" (1829) TO ASSURE PROPER CONDENSER FAN OPERATION.
   - LOCAL CODES OR JURISDICTION MAY PREVAIL.
7. WITH THE EXCEPTION OF CLEARANCE FOR THE CONDENSER COIL AND THE DAMPER/POWER EXHAUST AS STATED IN NOTE #6, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
8. DIMENSIONS ARE FROM OUTSIDE OF CORNER POST. ALLOW 0'-5/16" (8) ON EACH SIDE FOR TOP COVER DRIP EDGE.
9. **A 90 DEGREE ELBOW MUST BE INSTALLED ON THE SUPPLY DUCTWORK BELOW THE UNIT DISCHARGE FOR UNITS EQUIPPED WITH ELECTRIC HEATERS**



Specifications subject to change without notice.

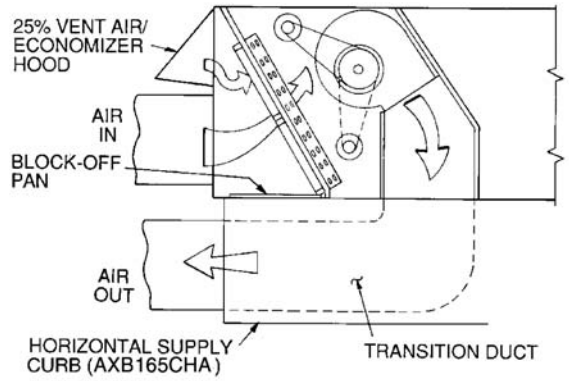
ACCESSORY DIMENSIONS

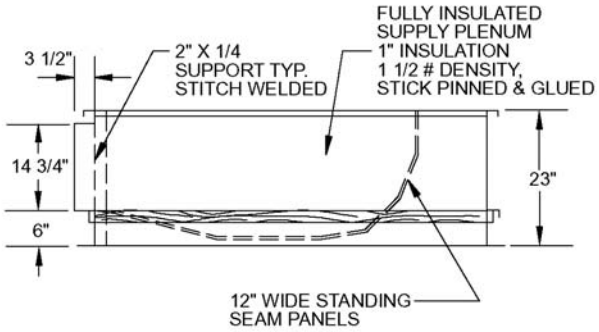
Horizontal Supply/Return Adapter Installation: PAH155−180



NOTE: AXB165CHA is a fully factory pre-assembled horizontal adapter and includes an insulated transition duct. The pressure drop through the adapter curb is negligible.

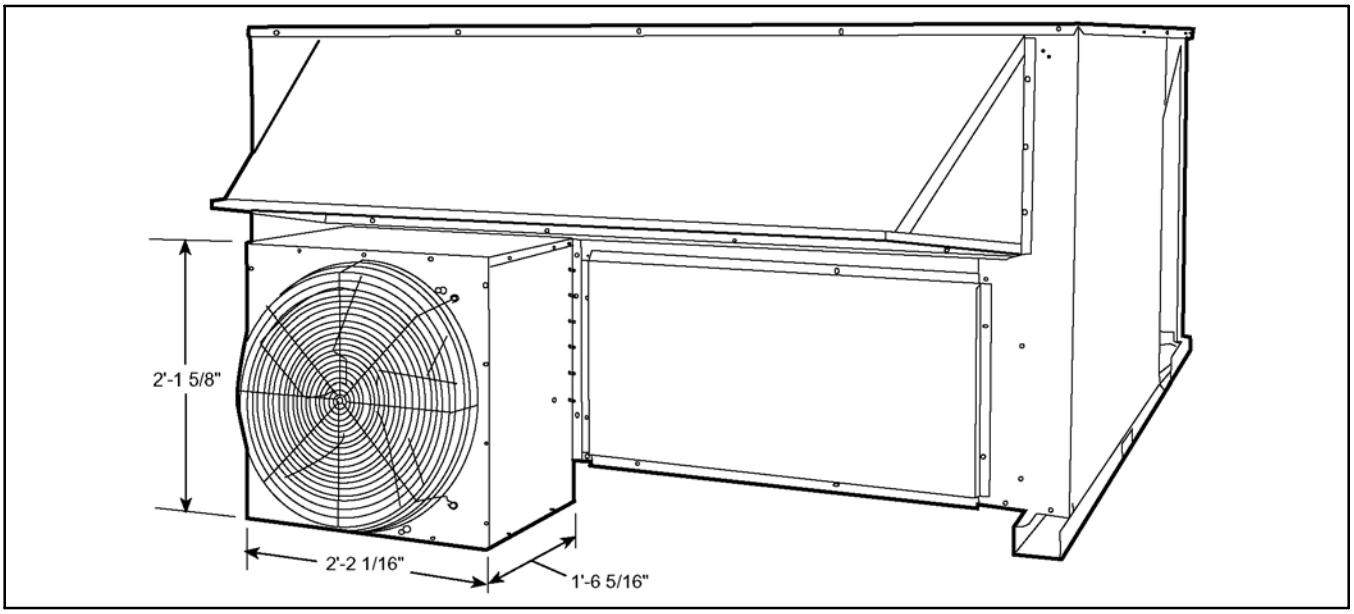
For horizontal return applications: The power exhaust and barometric relief dampers must be installed in the return air duct.





ACCESSORY PACKAGE NO.	CURB HEIGHT	DESCRIPTION
AXB165CHA	1′-11″ (584)	Pre-Assembled Horizontal Adapter Roof Curb

Barometric Relief/Power Exhaust



PERFORMANCE DATA: PAH155

COOLING CAPACITIES

PAH155 (12 Tons)																						
Temp (F) Air Ent Condenser (db)		Air Entering Evaporator — Cfm/BF																				
		3600/0.01							4375/0.01							5000/0.01						
		Air Entering Evaporator — Ewb (F)																				
		54	58	62	67	72	76	80	54	58	62	67	72	76	80	54	58	62	67	72	76	80
60	TC	152	156	161	174	189	201	213	161	164	167	180	195	207	218	169	171	172	184	199	211	222
	SHC	152	144	135	114	92.9	75.4	57.5	161	156	150	125	99.6	78.7	57.5	169	166	162	134	105	81.3	57.4
	kW	7.56	7.65	7.74	8.01	8.33	8.6	8.86	7.76	7.82	7.88	8.14	8.46	8.72	8.97	7.92	7.95	7.98	8.24	8.55	8.82	9.06
70	TC	148	152	156	169	183	195	206	157	160	162	174	189	200	211	165	166	167	179	193	204	214
	SHC	148	141	133	112	90.6	73.2	55.4	157	153	148	123	97.3	76.5	55.3	165	162	160	132	103	79.1	55.3
	kW	8.5	8.58	8.67	8.97	9.26	9.53	9.8	8.7	8.75	8.81	9.07	9.39	9.66	9.91	8.86	8.89	8.91	9.16	9.49	9.76	9.99
75	TC	146	150	154	166	181	192	204	155	158	160	172	186	197	208	163	164	164	176	189	201	212
	SHC	146	139	132	111	89.7	72.2	54.6	155	151	146	122	96.2	75.5	54.6	163	161	158	131	101	78.1	54.5
	kW	9.02	9.1	9.18	9.45	9.8	10.1	10.4	9.22	9.27	9.31	9.58	9.91	10.2	10.5	9.39	9.41	9.43	9.68	9.99	10.3	10.6
85	TC	142	145	149	161	175	186	196	151	153	154	166	179	190	200	158	159	159	170	183	194	203
	SHC	142	136	129	109	87.4	70	52.4	151	147	144	119	93.9	73.2	52.3	158	157	155	128	99.1	75.8	52.2
	kW	10.1	10.2	10.3	10.6	10.9	11.2	11.5	10.3	10.4	10.4	10.7	11	11.3	11.6	10.5	10.5	10.5	10.8	11.1	11.4	11.7
95	TC	138	141	143	155	168	179	189	147	148	149	160	173	183	192	153	153	154	164	177	187	195
	SHC	138	133	127	106	85	67.7	50.1	147	144	141	117	91.6	70.9	50	153	153	152	126	96.9	73.5	49.9
	kW	11.4	11.4	11.5	11.8	12.2	12.4	12.7	11.6	11.6	11.6	11.9	12.3	12.6	12.8	11.8	11.8	11.8	12	12.4	12.7	12.9
105	TC	134	136	138	149	162	172	181	141	142	143	153	166	176	184	148	148	148	157	169	179	186
	SHC	134	129	124	104	82.4	65.3	47.7	141	139	137	114	89	68.4	47.5	148	148	148	123	94.3	70.9	47.4
	kW	12.7	12.8	12.8	13.2	13.5	13.8	14.1	12.9	13	13	13.3	13.6	13.9	14.2	13.1	13.1	13.1	13.4	13.7	14	14.3
115	TC	129	130	132	143	155	164	172	136	137	138	146	158	168	175	142	142	142	149	161	171	177
	SHC	129	125	121	101	79.8	62.7	45.1	136	135	133	111	86.3	65.9	45	142	142	142	120	91.6	68.4	45
	kW	14.2	14.2	14.3	14.6	15	15.3	15.6	14.4	14.4	14.5	14.7	15.1	15.5	15.7	14.6	14.6	14.6	14.8	15.2	15.6	15.7
125	TC	124	125	126	136	147	156	163	131	131	132	140	150	159	165	136	136	136	136	142	153	162	167
	SHC	124	121	118	98.2	77	60.1	42.5	131	130	128	109	83.5	63.2	42.5	136	136	136	117	88.7	65.7	42.4
	kW	15.8	15.8	15.9	16.2	16.6	17	17.2	16.1	16.1	16.1	16.4	16.7	17.1	17.3	16.3	16.2	16.2	16.4	16.8	17.2	17.4

PAH155 (12 Tons) (cont)															
Temp (F) Air Ent Condenser (Edb)		Air Entering Evaporator — Cfm/BF													
		5625/0.02							6250/0.02						
		Air Entering Evaporator — Ewb (F)													
		54	58	62	67	72	76	80	54	58	62	67	72	76	80
60	TC	175	175	176	187	202	214	224	180	180	180	190	204	216	226
	SHC	175	173	171	142	110	83.8	57.3	180	180	180	151	115	86.2	57.2
	kW	8.03	8.05	8.07	8.3	8.61	8.87	9.1	8.14	8.15	8.16	8.36	8.66	8.93	9.14
70	TC	170	171	171	181	195	207	216	175	176	176	184	198	209	218
	SHC	170	169	168	140	108	81.5	55.2	175	176	176	148	113	84	55.1
	kW	8.98	8.99	9.01	9.23	9.55	9.81	10	9.09	9.1	9.11	9.3	9.61	9.87	10.1
75	TC	168	168	169	179	192	203	213	173	173	173	181	195	206	215
	SHC	168	167	166	139	107	80.5	54.4	173	173	173	147	112	83	54.3
	kW	9.5	9.51	9.52	9.75	10.1	10.3	10.6	9.62	9.62	9.62	9.81	10.1	10.4	10.6
85	TC	163	163	164	172	185	196	205	168	168	168	175	188	198	206
	SHC	163	162	162	136	104	78.2	52.2	168	168	168	145	109	80.6	52.1
	kW	10.6	10.6	10.6	10.9	11.2	11.5	11.7	10.7	10.7	10.8	10.9	11.2	11.5	11.8
95	TC	158	158	158	166	178	189	196	162	162	162	168	180	190	197
	SHC	158	157	157	134	102	75.9	49.8	162	162	162	142	107	78.3	49.7
	kW	11.9	11.9	11.9	12.1	12.4	12.7	12.9	12	12	12	12.1	12.5	12.8	13
105	TC	152	152	152	159	171	181	187	157	157	157	161	173	182	188
	SHC	152	152	152	131	99.3	73.3	47.4	157	157	157	139	104	75.7	47.4
	kW	13.2	13.2	13.2	13.4	13.8	14.1	14.3	13.4	13.4	13.4	13.5	13.9	14.2	14.4
115	TC	146	146	146	151	163	172	177	150	150	150	153	165	174	178
	SHC	146	146	146	128	96.6	70.7	44.9	150	150	150	136	102	73.1	44.8
	kW	14.7	14.7	14.7	14.9	15.3	15.6	15.8	14.9	14.9	14.9	14.9	15.4	15.7	15.8
125	TC	140	140	140	144	155	163	167	144	144	144	146	156	164	168
	SHC	140	140	140	125	93.7	67.9	42.4	144	144	144	133	98.7	70.2	42.3
	kW	16.4	16.4	16.4	16.5	16.9	17.2	17.4	16.5	16.5	16.5	16.6	17	17.3	17.4

LEGEND

BF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:

1. Direct interpolation is permissible. Do not extrapolate.
2. 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

3. 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.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.
Correction Factor = 1.10 x (1 – BF) x (edb – 80).

4. Use chart below for bypass factor.

CFM	ENTERING WET-BULB (F)						
	54	58	62	67	72	76	80
	Bypass Factor						
3600	0.355	0.158	0.054	0.038	0.049	0.000	0.000
4375	0.439	0.255	0.112	0.043	0.057	0.000	0.000
5000	0.486	0.314	0.126	0.054	0.037	0.000	0.000
5625	0.525	0.360	0.174	0.066	0.073	0.000	0.000
6250	0.551	0.410	0.202	0.080	0.079	0.000	0.000

PERFORMANCE DATA: PAH180

COOLING CAPACITIES (cont)

PAH180 (15 Tons)																							
Temp (F) Air Ent Condenser (Edb)		Air Entering Evaporator — Cfm/BF																					
		4500/0.01							5250/0.01							6000/0.01						
		Air Entering Evaporator — Ewb (F)																					
		54	58	62	67	72	76	80	54	58	62	67	72	76	80	54	58	62	67	72	76	80
60	TC	181	185	184	204	220	234	247	188	192	194	209	224	238	251	198	199	200	213	229	242	255
	SHC	180.5	172.4	159.4	132.3	104.7	87.9	65.7	189.3	183.2	173.2	142.8	110.4	91	65.5	198.1	195.1	185.1	153.1	116.7	94	65.4
	kW	9.41	9.49	9.58	9.87	10.19	10.47	10.78	9.58	9.63	9.68	9.97	10.29	10.57	10.87	9.75	9.77	9.79	10.07	10.39	10.67	10.95
70	TC	176.7	180.5	184.4	199	215.1	227.8	242	185.3	187.5	189.8	203	219.2	231.8	245	193	194.5	195.1	208.1	224.3	237	248
	SHC	176.7	169	155.8	129.4	102.4	86	63.9	185.3	179.7	169.3	138.9	108	89.1	63.8	193	191.4	181	149.7	114.2	92.2	63.7
	kW	10.5	10.57	10.64	10.96	11.35	11.62	11.95	10.68	10.72	10.76	11.06	11.45	11.72	12.04	10.85	10.87	10.89	11.17	11.55	11.82	12.13
75	TC	174.7	177.5	181	196	213	224.2	238	182.3	184.4	186	201	217	229.2	242	190.9	191.3	189	204	219	233.1	246
	SHC	174.7	167.2	147	124	99	84.9	62.9	182.3	177.9	160	133	105	88	62.8	190.9	189.5	173	143	113	91	62.7
	kW	11.07	11.14	11.2	11.6	12	12.23	12.57	11.25	11.3	11.3	11.7	12.1	12.33	12.66	11.45	11.45	11.4	11.8	12.1	12.44	12.75
85	TC	169.6	172.2	175	190	205	218.1	230.8	177.2	179	180	194	209	221.9	233.3	185.6	185.9	183	198	212	225.7	237
	SHC	169.6	163.3	145	121	97	82.5	60.7	177.2	174.1	157	130	102	85.6	60.5	185.6	184.7	168	139	106	88.6	60.4
	kW	12.29	12.35	12.3	12.7	13.1	13.5	13.86	12.47	12.51	12.5	12.8	13.2	13.61	13.96	12.67	12.68	12.6	12.9	13.3	13.71	14.05
95	TC	164.3	166.5	168	182	197	209.8	221.2	171.7	172.6	172	187	201	213.4	224.6	179.1	179.3	176	190	203	217.1	228
	SHC	164.3	158.9	142	118	93	79.8	57.9	171.7	168.8	154	127	98	82.8	57.9	179.1	178.7	164	136	102	86	57.8
	kW	13.59	13.65	13.5	13.9	14.3	14.85	15.23	13.8	13.82	13.6	14	14.4	14.96	15.32	14	14	13.8	14.1	14.5	15.07	15.43
105	TC	158.1	159.8	161	174	188	200.3	212.4	165.2	166	165	178	191	203.8	214.6	172.3	172.3	169	181	193	207.3	216.8
	SHC	158.1	154.2	138	115	91	76.8	55.2	165.2	163.1	150	124	95	79.9	55.1	172.3	172.2	158	132	98	83	54.9
	kW	14.97	15.02	14.8	15.2	15.6	16.28	16.69	15.19	15.21	14.9	15.3	15.7	16.39	16.77	15.41	15.4	15.1	15.4	15.7	16.5	16.86
115	TC	151.8	152.8	152	165	179	190.6	201.3	158.4	158.8	157	168	180	194	204.5	165	164.9	161	171	181	197.3	206.6
	SHC	151.8	149.1	134	111	87	73.7	52.1	158.4	157	145	120	91	76.7	52.1	165	164.9	151	128	94	79.8	51.9
	kW	16.45	16.48	16.1	16.5	16.9	17.79	18.21	16.68	16.68	16.2	16.6	17	17.91	18.3	16.89	16.88	16.4	16.7	17	18.01	18.39
125	TC	144.7	145.4	146	157.1	170.5	180.7	191.1	150.8	151.1	151.5	160.2	172.9	183.9	192	156.8	156.9	157	163.2	175.4	186.2	193.9
	SHC	144.7	143.5	123.4	102.2	81.16	70.4	48.9	150.8	150.2	135.2	109.6	85.15	73.4	48.8	156.8	156.9	145.6	117.4	89.3	76.4	48.7
	kW	17.96	16.48	18.05	18.49	18.99	19.44	19.85	18.18	18.22	18.25	18.6	19.11	19.5	19.89	18.42	18.44	18.46	18.72	19.14	19.65	19.93

PAH180 (15 Tons) (cont)															
Temp (F) Air Ent Condenser (Edb)		Air Entering Evaporator — Cfm/BF													
		6750/0.01							7500/0.02						
		Air Entering Evaporator — Ewb (F)													
		54	58	62	67	72	76	80	54	58	62	67	72	76	80
60	TC	203.8	204.2	204.6	216.3	231.7	244	257	209.5	209.5	209.6	218.8	235	248	259
	SHC	203.8	201.8	191.2	164.1	124.1	97	65.4	209.5	209.5	196.6	173.7	138.1	100	65.2
	kW	9.88	9.88	9.89	10.13	10.45	10.72	11	9.99	9.99	9.99	10.19	10.51	10.78	11.05
70	TC	199.6	199.8	200.1	210.5	226.5	239	250	205.2	205.1	205.1	213.8	228.8	241	252
	SHC	199.6	197.8	187	159.7	121.3	95.2	63.5	205.2	205.1	192.4	169.8	134.5	98.2	63.5
	kW	10.99	10.99	11	11.24	11.6	11.88	12.18	11.12	11.11	11.11	11.31	11.65	11.94	12.22
75	TC	196.4	196.6	194	206	220	235	247	201.9	201.9	198	208	223	237	249
	SHC	196.4	195.7	181	153	120	94	62.5	201.9	201.9	186	163	163	97.1	62.5
	kW	11.58	11.58	11.6	11.9	12.2	12.5	12.8	11.71	11.7	11.7	11.9	11.9	12.56	12.84
85	TC	191	191.1	188	200	213	227.8	239	196.4	196.4	192	202	214	229.8	241
	SHC	191	190.5	175	148	115	91.6	60.2	196.4	196.4	180	157	119	94.6	60.2
	kW	12.81	12.81	12.7	13	13.3	13.77	14.1	12.96	12.95	12.8	13.1	13.4	13.84	14.13
95	TC	184.4	184.5	181	192	205	219.1	229.7	189.7	189.7	185	194	206	221.1	230.5
	SHC	184.4	184.2	170	144	108	88.9	57.7	189.7	189.7	174	153	113	91.9	57.6
	kW	14.15	14.15	13.9	14.2	14.6	15.14	15.47	14.29	14.29	14	14.3	14.6	15.2	15.51
105	TC	176.7	176.7	173	182	194	209.2	218.5	181.9	181.9	177	184	194	211.1	220.1
	SHC	176.7	176.7	162	140	103	86	54.9	181.9	181.9	166	148	107	88.9	54.7
	kW	15.55	15.55	15.2	15.5	15.8	16.57	16.9	15.7	15.7	15.3	15.5	15.8	16.64	16.94
115	TC	169.5	169.4	166	172	183	198.2	207.1	173.9	173.8	169	174	183	200	208.6
	SHC	169.5	169.4	155	136	98	82.7	51.8	173.9	173.8	158	142	101	85.6	51.7
	kW	17.05	17.04	16.6	16.8	17.1	18.08	18.42	17.2	17.2	16.7	16.9	17.1	18.15	18.45
125	TC	160.9	161.1	161.2	165.6	177.4	187.9	195.4	165.1	165.2	165.4	167.8	179.2	188.6	196
	SHC	160.9	161.1	150.7	125.6	95.04	79.4	48.7	165.1	165.2	155.2	133.2	105.3	82.3	48.6
	kW	18.57	18.59	18.62	18.81	19.18	19.68	20.06	18.72	18.75	18.78	18.91	19.33	19.71	20.09

LEGEND

BF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:

1. Direct interpolation is permissible. Do not extrapolate.
2. 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

3. 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.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.

Correction Factor = 1.10 x (1 – BF) x (edb – 80).

4. Use chart below for bypass factor.

CFM	ENTERING WET-BULB (F)						
	54	58	62	67	72	76	80
	Bypass Factor						
4500	0.396	0.193	0.054	0.053	0.067	0.000	0.000
5250	0.455	0.272	0.077	0.065	0.077	0.000	0.000
6000	0.504	0.337	0.121	0.077	0.088	0.000	0.000
6750	0.544	0.390	0.193	0.094	0.100	0.000	0.000
7500	0.578	0.436	0.244	0.108	0.114	0.000	0.000

PERFORMANCE DATA: PAH155

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS

PAH155 (12 TONS) WITH STANDARD MOTOR*

Airflow (Cfm)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
3750	**542**	**687**	**0.72**	**649**	**841**	**0.96**	**737**	**1045**	**1.19**	**813**	**1229**	**1.43**	**882**	**1419**	**1.68**
4000	**564**	**792**	**0.83**	**666**	**956**	**1.08**	**754**	**1170**	**1.33**	**829**	**1364**	**1.58**	897	1565	1.83
4250	**586**	**903**	**0.96**	**684**	**1078**	**1.21**	**771**	**1302**	**1.47**	**846**	**1506**	**1.73**	913	1716	2.00
4500	**610**	**1021**	**1.09**	**702**	**1207**	**1.35**	**789**	**1440**	**1.63**	**863**	**1653**	**1.90**	929	1873	2.18
4750	**634**	**1147**	**1.24**	**721**	**1343**	**1.51**	**806**	**1584**	**1.80**	**880**	**1807**	**2.08**	946	2037	2.37
5000	**659**	**1281**	**1.40**	**741**	**1486**	**1.68**	**823**	**1735**	**1.98**	897	1968	2.28	963	2207	2.57
5250	**684**	**1423**	**1.58**	**762**	**1637**	**1.86**	**841**	**1894**	**2.17**	914	2135	2.48	980	2385	2.79
5500	**710**	**1572**	**1.78**	**783**	**1796**	**2.06**	**859**	**2060**	**2.38**	932	2311	2.70	997	2571	3.03
5750	**736**	**1732**	**1.98**	**805**	**1965**	**2.28**	**878**	**2235**	**2.60**	949	2496	2.94	1014	2765	3.27
6000	**762**	**1900**	**2.21**	**828**	**2143**	**2.51**	898	2419	2.84	967	2689	3.18	—	—	—
6250	**788**	**2080**	**2.45**	**851**	**2332**	**2.76**	918	2612	3.09	—	—	—	—	—	—

PAH155 (12 TONS) WITH STANDARD MOTOR* (cont)

Airflow (Cfm)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
3750	947	1617	1.93	1009	1823	2.20	1069	2051	2.47	1127	2301	2.75	1184	2563	3.05
4000	960	1773	2.09	1020	1989	2.36	1079	2227	2.64	1135	2486	2.93	1190	2756	3.23
4250	975	1934	2.27	1033	2161	2.54	1090	2408	2.83	1144	2676	3.12	—	—	—
4500	990	2102	2.45	1047	2339	2.74	1102	2596	3.03	1155	2843	3.33	—	—	—
4750	1006	2276	2.66	1062	2524	2.95	1116	2790	3.24	—	—	—	—	—	—
5000	1022	2457	2.87	1078	2717	3.17	—	—	—	—	—	—	—	—	—
5250	1039	2646	3.10	—	—	—	—	—	—	—	—	—	—	—	—
5500	1056	2843	3.35	—	—	—	—	—	—	—	—	—	—	—	—
5750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower

Watts — Input Watts to Motor

*Standard low-medium static drive range is 895 to 1147 rpm. Alternate high-static drive range is 1040 to 1315 (for 208/230 and 460-v units). The alternate high-static drive range is not available for 575-v units. Other rpms require a field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive required.
2. Maximum continuous bhp for the standard motor is 3.13 (for 208/230 and 460-v units) or 3.38 (for 575-v units). The maximum continuous watts is 2700 (for 208/230 and 460-v units) or 3065 (for 575-v units). Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm.
3. Fan performance is identical for horizontal discharge applications using horizontal adapter curb.
4. See general fan performance notes.

PAH155 (12 TONS) WITH OPTIONAL MOTOR*

Airflow (Cfm)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
3750	**542**	**687**	**0.72**	**649**	**841**	**0.96**	**737**	**1045**	**1.19**	**813**	**1229**	**1.43**	**882**	**1419**	**1.68**
4000	**564**	**792**	**0.83**	**666**	**956**	**1.08**	**754**	**1170**	**1.33**	**829**	**1364**	**1.58**	897	1565	1.83
4250	**586**	**903**	**0.96**	**684**	**1078**	**1.21**	**771**	**1302**	**1.47**	**846**	**1506**	**1.73**	913	1716	2.00
4500	**610**	**1021**	**1.09**	**702**	**1207**	**1.35**	**789**	**1440**	**1.63**	**863**	**1653**	**1.90**	929	1873	2.18
4750	**634**	**1147**	**1.24**	**721**	**1343**	**1.51**	**806**	**1584**	**1.80**	**880**	**1807**	**2.08**	946	2037	2.37
5000	**659**	**1281**	**1.40**	**741**	**1486**	**1.68**	**823**	**1735**	**1.98**	897	1968	2.28	963	2207	2.57
5250	**684**	**1423**	**1.58**	**762**	**1637**	**1.86**	**841**	**1894**	**2.17**	914	2135	2.48	980	2385	2.79
5500	**710**	**1572**	**1.78**	**783**	**1796**	**2.06**	**859**	**2060**	**2.38**	932	2311	2.70	997	2571	3.03
5750	**736**	**1732**	**1.98**	**805**	**1965**	**2.28**	**878**	**2235**	**2.60**	949	2496	2.94	1014	2765	3.27
6000	**762**	**1900**	**2.21**	**828**	**2143**	**2.51**	898	2419	2.84	967	2689	3.18	1031	2968	3.53
6250	**788**	**2080**	**2.45**	**851**	**2332**	**2.76**	918	2612	3.09	985	2892	3.45	1048	3181	3.81

PAH155 (12 TONS) WITH OPTIONAL MOTOR* (cont)

Airflow (Cfm)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
3750	947	1617	1.93	1009	1823	2.20	1069	2051	2.47	1127	2301	2.75	1184	2563	3.05
4000	960	1773	2.09	1020	1989	2.36	1079	2227	2.64	1135	2486	2.93	1190	2756	3.23
4250	975	1934	2.27	1033	2161	2.54	1090	2408	2.83	1144	2676	3.12	1197	2954	3.42
4500	990	2102	2.45	1047	2339	2.74	1102	2596	3.03	1155	2872	3.33	1207	3158	3.63
4750	1006	2276	2.66	1062	2524	2.95	1116	2790	3.24	1168	3073	3.55	1218	3366	3.86
5000	1022	2457	2.87	1078	2717	3.17	1131	2990	3.48	1182	3280	3.79	1231	3579	4.10
5250	1039	2646	3.10	1094	2916	3.41	1146	3198	3.73	1196	3493	4.04	—	—	—
5500	1056	2843	3.35	1111	3124	3.67	1162	3412	3.99	—	—	—	—	—	—
5750	1073	3048	3.60	1128	3339	3.94	—	—	—	—	—	—	—	—	—
6000	1090	3261	3.88	1145	3562	4.22	—	—	—	—	—	—	—	—	—
6250	1107	3483	4.16	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower

Watts — Input Watts to Motor

*Standard low-medium static drive range is 895 to 1147 rpm. Alternate high-static drive range is 1040 to 1315. Other rpms require a field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive required.
2. Maximum continuous bhp for the standard motor is 4.26. The maximum continuous watts is 3610. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm.
3. Fan performance is identical for horizontal discharge applications using horizontal adapter curb.
4. See general fan performance notes.

PERFORMANCE DATA: PAH180

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PAH180* (15 TONS)																		
Airflow (Cfm)	Available External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.2		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
4500	753	1307	1.53	753	1307	1.53	784	1397	1.64	859	1635	1.92	928	1880	2.20	993	2133	2.50
4800	747	1384	1.62	747	1384	1.62	806	1563	1.83	878	1808	2.12	946	2060	2.42	1009	2319	2.72
5100	741	1465	1.72	752	1500	1.76	828	1745	2.05	898	1996	2.34	964	2255	2.65	1026	2521	2.96
5700	735	1659	1.95	805	1895	2.22	876	2156	2.53	942	2423	2.84	1004	2696	3.16	1064	2975	3.49
6000	759	1854	2.18	832	2118	2.48	901	2388	2.80	965	2663	3.12	1026	2943	3.45	1083	3228	3.79
6300	790	2088	2.45	860	2360	2.77	926	2638	3.09	988	2920	3.43	1048	3208	3.76	1104	3501	4.11
6600	821	2340	2.74	888	2621	3.07	952	2906	3.41	1013	3196	3.75	1070	3491	4.10	1125	3791	4.45
6900	852	2611	3.06	917	2900	3.40	979	3194	3.75	1038	3492	4.10	1094	3794	4.45	1147	4101	4.81
7200	883	2903	3.40	946	3200	3.75	1006	3501	4.11	1063	3807	4.47	1118	4117	4.83	1170	4431	5.20
7500	914	3215	3.77	975	3521	4.13	1033	3830	4.49	1089	4143	4.86	1142	4461	5.23	1193	4781	5.61

PAH180* (15 TONS) (cont)																		
Airflow (Cfm)	Available External Static Pressure (in. wg)																	
	1.4			1.6			1.8			2.0			2.2			2.4		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
4500	1055	2394	2.81	1114	2662	3.12	1170	2938	3.45	1224	3220	3.78	1276	3509	4.12	1326	3805	4.46
4800	1070	2585	3.03	1127	2859	3.35	1183	3139	3.68	1236	3427	4.02	1287	3721	4.36	1336	4020	4.72
5100	1086	2794	3.28	1142	3073	3.60	1196	3359	3.94	1248	3650	4.28	1299	3949	4.63	1347	4253	4.99
5700	1120	3260	3.82	1174	3551	4.17	1226	3848	4.51	1277	4151	4.87	1325	4458	5.23	1373	4772	5.60
6000	1139	3520	4.13	1192	3817	4.48	1243	4119	4.83	1292	4427	5.19	1340	4741	5.56	1387	5060	5.93
6300	1158	3799	4.46	1210	4102	4.81	1260	4410	5.17	1309	4724	5.54	1356	5043	5.91	—	—	—
6600	1178	4095	4.80	1229	4405	5.17	1278	4720	5.54	1326	5039	5.91	—	—	—	—	—	—
6900	1199	4412	5.18	1249	4728	5.55	1297	5050	5.92	—	—	—	—	—	—	—	—	—
7200	1221	4749	5.57	1270	5072	5.95	—	—	—	—	—	—	—	—	—	—	—	—
7500	1243	5107	5.99	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

PAH180* (15 TONS) (cont)												
Airflow (Cfm)	Available External Static Pressure (in. wg)											
	2.6			2.8			3.0			3.2		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
4500	1375	4107	4.82	1421	4414	5.18	1467	4728	5.55	1511	5047	5.92
4800	1384	4326	5.07	1430	4638	5.44	1475	4955	5.81	—	—	—
5100	1395	4563	5.35	1440	4879	5.72	—	—	—	—	—	—
5700	1418	5091	5.97	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—
6600	—	—	—	—	—	—	—	—	—	—	—	—
6900	—	—	—	—	—	—	—	—	—	—	—	—
7200	—	—	—	—	—	—	—	—	—	—	—	—
7500	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower
Watts — Input Watts to Motor

*Standard low-medium static drive range is 873 to 1021 rpm. Alternate high-static drive range is 1025 to 1200. Other rpms require a field-supplied drive.

NOTES:

1. Maximum continuous bhp for the standard motor is 6.13. The maximum continuous watts is 5180. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm.
2. Fan performance is identical for horizontal discharge applications using horizontal adapter curb.
3. See general fan performance notes.

GENERAL FAN PERFORMANCE NOTES

NOTES:

1. Values include losses for filters, unit casing, and wet coils. See accessory/factory-installed option static pressure information.
2. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. See Evaporator-Fan Motor Performance tables for additional information.
3. Use of a field-supplied motor may affect wire sizing.
4. Interpolation is permissible. Do not extrapolate.
5. Field-supplied drive requires changing belt and motor pulley to meet desired airflow. See application data or contact your local representative for details.

PERFORMANCE DATA — PAH (cont)

ACCESSORY STATIC PRESSURE (in. wg)* — PAH155,180

COMPONENT	CFM								
	4500	5000	5400	6000	7200	7500	9000	10,000	11,250
Economizer	0.040	0.050	0.060	0.070	0.090	0.100	0.110	0.120	0.140

LEGEND
NOTE: Performance is for DN series economizer.

*The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should then be used in conjunction with the Fan Performance tables to determine blower rpm and watts.

ACCESSORY/ELECTRIC HEAT STATIC PRESSURE (in. wg) — PAH155,180 UNITS

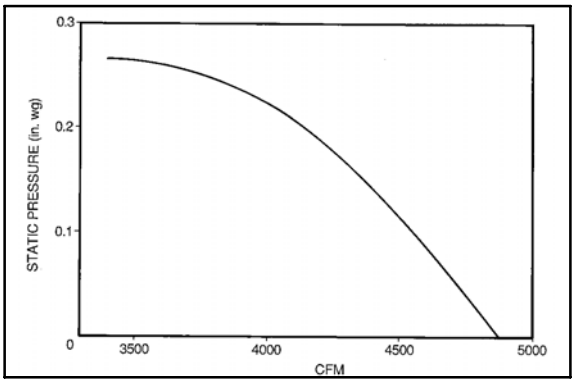
UNIT PAH	HEATER RATED VOLTAGE	CFM	ELECTRIC HEATERS PRESSURE DROP (kW)
155,180	208/240–3–60	3,750	0.05 (14/19, 26/34) 0.06 (42/56) 0.07 (56/75)
		4,000	0.05 (14/19, 26/34) 0.06 (42/56) 0.07 (56/75)
		5,000	0.07 (14/19, 26/34) 0.08 (42/56) 0.10 (56/75)
		6,000	0.09 (14/19, 26/34) 0.12 (42/56) 0.15 (56/75)
		7,200	0.11 (14/19, 26/34) 0.16 (42/56) 0.20 (56/75)
		7,500	0.12 (14/19, 26/34) 0.17 (42/56) 0.21 (56/75)
	480–3–60	3,750	0.05 (15, 32) 0.06 (55) 0.07 (80)
		4,000	0.05 (15, 32) 0.06 (55) 0.07 (80)
		5,000	0.07 (15, 32) 0.08 (55) 0.10 (80)
		6,000	0.09 (15, 32) 0.12 (55) 0.15 (80)
		7,200	0.11 (15, 32) 0.15 (55) 0.20 (80)
		7,500	0.12 (15, 32) 0.17 (55) 0.21 (80)
	600–3–60	3,750	0.06 (37)
		4,000	0.06 (37)
		5,000	0.08 (37)
		6,000	0.12 (37)
		7,200	0.15 (37)
		7,500	0.17 (37)

LEGEND
NOTES:
1. Heaters are rated at 240 v, 480 v and 600 v.
2. The factory assembled horizontal adapter substantially improves fan performance.
3. The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should then be used in conjunction with the Fan Performance table to determine blower rpm, bhp, and watts.

EVAPORATOR-FAN MOTOR EFFICIENCY — PAH155,180

MOTOR HORSEPOWER	MOTOR EFFICIENCY (%)
2.9, 3.7	85.8
3.0	87.5
5.0	87.5

NOTE: All indoor-fan motors 5 hp and larger meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT) effective October 24, 1997.



Fan Performance Using Accessory Power Exhaust (PAH155,180)

EVAPORATOR FAN MOTOR PERFORMANCE — PAH155,180

UNIT PAH	NOMINAL HP	VOLTAGE	MAX WATTS	EFF. %	MAX BHP	MAX BkW	MAX AMPS
155 (Standard Motor)	2.9	208	2700	85.8	3.13	2.34	9.46
	2.9	230	2700	85.8	3.13	2.34	8.6
	2.9	460	2700	85.8	3.13	2.34	4.3
	3	575	3065	81.7	3.38	2.53	3.9
155 (Optional Motor)	3.7	208	3610	85.8	4.38	3.27	10.5
	3.7	230	3610	85.8	4.38	3.27	10.5
	3.7	460	3610	85.8	4.38	3.27	4.8
180	5	208	5180	87.5	6.13	4.57	15.8
	5	230	5180	87.5	6.13	4.57	15.8
	5	460	5180	87.5	6.13	4.57	7.9
	5	575	5180	87.5	6.13	4.57	6.0

LEGEND
BHP — Brake Horsepower
BkW — Brake Kilowatts

PERFORMANCE DATA — PAH (cont)

FAN RPM AND MOTOR PULLEY SETTINGS* — PAH155,180

UNIT PAH	MOTOR PULLEY TURNS OPEN												
	0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
155 (208/230, 460 v)†	1147	1124	1101	1078	1055	1032	1010	987	964	941	918	895	††
155 (208/230, 460 v)**	1315	1292	1269	1246	1223	1200	1178	1155	1132	1109	1086	1063	1040
180†	††	††	††	††	1021	1002	984	965	947	928	910	891	873
180**	††	††	††	††	1200	1178	1156	1134	1112	1091	1069	1047	1025

*Approximate fan rpm shown (belt slip may vary).
†Indicates standard drive package.
**Indicates alternate drive package.
††Due to belt and pulley style, pulley cannot be set to this number of turns open.

COOLING OPERATION AIR QUANTITY LIMITS — PAH155,180

UNIT PAH	MINIMUM CFM	MAXIMUM CFM
155	3600	6250
180	4500	7500

OUTDOOR AIR LOW TEMPERATURE OPERATING LIMITS — PAH155,180

TEMPERATURE LIMIT (F)		
Standard Unit	Unit With Low Ambient Kit	Unit With Low Ambient Head Pressure Control Kit
40	20	–20

OUTDOOR SOUND POWER (TOTAL UNIT)

UNIT PAH	ARI RATING (dB)	A-WEIGHT (dB)	OCTAVE BANDS							
			63	125	250	500	1000	2000	4000	8000
155,180	88	87.6	90.8	88.7	86.4	84.3	83.5	78.4	75.6	66.8

LEGEND

ARI — Air Conditioning and Refrigeration Institute

ELECTRIC RESISTANCE HEATER DATA

UNIT PAH	HEATER kW Unit Voltages							HEATER STAGES	% HEAT PER STAGE	MAXIMUM STAGES*	MINIMUM Heating Cfm		HEATER AMPS						
	208	230	240	460	480	575	600				Cfm	L/s	208	230	240	460	480	575	600
155	14	17	19	14	15	—	—	1	100	1	3750	1770	39.3	43.4	45.3	17.2	17.9	—	—
	26	31	34	30	32	—	—	2	50/50	2			71.3	78.9	82.3	37.3	39.0	—	—
	42	52	56	50	55	37	40	2	33/67	3			117.0	129.4	135.0	63.3	66.1	37.0	38.6
180	26	31	34	30	32	—	—	2	50/50	2	3750	1770	71.3	78.8	82.3	37.3	39.0	—	—
	42	52	56	50	55	—	—	2	33/67	3			117.0	129.4	135.0	63.3	66.1	—	—
	56	69	75	73	80	—	—	2	50/50	4			155.9	172.4	179.9	92.0	96.0	—	—

*Maximum number of stages using accessory low-ambient kit or head pressure control device and low-ambient kit.
NOTES: Heaters are rated at 208, 240, 480, and 600 v. Use multiplication factors table to determine kW at different voltages.

INDOOR SOUND DATA (TOTAL UNIT)

UNIT PAH	SOUND RATING dB (60 Hz)	A-WEIGHTED (dB)	SOUND POWER (dB) Octave Bands							
			63	125	250	500	1000	2000	4000	8000
155	88	87.3	87.1	89.9	86.4	84.0	82.7	79.0	73.9	68.6
180	89	88.0	95.7	88.9	87.2	85.2	91.9	79.5	72.7	66.0

LEGEND

dB — Sound Levels (decibels)

ELECTRICAL DATA: PAH155−180

UNIT PAH	NOMIN. VOLT. (3 Ph, 60 Hz)	VOLTAGE RANGE		COMPRESSOR No. 1		COMPRESSOR No. 2		OFM			IFM		POWER EXHAUST		ELECTRIC HEAT*		POWER SUPPLY	
		Min	Max	RLA	LRA	RLA	LRA	Qty	Hp	FLA (ea)	Hp	FLA	FLA	LRA	kW	FLA	MCA	MOCP†
155 (Standard IFM)	208/230	187	253	20.7	156	20.7	156	3	0.5	1.7	2.9	8.8/ 8.4	—	—	—	—	60/60	80/80
													4.6	18.8	—	—	65/65	80/80
													—	—	14/19	39/45	60/67	80/80
													4.6	18.8	14/19	39/45	66/73	80/80
													—	—	26/34	71/82	100/113	100/125
													4.6	18.8	26/34	71/82	106/119	110/125
													—	—	42/56**	117/135	157/146	175/175
													4.6	18.8	42/56**	117/135	163/151	175/175
	460	414	506	10	75	10	75	3	0.5	0.8	2.9	4.2	—	—	—	—	29	35
													2.3	6.0	—	—	31	40
													—	—	15	18	29	35
													2.3	6.0	15	18	31	40
													—	—	32	39	54	60
													2.3	6.0	32	39	57	60
													—	—	55**	66	71	80
													2.3	6.0	55**	66	74	80
	575	518	633	8.2	54	8.2	54	3	0.5	0.75	3.0	3.9	—	—	—	—	25	30
													2.1	4.8	—	—	27	30
													—	—	37**	37	51	60
													2.1	4.8	37**	37	54	60

ELECTRICAL DATA: PAH155−180

UNIT PAH	NOMIN. VOLT. (3 Ph, 60 Hz)	VOLTAGE RANGE		COMPRESSOR No. 1		COMPRESSOR No. 2		OFM			IFM		POWER EXHAUST		ELECTRIC HEAT*		POWER SUPPLY	
		Min	Max	RLA	LRA	RLA	LRA	Qty	Hp	FLA (ea)	Hp	FLA	FLA	LRA	kW	FLA	MCA	MOCP†
155 (Optional IFM)	208/230	187	253	20.7	156	20.7	156	3	0.5	1.7	3.7	10.5/ 11.0	—	—	—	—	62/63	80/80
													4.6	18.8	—	—	67/67	80/80
													—	—	14/19	39/45	62/70	80/80
													4.6	18.8	14/19	39/45	68/76	80/80
													—	—	26/34	71/82	102/116	110/125
													4.6	18.8	26/34	71/82	108/122	110/125
													—	—	42/56**	117/135	159/149	175/175
													4.6	18.8	42/56**	117/135	165/155	175/175
	460	414	506	10	75	10	75	3	0.5	0.8	3.7	4.8	—	—	—	—	30	35
													2.3	6.0	—	—	32	40
													—	—	15	18	30	35
													2.3	6.0	15	18	32	40
													—	—	32	39	55	60
													2.3	6.0	32	39	58	60
													—	—	55**	66	72	80
													2.3	6.0	55**	66	75	80
180	208/230	187	253	32.1	195	20.7	156	3	0.5	1.7	5.0	15.8/ 15.8	—	—	—	—	82/82	110/110
													4.6	18.8	—	—	86/86	110/110
													—	—	26/34	71/82	109/122	110/125
													4.6	18.8	26/34	71/82	114/128	125/150
													—	—	42/56	117/135	166/155	175/175
													4.6	18.8	42/56	117/135	172/161	175/175
													—	—	56/75**	156/180	176/200	200/225
													4.6	18.8	56/75**	156/180	182/206	200/225
	460	414	508	16.4	95	10	70	3	0.5	0.8	5.0	7.9	—	—	—	—	41	50
													2.3	6.0	—	—	43	50
													—	—	32	39	59	60
													2.3	6.0	32	39	62	70
													—	—	55	66	76	90
													2.3	6.0	55	66	79	90
													—	—	80**	96	106	125
													2.3	6.0	80**	96	109	125
	575	518	633	12	80	8.2	54	3	0.5	0.75	5.0	6.0	– 2.1	– 4.8	– –	– –	31 34	40 40

LEGEND

FLA — Full Load Amps
HACR — Heating, Air Conditioning and Refrigeration
IFM — Indoor (Evaporator) Fan Motor
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
NEC — National Electrical Code
OFM — Outdoor (Condenser) Fan Motor
RLA — Rated Load Amps

*Fuse or HACR circuit breaker.

*Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v, and 600 v. Heaters are rated at 240 v, 480 v, or 600 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly. To determine heater capacity at actual unit voltage, multiply 240 v, 480 v, or 600 v capacity by multipliers found in table on page 202.

†Fuse or HACR circuit breaker.

**Electric heaters are field installed.

NOTES:

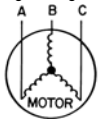
1. In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. The Canadian units may be fuse or circuit breaker.
2. **Unbalanced 3-Phase Supply Voltage**
   Never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

% Voltage Imbalance

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

EXAMPLE: Supply voltage is 460−3−60.
Determine maximum deviation from average voltage.

AB = 452 v
BC = 464 v
AC = 455 v



$$\text{Average Voltage} = \frac{452 + 464 + 455}{3}$$

$$= \frac{1371}{3}$$

$$= 457$$

Determine maximum deviation from average voltage.
(AB) 457 – 452 = 5 v
(BC) 464 – 457 = 7 v
(AC) 457 – 455 = 2 v
Maximum deviation is 7 v.
Determine percent voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{457}$$

$$= 1.53\%$$

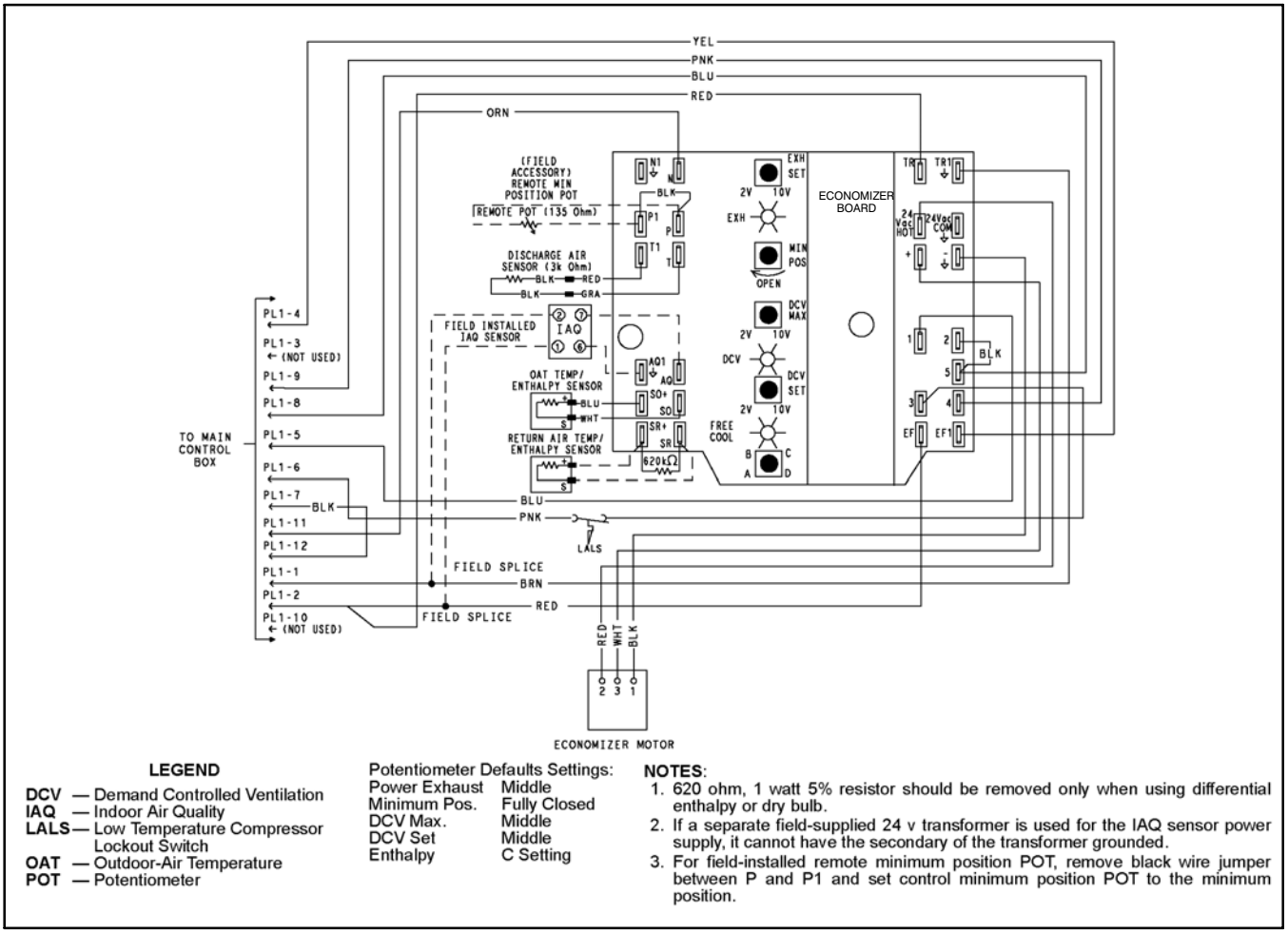
This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

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

3. MCA calculation for PAH155 units with electric heaters over 50 kW = (1.25 x IFM amps) + (1.00 x heater FLA).

TYPICAL WIRING SCHEMATICS — PAH (cont)

Economizer Wiring (PAH155,180 Units)



LEGEND

DCV — Demand Controlled Ventilation
IAQ — Indoor Air Quality
LALS — Low Temperature Compressor Lockout Switch
OAT — Outdoor-Air Temperature
POT — Potentiometer

Potentiometer Defaults Settings:

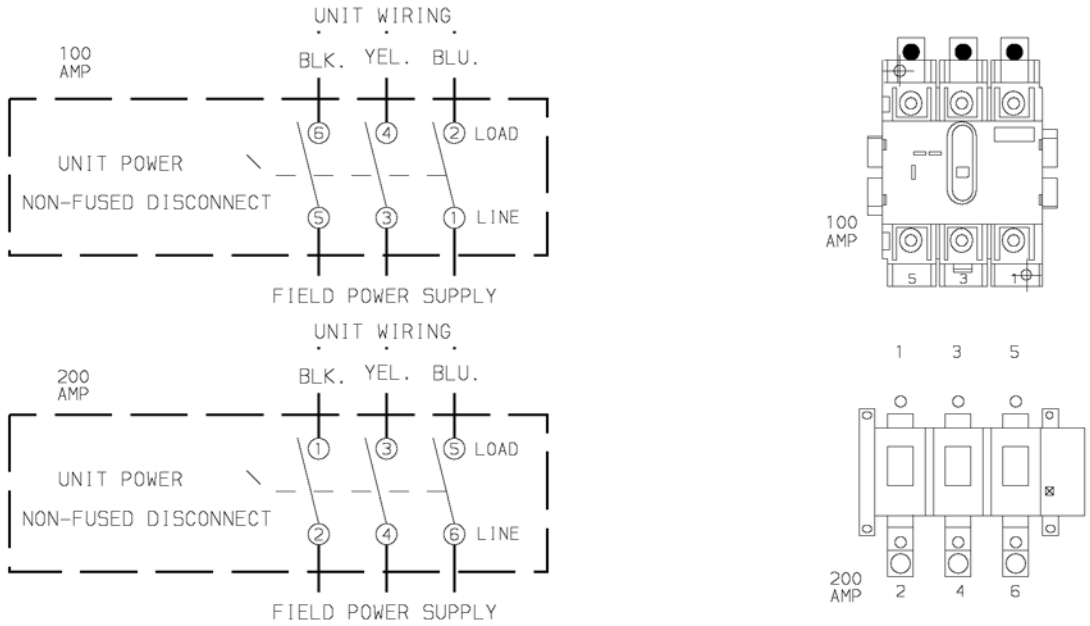
Power Exhaust	Middle
Minimum Pos.	Fully Closed
DCV Max.	Middle
DCV Set	Middle
Enthalpy	C Setting

NOTES:

1. 620 ohm, 1 watt 5% resistor should be removed only when using differential enthalpy or dry bulb.
2. If a separate field-supplied 24 v transformer is used for the IAQ sensor power supply, it cannot have the secondary of the transformer grounded.
3. For field-installed remote minimum position POT, remove black wire jumper between P and P1 and set control minimum position POT to the minimum position.

NOTE: Electrical wiring is for DN series economizer.

Non-Fused Disconnect (Optional) − PAH155,180

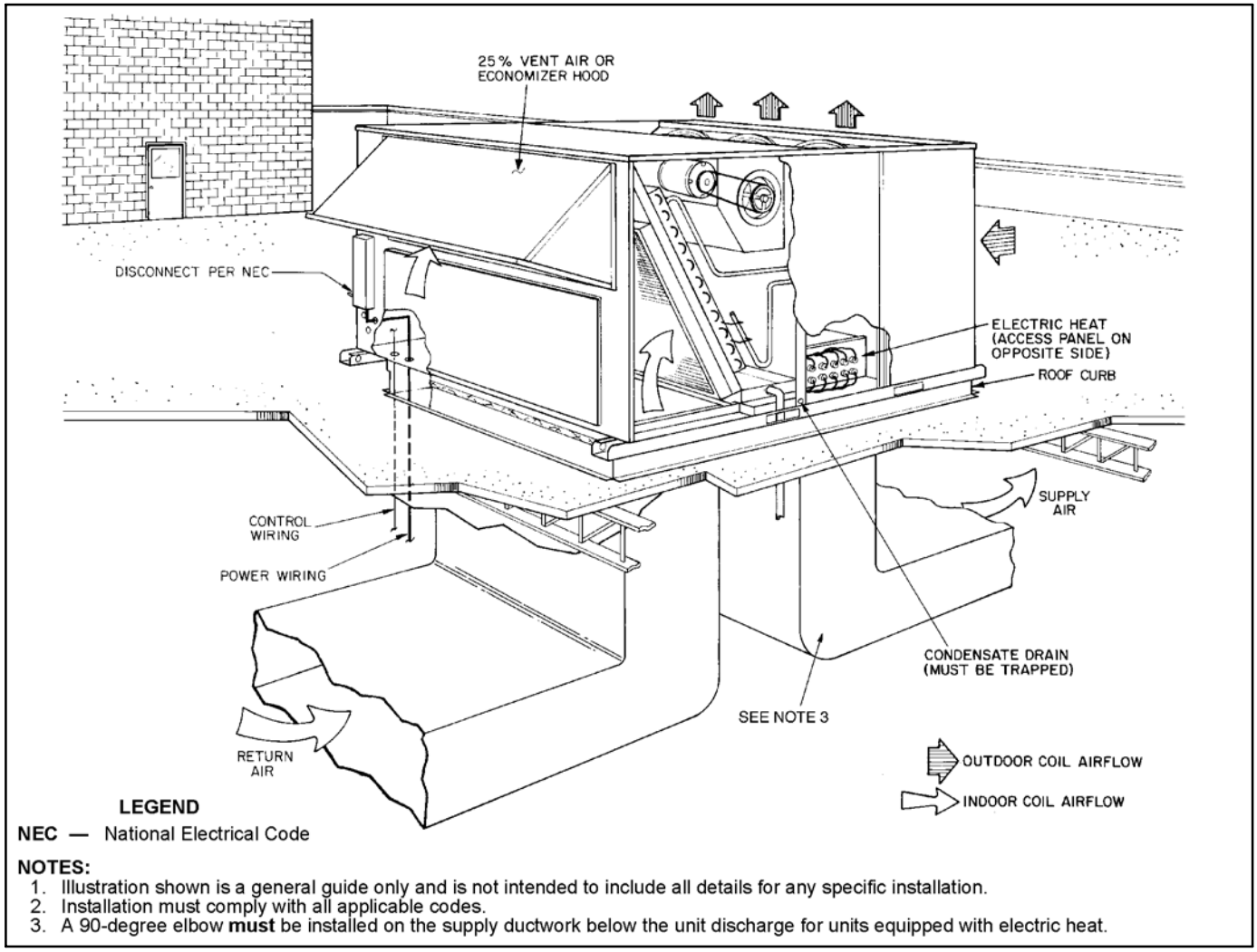


NOTES:

1. If the Non-Fused Disconnect Service Option is ordered for size155 and 180 units, the Non-Fused Disconnect will be factory-installed.
2. The Disconnect takes the place of TB-1 as shown on the unit wiring diagram label and the component arrangement label.

TYPICAL PIPING AND WIRING — PAH

PAH155−180 (PAH155 Shown)



LEGEND

NEC — National Electrical Code

NOTES:

1. Illustration shown is a general guide only and is not intended to include all details for any specific installation.
2. Installation must comply with all applicable codes.
3. A 90-degree elbow **must** be installed on the supply ductwork below the unit discharge for units equipped with electric heat.

GUIDE SPECIFICATIONS — PAH155 & 180

PACKAGED ROOFTOP ELECTRIC COOLING UNIT WITH ELECTRIC HEAT — CONSTANT VOLUME APPLICATIONS

HVAC GUIDE SPECIFICATIONS

SIZE RANGE: 12 TO 15 TONS NOMINAL (COOLING)
14 to 80 kW, NOMINAL (ELECTRIC HEATING)

MODEL NUMBERS:

PAH

ENERGY STAR

ASHRAE 90.1 COMPLIANT

PART 1 − GENERAL

1.01 SYSTEM DESCRIPTION

Unit is an outdoor rooftop mounted, electrically controlled heating and cooling unit utilizing scroll hermetic compressors for cooling duty and electric or glycol coils for heating duty. Supply air shall be discharged downward or horizontally (with horizontal supply/return curb adapter assembly), as shown on contract drawings. Standard unit shall include a manual outdoor-air inlet.

1.02 QUALITY ASSURANCE

A. Unit shall well exceed the energy efficiency requirements of ASHRAE Standard 90.1 − 2001. PAH units are Energy Star qualified.
B. Unit shall be rated in accordance with ARI Standards 270 and 360 and all units shall be designed in accordance with UL Standard 1995.
C. Unit shall be designed to conform to ASHRAE 15.
D. Unit shall be ETL and ETL, Canada, tested and certified in accordance with ANSI Z21.47 Standards as a total package.
E. Roof curb shall be designed to conform to NRCA Standards.
F. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
G. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
H. Unit shall be manufactured in a facility registered to ISO 9001:2000.

1.03 DELIVERY, STORAGE, AND HANDLING

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

PART 2 − PRODUCTS

2.01 EQUIPMENT (STANDARD)

A. General:

Each unit shall be a factory assembled, single-piece heating and cooling unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, refrigerant charge (R−22), and special features required prior to field start-up.

B. Unit Cabinet:
1. Constructed of galvanized steel (G90 — 1.8 oz. of zinc per square foot of sheet metal), bonderized and primer-coated on both sides and coated with a baked polyester thermosetting powdercoating finish on the outer surface.
2. Indoor blower compartment interior surfaces shall be insulated with a minimum $^1/_2$-in. thick, 1 lb density fiberglass insulation. Fiberglass insulation shall be bonded with a thermosetting resin (8 to 12% by weight nominal, phenol formaldehyde typical), and coated with an acrylic or other material that meets the NFPA 90 flame retardance requirements and has an ''R'' Value of 3.70.
3. Cabinet panels shall be easily removable for servicing. Cabinet panels are minimum 20 gage. Panels shall have $^1/_2$-in. thick, 1.5-lb density insulation.
4. Filters shall be accessible through an access panel.
5. Holes shall be provided in the base rails (minimum 12 gage) for rigging shackles to facilitate overhead rigging.
6. Unit shall contain a sloped drain pan, to prevent standing water from accumulating. Pan shall be fabricated of hot dipped zinc coated minimum spangle steel. Zinc coating shall be G90 designation according to ASTM Standard A653. Unit shall contain a factory-installed nonferrous main condensate drain connection.

C. Fans:
1. Indoor blower (evaporator fan):
   a. Fan shall be belt driven. Belt drive shall include an adjustable pulley. The standard fan drive shall have a factory-installed low-medium external static pressure capable fan drive. The alternate fan drive option shall have a factory-installed high external static pressure capable fan drive.
   b. Fan wheel shall be made from steel with a corrosion resistant finish. It shall be a dynamically balanced, double-inlet type with forward-curved blades.
2. Condenser fans shall be of the direct-driven propeller type, with corrosion-resistant blades riveted to corrosion-resistant steel supports. They shall be dynamically balanced and discharge air upwards.

D. Compressor(s):
1. Fully hermetic, scroll type, internally protected.
2. Factory spring-shock mounted and internally spring mounted for vibration isolation.
3. On electrically and mechanically independent refrigerant circuits.
4. All compressors shall have 70 W crankcase heaters.

E. Coils:
1. Standard evaporator and condenser coils shall have aluminum plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
2. Coils shall be leak tested at 150 psig and pressure tested at 450 psig.
3. Copper−fin coils shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets. Galvanized steel tube sheets shall not be from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan. All copper construction shall provide protection in moderate coastal environments.

F. Refrigerant Components:

Refrigerant circuit components shall include:
1. Thermostatic expansion valve (TXV).
2. Filter driers.
3. Gage port and connections on suction, discharge, and liquid lines.

G. Filter Section:

Standard filter section shall consist of 2 sizes of factory-installed 2-in. thick throwaway fiberglass filters of commercially available sizes. Filters shall be approximately 10% efficient with an airside pressure drop of approximately 0.07 in. wg (clean).

H. Controls and Safeties:

1. Unit Controls:
   a. Economizer control (optional)
   b. Capacity control (2-step)
   c. Unit shall be complete with self-contained low-voltage control circuit.
2. Safeties:
   a. Unit shall incorporate a solid-state compressor lockout which provides reset capability at the space thermostat, should any of the following safety devices trip and shut off compressor:
      (1.) Compressor lockout protection provided for either internal or external overload.
      (2.) Low-pressure switch.
      (3.) Dual freezestats (evaporator coil).
      (4.) High-pressure switch.
   b. Supply-air thermostat shall be located in the unit.
   c. Heating section shall be provided with a high-temperature limit switch.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 120°F (size 180) or 125°F (size 155) ambient outdoor temperature per maximum load criteria of ARI Standard 360.
2. Unit with standard controls will operate in cooling down to an outdoor ambient temperature of 40°F.
3. Unit shall be provided with fan time delay to prevent cold air delivery (PAH155−180).

J. Electrical Requirements:

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

K. Motors:

1. Compressor motors shall be cooled by refrigerant gas passing through motor windings and shall have line break thermal and current overload protection.
2. All fan motors shall have permanently lubricated, sealed bearings and inherent automatic-reset thermal overload protection or manual reset calibrated circuit breakers. Evaporator motors do NOT have conventional horsepower (hp) ratings listed on the motor nameplate. Motors are designed and qualified in the “air-over” location downstream of the cooling coil and carry a “maximum continuous bhp” rating that is the maximum application bhp rating for the motor; no “safety factors” above that rating may be applied.
3. All indoor-fan motors 5 hp and larger shall meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT) effective October 24, 1997.

L. Special Features

1. Integrated Economizers
   a. Integrated integral modulating type capable of simultaneous economizer and compressor operation.
   b. Available as a field supplied accessory in vertical supply/return configuration only.
   c. Includes all hardware and controls to provide cooling with outdoor air.
   d. Equipped with low−leakage dampers, not to exceed 2% leakage at 1 in. wg pressure differential.
   e. Capable of introducing up to 100% outdoor air.
   f. Economizer shall be equipped with a barometric relief damper.
   g. Designed to close damper(s) during loss−of power situations with spring return built into motor.
   h. Dry bulb outdoor−air temperature sensor shall be provided as standard. Outdoor air sensor set point is adjustable and shall range from 40° to 100° F. For the economizer, the return air sensor, indoor enthalpy sensor, and outdoor enthalpy sensor shall be provided as field installed accessories to provide enthalpy control, differential enthalpy control, and differential dry bulb temperature control.
   i. Economizer controller shall use a mixed air thermistor mounted on the evaporator fan housing to control economizer operation to a supply air temperature of 55° F.
   j. The economizer shall have a gear−driven parallel blade design.
   k. Economizer controller shall provide control of internal building pressure through its accessory power exhaust function. Factory set at 100%, with a range of 0% to 100%.
   l. Economizer Controller Occupied Minimum Damper Position Setting maintains the minimum airflow into the building during occupied period providing design ventilation rate for full occupancy (damper position during heating). A remote potentiometer may be used to override the set point.
   m. Economizer Controller Unoccupied Minimum Damper Position Setting − The economizer damper shall be completely closed when the unit is in the occupied mode.
   n. Economizer Controller IAQ/DCV Maximum Damper Position Setting − Setting the maximum position of the damper prevents the introduction of large amounts of hot or cold air into the space. This position is intended to satisfy the base minimum ventilation rate.
   o. Economizer controller IAQ/DCV control modulates the outdoor−air damper to provide ventilation based on the optional 2 to 10 vdc CO_2 sensor input.
   p. Compressor lockout sensor (opens at 35° F, closes at 50° F).
   q. Actuator shall be direct coupled to economizer gear, eliminating linkage arms and rods.
   r. Control LEDs:
      1. When the outdoor−air damper is capable of providing free cooling, the “Free Cool” LED shall illuminate.
      2. The IAQ LED indicates when the module is on the DCV mode.
      3. The EXH LED indicates when the exhaust fan contact is closed.
   s. Remote Minimum Position Control − A field−installed accessory remote potentiometer shall allow the outdoor−air damper to be opened or closed beyond the minimum position in the occupied mode for modified ventilation.

OPERATING SEQUENCE, SIZE 072−120 UNITS

Cooling, Units Without Economizer

When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC) and compressor contactor no. 1 (C1) are energized, and evaporator-fan motor (IFM), compressor no. 1, and condenser fan(s) start. The liquid line solenoid valve for compressor no. 1 is de-energized open. The condenser-fan motor(s) runs continuously while unit is cooling. For units with 2 stages of cooling, if the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

Heating, Units Without Economizer (Units With Electric Heat)

Upon a call for heating through W1, indoor (evaporator) fan contactor (IFC) and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, heater contactor no. 2 is energized through W2.

Cooling, Units With Economizer

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

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

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

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

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

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

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

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

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

Heating, Units With Economizer

NOTE: The units have 2 stages of electric heat.

When the thermostat calls for one stage of heating, W1 is energized. The thermostat must be configured such that the blower output (G) is energized when there is a W1 call for heating. The indoor fan contactor (IFC) and first stage electric heat contactor(s) are energized, and the indoor-fan motor and first stage electric heater are started. The Economizer damper modulates to the minimum position.

If additional heating is required, the thermostat will call for a second stage of heating, energizing W2. This will energize the second stage of electric heat. The Economizer damper modulates to the minimum position.

OPERATING SEQUENCE, PAH155,180

Cooling, Units Without Economizer

When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC) and compressor contactor no. 1 (C1) are energized, and evaporator-fan motor (IFM), compressor no. 1 and condenser fan(s) start. The condenser-fan motor(s) runs continuously while unit is cooling. When the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

Heating, Units Without Economizer (If Accessory Or Optional Heater Is Installed)

Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

Cooling, Units With Economizer

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

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

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

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

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

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

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

If free cooling can be used as determined from the appropriate changeover command (switch, dry bulb, enthalpy curve,

differential dry bulb, or differential enthalpy), then the control will modulate the dampers open to maintain the mixed-air temperature set point at 50° to 55°F.

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

Heating, Units With Economizer

NOTE: The units have 2 stages of electric heat.

When the thermostat calls for one stage of heating, W1 is energized. The thermostat must be configured such that the blower output (G) is energized when there is a W1 call for heating. The indoor fan contactor (IFC) and first stage electric heat contactor(s) are energized, and the indoor-fan motor and first stage electric heater are started. The Economizer damper modulates to the minimum position.

If additional heating is required, the thermostat will call for a second stage of heating, energizing W2. This will energize the second stage of electric heat. The Economizer damper modulates to the minimum position.