KeepRite®

PGH

Product Specifications

COMMERCIAL HIGH EFFICIENCY PACKAGE GAS HEATING/ELECTRIC COOLING R–22 SINGLE PACKAGE ROOFTOP 6 – 15 TONS (3–Phase)

PGH072

PGH090–120

PGH155–180

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
- Exclusive integrated gas control board with diagnostics with anti–cycle protection
- Tubular, dimpled gas heat exchangers optimize heat transfer for improved efficiency
- Induced–draft fan for gas combustion
- 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

- 10 Year heat exchanger limited warranty
- 5 Year compressor limited warranty
- 1 Year parts limited warranty

ISO 9001:2000

ARI Standard 340/360

155–180

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 PGH 3–Phase	NOMINAL TONS	COOLING		GAS HEATING		Unit Dimensions H x W x L	Unit Weight
		Net Cap. (Btuh)	EER	Input Cap. (Btuh)	AFUE %		
PGH072*^A00AA	6	73,000	11.0	72,000–150,000	80–82.0	41–5/16" x 45" x 73–11/16"	635
PGH090*^A00AA	7 1/2	90,000	11.0	125,000–224,000	82.0	41–5/16" x 57–3/4" x 87–3/8"	870
PGH102*^A00AA	8 1/2	103,000	11.6	125,000–224,000	82.0	49–5/16" x 57–3/4" x 87–3/8"	1015
PGH120*^A00AA	10	120,000	11.0	180,000–250,000	80–82.0	49–5/16" x 57–3/4" x 87–3/8"	1035
PGH155*^A00AA	12 1/2	152,000	10.80	230,000–300,000	81.0**	45" x 86–1/8" x 87–3/8"	1725
PGH180*^A00AA	15	176,000	10.50	275,000–360,000	81.0**	45" x 86–1/8" x 87–3/8"	1800

* Indicates Unit voltage: H = 208/230v, L = 460v, S = 575v
^ See model nomenclature listing for gas heating options. ** Steady state efficiency%

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

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MODEL NOMENCLATURE

MODEL SERIES	P	G	H	090	H	D	A	00	A	A	A
P = Package											
G = Gas/Electric											
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					
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.

All ignition components are contained in the compact integrated gas controller which is easily accessible for servicing. The IGC control board provides built-in diagnostic capability. A light-emitting diode simplifies troubleshooting by providing visual fault notification and required system status confirmation.

The IGC also contains an exclusive anti-cycle protection for gas heat operation.

The IGC also contains burner control logic for accurate and dependable gas ignition. The LED is visible without removing the unit control box access panel. The IGC also maximizes heating efficiency by controlling evaporator-fan on and off delays.

Tubular, dimpled gas heat exchangers optimize heat transfer for improved efficiency. The tubular design permits hot gases to make multiple passes across the path of the supply air. The dimpled design creates a turbulent gas flow to maximize heating efficiency.

The efficient in-shot burners and all ignition components are contained in an easily removable, compact assembly.

The extra thick heat exchanger coating provides corrosion resistance and ensures long life.

The inducer fan draws hot combustion gas through the heat exchanger at the optimum rate for the most effective heat transfer. The heat exchanger operates under negative pressure, preventing flue gas leakage into the indoor supply air.

The 30-second fan delay prevents cold air from entering the supply duct system when the conditioned space is calling for heat to maximize efficiency.

The direct-spark ignition system saves operating expense compared to pilot ignition systems.

All standard units are designed for natural gas, but an accessory propane conversion kit is available.

All units have a flame rectification sensor to quickly sense the burner flame and ignite burners almost immediately. Fast shutdown is a certainty since the sensor reacts quickly to any flame outage or system failure.

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 (PGH155,180).

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). (Thru-the-bottom gas connection requires thru-the-bottom accessory kit.) Power, gas 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.

Belt-Driven Evaporator-Fan Motors allow maximum on-site flexibility without changing motors or drives.

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.

During a first stage call for cooling, if the outdoor-air temperature is below the economizer control changeover set point, the

mixed-air sensor modulates the economizer outdoor-air damper open to take advantage of free cooling provided by the outside air. When second-stage cooling is called for, the compressor is energized in addition to the economizer. If the outdoor-air temperature is above the changeover set point, the first stage of compression is activated and the economizer damper stays at minimum position.

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 to help maintain proper building pressure.

For units without economizer, year-round ventilation is enhanced by a manual outdoor-air damper. On 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 (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 — PGH072–120

UNIT PGH	NOMINAL TONS	COOLING (Btuh)	TOTAL kW	SEER†	EER	SOUND RATING dB	IPLV
072	6	73,000	6.70	—	11.00	80	**
090	$7^1/_2$	90,000	8.18	—	11.00	82	11.6
102	$8^1/_2$	103,000	8.90	—	11.60	82	12.8
120	10	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) 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 PGH 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 PGH 072–120 units are Energy Star certified.

ARI* CAPACITY RATINGS (cont)

HEATING CAPACITIES AND EFFICIENCIES — PGH072–180 (cont)

208/230, 460, 575–3–60 — 2–STAGE GAS HEAT

UNIT PGH	INPUT CAPACITY		OUTPUT CAPACITY		TEMPERATURE RISE (°F)	MINIMUM HEATING AIRFLOW (CFM)	EFFICIENCY	
	1st Stage	2nd Stage	1st Stage	2nd Stage			AFUE (%)	Steady State (%)
072D	50,000	72,000	41,000	59,040	25–55	1220	82.0	82.0
072E	82,000	115,000	66,420	93,150	35–65	1330	81.0	81.0
072F	120,000	150,000	96,000	120,000	50–80	1390	80.0	80.0
090D	90,000	125,000	73,800	102,500	20–50	1900	82.0	82.0
090E	120,000	180,000	98,400	147,600	35–65	1440	82.0	82.0
090F	180,000	224,000	147,600	183,680	45–75	2230	82.0	82.0
102D	90,000	125,000	73,800	102,500	20–50	1900	82.0	82.0
102E	120,000	180,000	98,400	147,600	35–65	1440	82.0	82.0
102F	180,000	224,000	147,600	183,680	45–75	2230	82.0	82.0
120D	120,000	180,000	98,400	147,600	35–65	1440	82.0	82.0
120E	180,000	224,000	147,600	183,680	35–65	2570	82.0	82.0
120F	200,000	250,000	160,000	200,000	40–70	2650	80.0	80.0

LEGEND
AFUE – Annual Fuel Utilization Efficiency
NOTE: Capacities for stainless steel heat exchanger units are the same as standard units.

LOW HEAT UNITS

UNIT PGH	NOMINAL TONS	NET COOLING CAPACITY (Btuh)	TOTAL WATTS	EER	SOUND RATING (dB)	IPLV
155D	13	134,000	12,209	10.60	88	11.4
180D	15	180,000	17,064	10.50	88	11.4

HIGH HEAT UNITS

UNIT PGH	NOMINAL TONS	NET COOLING CAPACITY (Btuh)	TOTAL WATTS	EER	SOUND RATING (dB)	IPLV
155F	13	134,000	12,218	10.60	88	11.4
180F	15	180,000	17,179	10.50	88	11.1

LEGEND
dB — Sound Levels (decibels)
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 and 270.
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.

ARI PERFORMANCE CERTIFIED ARI Standard 340/360

ARI STANDARD 270

4. All PGH155, 180 units are in compliance with ASHRAE 90.1–1999 Energy Standard for minimum 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.

HEATING CAPACITIES AND EFFICIENCIES — PGH155–180

UNIT PGH	HEATING INPUT (Btuh) Stage 2/Stage 1*	OUTPUT CAPACITY (Btuh)	TEMPERATURE RISE (F)	AGA STEADY STATE EFFICIENCY (%)	MINIMUM HEATING CFM†
155D	230,000/172,000	186,000	15–45	81.0	3750
155F	300,000/225,000	243,000	30–60	81.0	3830
180D	275,000/206,000	223,000	15–45	81.0	4580
180F	360,000/270,000	292,000	20–50	81.0	5400

*All units are 2–stage heat.
†Minimum heating cfm must be maintained to ensure proper heating operation.
NOTE: Minimum allowable temperature of mixed air entering the heat exchanger during first stage heating is 45°F. There is no minimum mixed–air limitation during second–stage heating. For entering air temperatures below 45 F, both stages of heat must be energized together to minimize condensation issues and ensure proper unit operation. Mixed air below 35°F optional stainless steel heat exchangers are recommended.

LOW OUTDOOR AIR TEMPERATURE COOLING OPERATION LIMITS

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

AIR QUANTITY LIMITS (Cooling)

UNIT PGH	MINIMUM CFM	MAXIMUM CFM
155	3900	6500
180	4500	7500

OPTIONS AND ACCESSORIES
PGH 072–120

ITEM	OPTION*	ACCESSORY†
High Static Motors and Drives	X	
Economizer with Controller		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
Natural to LP Conversion Kit		X

PGH 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
Natural to LP Conversion Kit		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 – PGH 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	090
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 + thru––the curb Gas	072
DNBTMPWR002A01	Thru–the–bottom electrical + thru––the curb Gas	090 – 120
DNBTMPWR003A01	Thru–the–bottom electrical and Gas (AXB035PKA)	072
AXB045PKA	Thru–the–bottom electrical and Gas	090 – 120

ACCESSORIES – PGH 072–180 (cont.)

ECONOMIZER SENSORS		
Model Number	**Description**	**Use With Model Size**
DNTEMPSN002A00	Single Temp– (dry bulb) Control	ALL Economizers With W7212 Contoller
DNCBDIOX005A00	CO2 Sensor	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

LP GAS CONVERSION KITS		
Model Number	**Description**	**Use With Model Size**
AXB035LPA	Natural to LP Conversion Kit	072
AXB345LPA	Natural to LP Conversion Kit	090 – 120
DNLPKIT7002A00	Natural to LP Conversion Kit	155, 180

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

PHYSICAL DATA — PGH072

UNIT SIZE PGH		072
NOMINAL CAPACITY (Tons)		6
OPERATING WEIGHT (lb)		
Unit		635
COMPRESSOR		Scroll
Quantity		1
Oil (oz)		60
REFRIGERANT TYPE		R-22
Operating Charge (lb-oz)		12-8
CONDENSER FAN		Propeller
Quantity... Diameter (in.)		1...22
Nominal Cfm		4100
Motor Hp... Rpm		1/4...1100
Watts Input (Total)		320
CONDENSER COIL		3/8-in. OD Enhanced Copper Tubes, Aluminum Lanced Fins
Rows... Fins/in.		2...17
Total Face Area (sq ft)		21.3
EVAPORATOR COIL		3/8-in. OD Enhanced Copper Tubes, Aluminum Double-Wavy Fins, Fixed Orifice Metering Device
Rows... Fins/in.		4...15
Total Face Area (sq ft)		7.3
EVAPORATOR FAN		Centrifugal Type, Belt Drive
Quantity... Size (in.)		1...10 x 10
Nominal Cfm		2400
Maximum Continuous Bhp	Std	2.40
	Hi-Static	2.90
Motor Frame Size	Std	56
	Hi-Static	56
Fan Rpm Range	Std	1119-1585
	Hi-Static	1300-1685
Motor Bearing Type		Ball
Maximum Fan Rpm		2100
Motor Pulley Pitch Diameter A/B (in.)	Std	2.4/3.4
	Hi-Static	3.4/3.4
Nominal Motor Shaft Diameter (in.)	Std	5/8
	Hi-Static	7/8
Fan Pulley Pitch Diameter (in.)	Std	3.7
	Hi-Static	4.5
Belt — Type... Length (in.)	Std	1...A...38
	Hi-Static	1...A...40
Pulley Center Line Distance (in.)		14.7-15.5
Speed Change per Full Turn of Movable Pulley Flange (rpm)	Std	95
	Hi-Static	60
Movable Pulley Maximum Full Turns from Closed Position	Std	5
	Hi-Static	5
Factory Setting — Full Turns Open	Std	3
	Hi-Static	3 1/2
Factory Speed Setting (rpm)	Std	1305
	Hi-Static	1396
Fan Shaft Diameter at Pulley (in.)		5/8

LEGEND

Bhp – Brake Horsepower

PHYSICAL DATA — PGH072 (cont)

UNIT SIZE PGH		072
FURNACE SECTION		
Rollout Switch Cutout Temp (F)†		195
Burner Orifice Diameter (in. ...drill size)**		
Natural Gas — (Nominal Heating Size) Std	(72,000)	.113...33
	(115,000)	.113...33
	(150,000)	.129...30
Liquid Propane — (Nominal Heating Size) Alt††	(72,000)	.089...43
	(115,000)	.089...43
	(150,000)	.102...38
Thermostat Heat Anticipator Setting (amps) 208/230/460 v		
First Stage		.14
Second Stage		.14
Gas Input (Btuh)		
(Nominal Heating Size)		
Stage 1/Stage 2	(72,000)	50,000/72,000
Stage 1/Stage 2	(115,000)	82,000/115,000
Stage 1/Stage 2	(150,000)	120,000/150,000
Efficiency (Steady State) (%)	(72,000)	82
(Nominal Heating Size)	(115,000)	81
	(150,000)	80
Temperature Rise Range	(72,000)	25–55
(Nominal Heating Size)	(115,000)	35–65
	(150,000)	50–80
Manifold Pressure (in. wg)		
Natural Gas — Std		3.5
Liquid Propane — Alt†		3.5
Gas Valve Quantity		1
Gas Valve Pressure Range		
(Min–Max Allowable) Psig / in. wg.		0.180–0.470 / 5.0 – 13.0
Maximum Static Pressure (in. wg)		1.0
Field Gas Connection Size (in. FPT)		1/2
HIGH-PRESSURE SWITCH (psig)		
Standard Compressor Internal Relief		450 ± 50
Cutout		428
Reset (Auto.)		320
LOSS-OF-CHARGE SWITCH/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
Quantity... Size (in.)		Varies By Option Selected
RETURN-AIR FILTERS		Throwaway
Quantity... Size (in.)		4...16 x 16 x 2

LEGEND

Bhp — Brake Horsepower

†Indicates automatic reset.

**60,000 and 72,000 Btuh heat input units have 2 burners. 90,000 and 120,000 Btuh heat input units have 3 burners. 115,000 Btuh heat input units and 150,000 Btuh Heat input units have 3 burners.

††An LP kit is available as an accessory.

PHYSICAL DATA — PGH090–120

UNIT SIZE PGH		090	102	120
NOMINAL CAPACITY (tons)		7 1/2	8 1/2	10
OPERATING WEIGHT (lb)				
Unit		870	1015	1035
COMPRESSOR			Scroll	
Quantity		2	2	2
Oil (oz) (each compressor)		53	50	50
REFRIGERANT TYPE			R-22	
Operating Charge (lb–oz)				
Circuit 1 (first stage)		7–10	9–8	9–10
Circuit 2 (second stage)		8–2	8–13	10–10
CONDENSER FAN			Propeller	
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 Enhanced Copper Tubes, Aluminum Lanced Fins		
Rows... Fins/in.		2...17	2...17	2...17
Total Face Area (sq ft)		20.5	25.0	25.0
EVAPORATOR FAN			Centrifugal	
Size (in.)		15 x 15	15 x 15	15 x 15
Type Drive		Belt	Belt	Belt
Nominal Cfm		3000	3400	4000
Maximum Continuous Bhp	Std	2.90	2.90	3.70
	Hi-Static	4.20	4.20	5.25
Motor Frame		56	56	56
Fan Rpm Range	Std	840–1085	840–1085	860–1080
	Hi-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.)	Std	3.4/4.4	3.4/4.4	4.0/5.0
	Hi-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.)	Std	7.0	7.0	8.0
	Hi-Static	8.0	8.0	5.8
Belt — Type... Length (in.)	Std	A...48	A...51	A...53
	Hi-Static	A...53	A...53	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)	Std	50	50	45
	Hi-Static	60	60	60
Movable Pulley Maximum Full Turns from Closed Position	Std	5	5	5
	Hi-Static	5	5	6
Factory Setting — Full Turns Open	Std	5	5	5
	Hi-Static	5	5	5
Factory Speed Setting (rpm)	Std	840	840	860
	Hi-Static	860	860	890
Fan Shaft Diameter at Pulley (in.)		1	1	1
EVAPORATOR COIL		3/8-in. OD Enhanced Copper Tubes, Aluminum Double-Wavy Fins		
Rows... Fins/in.		3...15	4...15	4...15
Total Face Area (sq ft)		8.9	11.1	11.1

LEGEND

Bhp — Brake Horsepower

†Indicates automatic reset.

**72,000 Btuh heat input units have 2 burners.
115,000 Btuh heat input units and 150,000 Btuh Heat input units have 3 burners.

††An LP kit is available as an accessory.

PHYSICAL DATA — PGH090–120 (cont)

UNIT SIZE PGH			090	102	120
FURNACE SECTION					
Rollout Switch Cutout Temp (F)†			195	195	195
Burner Orifice Diameter (in. ...drill size)**					
Natural Gas — (Nominal Heating Size)	Std	(125,000)	.120...31	.120...31	–
		(180,000)	.120...31	.120...31	.120...31
		(224,000)	.120...31	.120...31	.120...31
		(250,000)			.129...30
Liquid Propane — (Nominal Heating Size)	Alt††	(125,000)	.096...41	.096...41	–
		(180,000)	.096...41	.096...41	.096...41
		(224,000)	.096...41	.096...41	.096...41
		(250,000)	–	–	.102...38
Thermostat Heat Anticipator Setting (amps) Stage 1 / Stage 2				.14 / .20	
Gas Input (Btuh)					
(Nominal Heating Size) Stage 1 / Stage 2		(125,000)	90,000/125,000	90,000/125,000	–
		(180,000)	120,000/180,000	120,000/180,000	120,000/180,000
		(224,000)	180,000/224,000	180,000/224,000	180,000/224,000
		(250,000)	–	–	200,000/250,000
Efficiency (Steady State) (%)			82	82	82
			82	82	82
			82	82	80
Temperature Rise Range		(125,000)	20–50	20–50	–
(Nominal Heating Size)		(180,000)	35–65	35–65	35–65
		(224,000)	45–75	45–75	35–65
		(250,000)	–	–	40–70
Manifold Pressure (in. wg)					
Natural Gas — Std			3.5	3.5	3.5
Liquid Propane — Alt††			3.5	3.5	3.5
Gas Valve Quantity			1	1	1
Gas Valve Pressure Range (Min–Max Allowable) Psig / in. wg				0.180–0.470 / 5.0–13.0	
Field Gas Connection Size (in. FPT)		(125,000)	.50	.50	–
(Nominal Heating Size)		(180,000)	.75	.75	.75
		(224,000)	.75	.75	.75
		(250,000)	–	–	.75
HIGH–PRESSURE SWITCH (psig)					
Standard Compressor Internal Relief				450 ± 50	
Cutout				428	
Reset (Auto.)				320	
LOSS–OF–CHARGE SWITCH/LOW–PRESSURE SWITCH (Liquid Line) (psig)					
Cutout				7 ± 3	
Reset (Auto.)				22 ± 7	
FREEZE PROTECTION THERMOSTAT					
Opens (F)				30 ± 5	
Closes (F)				45 ± 5	
OUTDOOR–AIR INLET SCREENS				Cleanable	
Quantity... Size (in.)				1...20 x 25 x 1 1...16 x 25 x 1	
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

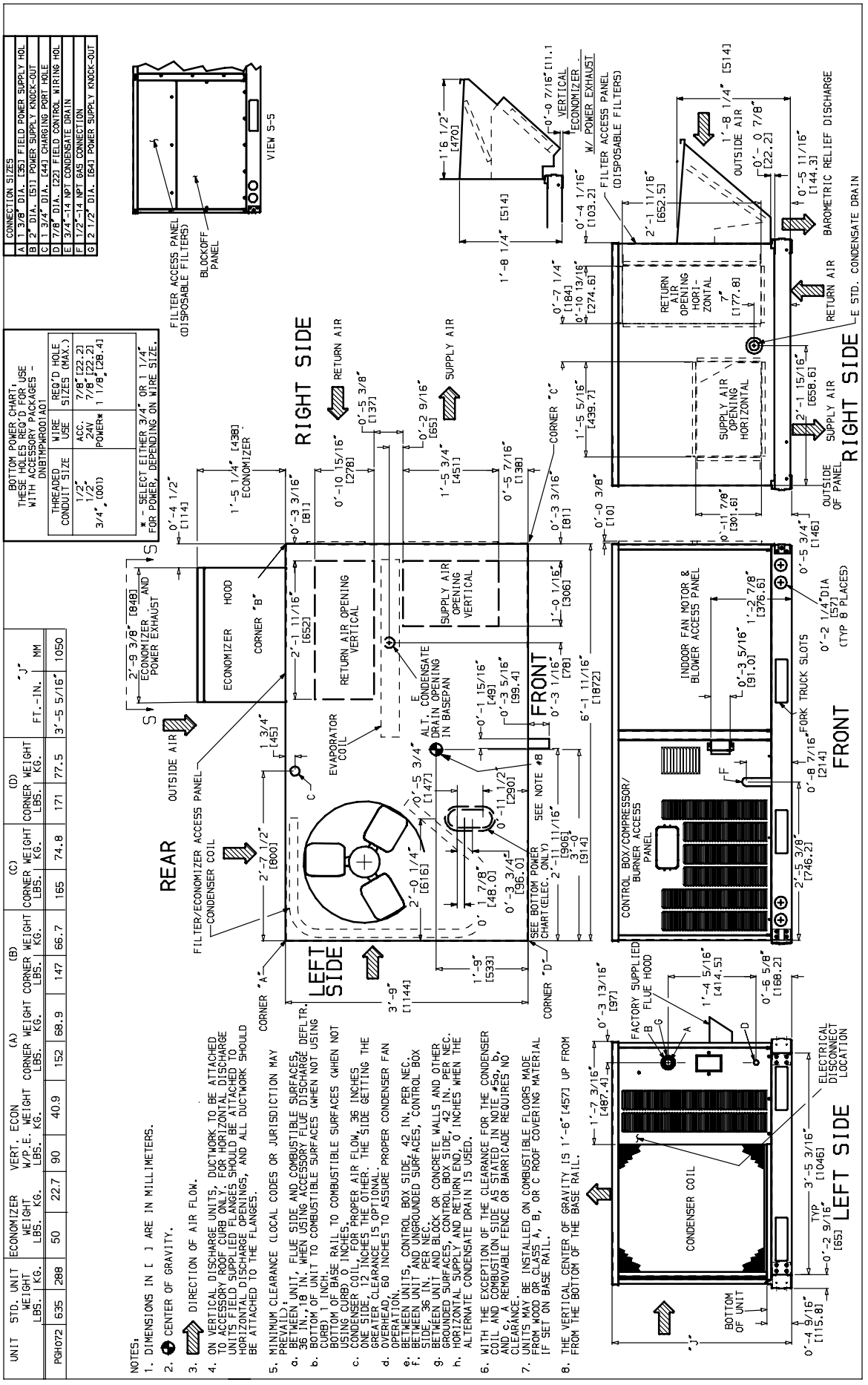
Bhp—Brake Horsepower

†Indicates automatic reset.

**180,000 Btuh heat input units have 2 burners.
224,000 Btuh heat input units and 250,000 Btuh Heat input units have 3 burners.

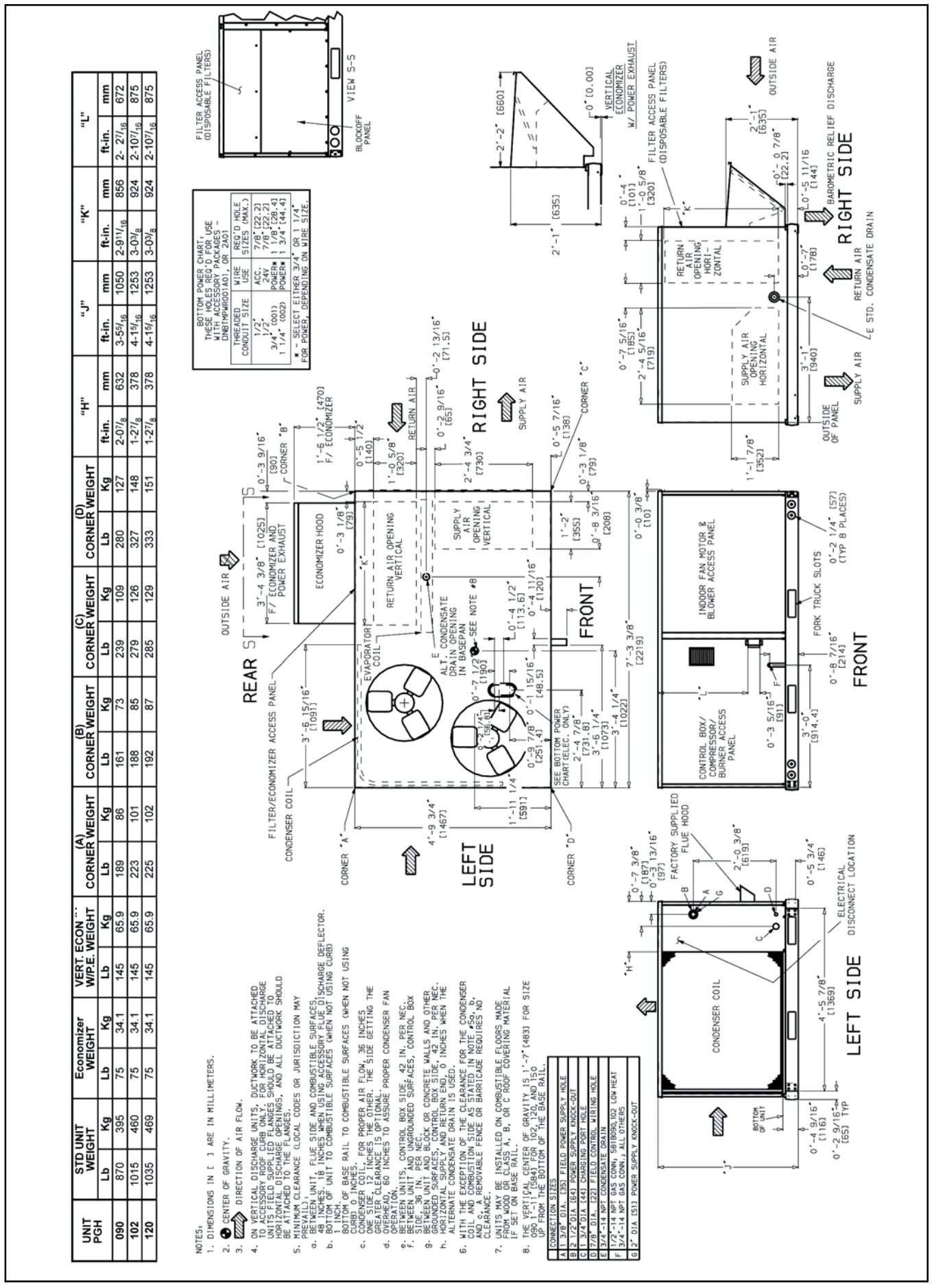
††An LP kit is available as an accessory.

BASE UNIT DIMENSIONS — PGH072



BASE UNIT DIMENSIONS — PGH090–120

UNIT PGH	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"		"L"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	ft-in.	mm	ft-in.	mm	ft-in.	mm	ft-in.	mm
090	870	395	75	34.1	145	65.9	189	86	161	73	239	109	280	127	2-07/8	632	3-55/16	1050	2-911/16	856	2- 27/16	672
102	1015	460	75	34.1	145	65.9	223	101	188	85	279	126	327	148	1-27/8	378	4-15/16	1253	3-03/8	924	2-107/16	875
120	1035	469	75	34.1	145	65.9	225	102	192	87	285	129	333	151	1-27/8	378	4-15/16	1253	3-03/8	924	2-107/16	875



PERFORMANCE DATA – PGH

COOLING CAPACITIES (cont)

PGH072 (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

PGH090 (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

PGH102 (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	

– 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 – PGH (cont)

COOLING CAPACITIES (cont)

PGH120 (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 – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH072 (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	**967**	**0.63**	**563**	**1075**	**0.80**	**715**	1170	0.97	861	1255	1.13	1002	1333	1.28	1139
1900	**1008**	**0.72**	**643**	**1112**	**0.91**	**805**	1205	1.08	960	1289	1.25	1111	1366	1.42	1258
2000	**1049**	**0.82**	**731**	1151	1.02	903	1241	1.20	1068	1323	1.38	1228	1399	1.56	1384
2100	**1091**	**0.93**	**827**	1189	1.14	1008	1278	1.33	1183	1358	1.52	1353	1433	1.71	1519
2200	1133	1.05	933	1229	1.26	1123	1315	1.47	1308	1393	1.67	1487	1467	1.87	1662
2300	1176	1.18	1047	1268	1.40	1247	1352	1.62	1441	1429	1.84	1630	1501	2.04	1815
2400	1218	1.32	1170	1308	1.55	1380	1390	1.78	1584	1466	2.01	1782	1537	2.23	1977
2500	1261	1.47	1304	1349	1.72	1523	1429	1.96	1736	1503	2.19	1945	—	—	—
2600	1305	1.63	1448	1390	1.89	1677	1468	2.14	1900	1540	2.38	2117	—	—	—
2700	1348	1.80	1602	1431	2.07	1841	1507	2.33	2073	—	—	—	—	—	—
2800	1392	1.99	1768	1472	2.27	2016	—	—	—	—	—	—	—	—	—
2900	1435	2.19	1945	—	—	—	—	—	—	—	—	—	—	—	—
3000	1479	2.40	2135	—	—	—	—	—	—	—	—	—	—	—	—

PGH072 (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	1406	1.43	1273	1475	1.58	1403	1540	1.72	1531	**1601**	**1.87**	**1657**	**1660**	**2.00**	**1780**
1900	1438	1.58	1401	1505	1.73	1541	1569	1.89	1678	**1630**	**2.04**	**1813**	**1689**	**2.19**	**1945**
2000	1470	1.73	1537	1537	1.90	1686	**1600**	**2.06**	**1833**	**1660**	**2.23**	**1977**	**1718**	**2.38**	**2118**
2100	1502	1.89	1681	1568	2.07	1840	**1631**	**2.25**	**1996**	—	—	—	—	—	—
2200	1535	2.06	1834	**1600**	**2.25**	**2002**	—	—	—	—	—	—	—	—	—
2300	1569	2.25	1996	—	—	—	—	—	—	—	—	—	—	—	—
2400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower

Watts — Input Watts to Motor

*Motor drive range: 1119 to 1585 rpm. All other rpms require field-supplied drive.

Refer to General Fan Performance Data notes.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.40.

PGH072 (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	**967**	**0.63**	**563**	**1075**	**0.80**	**715**	**1170**	**0.97**	**861**	**1255**	**1.13**	**1002**	1333	1.28	1139
1900	**1008**	**0.72**	**643**	**1112**	**0.91**	**805**	**1205**	**1.08**	**960**	**1289**	**1.25**	**1111**	1366	1.42	1258
2000	**1049**	**0.82**	**731**	**1151**	**1.02**	**903**	**1241**	**1.20**	**1068**	1323	1.38	1228	1399	1.56	1384
2100	**1091**	**0.93**	**827**	**1189**	**1.14**	**1008**	**1278**	**1.33**	**1183**	1358	1.52	1353	1433	1.71	1519
2200	**1133**	**1.05**	**933**	**1229**	**1.26**	**1123**	1315	1.47	1308	1393	1.67	1487	1467	1.87	1662
2300	**1176**	**1.18**	**1047**	**1268**	**1.40**	**1247**	1352	1.62	1441	1429	1.84	1630	1501	2.04	1815
2400	**1218**	**1.32**	**1170**	1308	1.55	1380	1390	1.78	1584	1466	2.01	1782	1537	2.23	1977
2500	**1261**	**1.47**	**1304**	1349	1.72	1523	1429	1.96	1736	1503	2.19	1945	1572	2.42	2149
2600	1305	1.63	1448	1390	1.89	1677	1468	2.14	1900	1540	2.38	2117	1608	2.62	2331
2700	1348	1.80	1602	1431	2.07	1841	1507	2.33	2073	1578	2.59	2301	1645	2.84	2524
2800	1392	1.99	1768	1472	2.27	2016	1547	2.54	2258	1616	2.81	2495	—	—	—
2900	1435	2.19	1945	1514	2.48	2203	1587	2.76	2455	—	—	—	—	—	—
3000	1479	2.40	2135	1556	2.70	2402	—	—	—	—	—	—	—	—	—

PGH072 (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	1406	1.43	1273	1475	1.58	1403	1540	1.72	1531	1601	1.87	1657	1660	2.00	1780
1900	1438	1.58	1401	1505	1.73	1541	1569	1.89	1678	1630	2.04	1813	**1689**	**2.19**	**1945**
2000	1470	1.73	1537	1537	1.90	1686	1600	2.06	1833	1660	2.23	1977	**1718**	**2.38**	**2118**
2100	1502	1.89	1681	1568	2.07	1840	1631	2.25	1996	**1690**	**2.42**	**2149**	**1747**	**2.59**	**2300**
2200	1535	2.06	1834	1600	2.25	2002	1662	2.44	2167	**1721**	**2.62**	**2330**	**1778**	**2.80**	**2490**
2300	1569	2.25	1996	1633	2.45	2174	**1694**	**2.64**	**2348**	**1752**	**2.84**	**2520**	—	—	—
2400	1603	2.44	2167	1666	2.65	2355	**1727**	**2.86**	**2539**	—	—	—	—	—	—
2500	1638	2.64	2349	**1700**	**2.87**	**2546**	—	—	—	—	—	—	—	—	—
2600	1673	2.86	2541	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower

Watts — Input Watts to Motor

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

Refer to General Fan Performance Data notes.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH090 ($7^1/_2$ 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	**513**	**0.54**	**505**	**595**	**0.76**	**713**	**665**	**1.01**	**940**	**728**	**1.27**	**1187**	**786**	**1.56**	**1453**
2300	**521**	**0.57**	**531**	**601**	**0.79**	**741**	**671**	**1.04**	**972**	**734**	**1.31**	**1222**	**791**	**1.60**	**1489**
2400	**535**	**0.63**	**584**	**615**	**0.86**	**802**	**684**	**1.11**	**1038**	**745**	**1.39**	**1293**	**802**	**1.68**	**1566**
2500	**551**	**0.69**	**642**	**628**	**0.93**	**866**	**696**	**1.19**	**1109**	**757**	**1.47**	**1369**	**813**	**1.77**	**1647**
2550	**558**	**0.72**	**673**	**635**	**0.97**	**900**	**702**	**1.23**	**1146**	**763**	**1.51**	**1409**	**818**	**1.81**	**1689**
2600	**566**	**0.76**	**705**	**642**	**1.00**	**935**	**709**	**1.27**	**1183**	**769**	**1.55**	**1450**	**824**	**1.86**	**1732**
2700	**582**	**0.83**	**771**	**656**	**1.08**	**1008**	**721**	**1.35**	**1263**	**781**	**1.65**	**1535**	**835**	**1.95**	**1823**
2800	**597**	**0.90**	**842**	**670**	**1.16**	**1086**	**734**	**1.44**	**1347**	**793**	**1.74**	**1625**	847	2.06	1917
2900	**613**	**0.98**	**918**	**684**	**1.25**	**1169**	**748**	**1.54**	**1436**	**805**	**1.84**	**1720**	859	2.16	2019
3000	**629**	**1.07**	**999**	**699**	**1.35**	**1256**	**761**	**1.64**	**1530**	**818**	**1.95**	**1820**	871	2.28	2125
3100	**645**	**1.16**	**1085**	**713**	**1.45**	**1349**	**775**	**1.75**	**1630**	**831**	**2.06**	**1925**	883	2.40	2235
3200	**662**	**1.26**	**1176**	**728**	**1.55**	**1448**	**788**	**1.86**	**1734**	844	2.18	2036	895	2.52	2352
3300	**678**	**1.36**	**1272**	**743**	**1.66**	**1551**	**802**	**1.98**	**1845**	857	2.31	2152	908	2.65	2475
3400	**694**	**1.47**	**1374**	**758**	**1.78**	**1660**	**816**	**2.10**	**1961**	870	2.44	2275	920	2.79	2603
3500	**711**	**1.59**	**1482**	**773**	**1.90**	**1775**	**831**	**2.23**	**2082**	884	2.58	2402	—	—	—
3600	**727**	**1.71**	**1596**	**789**	**2.03**	**1896**	845	2.37	2210	897	2.72	2537	—	—	—
3700	**744**	**1.84**	**1716**	**804**	**2.17**	**2023**	860	2.51	2343	911	2.87	2677	—	—	—
3750	**752**	**1.91**	**1778**	**812**	**2.24**	**2089**	867	2.59	2413	—	—	—	—	—	—

PGH090 ($7^1/_2$ 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	**839**	**1.86**	**1735**	889	2.18	2032	935	2.52	2345	980	2.87	2673	—	—	—
2300	844	1.90	1773	893	2.22	2073	940	2.56	2389	—	—	—	—	—	—
2400	854	1.99	1855	903	2.32	2159	950	2.66	2478	—	—	—	—	—	—
2500	865	2.08	1940	913	2.41	2249	959	2.76	2573	—	—	—	—	—	—
2550	870	2.13	1985	918	2.46	2296	964	2.81	2622	—	—	—	—	—	—
2600	875	2.18	2031	923	2.51	2344	969	2.87	2673	—	—	—	—	—	—
2700	886	2.28	2126	934	2.62	2445	—	—	—	—	—	—	—	—	—
2800	897	2.39	2227	944	2.73	2550	—	—	—	—	—	—	—	—	—
2900	908	2.50	2333	955	2.85	2661	—	—	—	—	—	—	—	—	—
3000	920	2.62	2443	—	—	—	—	—	—	—	—	—	—	—	—
3100	931	2.75	2560	—	—	—	—	—	—	—	—	—	—	—	—
3200	943	2.88	2682	—	—	—	—	—	—	—	—	—	—	—	—
3300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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.

Refer to General Fan Performance Data notes.

NOTES:

1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH090 ($7^1/_2$ 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	**513**	**0.54**	**505**	**595**	**0.76**	**713**	**665**	**1.01**	**940**	**728**	**1.27**	**1187**	**786**	**1.56**	**1453**
2300	**521**	**0.57**	**531**	**601**	**0.79**	**741**	**671**	**1.04**	**972**	**734**	**1.31**	**1222**	**791**	**1.60**	**1489**
2400	**535**	**0.63**	**584**	**615**	**0.86**	**802**	**684**	**1.11**	**1038**	**745**	**1.39**	**1293**	**802**	**1.68**	**1566**
2500	**551**	**0.69**	**642**	**628**	**0.93**	**866**	**696**	**1.19**	**1109**	**757**	**1.47**	**1369**	**813**	**1.77**	**1647**
2550	**558**	**0.72**	**673**	**635**	**0.97**	**900**	**702**	**1.23**	**1146**	**763**	**1.51**	**1409**	**818**	**1.81**	**1689**
2600	**566**	**0.76**	**705**	**642**	**1.00**	**935**	**709**	**1.27**	**1183**	**769**	**1.55**	**1450**	**824**	**1.86**	**1732**
2700	**582**	**0.83**	**771**	**656**	**1.08**	**1008**	**721**	**1.35**	**1263**	**781**	**1.65**	**1535**	**835**	**1.95**	**1823**
2800	**597**	**0.90**	**842**	**670**	**1.16**	**1086**	**734**	**1.44**	**1347**	**793**	**1.74**	**1625**	**847**	**2.06**	**1917**
2900	**613**	**0.98**	**918**	**684**	**1.25**	**1169**	**748**	**1.54**	**1436**	**805**	**1.84**	**1720**	**859**	**2.16**	**2019**
3000	**629**	**1.07**	**999**	**699**	**1.35**	**1256**	**761**	**1.64**	**1530**	**818**	**1.95**	**1820**	871	2.28	2125
3100	**645**	**1.16**	**1085**	**713**	**1.45**	**1349**	**775**	**1.75**	**1630**	**831**	**2.06**	**1925**	883	2.40	2235
3200	**662**	**1.26**	**1176**	**728**	**1.55**	**1448**	**788**	**1.86**	**1734**	**844**	**2.18**	**2036**	895	2.52	2352
3300	**678**	**1.36**	**1272**	**743**	**1.66**	**1551**	**802**	**1.98**	**1845**	**857**	**2.31**	**2152**	908	2.65	2475
3400	**694**	**1.47**	**1374**	**758**	**1.78**	**1660**	**816**	**2.10**	**1961**	870	2.44	2275	920	2.79	2603
3500	**711**	**1.59**	**1482**	**773**	**1.90**	**1775**	**831**	**2.23**	**2082**	884	2.58	2402	933	2.93	2737
3600	**727**	**1.71**	**1596**	**789**	**2.03**	**1896**	**845**	**2.37**	**2210**	897	2.72	2537	946	3.09	2877
3700	**744**	**1.84**	**1716**	**804**	**2.17**	**2023**	860	2.51	2343	911	2.87	2677	959	3.24	3023
3750	**752**	**1.91**	**1778**	**812**	**2.24**	**2089**	867	2.59	2413	918	2.95	2750	966	3.32	3100

PGH090 ($7^1/_2$ 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	839	1.86	1735	889	2.18	2032	935	2.52	2345	980	2.87	2673	1022	3.23	3015
2300	844	1.90	1773	893	2.22	2073	940	2.56	2389	984	2.91	2718	1027	3.28	3062
2400	854	1.99	1855	903	2.32	2159	950	2.66	2478	993	3.02	2812	1035	3.39	3159
2500	865	2.08	1940	913	2.41	2249	959	2.76	2573	1003	3.12	2911	1044	3.50	3261
2550	870	2.13	1985	918	2.46	2296	964	2.81	2622	1008	3.18	2962	1049	3.55	3315
2600	875	2.18	2031	923	2.51	2344	969	2.87	2673	1012	3.23	3014	1054	3.61	3370
2700	886	2.28	2126	934	2.62	2445	979	2.98	2777	1022	3.35	3123	1063	3.74	3483
2800	897	2.39	2227	944	2.73	2550	989	3.10	2888	1032	3.47	3238	1073	3.86	3601
2900	908	2.50	2333	955	2.85	2661	1000	3.22	3003	1042	3.60	3358	**1083**	**4.00**	**3725**
3000	920	2.62	2443	966	2.98	2777	1010	3.35	3123	1052	3.74	3484	**1093**	**4.14**	**3856**
3100	931	2.75	2560	977	3.11	2899	1021	3.49	3250	1063	3.88	3615	—	—	—
3200	943	2.88	2682	989	3.25	3026	1032	3.63	3383	1074	4.02	3752	—	—	—
3300	955	3.01	2810	1000	3.39	3159	1043	3.78	3521	**1084**	**4.18**	**3896**	—	—	—
3400	967	3.16	2945	1012	3.54	3299	1055	3.93	3667	—	—	—	—	—	—
3500	980	3.31	3084	1024	3.69	3445	1066	4.09	3817	—	—	—	—	—	—
3600	992	3.46	3230	1036	3.86	3596	—	—	—	—	—	—	—	—	—
3700	1005	3.63	3383	1048	4.03	3755	—	—	—	—	—	—	—	—	—
3750	1011	3.71	3462	1054	4.11	3836	—	—	—	—	—	—	—	—	—

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.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH102 (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	**541**	**0.50**	**467**	**624**	**0.66**	**614**	**701**	**0.83**	**771**	**771**	**1.00**	**936**	**837**	**1.19**	**1109**
2600	**556**	**0.55**	**513**	**637**	**0.71**	**665**	**711**	**0.89**	**827**	**781**	**1.07**	**996**	845	1.26	1173
2700	**571**	**0.60**	**562**	**650**	**0.77**	**720**	**722**	**0.95**	**885**	**790**	**1.14**	**1059**	854	1.33	1241
2800	**586**	**0.66**	**615**	**663**	**0.83**	**777**	**734**	**1.02**	**948**	**800**	**1.21**	**1126**	863	1.41	1312
2900	**601**	**0.72**	**672**	**676**	**0.90**	**839**	**745**	**1.09**	**1014**	**811**	**1.28**	**1197**	872	1.49	1387
3000	**616**	**0.79**	**732**	**689**	**0.97**	**904**	**757**	**1.16**	**1083**	**821**	**1.36**	**1271**	882	1.57	1465
3100	**632**	**0.85**	**796**	**703**	**1.04**	**972**	**769**	**1.24**	**1157**	**832**	**1.45**	**1349**	892	1.66	1548
3200	**648**	**0.93**	**864**	**717**	**1.12**	**1045**	**782**	**1.32**	**1235**	843	1.53	1431	902	1.75	1635
3300	**663**	**1.00**	**936**	**731**	**1.20**	**1122**	**795**	**1.41**	**1316**	855	1.63	1517	912	1.85	1725
3400	**679**	**1.09**	**1012**	**745**	**1.29**	**1203**	**808**	**1.50**	**1402**	867	1.72	1608	923	1.95	1820
3500	**695**	**1.17**	**1092**	**760**	**1.38**	**1288**	**821**	**1.60**	**1492**	879	1.83	1703	934	2.06	1920
3600	**711**	**1.26**	**1177**	**774**	**1.48**	**1379**	**834**	**1.70**	**1587**	891	1.93	1802	945	2.17	2024
3700	**728**	**1.36**	**1266**	**789**	**1.58**	**1473**	848	1.81	1686	904	2.04	1906	957	2.29	2132
3800	**744**	**1.46**	**1361**	**804**	**1.69**	**1572**	861	1.92	1790	916	2.16	2015	969	2.41	2246
3900	**760**	**1.57**	**1460**	**819**	**1.80**	**1676**	875	2.04	1899	929	2.28	2128	981	2.53	2364
4000	**777**	**1.68**	**1563**	**834**	**1.91**	**1785**	889	2.16	2012	942	2.41	2247	993	2.67	2487
4100	**793**	**1.79**	**1672**	850	2.04	1899	904	2.29	2132	956	2.54	2371	1006	2.80	2615
4200	**810**	**1.92**	**1786**	865	2.16	2018	918	2.42	2255	969	2.68	2499	—	—	—
4300	**826**	**2.04**	**1906**	880	2.30	2142	932	2.56	2385	983	2.82	2633	—	—	—

PGH102 (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	900	1.38	1289	959	1.58	1476	1015	1.79	1669	1069	2.00	1868	**1121**	**2.22**	**2073**
2600	907	1.46	1357	965	1.66	1548	1021	1.87	1745	1074	2.09	1948	**1125**	**2.31**	**2158**
2700	914	1.53	1429	972	1.74	1624	1027	1.96	1825	1079	2.18	2032	**1130**	**2.41**	**2245**
2800	922	1.61	1505	979	1.83	1704	1033	2.05	1909	1085	2.27	2120	**1135**	**2.51**	**2337**
2900	931	1.70	1584	986	1.92	1787	1040	2.14	1996	**1091**	**2.37**	**2211**	**1141**	**2.61**	**2432**
3000	939	1.79	1667	994	2.01	1874	1047	2.24	2087	**1098**	**2.47**	**2307**	**1147**	**2.71**	**2532**
3100	948	1.88	1753	1002	2.11	1965	1054	2.34	2183	**1105**	**2.58**	**2406**	**1153**	**2.83**	**2635**
3200	957	1.98	1844	1011	2.21	2060	1062	2.45	2283	**1112**	**2.69**	**2510**	—	—	—
3300	967	2.08	1939	1020	2.32	2160	1070	2.56	2386	**1119**	**2.81**	**2618**	—	—	—
3400	977	2.19	2039	1029	2.43	2264	1079	2.67	2494	—	—	—	—	—	—
3500	987	2.30	2143	1038	2.54	2372	**1088**	**2.80**	**2607**	—	—	—	—	—	—
3600	998	2.41	2251	1048	2.66	2485	—	—	—	—	—	—	—	—	—
3700	1008	2.54	2364	1058	2.79	2602	—	—	—	—	—	—	—	—	—
3800	1019	2.66	2482	—	—	—	—	—	—	—	—	—	—	—	—
3900	1031	2.79	2605	—	—	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.

PGH102 (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	**541**	**0.50**	**467**	**624**	**0.66**	**614**	**701**	**0.83**	**771**	**771**	**1.00**	**936**	**837**	**1.19**	**1109**
2600	**556**	**0.55**	**513**	**637**	**0.71**	**665**	**711**	**0.89**	**827**	**781**	**1.07**	**996**	**845**	**1.26**	**1173**
2700	**571**	**0.60**	**562**	**650**	**0.77**	**720**	**722**	**0.95**	**885**	**790**	**1.14**	**1059**	**854**	**1.33**	**1241**
2800	**586**	**0.66**	**615**	**663**	**0.83**	**777**	**734**	**1.02**	**948**	**800**	**1.21**	**1126**	863	1.41	1312
2900	**601**	**0.72**	**672**	**676**	**0.90**	**839**	**745**	**1.09**	**1014**	**811**	**1.28**	**1197**	872	1.49	1387
3000	**616**	**0.79**	**732**	**689**	**0.97**	**904**	**757**	**1.16**	**1083**	**821**	**1.36**	**1271**	882	1.57	1465
3100	**632**	**0.85**	**796**	**703**	**1.04**	**972**	**769**	**1.24**	**1157**	**832**	**1.45**	**1349**	892	1.66	1548
3200	**648**	**0.93**	**864**	**717**	**1.12**	**1045**	**782**	**1.32**	**1235**	**843**	**1.53**	**1431**	902	1.75	1635
3300	**663**	**1.00**	**936**	**731**	**1.20**	**1122**	**795**	**1.41**	**1316**	**855**	**1.63**	**1517**	912	1.85	1725
3400	**679**	**1.09**	**1012**	**745**	**1.29**	**1203**	**808**	**1.50**	**1402**	867	1.72	1608	923	1.95	1820
3500	**695**	**1.17**	**1092**	**760**	**1.38**	**1288**	**821**	**1.60**	**1492**	879	1.83	1703	934	2.06	1920
3600	**711**	**1.26**	**1177**	**774**	**1.48**	**1379**	**834**	**1.70**	**1587**	891	1.93	1802	945	2.17	2024
3700	**728**	**1.36**	**1266**	**789**	**1.58**	**1473**	**848**	**1.81**	**1686**	904	2.04	1906	957	2.29	2132
3800	**744**	**1.46**	**1361**	**804**	**1.69**	**1572**	861	1.92	1790	916	2.16	2015	969	2.41	2246
3900	**760**	**1.57**	**1460**	**819**	**1.80**	**1676**	875	2.04	1899	929	2.28	2128	981	2.53	2364
4000	**777**	**1.68**	**1563**	**834**	**1.91**	**1785**	889	2.16	2012	942	2.41	2247	993	2.67	2487
4100	**793**	**1.79**	**1672**	**850**	**2.04**	**1899**	904	2.29	2132	956	2.54	2371	1006	2.80	2615
4200	**810**	**1.92**	**1786**	865	2.16	2018	918	2.42	2255	969	2.68	2499	1018	2.95	2748
4300	**826**	**2.04**	**1906**	880	2.30	2142	932	2.56	2385	983	2.82	2633	1031	3.10	2888

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH102 ($8^1/_2$ 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	900	1.38	1289	959	1.58	1476	1015	1.79	1669	1069	2.00	1868	**1121**	**2.22**	**2073**
2600	907	1.46	1357	965	1.66	1548	1021	1.87	1745	1074	2.09	1948	**1125**	**2.31**	**2158**
2700	914	1.53	1429	972	1.74	1624	1027	1.96	1825	1079	2.18	2032	**1130**	**2.41**	**2245**
2800	922	1.61	1505	979	1.83	1704	1033	2.05	1909	**1085**	**2.27**	**2120**	**1135**	**2.51**	**2337**
2900	931	1.70	1584	986	1.92	1787	1040	2.14	1996	**1091**	**2.37**	**2211**	**1141**	**2.61**	**2432**
3000	939	1.79	1667	994	2.01	1874	1047	2.24	2087	**1098**	**2.47**	**2307**	**1147**	**2.71**	**2532**
3100	948	1.88	1753	1002	2.11	1965	1054	2.34	2183	**1105**	**2.58**	**2406**	**1153**	**2.83**	**2635**
3200	957	1.98	1844	1011	2.21	2060	1062	2.45	2283	**1112**	**2.69**	**2510**	**1160**	**2.94**	**2743**
3300	967	2.08	1939	1020	2.32	2160	1070	2.56	2386	**1119**	**2.81**	**2618**	**1167**	**3.06**	**2855**
3400	977	2.19	2039	1029	2.43	2264	1079	2.67	2494	**1127**	**2.93**	**2730**	**1174**	**3.19**	**2971**
3500	987	2.30	2143	1038	2.54	2372	**1088**	**2.80**	**2607**	**1135**	**3.05**	**2847**	**1181**	**3.32**	**3092**
3600	998	2.41	2251	1048	2.66	2485	**1097**	**2.92**	**2724**	**1144**	**3.18**	**2968**	**1189**	**3.45**	**3218**
3700	1008	2.54	2364	1058	2.79	2602	**1106**	**3.05**	**2846**	**1152**	**3.32**	**3094**	**1198**	**3.59**	**3348**
3800	1019	2.66	2482	1068	2.92	2725	**1116**	**3.19**	**2972**	**1162**	**3.46**	**3226**	**1206**	**3.74**	**3484**
3900	1031	2.79	2605	1079	3.06	2852	**1126**	**3.33**	**3104**	**1171**	**3.61**	**3362**	**1215**	**3.89**	**3624**
4000	1042	2.93	2733	**1090**	**3.20**	**2984**	**1136**	**3.48**	**3241**	**1180**	**3.76**	**3503**	**1224**	**4.04**	**3770**
4100	1054	3.07	2866	**1101**	**3.35**	**3122**	**1146**	**3.63**	**3383**	**1190**	**3.91**	**3649**	**1233**	**4.20**	**3921**
4200	1066	3.22	3004	**1112**	**3.50**	**3264**	**1157**	**3.79**	**3530**	**1200**	**4.08**	**3801**	—	—	—
4300	1078	3.38	3148	**1123**	**3.66**	**3413**	**1167**	**3.95**	**3683**	—	—	—	—	—	—

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.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.

PGH120 (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	**616**	**0.79**	**732**	**689**	**0.97**	**904**	**757**	**1.16**	**1083**	**821**	**1.36**	**1271**	882	1.57	1465
3100	**632**	**0.85**	**796**	**703**	**1.04**	**972**	**769**	**1.24**	**1157**	**832**	**1.45**	**1349**	892	1.66	1548
3200	**648**	**0.93**	**864**	**717**	**1.12**	**1045**	**782**	**1.32**	**1235**	**843**	**1.53**	**1431**	902	1.75	1635
3300	**663**	**1.00**	**936**	**731**	**1.20**	**1122**	**795**	**1.41**	**1316**	**855**	**1.63**	**1517**	912	1.85	1725
3400	**679**	**1.09**	**1012**	**745**	**1.29**	**1203**	**808**	**1.50**	**1402**	867	1.72	1608	923	1.95	1820
3500	**695**	**1.17**	**1092**	**760**	**1.38**	**1288**	**821**	**1.60**	**1492**	879	1.83	1703	934	2.06	1920
3600	**711**	**1.26**	**1177**	**774**	**1.48**	**1379**	**834**	**1.70**	**1587**	891	1.93	1802	945	2.17	2024
3700	**728**	**1.36**	**1266**	**789**	**1.58**	**1473**	**848**	**1.81**	**1686**	904	2.04	1906	957	2.29	2132
3800	**744**	**1.46**	**1361**	**804**	**1.69**	**1572**	861	1.92	1790	916	2.16	2015	969	2.41	2246
3900	**760**	**1.57**	**1460**	**819**	**1.80**	**1676**	875	2.04	1899	929	2.28	2128	981	2.53	2364
4000	**777**	**1.68**	**1563**	834	1.91	1785	889	2.16	2012	942	2.41	2247	993	2.67	2487
4100	**793**	**1.79**	**1672**	850	2.04	1899	904	2.29	2132	956	2.54	2371	1006	2.80	2615
4200	**810**	**1.92**	**1786**	865	2.16	2018	918	2.42	2255	969	2.68	2499	1018	2.95	2748
4300	**826**	**2.04**	**1906**	880	2.30	2142	932	2.56	2385	983	2.82	2633	1031	3.10	2888
4400	**843**	**2.18**	**2031**	896	2.44	2272	947	2.70	2520	996	2.97	2773	1044	3.25	3032
4500	860	2.32	2161	912	2.58	2408	962	2.85	2660	1010	3.13	2918	1057	3.41	3182
4600	876	2.46	2297	927	2.73	2549	977	3.01	2807	1024	3.29	3070	1070	3.58	3338
4700	893	2.62	2439	943	2.89	2696	992	3.17	2958	1038	3.46	3226	—	—	—
4800	910	2.77	2587	959	3.06	2849	1007	3.34	3116	1053	3.63	3390	—	—	—
4900	927	2.94	2741	975	3.23	3008	1022	3.52	3280	—	—	—	—	—	—
5000	944	3.11	2901	991	3.40	3173	1037	3.70	3451	—	—	—	—	—	—

PGH120 (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	939	1.79	1667	994	2.01	1874	1047	2.24	2087	**1098**	**2.47**	**2307**	**1147**	**2.71**	**2532**
3100	948	1.88	1753	1002	2.11	1965	1054	2.34	2183	**1105**	**2.58**	**2406**	**1153**	**2.83**	**2635**
3200	957	1.98	1844	1011	2.21	2060	1062	2.45	2283	**1112**	**2.69**	**2510**	**1160**	**2.94**	**2743**
3300	967	2.08	1939	1020	2.32	2160	1070	2.56	2386	**1119**	**2.81**	**2618**	**1167**	**3.06**	**2855**
3400	977	2.19	2039	1029	2.43	2264	1079	2.67	2494	**1127**	**2.93**	**2730**	**1174**	**3.19**	**2971**
3500	987	2.30	2143	1038	2.54	2372	**1088**	**2.80**	**2607**	**1135**	**3.05**	**2847**	**1181**	**3.32**	**3092**
3600	998	2.41	2251	1048	2.66	2485	**1097**	**2.92**	**2724**	**1144**	**3.18**	**2968**	**1189**	**3.45**	**3218**
3700	1008	2.54	2364	1058	2.79	2602	**1106**	**3.05**	**2846**	**1152**	**3.32**	**3094**	**1198**	**3.59**	**3348**
3800	1019	2.66	2482	1068	2.92	2725	**1116**	**3.19**	**2972**	**1162**	**3.46**	**3226**	—	—	—
3900	1031	2.79	2605	1079	3.06	2852	**1126**	**3.33**	**3104**	**1171**	**3.61**	**3362**	—	—	—
4000	1042	2.93	2733	**1090**	**3.20**	**2984**	**1136**	**3.48**	**3241**	—	—	—	—	—	—
4100	1054	3.07	2866	**1101**	**3.35**	**3122**	**1146**	**3.63**	**3383**	—	—	—	—	—	—
4200	1066	3.22	3004	**1112**	**3.50**	**3264**	—	—	—	—	—	—	—	—	—
4300	1078	3.38	3148	**1123**	**3.66**	**3413**	—	—	—	—	—	—	—	—	—
4400	**1090**	**3.54**	**3297**	—	—	—	—	—	—	—	—	—	—	—	—
4500	**1103**	**3.70**	**3451**	—	—	—	—	—	—	—	—	—	—	—	—
4600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 3.70.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH120 (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	**616**	**0.79**	**732**	**689**	**0.97**	**904**	**757**	**1.16**	**1083**	**821**	**1.36**	**1271**	882	1.57	1465
3100	**632**	**0.85**	**796**	**703**	**1.04**	**972**	**769**	**1.24**	**1157**	832	1.45	1349	892	1.66	1548
3200	**648**	**0.93**	**864**	**717**	**1.12**	**1045**	**782**	**1.32**	**1235**	843	1.53	1431	902	1.75	1635
3300	**663**	**1.00**	**936**	**731**	**1.20**	**1122**	**795**	**1.41**	**1316**	855	1.63	1517	912	1.85	1725
3400	**679**	**1.09**	**1012**	**745**	**1.29**	**1203**	**808**	**1.50**	**1402**	867	1.72	1608	923	1.95	1820
3500	**695**	**1.17**	**1092**	**760**	**1.38**	**1288**	**821**	**1.60**	**1492**	879	1.83	1703	934	2.06	1920
3600	**711**	**1.26**	**1177**	**774**	**1.48**	**1379**	834	1.70	1587	891	1.93	1802	945	2.17	2024
3700	**728**	**1.36**	**1266**	**789**	**1.58**	**1473**	848	1.81	1686	904	2.04	1906	957	2.29	2132
3800	**744**	**1.46**	**1361**	**804**	**1.69**	**1572**	861	1.92	1790	916	2.16	2015	969	2.41	2246
3900	**760**	**1.57**	**1460**	**819**	**1.80**	**1676**	875	2.04	1899	929	2.28	2128	981	2.53	2364
4000	**777**	**1.68**	**1563**	834	1.91	1785	889	2.16	2012	942	2.41	2247	993	2.67	2487
4100	**793**	**1.79**	**1672**	850	2.04	1899	904	2.29	2132	956	2.54	2371	1006	2.80	2615
4200	**810**	**1.92**	**1786**	865	2.16	2018	918	2.42	2255	969	2.68	2499	1018	2.95	2748
4300	**826**	**2.04**	**1906**	880	2.30	2142	932	2.56	2385	983	2.82	2633	1031	3.10	2888
4400	843	2.18	2031	896	2.44	2272	947	2.70	2520	996	2.97	2773	1044	3.25	3032
4500	860	2.32	2161	912	2.58	2408	962	2.85	2660	1010	3.13	2918	1057	3.41	3182
4600	876	2.46	2297	927	2.73	2549	977	3.01	2807	1024	3.29	3070	1070	3.58	3338
4700	893	2.62	2439	943	2.89	2696	992	3.17	2958	1038	3.46	3226	1084	3.75	3500
4800	910	2.77	2587	959	3.06	2849	1007	3.34	3116	1053	3.63	3390	1098	3.93	3668
4900	927	2.94	2741	975	3.23	3008	1022	3.52	3280	1067	3.82	3558	1111	4.12	3841
5000	944	3.11	2901	991	3.40	3173	1037	3.70	3451	1082	4.00	3733	1125	4.31	4021

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.

Refer to General Fan Performance Data notes.
NOTES:
3. Boldface indicates field-supplied drive is required.
4. Maximum continuous bhp is 5.25.

PGH120 (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	939	1.79	1667	994	2.01	1874	1047	2.24	2087	1098	2.47	2307	**1147**	**2.71**	**2532**
3100	948	1.88	1753	1002	2.11	1965	1054	2.34	2183	1105	2.58	2406	**1153**	**2.83**	**2635**
3200	957	1.98	1844	1011	2.21	2060	1062	2.45	2283	1112	2.69	2510	**1160**	**2.94**	**2743**
3300	967	2.08	1939	1020	2.32	2160	1070	2.56	2386	1119	2.81	2618	**1167**	**3.06**	**2855**
3400	977	2.19	2039	1029	2.43	2264	1079	2.67	2494	1127	2.93	2730	**1174**	**3.19**	**2971**
3500	987	2.30	2143	1038	2.54	2372	1088	2.80	2607	**1135**	**3.05**	**2847**	**1181**	**3.32**	**3092**
3600	998	2.41	2251	1048	2.66	2485	1097	2.92	2724	**1144**	**3.18**	**2968**	**1189**	**3.45**	**3218**
3700	1008	2.54	2364	1058	2.79	2602	1106	3.05	2846	**1152**	**3.32**	**3094**	**1198**	**3.59**	**3348**
3800	1019	2.66	2482	1068	2.92	2725	1116	3.19	2972	**1162**	**3.46**	**3226**	**1206**	**3.74**	**3484**
3900	1031	2.79	2605	1079	3.06	2852	1126	3.33	3104	**1171**	**3.61**	**3362**	**1215**	**3.89**	**3624**
4000	1042	2.93	2733	1090	3.20	2984	**1136**	**3.48**	**3241**	**1180**	**3.76**	**3503**	**1224**	**4.04**	**3770**
4100	1054	3.07	2866	1101	3.35	3122	**1146**	**3.63**	**3383**	**1190**	**3.91**	**3649**	**1233**	**4.20**	**3921**
4200	1066	3.22	3004	1112	3.50	3264	**1157**	**3.79**	**3530**	**1200**	**4.08**	**3801**	**1243**	**4.37**	**4077**
4300	1078	3.38	3148	1123	3.66	3413	**1167**	**3.95**	**3683**	**1210**	**4.24**	**3958**	**1252**	**4.54**	**4238**
4400	1090	3.54	3297	**1135**	**3.82**	**3566**	**1179**	**4.12**	**3841**	**1221**	**4.42**	**4121**	**1262**	**4.72**	**4405**
4500	1103	3.70	3451	**1147**	**4.00**	**3726**	**1190**	**4.29**	**4005**	**1232**	**4.60**	**4289**	**1273**	**4.91**	**4578**
4600	1115	3.87	3612	**1159**	**4.17**	**3891**	**1201**	**4.48**	**4175**	**1243**	**4.79**	**4464**	**1283**	**5.10**	**4757**
4700	1128	4.05	3778	**1171**	**4.36**	**4062**	**1213**	**4.67**	**4350**	**1254**	**4.98**	**4644**	—	—	—
4800	**1141**	**4.24**	**3951**	**1183**	**4.55**	**4239**	**1225**	**4.86**	**4532**	**1265**	**5.18**	**4830**	—	—	—
4900	**1154**	**4.43**	**4130**	**1196**	**4.74**	**4422**	**1237**	**5.06**	**4720**	—	—	—	—	—	—
5000	**1167**	**4.63**	**4314**	**1209**	**4.95**	**4611**	—	—	—	—	—	—	—	—	—

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.

Refer to General Fan Performance Data notes.
NOTES:
5. Boldface indicates field-supplied drive is required.
6. Maximum continuous bhp is 5.25.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PGH072 (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	**913**	**0.64**	**569**	**1010**	**0.80**	**715**	**1098**	**0.98**	**869**	1178	1.16	1032	1252	1.35	1203
1900	**952**	**0.73**	**652**	**1046**	**0.91**	**805**	1131	1.09	965	1210	1.28	1134	1282	1.48	1311
2000	**992**	**0.84**	**744**	**1083**	**1.02**	**903**	1166	1.21	1070	1242	1.40	1245	1313	1.61	1427
2100	**1032**	**0.95**	**844**	1120	1.14	1010	1200	1.33	1184	1275	1.54	1365	1345	1.75	1553
2200	**1073**	**1.07**	**954**	1158	1.27	1127	1236	1.47	1307	1308	1.68	1495	1377	1.90	1689
2300	**1114**	**1.21**	**1074**	1196	1.41	1254	1272	1.62	1440	1343	1.84	1634	1409	2.07	1834
2400	1155	1.36	1204	1234	1.57	1391	1308	1.78	1584	1377	2.01	1784	1443	2.24	1990
2500	1196	1.51	1345	1273	1.73	1538	1345	1.96	1738	1412	2.19	1945	—	—	—
2600	1238	1.69	1497	1312	1.91	1697	1382	2.14	1904	1448	2.38	2117	—	—	—
2700	1280	1.87	1660	1352	2.10	1867	1420	2.34	2081	—	—	—	—	—	—
2800	1322	2.07	1835	1392	2.31	2050	—	—	—	—	—	—	—	—	—
2900	1364	2.28	2023	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

PGH072 (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	1322	1.56	1382	1388	1.77	1568	1451	1.98	1762	1510	2.21	1962	—	—	—
1900	1351	1.68	1495	1416	1.90	1686	1477	2.12	1885	1536	2.35	2090	—	—	—
2000	1380	1.82	1617	1444	2.04	1814	1505	2.27	2017	—	—	—	—	—	—
2100	1411	1.97	1748	1473	2.20	1950	—	—	—	—	—	—	—	—	—
2200	1441	2.13	1890	1503	2.36	2097	—	—	—	—	—	—	—	—	—
2300	1473	2.30	2041	—	—	—	—	—	—	—	—	—	—	—	—
2400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Motor drive range: 1119 to 1585 rpm. All other rpms require field-supplied drive.

Refer to General Fan Performance Data notes.
NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.40.

PGH072 (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	**913**	**0.64**	**569**	**1010**	**0.80**	**715**	**1098**	**0.98**	**869**	**1178**	**1.16**	**1032**	**1252**	**1.35**	**1203**
1900	**952**	**0.73**	**652**	**1046**	**0.91**	**805**	**1131**	**1.09**	**965**	**1210**	**1.28**	**1134**	**1282**	**1.48**	**1311**
2000	**992**	**0.84**	**744**	**1083**	**1.02**	**903**	**1166**	**1.21**	**1070**	**1242**	**1.40**	**1245**	1313	1.61	1427
2100	**1032**	**0.95**	**844**	**1120**	**1.14**	**1010**	**1200**	**1.33**	**1184**	**1275**	**1.54**	**1365**	1345	1.75	1553
2200	**1073**	**1.07**	**954**	**1158**	**1.27**	**1127**	**1236**	**1.47**	**1307**	1308	1.68	1495	1377	1.90	1689
2300	**1114**	**1.21**	**1074**	**1196**	**1.41**	**1254**	**1272**	**1.62**	**1440**	1343	1.84	1634	1409	2.07	1834
2400	**1155**	**1.36**	**1204**	**1234**	**1.57**	**1391**	1308	1.78	1584	1377	2.01	1784	1443	2.24	1990
2500	**1196**	**1.51**	**1345**	**1273**	**1.73**	**1538**	1345	1.96	1738	1412	2.19	1945	1477	2.43	2157
2600	**1238**	**1.69**	**1497**	1312	1.91	1697	1382	2.14	1904	1448	2.38	2117	1511	2.63	2335
2700	**1280**	**1.87**	**1660**	1352	2.10	1867	1420	2.34	2081	1484	2.59	2300	1546	2.84	2526
2800	1322	2.07	1835	1392	2.31	2050	1458	2.56	2270	1521	2.81	2496	—	—	—
2900	1364	2.28	2023	1432	2.53	2245	1496	2.78	2472	—	—	—	—	—	—
3000	1406	2.50	2224	1472	2.76	2452	—	—	—	—	—	—	—	—	—

PGH072 (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	1322	1.56	1382	1388	1.77	1568	1451	1.98	1762	1510	2.21	1962	1568	2.44	2169
1900	1351	1.68	1495	1416	1.90	1686	1477	2.12	1885	1536	2.35	2090	1593	2.59	2302
2000	1380	1.82	1617	1444	2.04	1814	1505	2.27	2017	1563	2.51	2227	1619	2.75	2443
2100	1411	1.97	1748	1473	2.20	1950	1533	2.43	2159	1590	2.67	2374	—	—	—
2200	1441	2.13	1890	1503	2.36	2097	1562	2.60	2311	1618	2.85	2532	—	—	—
2300	1473	2.30	2041	1533	2.54	2254	1591	2.79	2474	—	—	—	—	—	—
2400	1505	2.48	2203	1564	2.73	2422	—	—	—	—	—	—	—	—	—
2500	1537	2.68	2376	—	—	—	—	—	—	—	—	—	—	—	—
2600	1571	2.88	2560	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Motor drive range: 1300 to 1686 rpm. All other rpms require field-supplied drive.

Refer to General Fan Performance Data notes.
NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PGH090 ($7^1/_2$ 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	**505**	**0.52**	**484**	**586**	**0.73**	**681**	**657**	**0.97**	**901**	**722**	**1.22**	**1142**	**782**	**1.50**	**1403**
2300	**513**	**0.55**	**509**	**592**	**0.76**	**708**	**663**	**1.00**	**931**	**727**	**1.26**	**1174**	**787**	**1.54**	**1437**
2400	**527**	**0.60**	**561**	**605**	**0.82**	**766**	**674**	**1.07**	**993**	**738**	**1.33**	**1241**	**796**	**1.62**	**1508**
2500	**543**	**0.66**	**617**	**618**	**0.89**	**828**	**686**	**1.14**	**1060**	**748**	**1.41**	**1312**	**806**	**1.70**	**1583**
2550	**550**	**0.69**	**647**	**625**	**0.92**	**860**	**692**	**1.17**	**1095**	**754**	**1.45**	**1349**	**811**	**1.74**	**1623**
2600	**558**	**0.73**	**677**	**632**	**0.96**	**894**	**698**	**1.21**	**1131**	**759**	**1.49**	**1388**	**816**	**1.78**	**1664**
2700	**574**	**0.80**	**742**	**645**	**1.03**	**964**	**710**	**1.29**	**1207**	**770**	**1.58**	**1469**	**826**	**1.88**	**1749**
2800	**589**	**0.87**	**811**	**659**	**1.11**	**1039**	**723**	**1.38**	**1287**	**782**	**1.67**	**1554**	**837**	**1.97**	**1839**
2900	**605**	**0.95**	**885**	**673**	**1.20**	**1119**	**736**	**1.47**	**1372**	**794**	**1.76**	**1644**	848	2.07	1933
3000	**621**	**1.03**	**963**	**688**	**1.29**	**1204**	**749**	**1.57**	**1463**	**806**	**1.87**	**1740**	859	2.18	2033
3100	**637**	**1.12**	**1046**	**702**	**1.39**	**1293**	**762**	**1.67**	**1558**	**818**	**1.97**	**1840**	871	2.29	2139
3200	**654**	**1.22**	**1135**	**717**	**1.49**	**1388**	**776**	**1.78**	**1658**	**831**	**2.09**	**1946**	882	2.41	2249
3300	**670**	**1.32**	**1228**	**732**	**1.60**	**1488**	**789**	**1.89**	**1764**	843	2.21	2057	894	2.54	2365
3400	**686**	**1.42**	**1328**	**747**	**1.71**	**1593**	**803**	**2.01**	**1876**	856	2.33	2174	907	2.67	2488
3500	**703**	**1.54**	**1433**	**762**	**1.83**	**1705**	**817**	**2.14**	**1993**	870	2.46	2297	919	2.81	2616
3600	**720**	**1.66**	**1543**	**777**	**1.95**	**1822**	**832**	**2.27**	**2116**	883	2.60	2425	—	—	—
3700	**736**	**1.78**	**1660**	**793**	**2.09**	**1944**	846	2.41	2245	896	2.75	2560	—	—	—
3750	**745**	**1.85**	**1721**	**801**	**2.15**	**2008**	853	2.48	2312	903	2.82	2630	—	—	—

PGH090 ($7^1/_2$ 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	**838**	**1.81**	**1683**	891	2.12	1981	941	2.46	2297	988	2.82	2629	—	—	—
2300	842	1.84	1719	895	2.17	2019	944	2.51	2336	992	2.86	2669	—	—	—
2400	851	1.92	1793	903	2.25	2097	952	2.59	2416	—	—	—	—	—	—
2500	860	2.01	1873	911	2.34	2180	960	2.68	2502	—	—	—	—	—	—
2550	865	2.05	1914	916	2.38	2223	964	2.73	2547	—	—	—	—	—	—
2600	869	2.10	1957	920	2.43	2267	968	2.78	2593	—	—	—	—	—	—
2700	879	2.19	2046	929	2.53	2360	976	2.88	2689	—	—	—	—	—	—
2800	889	2.29	2140	938	2.64	2458	—	—	—	—	—	—	—	—	—
2900	899	2.40	2239	948	2.75	2561	—	—	—	—	—	—	—	—	—
3000	910	2.51	2343	958	2.86	2670	—	—	—	—	—	—	—	—	—
3100	921	2.63	2453	—	—	—	—	—	—	—	—	—	—	—	—
3200	932	2.75	2569	—	—	—	—	—	—	—	—	—	—	—	—
3300	943	2.88	2690	—	—	—	—	—	—	—	—	—	—	—	—
3400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field–supplied drive is required.
2. Maximum continuous bhp is 2.90.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PGH090 ($7^1/_2$ 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	**505**	**0.52**	**484**	**586**	**0.73**	**681**	**657**	**0.97**	**901**	**722**	**1.22**	**1142**	**782**	**1.50**	**1403**
2300	**513**	**0.55**	**509**	**592**	**0.76**	**708**	**663**	**1.00**	**931**	**727**	**1.26**	**1174**	**787**	**1.54**	**1437**
2400	**527**	**0.60**	**561**	**605**	**0.82**	**766**	**674**	**1.07**	**993**	**738**	**1.33**	**1241**	**796**	**1.62**	**1508**
2500	**543**	**0.66**	**617**	**618**	**0.89**	**828**	**686**	**1.14**	**1060**	**748**	**1.41**	**1312**	**806**	**1.70**	**1583**
2550	**550**	**0.69**	**647**	**625**	**0.92**	**860**	**692**	**1.17**	**1095**	**754**	**1.45**	**1349**	**811**	**1.74**	**1623**
2600	**558**	**0.73**	**677**	**632**	**0.96**	**894**	**698**	**1.21**	**1131**	**759**	**1.49**	**1388**	**816**	**1.78**	**1664**
2700	**574**	**0.80**	**742**	**645**	**1.03**	**964**	**710**	**1.29**	**1207**	**770**	**1.58**	**1469**	**826**	**1.88**	**1749**
2800	**589**	**0.87**	**811**	**659**	**1.11**	**1039**	**723**	**1.38**	**1287**	**782**	**1.67**	**1554**	**837**	**1.97**	**1839**
2900	**605**	**0.95**	**885**	**673**	**1.20**	**1119**	**736**	**1.47**	**1372**	**794**	**1.76**	**1644**	**848**	**2.07**	**1933**
3000	**621**	**1.03**	**963**	**688**	**1.29**	**1204**	**749**	**1.57**	**1463**	**806**	**1.87**	**1740**	**859**	**2.18**	**2033**
3100	**637**	**1.12**	**1046**	**702**	**1.39**	**1293**	**762**	**1.67**	**1558**	**818**	**1.97**	**1840**	871	2.29	2139
3200	**654**	**1.22**	**1135**	**717**	**1.49**	**1388**	**776**	**1.78**	**1658**	**831**	**2.09**	**1946**	882	2.41	2249
3300	**670**	**1.32**	**1228**	**732**	**1.60**	**1488**	**789**	**1.89**	**1764**	**843**	**2.21**	**2057**	894	2.54	2365
3400	**686**	**1.42**	**1328**	**747**	**1.71**	**1593**	**803**	**2.01**	**1876**	**856**	**2.33**	**2174**	907	2.67	2488
3500	**703**	**1.54**	**1433**	**762**	**1.83**	**1705**	**817**	**2.14**	**1993**	870	2.46	2297	919	2.81	2616
3600	**720**	**1.66**	**1543**	**777**	**1.95**	**1822**	**832**	**2.27**	**2116**	883	2.60	2425	932	2.95	2750
3700	**736**	**1.78**	**1660**	**793**	**2.09**	**1944**	**846**	**2.41**	**2245**	896	2.75	2560	944	3.10	2889
3750	**745**	**1.85**	**1721**	**801**	**2.15**	**2008**	**853**	**2.48**	**2312**	903	2.82	2630	951	3.18	2962

PGH090 ($7^1/_2$ 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	**838**	**1.81**	**1683**	891	2.12	1981	941	2.46	2297	988	2.82	2629	1033	3.19	2976
2300	**842**	**1.84**	**1719**	895	2.17	2019	944	2.51	2336	992	2.86	2669	1037	3.24	3018
2400	**851**	**1.92**	**1793**	903	2.25	2097	952	2.59	2416	999	2.95	2752	1043	3.33	3104
2500	860	2.01	1873	911	2.34	2180	960	2.68	2502	1006	3.05	2842	1051	3.43	3196
2550	865	2.05	1914	916	2.38	2223	964	2.73	2547	1010	3.10	2888	1054	3.48	3243
2600	869	2.10	1957	920	2.43	2267	968	2.78	2593	1014	3.15	2935	1058	3.53	3292
2700	879	2.19	2046	929	2.53	2360	976	2.88	2689	1022	3.25	3035	1066	3.64	3395
2800	889	2.29	2140	938	2.64	2458	985	2.99	2791	1030	3.37	3140	1073	3.76	3503
2900	899	2.40	2239	948	2.75	2561	994	3.11	2898	1039	3.49	3250	**1082**	**3.88**	**3616**
3000	910	2.51	2343	958	2.86	2670	1004	3.23	3011	1048	3.61	3366	**1090**	**4.01**	**3736**
3100	921	2.63	2453	968	2.98	2783	1013	3.35	3128	1057	3.74	3488	**1099**	**4.14**	**3861**
3200	932	2.75	2569	978	3.11	2903	1023	3.49	3252	1066	3.88	3616	—	—	—
3300	943	2.88	2690	989	3.25	3029	1033	3.63	3382	1076	4.02	3749	—	—	—
3400	954	3.02	2816	1000	3.39	3159	1044	3.77	3518	**1086**	**4.17**	**3889**	—	—	—
3500	966	3.16	2950	1011	3.54	3297	1054	3.92	3660	—	—	—	—	—	—
3600	978	3.31	3088	1022	3.69	3442	1065	4.08	3808	—	—	—	—	—	—
3700	990	3.47	3233	1034	3.85	3591	—	—	—	—	—	—	—	—	—
3750	996	3.55	3308	1040	3.93	3669	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower

Watts — Input Watts to Motor

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

Refer to General Fan Performance Data notes.

NOTES:

1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PGH102 (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	**513**	**0.45**	**423**	**603**	**0.62**	**576**	**682**	**0.78**	**732**	**753**	**0.96**	**892**	**817**	**1.13**	**1055**
2600	**526**	**0.50**	**463**	**614**	**0.67**	**621**	**692**	**0.84**	**783**	**761**	**1.02**	**948**	**825**	**1.20**	**1117**
2700	**539**	**0.54**	**505**	**625**	**0.72**	**670**	**702**	**0.90**	**837**	**770**	**1.08**	**1008**	**834**	**1.27**	**1182**
2800	**552**	**0.59**	**551**	**637**	**0.77**	**721**	**712**	**0.96**	**894**	**780**	**1.15**	**1070**	842	1.34	1250
2900	**565**	**0.64**	**599**	**648**	**0.83**	**775**	**722**	**1.02**	**954**	**789**	**1.22**	**1136**	851	1.42	1321
3000	**579**	**0.70**	**651**	**660**	**0.89**	**832**	**732**	**1.09**	**1017**	**799**	**1.29**	**1204**	860	1.50	1395
3100	**592**	**0.76**	**706**	**672**	**0.96**	**893**	**743**	**1.16**	**1083**	**808**	**1.37**	**1276**	869	1.58	1471
3200	**606**	**0.82**	**764**	**684**	**1.03**	**957**	**754**	**1.24**	**1153**	**818**	**1.45**	**1351**	878	1.66	1552
3300	**620**	**0.88**	**825**	**696**	**1.10**	**1024**	**765**	**1.31**	**1225**	**829**	**1.53**	**1429**	888	1.75	1636
3400	**634**	**0.95**	**890**	**709**	**1.17**	**1095**	**777**	**1.40**	**1302**	**839**	**1.62**	**1511**	897	1.85	1723
3500	**648**	**1.03**	**958**	**721**	**1.25**	**1169**	**788**	**1.48**	**1381**	850	1.71	1597	907	1.95	1815
3600	**662**	**1.10**	**1030**	**734**	**1.34**	**1246**	**800**	**1.57**	**1465**	860	1.81	1686	917	2.05	1909
3700	**676**	**1.19**	**1106**	**747**	**1.42**	**1328**	**811**	**1.66**	**1552**	871	1.91	1779	927	2.15	2008
3800	**690**	**1.27**	**1185**	**760**	**1.52**	**1414**	**823**	**1.76**	**1644**	882	2.01	1876	938	2.26	2111
3900	**705**	**1.36**	**1269**	**773**	**1.61**	**1503**	**835**	**1.86**	**1739**	894	2.12	1977	948	2.38	2217
4000	**719**	**1.45**	**1357**	**786**	**1.71**	**1597**	848	1.97	1838	905	2.23	2082	959	2.50	2328
4100	**734**	**1.55**	**1449**	**799**	**1.82**	**1695**	860	2.08	1942	917	2.35	2192	970	2.62	2443
4200	**748**	**1.66**	**1545**	**813**	**1.93**	**1797**	872	2.20	2050	928	2.47	2305	981	2.75	2562
4300	**763**	**1.76**	**1646**	**826**	**2.04**	**1903**	885	2.32	2162	940	2.60	2423	992	2.88	2686

PGH102 (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	877	1.31	1222	933	1.49	1392	986	1.68	1565	1037	1.87	1742	1085	2.06	1921
2600	885	1.38	1289	940	1.57	1464	993	1.76	1643	1043	1.96	1824	**1091**	**2.15**	**2008**
2700	892	1.46	1359	948	1.65	1540	1000	1.85	1723	1049	2.05	1909	**1097**	**2.25**	**2099**
2800	900	1.54	1432	955	1.74	1618	1007	1.94	1807	1056	2.14	1998	**1103**	**2.35**	**2192**
2900	908	1.62	1508	963	1.82	1699	1014	2.03	1893	1063	2.24	2089	**1110**	**2.45**	**2289**
3000	917	1.70	1587	970	1.91	1784	1021	2.13	1983	1070	2.34	2185	**1117**	**2.56**	**2389**
3100	925	1.79	1670	979	2.01	1872	1029	2.23	2076	1077	2.45	2283	**1123**	**2.67**	**2492**
3200	934	1.88	1756	987	2.10	1963	1037	2.33	2172	1085	2.56	2384	**1131**	**2.79**	**2599**
3300	943	1.98	1845	995	2.21	2057	1045	2.44	2272	**1092**	**2.67**	**2490**	—	—	—
3400	952	2.08	1939	1004	2.31	2156	1053	2.55	2376	**1100**	**2.79**	**2599**	—	—	—
3500	961	2.18	2035	1013	2.42	2258	1062	2.66	2483	—	—	—	—	—	—
3600	971	2.29	2135	1022	2.53	2364	1070	2.78	2595	—	—	—	—	—	—
3700	981	2.40	2240	1031	2.65	2473	—	—	—	—	—	—	—	—	—
3800	990	2.52	2348	1040	2.77	2587	—	—	—	—	—	—	—	—	—
3900	1000	2.64	2459	1050	2.90	2705	—	—	—	—	—	—	—	—	—
4000	1011	2.76	2576	—	—	—	—	—	—	—	—	—	—	—	—
4100	1021	2.89	2697	—	—	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower

Watts — Input Watts to Motor

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

Refer to General Fan Performance Data notes.

NOTES:

1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.

PGH102 (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	**513**	**0.45**	**423**	**603**	**0.62**	**576**	**682**	**0.78**	**732**	**753**	**0.96**	**892**	**817**	**1.13**	**1055**
2600	**526**	**0.50**	**463**	**614**	**0.67**	**621**	**692**	**0.84**	**783**	**761**	**1.02**	**948**	**825**	**1.20**	**1117**
2700	**539**	**0.54**	**505**	**625**	**0.72**	**670**	**702**	**0.90**	**837**	**770**	**1.08**	**1008**	**834**	**1.27**	**1182**
2800	**552**	**0.59**	**551**	**637**	**0.77**	**721**	**712**	**0.96**	**894**	**780**	**1.15**	**1070**	**842**	**1.34**	**1250**
2900	**565**	**0.64**	**599**	**648**	**0.83**	**775**	**722**	**1.02**	**954**	**789**	**1.22**	**1136**	**851**	**1.42**	**1321**
3000	**579**	**0.70**	**651**	**660**	**0.89**	**832**	**732**	**1.09**	**1017**	**799**	**1.29**	**1204**	860	1.50	1395
3100	**592**	**0.76**	**706**	**672**	**0.96**	**893**	**743**	**1.16**	**1083**	**808**	**1.37**	**1276**	869	1.58	1471
3200	**606**	**0.82**	**764**	**684**	**1.03**	**957**	**754**	**1.24**	**1153**	**818**	**1.45**	**1351**	878	1.66	1552
3300	**620**	**0.88**	**825**	**696**	**1.10**	**1024**	**765**	**1.31**	**1225**	**829**	**1.53**	**1429**	888	1.75	1636
3400	**634**	**0.95**	**890**	**709**	**1.17**	**1095**	**777**	**1.40**	**1302**	**839**	**1.62**	**1511**	897	1.85	1723
3500	**648**	**1.03**	**958**	**721**	**1.25**	**1169**	**788**	**1.48**	**1381**	**850**	**1.71**	**1597**	907	1.95	1815
3600	**662**	**1.10**	**1030**	**734**	**1.34**	**1246**	**800**	**1.57**	**1465**	860	1.81	1686	917	2.05	1909
3700	**676**	**1.19**	**1106**	**747**	**1.42**	**1328**	**811**	**1.66**	**1552**	871	1.91	1779	927	2.15	2008
3800	**690**	**1.27**	**1185**	**760**	**1.52**	**1414**	**823**	**1.76**	**1644**	882	2.01	1876	938	2.26	2111
3900	**705**	**1.36**	**1269**	**773**	**1.61**	**1503**	**835**	**1.86**	**1739**	894	2.12	1977	948	2.38	2217
4000	**719**	**1.45**	**1357**	**786**	**1.71**	**1597**	**848**	**1.97**	**1838**	905	2.23	2082	959	2.50	2328
4100	**734**	**1.55**	**1449**	**799**	**1.82**	**1695**	860	2.08	1942	917	2.35	2192	970	2.62	2443
4200	**748**	**1.66**	**1545**	**813**	**1.93**	**1797**	872	2.20	2050	928	2.47	2305	981	2.75	2562
4300	**763**	**1.76**	**1646**	**826**	**2.04**	**1903**	885	2.32	2162	940	2.60	2423	992	2.88	2686

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PGH102 (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	877	1.31	1222	933	1.49	1392	986	1.68	1565	1037	1.87	1742	**1085**	**2.06**	**1921**
2600	885	1.38	1289	940	1.57	1464	993	1.76	1643	1043	1.96	1824	**1091**	**2.15**	**2008**
2700	892	1.46	1359	948	1.65	1540	1000	1.85	1723	1049	2.05	1909	**1097**	**2.25**	**2099**
2800	900	1.54	1432	955	1.74	1618	1007	1.94	1807	1056	2.14	1998	**1103**	**2.35**	**2192**
2900	908	1.62	1508	963	1.82	1699	1014	2.03	1893	1063	2.24	2089	**1110**	**2.45**	**2289**
3000	917	1.70	1587	970	1.91	1784	1021	2.13	1983	1070	2.34	2185	**1117**	**2.56**	**2389**
3100	925	1.79	1670	979	2.01	1872	1029	2.23	2076	1077	2.45	2283	**1123**	**2.67**	**2492**
3200	934	1.88	1756	987	2.10	1963	1037	2.33	2172	**1085**	**2.56**	**2384**	**1131**	**2.79**	**2599**
3300	943	1.98	1845	995	2.21	2057	1045	2.44	2272	**1092**	**2.67**	**2490**	**1138**	**2.91**	**2710**
3400	952	2.08	1939	1004	2.31	2156	1053	2.55	2376	**1100**	**2.79**	**2599**	**1145**	**3.03**	**2824**
3500	961	2.18	2035	1013	2.42	2258	1062	2.66	2483	**1108**	**2.91**	**2711**	**1153**	**3.15**	**2942**
3600	971	2.29	2135	1022	2.53	2364	1070	2.78	2595	**1116**	**3.03**	**2827**	**1161**	**3.29**	**3063**
3700	981	2.40	2240	1031	2.65	2473	1079	2.91	2709	**1125**	**3.16**	**2948**	**1169**	**3.42**	**3189**
3800	990	2.52	2348	1040	2.77	2587	1088	3.03	2828	**1133**	**3.30**	**3073**	**1177**	**3.56**	**3319**
3900	1000	2.64	2459	1050	2.90	2705	1097	3.17	2951	**1142**	**3.43**	**3201**	**1186**	**3.70**	**3452**
4000	1011	2.76	2576	1059	3.03	2826	1106	3.30	3079	**1151**	**3.58**	**3334**	**1194**	**3.85**	**3591**
4100	1021	2.89	2697	1069	3.17	2953	**1116**	**3.44**	**3210**	**1160**	**3.72**	**3471**	**1203**	**4.00**	**3733**
4200	1031	3.03	2822	1079	3.31	3083	**1125**	**3.59**	**3347**	**1169**	**3.87**	**3612**	**1212**	**4.16**	**3880**
4300	1042	3.16	2951	**1089**	**3.45**	**3218**	**1135**	**3.74**	**3487**	**1179**	**4.03**	**3758**	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.

PGH120 (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	**579**	**0.70**	**651**	**660**	**0.89**	**832**	**732**	**1.09**	**1017**	**799**	**1.29**	**1204**	860	1.50	1395
3100	**592**	**0.76**	**706**	**672**	**0.96**	**893**	**743**	**1.16**	**1083**	**808**	**1.37**	**1276**	869	1.58	1471
3200	**606**	**0.82**	**764**	**684**	**1.03**	**957**	**754**	**1.24**	**1153**	**818**	**1.45**	**1351**	878	1.66	1552
3300	**620**	**0.88**	**825**	**696**	**1.10**	**1024**	**765**	**1.31**	**1225**	**829**	**1.53**	**1429**	888	1.75	1636
3400	**634**	**0.95**	**890**	**709**	**1.17**	**1095**	**777**	**1.40**	**1302**	**839**	**1.62**	**1511**	897	1.85	1723
3500	**648**	**1.03**	**958**	**721**	**1.25**	**1169**	**788**	**1.48**	**1381**	**850**	**1.71**	**1597**	907	1.95	1815
3600	**662**	**1.10**	**1030**	**734**	**1.34**	**1246**	**800**	**1.57**	**1465**	860	1.81	1686	917	2.05	1909
3700	**676**	**1.19**	**1106**	**747**	**1.42**	**1328**	**811**	**1.66**	**1552**	871	1.91	1779	927	2.15	2008
3800	**690**	**1.27**	**1185**	**760**	**1.52**	**1414**	**823**	**1.76**	**1644**	882	2.01	1876	938	2.26	2111
3900	**705**	**1.36**	**1269**	**773**	**1.61**	**1503**	**835**	**1.86**	**1739**	894	2.12	1977	948	2.38	2217
4000	**719**	**1.45**	**1357**	**786**	**1.71**	**1597**	**848**	**1.97**	**1838**	905	2.23	2082	959	2.50	2328
4100	**734**	**1.55**	**1449**	**799**	**1.82**	**1695**	860	2.08	1942	917	2.35	2192	970	2.62	2443
4200	**748**	**1.66**	**1545**	**813**	**1.93**	**1797**	872	2.20	2050	928	2.47	2305	981	2.75	2562
4300	**763**	**1.76**	**1646**	**826**	**2.04**	**1903**	885	2.32	2162	940	2.60	2423	992	2.88	2686
4400	**778**	**1.88**	**1751**	**840**	**2.16**	**2014**	898	2.44	2279	952	2.73	2546	1004	3.02	2814
4500	**792**	**1.99**	**1860**	**853**	**2.28**	**2130**	910	2.57	2401	964	2.87	2673	1015	3.16	2947
4600	**807**	**2.12**	**1975**	867	2.41	2250	923	2.71	2527	976	3.01	2805	1027	3.31	3085
4700	**822**	**2.25**	**2094**	881	2.55	2375	936	2.85	2658	989	3.15	2942	1038	3.46	3227
4800	**837**	**2.38**	**2218**	895	2.69	2505	949	3.00	2794	1001	3.31	3083	1050	3.62	3375
4900	**852**	**2.52**	**2347**	909	2.83	2640	963	3.15	2935	1014	3.46	3230	—	—	—
5000	867	2.66	2482	923	2.98	2781	976	3.30	3081	1026	3.63	3383	—	—	—

PGH120 (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	917	1.70	1587	970	1.91	1784	1021	2.13	1983	1070	2.34	2185	**1117**	**2.56**	**2389**
3100	925	1.79	1670	979	2.01	1872	1029	2.23	2076	1077	2.45	2283	**1123**	**2.67**	**2492**
3200	934	1.88	1756	987	2.10	1963	1037	2.33	2172	**1085**	**2.56**	**2384**	**1131**	**2.79**	**2599**
3300	943	1.98	1845	995	2.21	2057	1045	2.44	2272	**1092**	**2.67**	**2490**	**1138**	**2.91**	**2710**
3400	952	2.08	1939	1004	2.31	2156	1053	2.55	2376	**1100**	**2.79**	**2599**	**1145**	**3.03**	**2824**
3500	961	2.18	2035	1013	2.42	2258	1062	2.66	2483	**1108**	**2.91**	**2711**	**1153**	**3.15**	**2942**
3600	971	2.29	2135	1022	2.53	2364	1070	2.78	2595	**1116**	**3.03**	**2827**	**1161**	**3.29**	**3063**
3700	981	2.40	2240	1031	2.65	2473	1079	2.91	2709	**1125**	**3.16**	**2948**	**1169**	**3.42**	**3189**
3800	990	2.52	2348	1040	2.77	2587	**1088**	**3.03**	**2828**	**1133**	**3.30**	**3073**	**1177**	**3.56**	**3319**
3900	1000	2.64	2459	1050	2.90	2705	**1097**	**3.17**	**2951**	**1142**	**3.43**	**3201**	**1186**	**3.70**	**3452**
4000	1011	2.76	2576	1059	3.03	2826	**1106**	**3.30**	**3079**	**1151**	**3.58**	**3334**	—	—	—
4100	1021	2.89	2697	1069	3.17	2953	**1116**	**3.44**	**3210**	—	—	—	—	—	—
4200	1031	3.03	2822	1079	3.31	3083	**1125**	**3.59**	**3347**	—	—	—	—	—	—
4300	1042	3.16	2951	**1089**	**3.45**	**3218**	—	—	—	—	—	—	—	—	—
4400	1053	3.31	3085	**1100**	**3.60**	**3357**	—	—	—	—	—	—	—	—	—
4500	1064	3.46	3224	—	—	—	—	—	—	—	—	—	—	—	—
4600	1075	3.61	3367	—	—	—	—	—	—	—	—	—	—	—	—
4700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 3.70.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

PGH120 (10 TONS) — HIGH STATIC MOTOR (BELT DRIVE)* (cont)

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	579	0.70	651	660	0.89	832	732	1.09	1017	799	1.29	1204	860	1.50	1395
3100	592	0.76	706	672	0.96	893	743	1.16	1083	808	1.37	1276	869	1.58	1471
3200	606	0.82	764	684	1.03	957	754	1.24	1153	818	1.45	1351	878	1.66	1552
3300	620	0.88	825	696	1.10	1024	765	1.31	1225	829	1.53	1429	888	1.75	1636
3400	634	0.95	890	709	1.17	1095	777	1.40	1302	839	1.62	1511	897	1.85	1723
3500	648	1.03	958	721	1.25	1169	788	1.48	1381	850	1.71	1597	907	1.95	1815
3600	662	1.10	1030	734	1.34	1246	800	1.57	1465	860	1.81	1686	917	2.05	1909
3700	676	1.19	1106	747	1.42	1328	811	1.66	1552	871	1.91	1779	927	2.15	2008
3800	690	1.27	1185	760	1.52	1414	823	1.76	1644	882	2.01	1876	938	2.26	2111
3900	705	1.36	1269	773	1.61	1503	835	1.86	1739	894	2.12	1977	948	2.38	2217
4000	719	1.45	1357	786	1.71	1597	848	1.97	1838	905	2.23	2082	959	2.50	2328
4100	734	1.55	1449	799	1.82	1695	860	2.08	1942	917	2.35	2192	970	2.62	2443
4200	748	1.66	1545	813	1.93	1797	872	2.20	2050	928	2.47	2305	981	2.75	2562
4300	763	1.76	1646	826	2.04	1903	885	2.32	2162	940	2.60	2423	992	2.88	2686
4400	778	1.88	1751	840	2.16	2014	898	2.44	2279	952	2.73	2546	1004	3.02	2814
4500	792	1.99	1860	853	2.28	2130	910	2.57	2401	964	2.87	2673	1015	3.16	2947
4600	807	2.12	1975	867	2.41	2250	923	2.71	2527	976	3.01	2805	1027	3.31	3085
4700	822	2.25	2094	881	2.55	2375	936	2.85	2658	989	3.15	2942	1038	3.46	3227
4800	837	2.38	2218	895	2.69	2505	949	3.00	2794	1001	3.31	3083	1050	3.62	3375
4900	852	2.52	2347	909	2.83	2640	963	3.15	2935	1014	3.46	3230	1062	3.78	3528
5000	867	2.66	2482	923	2.98	2781	976	3.30	3081	1026	3.63	3383	1074	3.95	3685

PGH120 (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	917	1.70	1587	970	1.91	1784	1021	2.13	1983	1070	2.34	2185	1117	2.56	2389
3100	925	1.79	1670	979	2.01	1872	1029	2.23	2076	1077	2.45	2283	1123	2.67	2492
3200	934	1.88	1756	987	2.10	1963	1037	2.33	2172	1085	2.56	2384	1131	2.79	2599
3300	943	1.98	1845	995	2.21	2057	1045	2.44	2272	1092	2.67	2490	1138	2.91	2710
3400	952	2.08	1939	1004	2.31	2156	1053	2.55	2376	1100	2.79	2599	1145	3.03	2824
3500	961	2.18	2035	1013	2.42	2258	1062	2.66	2483	1108	2.91	2711	1153	3.15	2942
3600	971	2.29	2135	1022	2.53	2364	1070	2.78	2595	1116	3.03	2827	1161	3.29	3063
3700	981	2.40	2240	1031	2.65	2473	1079	2.91	2709	1125	3.16	2948	1169	3.42	3189
3800	990	2.52	2348	1040	2.77	2587	1088	3.03	2828	1133	3.30	3073	1177	3.56	3319
3900	1000	2.64	2459	1050	2.90	2705	1097	3.17	2951	1142	3.43	3201	1186	3.70	3452
4000	1011	2.76	2576	1059	3.03	2826	1106	3.30	3079	1151	3.58	3334	1194	3.85	3591
4100	1021	2.89	2697	1069	3.17	2953	1116	3.44	3210	1160	3.72	3471	1203	4.00	3733
4200	1031	3.03	2822	1079	3.31	3083	1125	3.59	3347	1169	3.87	3612	1212	4.16	3880
4300	1042	3.16	2951	1089	3.45	3218	1135	3.74	3487	1179	4.03	3758	1221	4.32	4031
4400	1053	3.31	3085	1100	3.60	3357	1145	3.90	3632	1188	4.19	3909	1230	4.49	4187
4500	1064	3.46	3224	1110	3.76	3502	1155	4.06	3782	1198	4.36	4064	1239	4.66	4348
4600	1075	3.61	3367	1121	3.91	3650	1165	4.22	3937	1208	4.53	4224	1249	4.84	4514
4700	1086	3.77	3515	1131	4.08	3805	1175	4.39	4096	1217	4.71	4389	1258	5.02	4684
4800	1097	3.93	3668	1142	4.25	3963	1186	4.57	4260	1228	4.89	4559	1268	5.21	4860
4900	1109	4.10	3826	1153	4.43	4128	1196	4.75	4430	1238	5.08	4734	—	—	—
5000	1120	4.28	3990	1164	4.61	4296	1207	4.94	4604	—	—	—	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Motor drive range: 860 to 1130 rpm. All other rpms require field-supplied drive.

Refer to General Fan Performance Data notes.
NOTES:
1. Boldface indicates field-supplied drive is required.
2. Maximum continuous bhp is 5.25.

FAN RPM AT MOTOR PULLEY SETTING WITH STANDARD MOTOR* — PGH072–120

UNIT PGH	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	1538	1492	1445	1399	1352	1305	1259	1212	1166	1119	—	—
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	—	—

*Approximate fan rpm shown (standard motor/drive).

FAN RPM AT MOTOR PULLEY SETTING WITH HIGH–STATIC MOTOR* — PGH072–120

UNIT PGH	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	962	830

*Approximate fan rpm shown (high–static motor/drive).

PERFORMANCE DATA – PGH (cont)

ALTITUDE COMPENSATION* — PGH072

ELEVATION (ft)	72,000 AND 115,000/ 60,000 and 90,000 BTUH NOMINAL INPUT		150,000/120,000 BTUH NOMINAL INPUT	
	Natural Gas Orifice Size†	Liquid Propane Orifice Size†	Natural Gas Orifice Size	Liquid Propane Orifice Size†
0–2,000	33/38	43	30/32	38
2,000	34/39	43	30/33	39
3,000	35/40	44	31/34	40
4,000	36/41	44	32/35	41
5,000	36/41	44	33/35	42
6,000	37/42	45	34/36	43
7,000	37/42	45	35/37	43
8,000	38/43	46	36/37	44
9,000	39/43	47	37/38	44
10,000	41/44	48	38/40	45
11,000	43/45	48	39/41	45
12,000	44/45	49	40/42	46
13,000	44/46	49	41/43	47
14,000	45/47	50	42/43	47

*As the height above sea level increases, there is less oxygen per cubic foot of air. Therefore, the input rate should be reduced at higher altitudes.
†Orifices are available through your local distributor.

ALTITUDE COMPENSATION* — PGH090–120

ELEVATION (ft)	125,000, 180,000, AND 224,000 BTUH NOMINAL INPUT		250,000 BTUH NOMINAL INPUT	
	Natural Gas Orifice Size†	Liquid Propane Orifice Size†	Natural Gas Orifice Size†	Liquid Propane Orifice Size†
0–2,000	31	41	30	38
2,000	32	42	30	39
3,000	32	42	31	40
4,000	32	42	32	41
5,000	33	43	33	42
6,000	34	43	34	43
7,000	35	44	35	43
8,000	36	44	36	44
9,000	37	45	37	44
10,000	38	46	38	45
11,000	39	47	39	45
12,000	40	47	40	46
13,000	41	48	41	47
14,000	42	48	42	47

*As the height above sea level increases, there is less oxygen per cubic foot of air. Therefore, the input rate should be reduced at higher altitudes.
†Orifices are available through your local distributor.

ALTITUDE DERATING FACTOR*

ELEVATION	MAXIMUM HEATING VALUE (Btu/ft^3)
0–2000	1100
2001–3000	1050
3001–4000	1000
4001–5000	950
5001–6000	900

*Derating of the unit is not required unless the heating value of the gas exceeds the values listed in the table above, or if the elevation exceeds 6000 ft. Derating conditions must be 4% per thousand ft above 2000 ft. For example, at 4000 ft, if the heating value of the gas exceeds 1000 Btu/ft^3, the unit will require a 16% derating. For elevations above 6000 ft, the same formula applies. For example, at 7000 ft, the unit will require a 28% derating of the maximum heating value per the National Fuel Gas Code.

IMPORTANT: Local utility companies may be reducing heat content of gas at altitudes above 2000 ft. If this is being done, changing spuds may not be required.

OUTDOOR SOUND POWER (TOTAL UNIT)

UNIT PGH	SOUND 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
dB — Sound Levels (decibels)

NOTE: The indoor sound power is available in the Electronic Catalog program (ECAT) for specific operating parameters.

EVAPORATOR–FAN MOTOR EFFICIENCY

UNIT SIZE PGH	EFFICIENCY%
072	84
090,102	80
120	85

*Single phase/3 phase.

NOTE:
1. Convert bhp to watts using the following formula:

$$\text{watts} = \frac{\text{bhp (746)}}{\text{motor efficiency}}$$

2. The EPACT (Energy Policy Act of 1992) regulates energy requirements for specific types of indoor fan motors. Motors regulated by EPACT include any general purpose, T-frame (three-digit, 143 and larger), single-speed, foot mounted, polyphase, squirrel cage induction motors of NEMA (National Electrical Manufacturers Association) design A and B, manufactured for use in the United States. Ranging from 1 to 200 Hp, these continuous-duty motors operate on 230 and 460 volt, 60 Hz power. If a motor does not fit into these specifications, the motor does not have to be replaced by an EPACT-compliant energy-efficient motor. Variable-speed motors are exempt from EPACT compliance requirements. Therefore, the indoor fan motors for PGH036-120 units are exempt from these requirements.

ACCESSORY STATIC PRESSURE* (in. wg) — PGH072

COMPONENT	CFM										
	600	800	1000	1250	1500	1750	2000	2250	2500	2750	3000
Vertical Economizer	0.10	0.20	0.35	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 STATIC PRESSURE* (in. wg) — PGH090–120

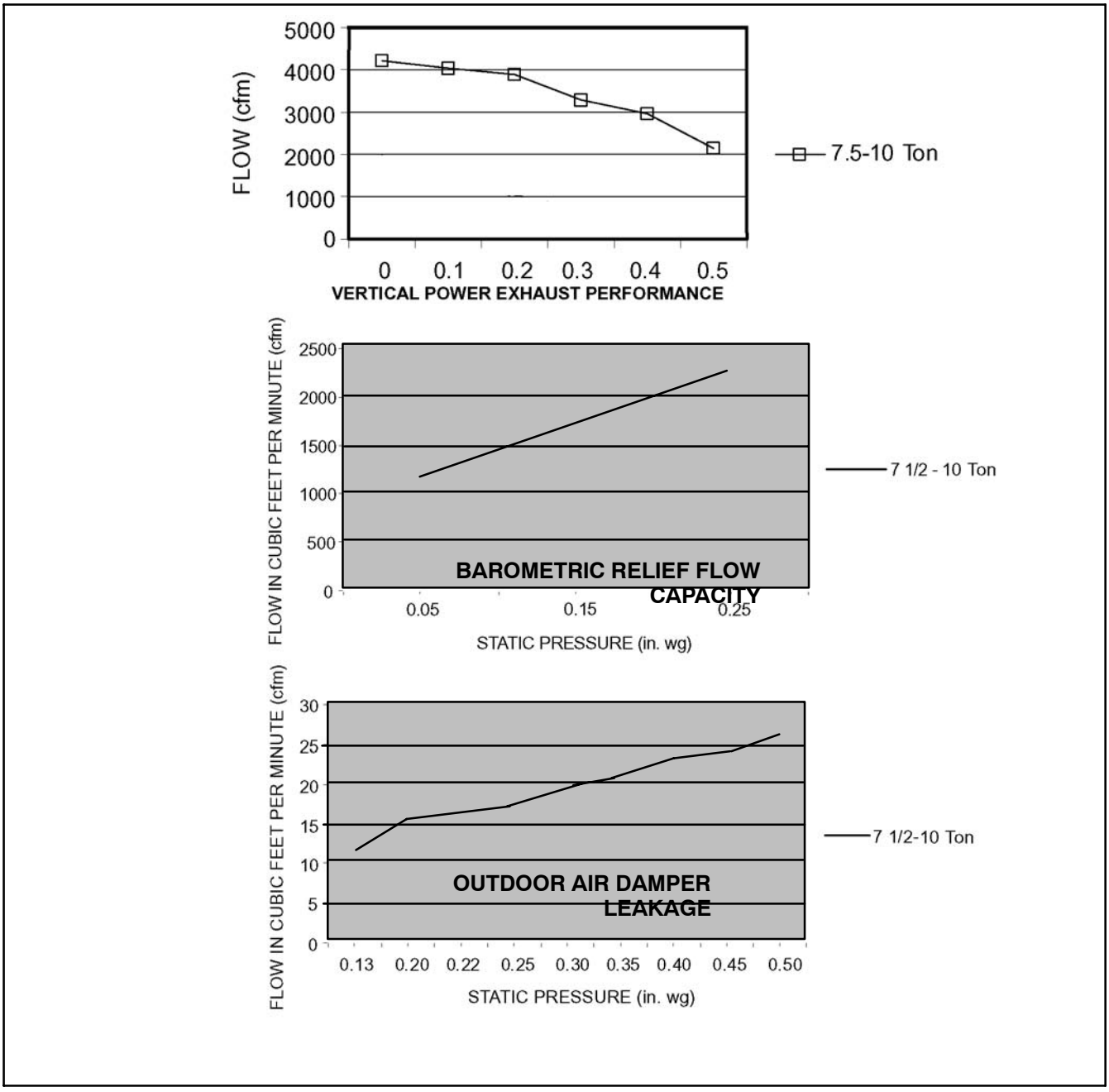
COMPONENT	CFM													
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	6250
Vertical Economizer	0.06	0.075	0.09	0.115	0.13	0.15	0.17	0.195	0.22	0.25	0.285	0.325	0.36	—
Horizontal Economizer	—	0.1	0.125	0.15	0.18	0.21	0.25	0.275	0.3	0.34	0.388	—	—	—

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.

PERFORMANCE DATA – PGH (cont)

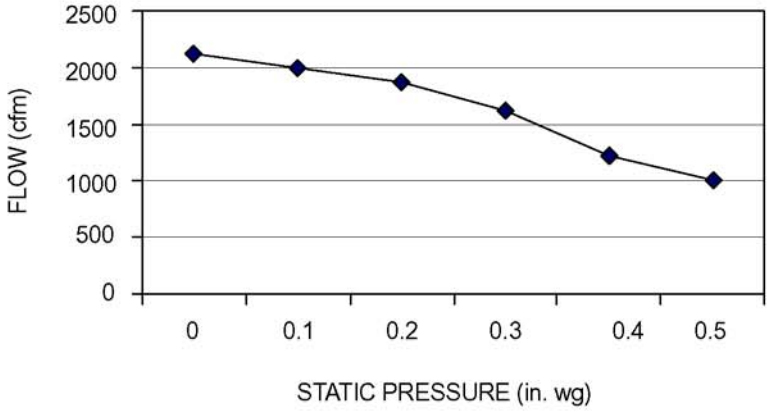
Vertical Economizer
Performance Data (PGH072–120)



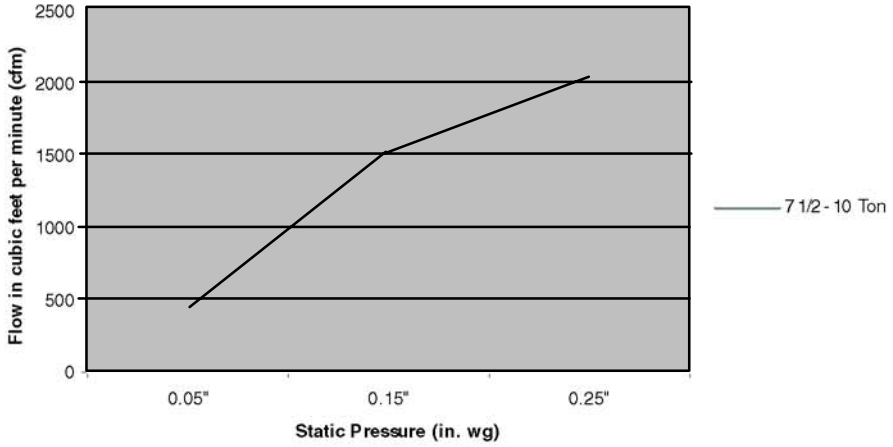
NOTE: Performance is for DN series economizer.

PERFORMANCE DATA – PGH (cont)

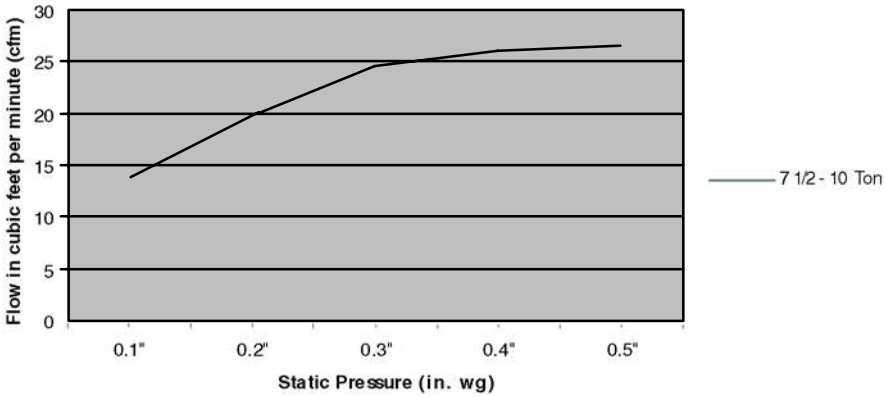
Horizontal Economizer
Performance Data (PGH072–120)



HORIZONTAL POWER EXHAUST PERFORMANCE



BAROMETRIC RELIEF CAPACITY



OUTDOOR AIR DAMPER LEAKAGE

NOTE: Performance is for DN series economizer.

PERFORMANCE DATA – PGH (cont)

EVAPORATOR-FAN MOTOR PERFORMANCE — STANDARD MOTOR

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

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

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

POWER EXHAUST POWER REQUIREMENTS

POWER EXHAUST SIZE	AMPS AT 230 V (2 FANS RUNNING)	MOCP		
		230 VAC	460 VAC	575 VAC
7 1/2 to 10 Ton	3.04 amps at 60 Hz	15.0 amps	15.0 amps	15.0 amps

LEGEND
MOCP — Maximum Overcurrent Protection

ELECTRICAL DATA

PGH072–120 UNITS

UNIT SIZE PGH	NOMINAL V–PH–Hz	IFM TYPE	VOLTAGE RANGE		COMPRESSOR (each)			OFM (each)		IFM FLA	COMBUSTION FAN MOTOR	POWER SUPPLY*		MINIMUM UNIT DISCONNECT SIZE†	
			Min	Max	Qty	RLA	LRA	Qty	FLA		FLA	MCA	MOCP**	FLA	LRA
072 (6 Tons)	208/230–3–60	STD	187	254	1	20.5	156	1	1.4	5.8	0.6	32.8	40	32	200
		HIGH								7.5	0.6	34.5	40	34	219
	460–3–60	STD	414	508	1	9.6	75	1	0.6	2.6	0.3	15.2	20	15	97
		HIGH								3.4	0.3	16.0	20	16	107
	575–3–60	STD	518	632	1	7.7	56	1	0.8	2.0	0.3†	12.4	15	12	69
		HIGH								2.8		13.2	20	13	79
090 ($7^1/_2$ Tons)	208/230–3–60	STD	187	254	2	12.4	88	2	1.4	7.5	0.6	38.2	45	40	242
		HIGH								10.6		41.3	45	44	267
	460–3–60	STD	414	508	2	6.4	44	2	0.7	3.4	0.3	19.2	25	20	121
		HIGH								4.8		20.6	25	22	134
	575–3–60	STD	518	632	2	4.8	34	2	0.6	2.8	0.3	14.6	20	15	95
		HIGH								3.3		15.3	20	17	104
102 ($8^1/_2$ Tons)	208/230–3–60	HIGH	187	254	2	13.1	105	2	1.4	10.6	0.6	43.3	50	46	301
	460–3–60	STD	414	508	2	7.4	55	2	0.7	3.4	0.3	21.5	25	23	143
		HIGH								4.8		22.9	25	24	156
	575–3–60	STD	518	632	2	6.4	44	2	0.6	2.8	0.3	18.2	20	19	115
		HIGH								3.3		18.9	25	20	124
120 (10 Tons)	208/230–3–60	STD	187	254	2	17.6	125	2	1.4	10.6	0.6	53.0	60	56	341
		HIGH								15.0	0.6	57.4	70	61	364
	460–3–60	STD	414	508	2	8.3	62.5	2	0.7	4.8	0.3	24.9	30	26	171
		HIGH								7.4		27.5	30	29	182
	575–3–60	STD	518	632	2	6.3	50	2	0.6	3.3	0.3	19.1	25	20	136
		HIGH								5.6		21.0	25	23	138

LEGEND

FLA — Full Load Amps
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 — Perfect Humidity™ Dehumidification System
RLA — Rated Load Amps
UL — Underwriters' Laboratories

*The values listed in this table do not include power exhaust. See table at right for power exhaust requirements.
†Used to determine minimum disconnect per NEC.
**Fuse or HACR circuit breaker.

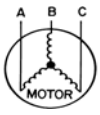
NOTES:

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 UL, Canada units may be fuse or circuit breaker.
2. Electrical data based on 95°F ambient outdoor-air temperature ± 10% voltage.
3. Unbalanced 3-Phase Supply Voltage
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent of voltage imbalance.

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

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.

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	072	N/A	0.68	N/A	15
DNPWREXH022A01	090–120	3.4	N/A	1.32	15
DNPWREXH023A01	090–120	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

N/A — Not Available

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.

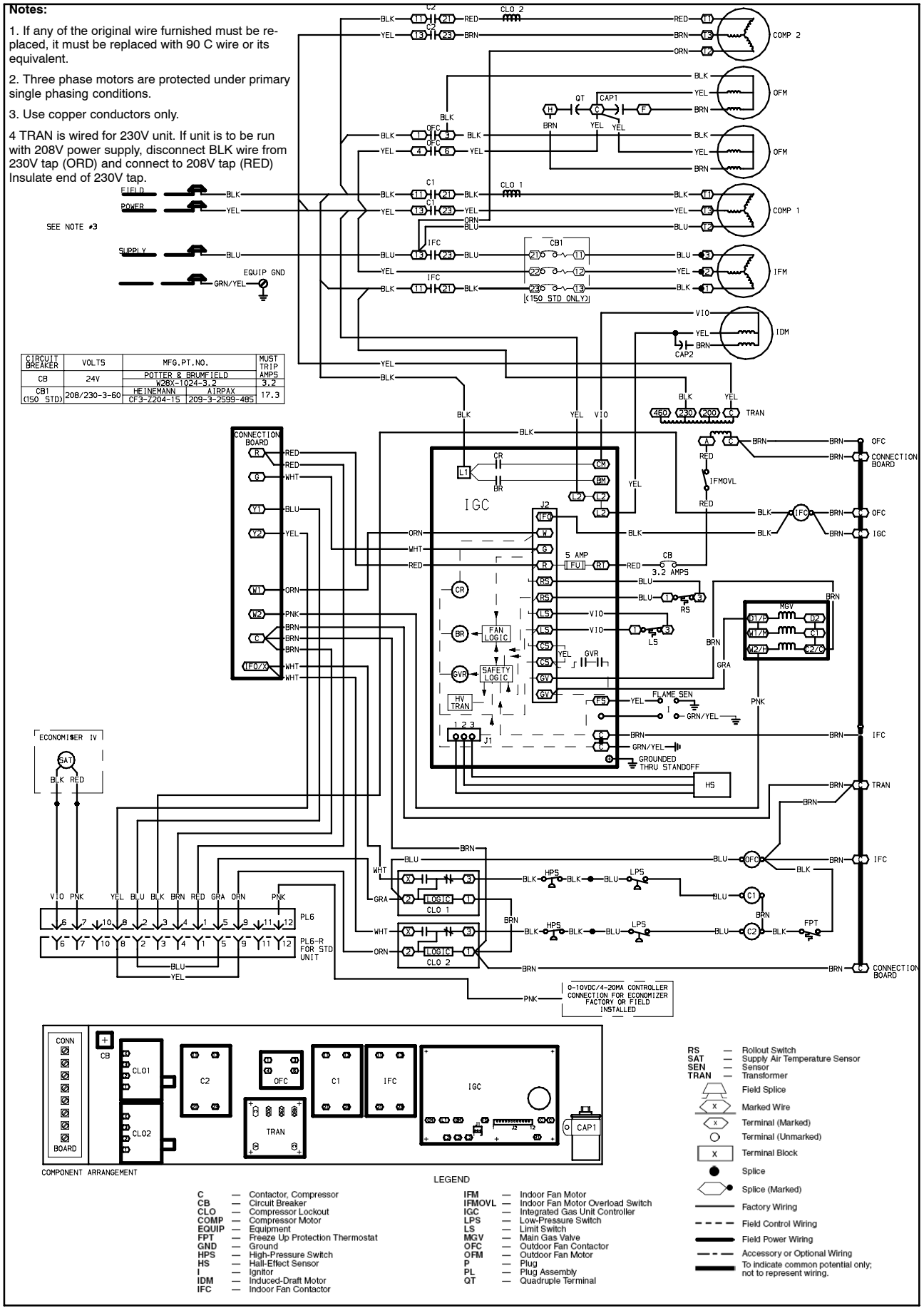
NOTE: If a single power source is to be used, size wire to include power exhaust MCA and MOCP. Check MCA and MOCP when power exhaust is powered through the unit. Determine the new MCA including the power exhaust using the following formula:
MCA New = MCA unit only + MCA of Power Exhaust
MCA New = 28.9 amps + 1.6 amps = 30.5 amps
If the new MCA does not exceed the published MOCP, then MOCP would not change. The MOCP in this example is 35 amps and 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.

TYPICAL WIRING SCHEMATICS — PGH

SIZES 072–120 (PGH090–120, 208/230–3–60 Shown)

Notes:

1. If any of the original wire furnished must be replaced, it must be replaced with 90 C wire or its equivalent.
2. Three phase motors are protected under primary single phasing conditions.
3. Use copper conductors only.
4 TRAN is wired for 230V unit. If unit is to be run with 208V power supply, disconnect BLK wire from 230V tap (ORD) and connect to 208V tap (RED) Insulate end of 230V tap.



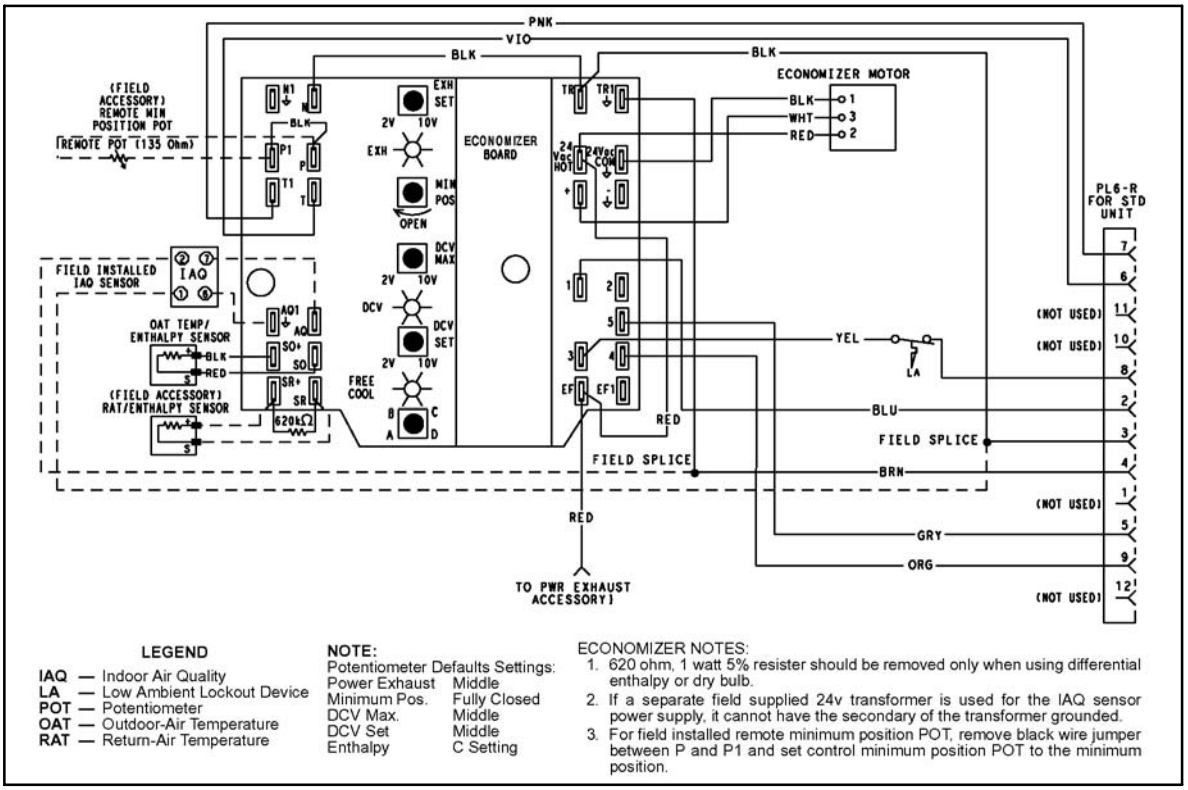
LEGEND

C	—	Contactor, Compressor
CB	—	Circuit Breaker
CLO	—	Compressor Lockout
COMP	—	Compressor Motor
EQUIP	—	Equipment
FPT	—	Freeze Up Protection Thermostat
GND	—	Ground
HPS	—	High-Pressure Switch
HS	—	Hall-Effect Sensor
I	—	Ignitor
IDM	—	Induced-Draft Motor
IFC	—	Indoor Fan Contactor
IFM	—	Indoor Fan Motor
IFMOVL	—	Indoor Fan Motor Overload Switch
IGC	—	Integrated Gas Unit Controller
LPS	—	Low-Pressure Switch
LS	—	Limit Switch
MGV	—	Main Gas Valve
OFC	—	Outdoor Fan Contactor
OFM	—	Outdoor Fan Motor
P	—	Plug
PL	—	Plug Assembly
QT	—	Quadruple Terminal
RS	—	Rollout Switch
SAT	—	Supply Air Temperature Sensor
SEN	—	Sensor
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.

TYPICAL WIRING SCHEMATICS — PGH (cont)

Economizer Wiring – PGH072–120 Units



LEGEND

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

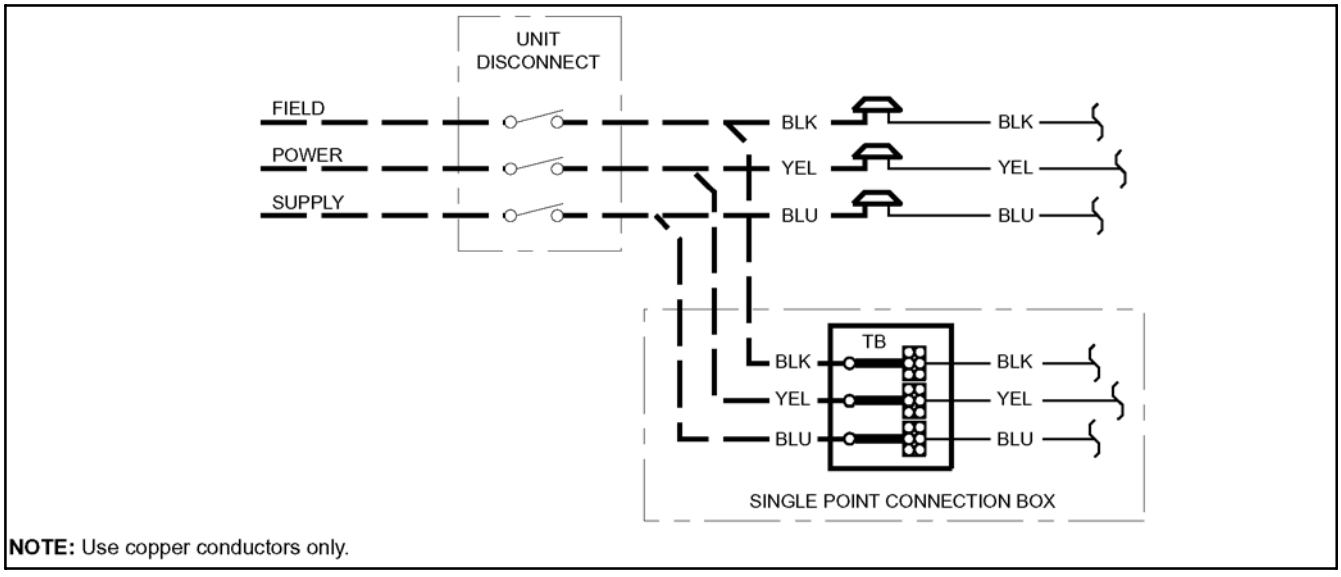
NOTE:
Potentiometer Defaults Settings:

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

ECONOMIZER 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.

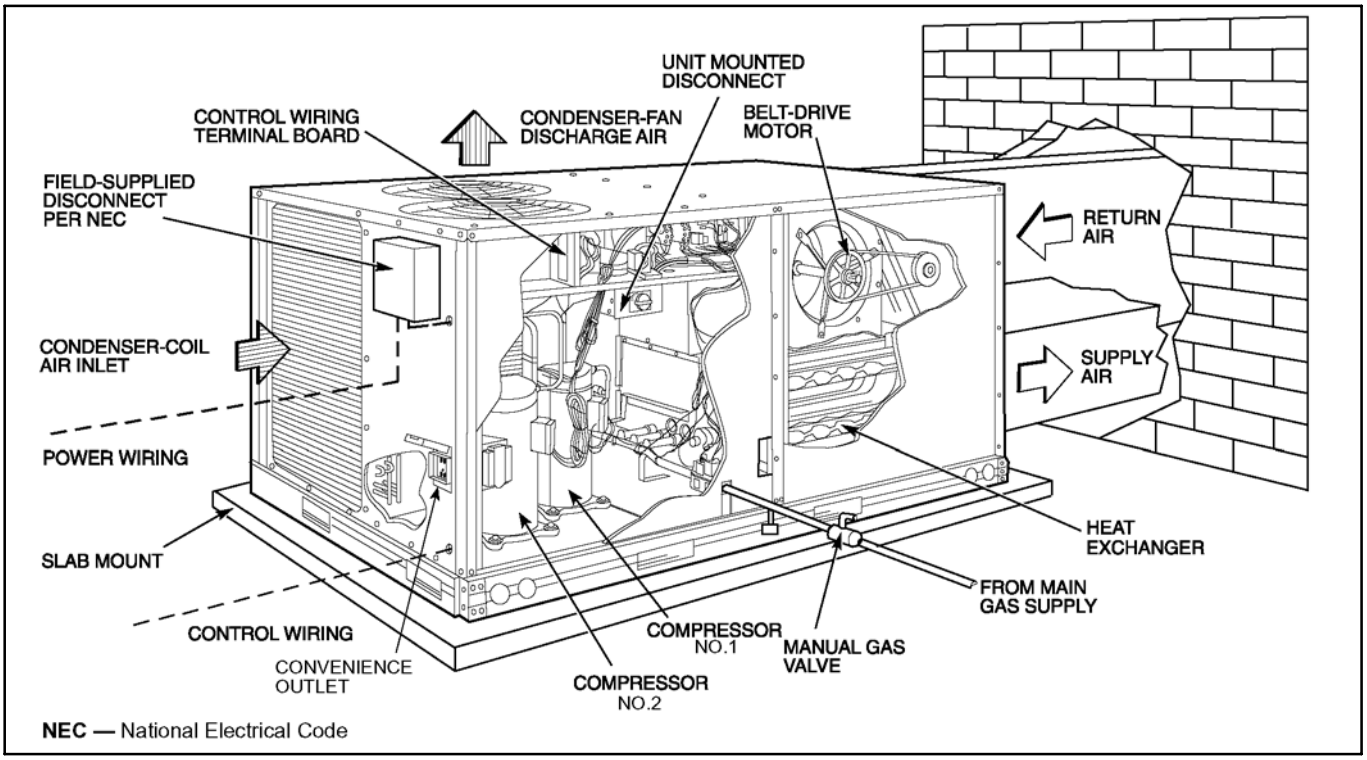
Non-Fused Disconnect (Optional) – Sizes PGH072-120



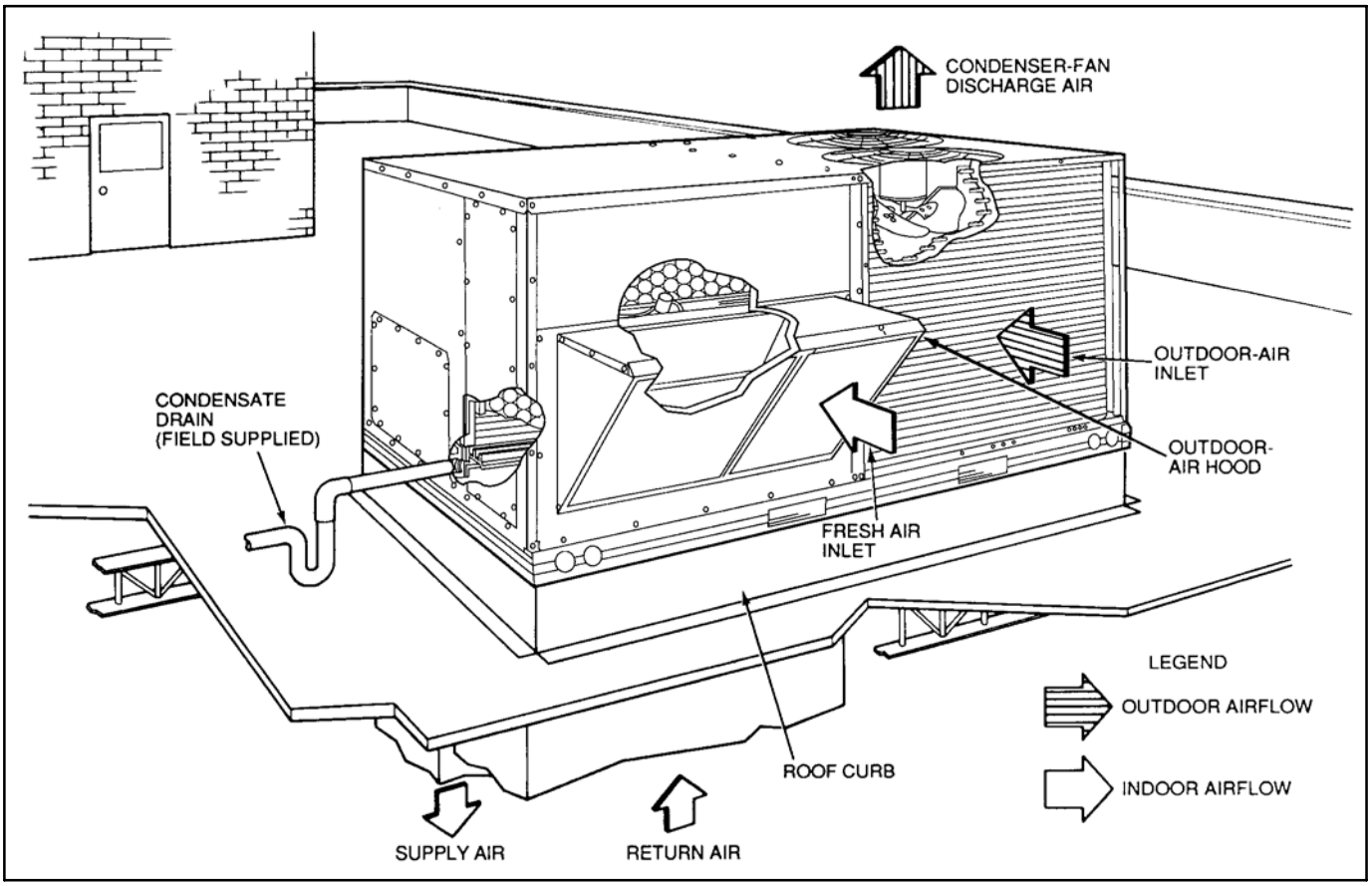
NOTE: Use copper conductors only.

TYPICAL PIPING AND WIRING — PGH072–120

Vertical Discharge Ducting



Horizontal Discharge Ducting



GUIDE SPECIFICATIONS — PGH072–120

PACKAGED ROOFTOP ELECTRIC COOLING UNIT WITH GAS HEAT — CONSTANT VOLUME APPLICATION

HVAC GUIDE SPECIFICATIONS

SIZE RANGE: 6 TO 10 TONS, NOMINAL (COOLING)
60,000 TO 250,000 BTUH, NOMINAL (INPUT HEATING)

MODEL NUMBERS: **PGH**

PGH072–120 UNITS ARE ENERGY STAR QUALIFIED

ENERGY STAR
PGH036-120 UNITS ARE ENERGY-STAR QUALIFIED

ASHRAE 90.1 COMPLIANT

PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

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

1.02 QUALITY ASSURANCE

A. Unit well exceeds ASHRAE 90.1–2001 Energy Standards. Units PGH072–120 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. Aluminum foil-faced fiber-glass insulation shall be used in the gas heat compartment.
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 gas and 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 specifically designed and are rated in maximum continuous Bhp or maximum continuous watts. The motors do not have a horsepower 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.
6. Induced-draft blower shall be of the direct-driven, single inlet, forward-curved centrifugal type, made from steel with a corrosion-resistant finish 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 (size 090–120) shall have face-split type evaporator coil (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.

F. Heating Section:
1. Induced-draft combustion type with energy saving direct-spark ignition system and redundant main gas valve.
2. Heat Exchanger:
   a. The standard heat exchanger shall be of the tubular-section type constructed of a minimum of 20-gage steel coated with a nominal 1.2 mil aluminum-silicone alloy for corrosion resistance.
3. Burners shall be of the in-shot type constructed of aluminum-coated steel.
4. All gas piping shall enter the unit cabinet at a single location on side of unit (horizontal plane).
5. The integrated gas controller (IGC) board shall include gas heat operation fault notification using an LED (light-emitting diode).
6. Unit shall be equipped with anti-cycle protection with one short cycle on unit flame rollout switch or 4 continuous short cycles on the high-temperature limit switch. Fault indication shall be made using an LED.
7. The IGC board shall contain algorithms that modify evaporator-fan operation to prevent future cycling on high-temperature limit switch.
8. The LED shall be visible without removal of control box access panel.

G. 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.

H. 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.

I. 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.
   b. Heating section shall be provided with the following minimum protections:
      (1.) High-temperature limit switches.
      (2.) Induced draft motor speed sensor.
      (3.) Flame rollout switch.
      (4.) Flame proving controls.

J. 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.

K. Electrical Requirements:

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

L. 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 are specifically designed and 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.
4. Induced-draft motor shall have permanently lubricated sealed bearings and inherent automatic-reset thermal overload protection.

M. 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 — PGH155,180

UNIT PGH		155			180		
		208/230	460	575	208/230	460	575
NOMINAL CAPACITY (tons)			12			15	
OPERATING WEIGHT (lb)							
Unit			1875			1950	
COMPRESSOR							
Quantity... Model (Ckt 1, Ckt 2)			2...ZR72KC			1...ZR94KC, 1...ZR72KC	
Number of Refrigerant Circuits			2			2	
Loading (% of full capacity)			0,53,100			0,60,100	
Crankcase Heater Watts			70			70	
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	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			
Motor Frame Size		56H			184T		
Fan Rpm Range	**Low-Medium Static**	895-1147		895-1147	873-1021		
High Static		1040-1315		N/A	1025-1200		
Motor Bearing Type		Ball			Ball		
Maximum Allowable Rpm		1550			1550		
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							
Pulley Flange (Rpm)	**Low-Medium Static**	45		45	37		
	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	

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, moveable pulley cannot be set to 0 to 1/2 turns open.

***Rollout switch is manual reset.

†††A Liquid Propane kit is available as an accessory. Kit may be used at elevations as high as 2000 ft.

PHYSICAL DATA — PGH155,180 (Cont.)

UNIT PGH		155			180		
		208/230	460	575	208/230	460	575
FURNACE SECTION							
Rollout Switch Cutout Temp (F)***		190			190		
Burner Orifice Diameter (in... drill size)							
Natural Gas	Std	0.1285...30/ 0.136...29			0.1285...30/ 0.136...29		
Liquid Propane†††	Alt	0.1065...36/0.1065...36			0.1065...36/0.1065...36		
Thermostat Heat Anticipator Setting							
208/230/460/575 v							
Stage 1 (amps)		0.98	0.8	.98	0.98	0.8	0.98
Stage 2 (amps)		0.44	0.44	.44	0.44	0.44	0.44
Gas Input (Btuh)							
(Nominal Heating Size)							
Stage 1/ Stage 2	(230,000)	172,000/230,000			–		
Stage 1/ Stage 2	(270,000)	–			206,000/270,000		
Stage 1/ Stage 2	(300,000)	225,000/300,000			–		
Stage 1/ Stage 2	(360,000)	–			275,000/360,000		
Efficiency (Steady State) (%)		81			81		
Temperature Rise Range		15–45/30–60			15–45/20–50		
Manifold Pressure (in. wg)							
Natural Gas	Std	3.3			3.3		
Liquid Propane†††	Alt	3.3			3.3		
Gas Valve Quantity		1			1		
Gas Valve Pressure Range							
(Min–Max Allowable) in. wg / psig		5.5–13.5 / .235–.487			5.5–13.5 / .235–.487		
Field Gas Connection Size (in.–FPT)		3/4			3/4		
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					

OPERATING AND RIGGING WEIGHTS — PGH155,180

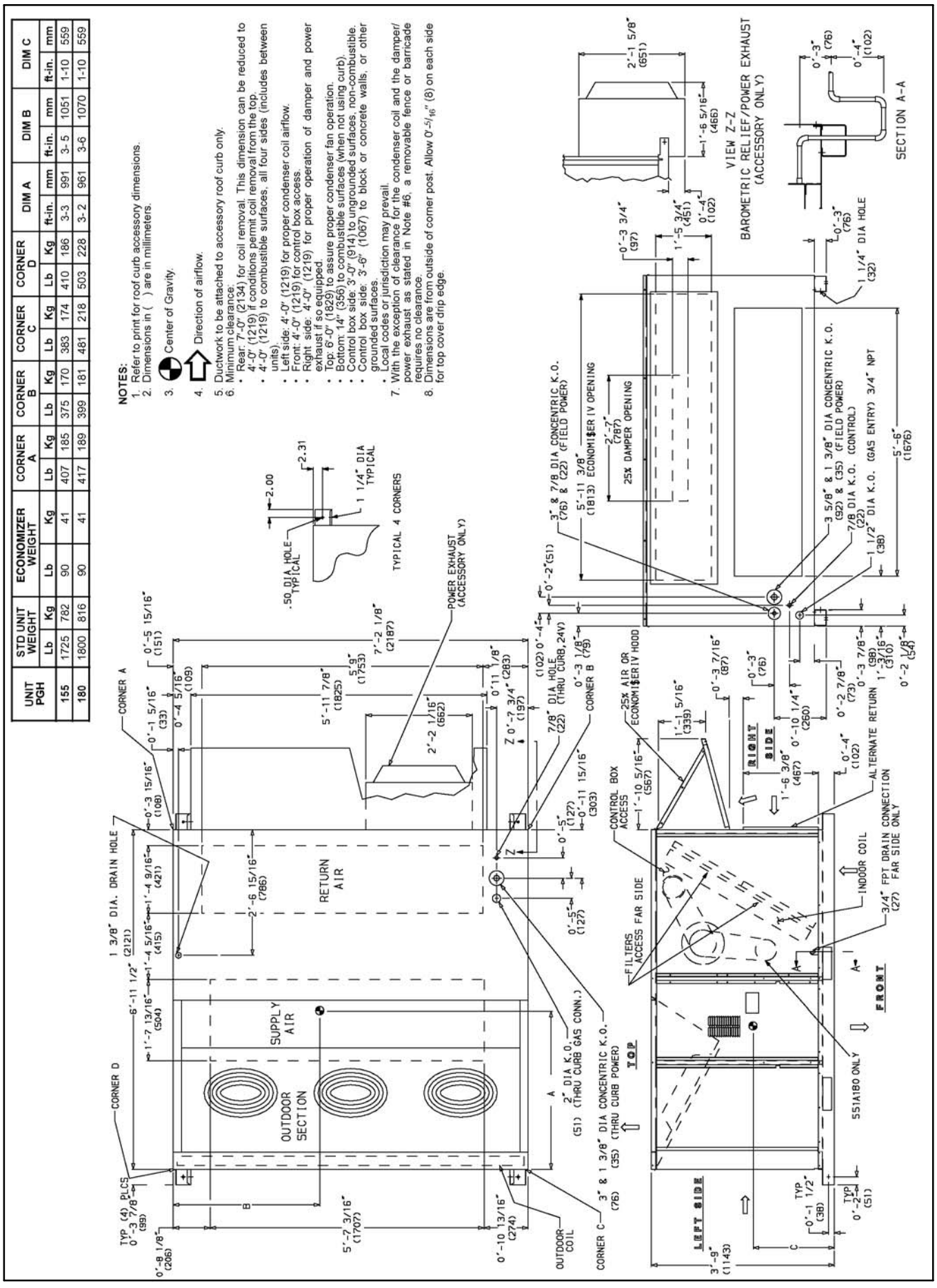
UNIT PGH	BASE UNIT OPERATING WEIGHTS*			
	155		180	
	lb	kg	lb	kg
	1725	782	1800	816

*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. For export crating add 500 lb (227 kg).

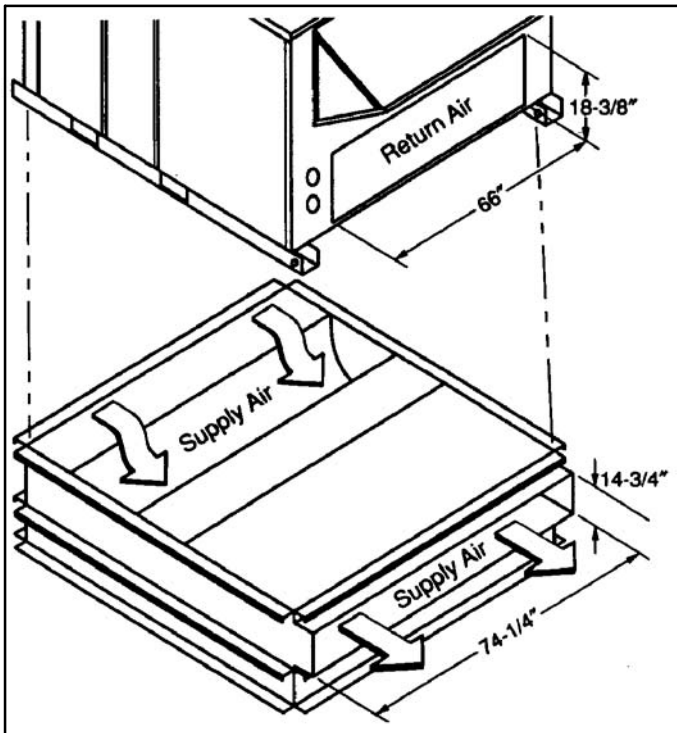
BASE UNIT DIMENSIONS — PGH155,180

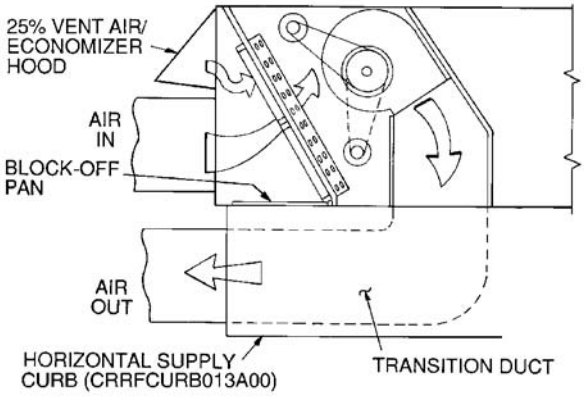
UNIT PGH	STD UNIT WEIGHT		ECONOMIZER WEIGHT		CORNER A		CORNER B		CORNER C		CORNER D		DIM A		DIM B		DIM C	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	ft-in.	mm	ft-in.	mm	ft-in.	mm
155	1725	782	90	41	407	185	375	170	383	174	410	186	3-3	991	3- 5	1051	1-10	559
180	1800	816	90	41	417	189	399	181	481	218	503	228	3-2	961	3-6	1070	1-10	559

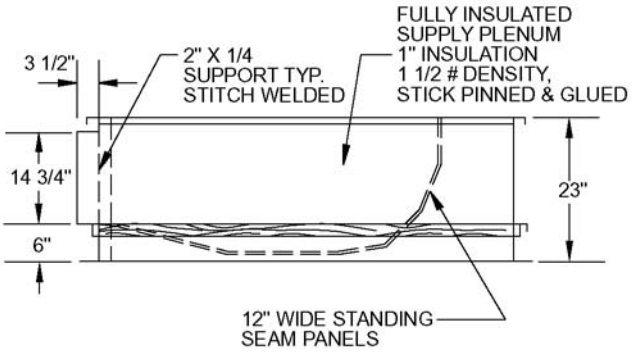


ACCESSORY DIMENSIONS

Horizontal Supply/Return Adapter Installation (PGH155,180)



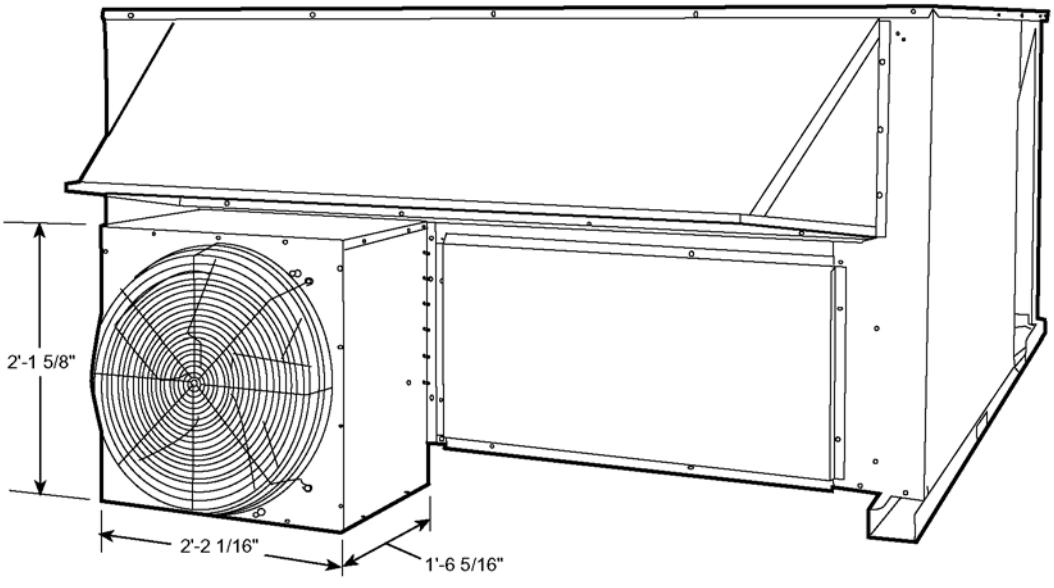




NOTE: AXB165CHA is a horizontal adapter and includes an insulated transition duct. The pressure drop through the adapter curb is negligible.
For horizontal return applications: The power exhaust and barometric relief dampers muxt be installed in the return air duct.

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

Barometric Relief/Power Exhaust



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

PERFORMANCE DATA – PGH

COOLING CAPACITIES

PGH155 (12 Tons)

Temp (F) Air Ent Cond		Evap Air — Cfm/BF																				
		3600/0.01							4375/0.01							5000/0.01						
		Evap Air — 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	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

PGH155 (12 Tons) (cont)

Temp (F) Air Ent Cond		Evap Air — Cfm/BF													
		5625/0.02							6250/0.02						
		Evap Air — 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 – PGH (cont)

COOLING CAPACITIES

PGH180 (15 Tons)

Temp (F) Air Ent Cond		Evap Air — Cfm/BF																				
		4500/0.01							5250/0.01							6000/0.01						
		Evap Air — 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	180.5	184.6	188.7	203.5	219.9	233.7	247	189.3	191.7	194.2	208.7	224.1	238	251	198.1	198.8	199.6	212.9	229.3	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	18.01	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

PGH180 (15 Tons) (cont)

Temp (F) Air Ent Cond		Evap Air — Cfm/BF													
		6750/0.01							7500/0.02						
		Evap Air — 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 – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS

PGH155 (12 TONS) WITH STANDARD MOTOR (Low Heat Units)*

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	597	895	0.84	692	967	1.07	781	1150	1.33	858	1342	1.59	928	1527	1.85
4000	625	1014	0.98	714	1097	1.21	800	1292	1.48	876	1495	1.75	945	1689	2.03
4250	653	1141	1.13	737	1236	1.36	820	1442	1.64	895	1656	1.93	963	1859	2.22
4500	682	1274	1.29	761	1382	1.54	840	1599	1.82	914	1824	2.11	982	2037	2.42
4750	711	1415	1.48	786	1538	1.73	861	1765	2.01	934	2001	2.32	1001	2224	2.63
5000	740	1563	1.68	812	1702	1.94	884	1940	2.22	954	2188	2.53	1020	2419	2.86
5250	769	1719	1.89	839	1875	2.16	907	2125	2.45	974	2384	2.77	1039	2625	3.10
5500	799	1884	2.13	867	2060	2.41	931	2321	2.70	996	2592	3.02	1059	2841	3.36
5750	828	2058	2.38	894	2256	2.67	956	2528	2.97	1018	2810	3.29	1080	3069	3.64
6000	857	2243	2.64	923	2464	2.96	982	2748	3.26	1041	3042	3.59	1101	3308	3.94
6250	885	2438	2.93	951	2687	3.27	1008	2981	3.58	1065	3286	3.91	1122	3559	4.26

PGH155 (12 TONS) WITH STANDARD MOTOR (Low Heat Units)* (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	992	1756	2.12	1053	1988	2.40	1112	2236	2.68	1169	2497	2.97	1224	2769	3.27
4000	1009	1931	2.31	1069	2173	2.59	1126	2431	2.88	1181	2702	3.18	1234	2984	3.48
4250	1026	2114	2.51	1085	2366	2.80	1141	2634	3.10	1194	2914	3.40	1246	3206	3.72
4500	1044	2304	2.72	1102	2566	3.02	1157	2844	3.33	1209	3133	3.65	1260	3433	3.97
4750	1062	2504	2.95	1120	2775	3.26	1174	3062	3.58	1226	3360	3.91	1275	3666	4.23
5000	1081	2712	3.19	1138	2993	3.52	1191	3288	3.85	1242	3592	4.18	1291	3905	4.52
5250	1100	2931	3.44	1156	3220	3.79	1209	3523	4.13	1260	3832	4.47	1308	4148	4.82
5500	1119	3160	3.72	1175	3457	4.07	1228	3765	4.43	1278	4077	4.78	1326	4395	5.14
5750	1138	3399	4.00	1194	3702	4.37	1246	4014	4.74	1296	4328	5.11	1343	4644	5.48
6000	1158	3649	4.31	1213	3957	4.69	1265	4270	5.07	1315	4581	5.45	—	—	—
6250	1179	3910	4.64	1233	4219	5.02	1284	4531	5.41	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower
Watts — Input Watts to Motor

*Standard low–medium static drive range is 895 to 1147 rpm. Other rpms require a field–supplied drive.

Refer to this page for general Fan Performance Data notes.

NOTES:

1. Field-supplied motor 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. See Evaporator Fan Motor Data tables for more information.
3. Fan performance is identical for horizontal discharge applications using a horizontal adapter curb.

PGH155 (12 TONS) WITH OPTIONAL MOTOR (Low Heat Units)*

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	597	895	0.84	692	967	1.07	781	1150	1.33	858	1342	1.59	928	1527	1.85
4000	625	1014	0.98	714	1097	1.21	800	1292	1.48	876	1495	1.75	945	1689	2.03
4250	653	1141	1.13	737	1236	1.36	820	1442	1.64	895	1656	1.93	963	1859	2.22
4500	682	1274	1.29	761	1382	1.54	840	1599	1.82	914	1824	2.11	982	2037	2.42
4750	711	1415	1.48	786	1538	1.73	861	1765	2.01	934	2001	2.32	1001	2224	2.63
5000	740	1563	1.68	812	1702	1.94	884	1940	2.22	954	2188	2.53	1020	2419	2.86
5250	769	1719	1.89	839	1875	2.16	907	2125	2.45	974	2384	2.77	1039	2625	3.10
5500	799	1884	2.13	867	2060	2.41	931	2321	2.70	996	2592	3.02	1059	2841	3.36
5750	828	2058	2.38	894	2256	2.67	956	2528	2.97	1018	2810	3.29	1080	3069	3.64
6000	857	2243	2.64	923	2464	2.96	982	2748	3.26	1041	3042	3.59	1101	3308	3.94
6250	885	2438	2.93	951	2687	3.27	1008	2981	3.58	1065	3286	3.91	1122	3559	4.26

PGH155 (12 TONS) WITH OPTIONAL MOTOR (Low Heat Units)* (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	992	1756	2.12	1053	1988	2.40	1112	2236	2.68	1169	2497	2.97	1224	2769	3.27
4000	1009	1931	2.31	1069	2173	2.59	1126	2431	2.88	1181	2702	3.18	1234	2984	3.48
4250	1026	2114	2.51	1085	2366	2.80	1141	2634	3.10	1194	2914	3.40	1246	3206	3.72
4500	1044	2304	2.72	1102	2566	3.02	1157	2844	3.33	1209	3133	3.65	1260	3433	3.97
4750	1062	2504	2.95	1120	2775	3.26	1174	3062	3.58	1226	3360	3.91	1275	3666	4.23
5000	1081	2712	3.19	1138	2993	3.52	1191	3288	3.85	1242	3592	4.18	1291	3905	4.52
5250	1100	2931	3.44	1156	3220	3.79	1209	3523	4.13	1260	3832	4.47	1308	4148	4.82
5500	1119	3160	3.72	1175	3457	4.07	1228	3765	4.43	1278	4077	4.78	1326	4395	5.14
5750	1138	3399	4.00	1194	3702	4.37	1246	4014	4.74	1296	4328	5.11	1343	4644	5.48
6000	1158	3649	4.31	1213	3957	4.69	1265	4270	5.07	1315	4581	5.45	—	—	—
6250	1179	3910	4.64	1233	4219	5.02	1284	4531	5.41	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower
Watts — Input Watts to Motor

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

Refer to this page for general Fan Performance Data notes.

NOTE: Maximum continuous bhp is:

Low Range: 5.75
High Range: 8.63

NOTES:

1. Field-supplied motor required.
2. Maximum continuous bhp for the optional motor is 4.26. Maximum continuous watts for the optional motor is 3610. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm. See Evaporator Fan Motor Data tables for more information.
3. Fan performance is identical for horizontal discharge applications using a horizontal adapter curb.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH155 (12 TONS) WITH STANDARD MOTOR (High Heat Units)*

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	622	888	0.89	713	1027	1.13	795	1234	1.37	869	1454	1.63	936	1584	1.89
4000	652	1015	1.04	738	1168	1.28	818	1388	1.54	890	1620	1.80	956	1756	2.07
4250	682	1151	1.20	763	1317	1.45	841	1550	1.72	911	1793	1.99	976	1937	2.27
4500	713	1295	1.38	790	1474	1.63	864	1719	1.91	934	1973	2.20	997	2126	2.49
4750	744	1448	1.58	817	1641	1.84	889	1896	2.12	956	2159	2.42	1019	2326	2.72
5000	776	1610	1.80	845	1817	2.06	914	2081	2.35	979	2353	2.66	1041	2536	2.97
5250	808	1783	2.04	874	2003	2.31	940	2277	2.60	1003	2556	2.91	1064	2757	3.24
5500	840	1967	2.29	903	2200	2.57	966	2482	2.87	1028	2768	3.19	1087	2991	3.52
5750	872	2163	2.57	933	2410	2.86	993	2699	3.16	1053	2990	3.49	1110	3237	3.83
6000	905	2373	2.87	963	2634	3.16	1021	2929	3.47	1078	3225	3.81	1134	3497	4.15
6250	937	2596	3.19	994	2872	3.49	1049	3172	3.81	1105	3473	4.15	1159	3769	4.50

PGH155 (12 TONS) WITH STANDARD MOTOR (High Heat Units)* (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	999	1829	2.15	1059	2091	2.42	1117	2343	2.70	1174	2521	2.99	1228	2801	3.29
4000	1017	2010	2.35	1076	2279	2.63	1132	2540	2.91	1186	2738	3.21	1239	3023	3.51
4250	1036	2198	2.56	1093	2474	2.85	1148	2743	3.14	1201	2962	3.44	1253	3251	3.75
4500	1056	2395	2.78	1112	2675	3.08	1166	2951	3.39	1217	3194	3.70	1267	3487	4.01
4750	1077	2601	3.03	1132	2885	3.34	1184	3168	3.65	1235	3435	3.97	1284	3731	4.29
5000	1098	2816	3.29	1152	3104	3.61	1204	3392	3.93	1253	3683	4.26	1301	3981	4.59
5250	1120	3042	3.56	1173	3332	3.90	1224	3626	4.23	1273	3940	4.57	1320	4239	4.91
5500	1142	3279	3.86	1195	3570	4.20	1245	3870	4.55	1293	4203	4.89	1339	4501	5.24
5750	1165	3528	4.18	1217	3819	4.53	1266	4125	4.88	1313	4471	5.24	—	—	—
6000	1188	3789	4.51	1239	4080	4.88	1288	4389	5.24	—	—	—	—	—	—
6250	1212	4062	4.87	1262	4351	5.24	—	—	—	—	—	—	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Standard low–medium static drive range is 895 to 1147 rpm. Other rpms require a field–supplied drive.
Refer to General Fan Performance Data notes.

NOTES:
1. Field–supplied motor 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. See Evaporator Fan Motor Data tables for more information.
3. Fan performance is identical for horizontal discharge applications using a horizontal adapter curb.

PGH155 (12 TONS) WITH OPTIONAL MOTOR (High Heat Units)*

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	622	888	0.89	713	1027	1.13	795	1234	1.37	869	1454	1.63	936	1584	1.89
4000	652	1015	1.04	738	1168	1.28	818	1388	1.54	890	1620	1.80	956	1756	2.07
4250	682	1151	1.20	763	1317	1.45	841	1550	1.72	911	1793	1.99	976	1937	2.27
4500	713	1295	1.38	790	1474	1.63	864	1719	1.91	934	1973	2.20	997	2126	2.49
4750	744	1448	1.58	817	1641	1.84	889	1896	2.12	956	2159	2.42	1019	2326	2.72
5000	776	1610	1.80	845	1817	2.06	914	2081	2.35	979	2353	2.66	1041	2536	2.97
5250	808	1783	2.04	874	2003	2.31	940	2277	2.60	1003	2556	2.91	1064	2757	3.24
5500	840	1967	2.29	903	2200	2.57	966	2482	2.87	1028	2768	3.19	1087	2991	3.52
5750	872	2163	2.57	933	2410	2.86	993	2699	3.16	1053	2990	3.49	1110	3237	3.83
6000	905	2373	2.87	963	2634	3.16	1021	2929	3.47	1078	3225	3.81	1134	3497	4.15
6250	937	2596	3.19	994	2872	3.49	1049	3172	3.81	1105	3473	4.15	1159	3769	4.50

PGH155 (12 TONS) WITH OPTIONAL MOTOR (High Heat Units)* (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	999	1829	2.15	1059	2091	2.42	1117	2343	2.70	1174	2521	2.99	1228	2801	3.29
4000	1017	2010	2.35	1076	2279	2.63	1132	2540	2.91	1186	2738	3.21	1239	3023	3.51
4250	1036	2198	2.56	1093	2474	2.85	1148	2743	3.14	1201	2962	3.44	1253	3251	3.75
4500	1056	2395	2.78	1112	2675	3.08	1166	2951	3.39	1217	3194	3.70	1267	3487	4.01
4750	1077	2601	3.03	1132	2885	3.34	1184	3168	3.65	1235	3435	3.97	1284	3731	4.29
5000	1098	2816	3.29	1152	3104	3.61	1204	3392	3.93	1253	3683	4.26	1301	3981	4.59
5250	1120	3042	3.56	1173	3332	3.90	1224	3626	4.23	1273	3940	4.57	1320	4239	4.91
5500	1142	3279	3.86	1195	3570	4.20	1245	3870	4.55	1293	4203	4.89	1339	4501	5.24
5750	1165	3528	4.18	1217	3819	4.53	1266	4125	4.88	1313	4471	5.24	—	—	—
6000	1188	3789	4.51	1239	4080	4.88	1288	4389	5.24	—	—	—	—	—	—
6250	1212	4062	4.87	1262	4351	5.24	—	—	—	—	—	—	—	—	—

LEGEND
Bhp — Brake Horsepower
Watts — Input Watts to Motor
*Alternate high-static drive range is 1040 to 1315. Other rpms require a field-supplied drive.
Refer to General Fan Performance Data notes.

NOTES:
1. Field-supplied motor required.
2. Maximum continuous bhp for the optional 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. See Evaporator Fan Motor Data tables for more information.
3. Fan performance is identical for horizontal discharge applications using a horizontal adapter curb.

PERFORMANCE DATA – PGH (cont)

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

PGH180 (15 TONS) (Low Heat Units)*

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
4500	753	1307	1.53	761	1330	1.56	840	1572	1.84	912	1822	2.14	980	2080	2.44
4800	747	1384	1.62	790	1515	1.78	866	1765	2.07	936	2023	2.37	1002	2289	2.68
5100	741	1465	1.72	820	1718	2.01	893	1977	2.32	961	2243	2.63	1025	2516	2.95
5700	810	1911	2.24	882	2182	2.56	950	2459	2.88	1014	2741	3.21	1075	3029	3.55
6000	844	2164	2.54	914	2444	2.87	980	2730	3.20	1042	3021	3.54	1100	3317	3.89
6300	879	2439	2.86	947	2729	3.20	1010	3023	3.55	1070	3322	3.90	1127	3626	4.25
6600	915	2737	3.21	980	3035	3.56	1041	3338	3.91	1099	3645	4.28	1155	3957	4.64
6900	950	3057	3.59	1013	3364	3.95	1072	3675	4.31	1129	3991	4.68	1183	4311	5.06
7200	986	3401	3.99	1047	3717	4.36	1104	4037	4.74	1159	4361	5.11	1211	4689	5.50
7500	1022	3770	4.42	1081	4095	4.80	1136	4423	5.19	1189	4755	5.58	1241	5091	5.97

PGH180 (15 TONS) (Low Heat Units)* (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
4500	1044	2345	2.75	1105	2619	3.07	1163	2899	3.40	1218	3187	3.74	1271	3481	4.08
4800	1065	2561	3.00	1124	2841	3.33	1180	3127	3.67	1235	3420	4.01	1287	3720	4.36
5100	1086	2795	3.28	1144	3082	3.61	1199	3375	3.96	1252	3674	4.31	1304	3979	4.67
5700	1132	3324	3.90	1187	3624	4.25	1240	3929	4.61	1291	4241	4.97	1341	4558	5.35
6000	1157	3619	4.24	1210	3925	4.60	1262	4239	4.97	1312	4557	5.34	1361	4880	5.72
6300	1182	3935	4.62	1234	4249	4.98	1285	4569	5.36	1334	4894	5.74	—	—	—
6600	1208	4274	5.01	1259	4595	5.39	1309	4922	5.77	—	—	—	—	—	—
6900	1235	4636	5.44	1285	4964	5.82	—	—	—	—	—	—	—	—	—
7200	1262	5021	5.89	—	—	—	—	—	—	—	—	—	—	—	—

PGH180 (15 TONS) (Low Heat Units)* (cont)

Airflow (Cfm)	Available External Static Pressure (in. wg)														
	2.2			2.4			2.6			2.8			3.0		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
4500	1322	3781	4.43	1372	4088	4.79	1419	4400	5.16	1466	4719	5.53	1511	5042	5.91
4800	1337	4025	4.72	1386	4337	5.09	1433	4655	5.46	1479	4978	5.84	—	—	—
5100	1353	4290	5.03	1401	4607	5.40	1448	4930	5.78	—	—	—	—	—	—
5700	1388	4881	5.72	—	—	—	—	—	—	—	—	—	—	—	—

PGH180 (15 TONS) (High Heat Units)*

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
4500	753	1307	1.53	786	1404	1.65	861	1644	1.93	932	1893	2.22	997	2150	2.52
4800	747	1384	1.62	818	1603	1.88	890	1852	2.17	958	2108	2.47	1022	2373	2.78
5100	775	1571	1.84	850	1822	2.14	920	2079	2.44	986	2344	2.75	1048	2616	3.07
5700	849	2054	2.41	918	2323	2.73	982	2598	3.05	1044	2879	3.38	1102	3166	3.71
6000	886	2329	2.73	952	2607	3.06	1015	2891	3.39	1074	3180	3.73	1130	3474	4.08
6300	924	2628	3.08	987	2915	3.42	1047	3207	3.76	1105	3504	4.11	1160	3807	4.46
6600	962	2951	3.46	1023	3246	3.81	1081	3547	4.16	1136	3853	4.52	1190	4163	4.88
6900	1000	3298	3.87	1059	3603	4.23	1115	3912	4.59	1168	4225	4.96	1220	4543	5.33
7200	1038	3672	4.31	1095	3986	4.67	1149	4303	5.05	1201	4625	5.42	1251	4950	5.81
7500	1077	4072	4.78	1131	4394	5.15	1184	4720	5.54	1234	5050	5.92	—	—	—

PGH180 (15 TONS) (High Heat Units)* (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
4500	1060	2414	2.83	1119	2685	3.15	1175	2964	3.48	1230	3250	3.81	1282	3542	4.15
4800	1082	2644	3.10	1140	2922	3.43	1195	3207	3.76	1248	3498	4.10	1299	3795	4.45
5100	1106	2894	3.39	1163	3178	3.73	1216	3470	4.07	1268	3767	4.42	1319	4071	4.77
5700	1157	3459	4.06	1211	3757	4.41	1262	4061	4.76	1312	4371	5.13	1360	4686	5.50
6000	1184	3774	4.43	1236	4080	4.79	1287	4391	5.15	1335	4707	5.52	1382	5029	5.90
6300	1212	4114	4.83	1263	4427	5.19	1312	4745	5.57	1359	5067	5.94	—	—	—
6600	1241	4478	5.25	1290	4798	5.63	1338	5122	6.01	—	—	—	—	—	—
6900	1270	4866	5.71	—	—	—	—	—	—	—	—	—	—	—	—

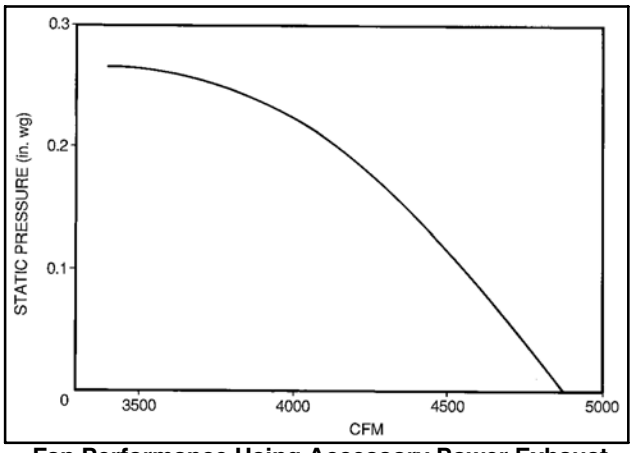
PGH180 (15 TONS) (High Heat Units)* (cont)

Airflow (Cfm)	Available External Static Pressure (in. wg)														
	2.2			2.4			2.6			2.8			3.0		
	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp	Rpm	Watts	Bhp
4500	1332	3841	4.50	1381	4145	4.86	1428	4456	5.23	1473	4772	5.60	1518	5095	5.98
4800	1349	4100	4.81	1397	4409	5.17	1443	4725	5.54	1488	5046	5.92	—	—	—
5100	1367	4380	5.14	1414	4695	5.51	1460	5016	5.88	—	—	—	—	—	—
5700	1407	5007	5.87	—	—	—	—	—	—	—	—	—	—	—	—

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.
Refer to General Fan Performance Data notes.

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. See Evaporator Fan Motor Data tables for more information.
2. Fan performance is identical for horizontal discharge applications using a horizontal adapter curb.

PERFORMANCE DATA – PGH (cont)



Fan Performance Using Accessory Power Exhaust (PGH155,180)

ALTITUDE COMPENSATION* — PGH155,180 (Natural Gas Units)

ELEVATION (ft)	NATURAL GAS ORIFICE SIZE†	
	Low Heat	High Heat
0–3,000	30	29
3,000–7,000	31	30
7,000–9,000	32	31
9,000–10,000	33	31
above 10,000	35	32

*Includes a 4% input reduction per each 1,000 feet.
†Orifices available through your local dealer.

ALTITUDE COMPENSATION — PGH155,180 (LP Gas Units)

ELEVATION (ft)	LIQUID PROPANE ORIFICE SIZE
	Low Heat and High Heat
0–2,000	36
2,000	37
3,000	38
4,000	38
5,000	39
6,000	40
7,000	41
8,000	41
9,000	42
10,000	43

ALTITUDE DERATING FACTOR*

ELEVATION (ft)	MAXIMUM HEATING VALUE (Btu/ft^3)
0–2,000	1,100
2,001–3,000	1,050
3,001–4,000	1,000
4,001–5,000	950
5,001–6,000	900

*Derating of the unit is not required unless the heating value of the gas exceeds the values listed in the table above, or if the elevation exceeds 6000 ft. Derating conditions must be 4% per thousand ft above 2000 ft. For example, at 4000 ft, if the heating value of the gas exceeds 1000 Btu/ft^3, the unit will require a 16% derating. For elevations above 6000 ft, the same formula applies. For example, at 7000 ft, the unit will require a 28% derating of the maximum heating value per the National Fuel Gas Code.
IMPORTANT: Local utility companies may be reducing heat content of gas at altitudes above 2000 ft. If this is being done, changing spuds may not be required.

EVAPORATOR-FAN MOTOR EFFICIENCY — PGH155,180

MOTOR HORSEPOWER	MOTOR EFFICIENCY (%)
3.0	81.7
2.9, 3.7	85.8
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.

PERFORMANCE DATA – PGH (cont)

ACCESSORY STATIC PRESSURE (in. wg)* — PGH155,180

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.

INDOOR SOUND DATA (TOTAL UNIT) — PGH155,180

UNIT PGH	SOUND RATING-dB (60 Hz)	A-WEIGHTED (dB)	SOUND POWER (dB) Octave Bands							
			63	125	250	500	1000	2000	4000	8000
155	87	87.3	87.1	89.9	86.4	84.0	82.7	79.0	73.9	68.6
180	88	88.0	95.7	88.9	87.2	85.2	91.9	79.5	72.7	66.0

EVAPORATOR FAN MOTOR PERFORMANCE — PGH155,180

UNIT PGH	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

FAN RPM AT MOTOR PULLEY SETTINGS* — PGH155,180

UNIT PGH	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†	1147	1124	1101	1078	1055	1032	1010	987	964	941	918	895	††
155**	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.

†Indicates standard drive package.

**Indicates alternate drive package.

††Due to belt and pulley style, pulley cannot be set to this number of turns open.

OUTDOOR SOUND POWER (TOTAL UNIT)

UNIT PGH	ARI RATING (decibels)	A-WEIGHTED (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

NOTE: Indoor sound power is available in the Electronic Catalog Program (ECAT) for specific operating parameters.

ELECTRICAL DATA — PGH (cont)

ELECTRICAL DATA — PGH155,180

UNIT PGH	NOMINAL VOLTAGE (3 Ph, 60 Hz)	VOLTAGE RANGE		COMPRESSOR No. 1		COMPRESSOR No. 2		OFM			IFM		POWER EXHAUST		COMBUSTION FAN MOTOR	POWER SUPPLY	
		Min	Max	RLA	LRA	RLA	LRA	Qty	Hp	FLA (ea)	Hp	FLA	FLA	LRA	FLA	MCA	MOCP*
155 (Standard IFM)	208/230	187	253	20.7	156	20.7	156	3	0.5	1.70	2.9	8.8/ 8.4	—	—	0.57	60/60	80/80
													4.6	18.8	0.57	65/65	80/80
	460	414	506	10.0	75	10.0	75	3	0.5	0.80	2.9	4.2	—	—	0.30	29	35
													2.3	6.0	0.30	31	40
	575	518	633	8.2	54	8.2	54	3	0.5	0.75	3.0	3.9	—	—	0.57	25	30
													2.1	4.8	0.57	27	30
155 (Optional IFM)	208/230	187	253	20.7	156	20.7	156	3	0.5	1.70	3.7	10.5/11.0	—	—	0.57	62/63	80/80
													4.6	18.8	0.57	67/67	80/80
	460	414	506	10.0	75	10.0	75	3	0.5	0.80	3.7	4.8	—	—	0.30	30	35
													2.3	6.0	0.30	32	40
180	208/230	187	253	32.1	195	20.7	156	3	0.5	1.70	5.0	15.8/15.8	—	—	0.57	82/82	110/110
													4.6	18.8	0.57	86/86	110/110
	460	414	506	16.4	95	10.0	75	3	0.5	0.80	5.0	7.9	—	—	0.30	41	50
													2.3	6.0	0.30	43	50
	575	518	633	12.0	80	8.2	54	3	0.5	0.75	5.0	6.0	—	—	0.57	31	40
													2.1	4.8	0.57	34	45

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.

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

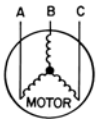
$$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

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.

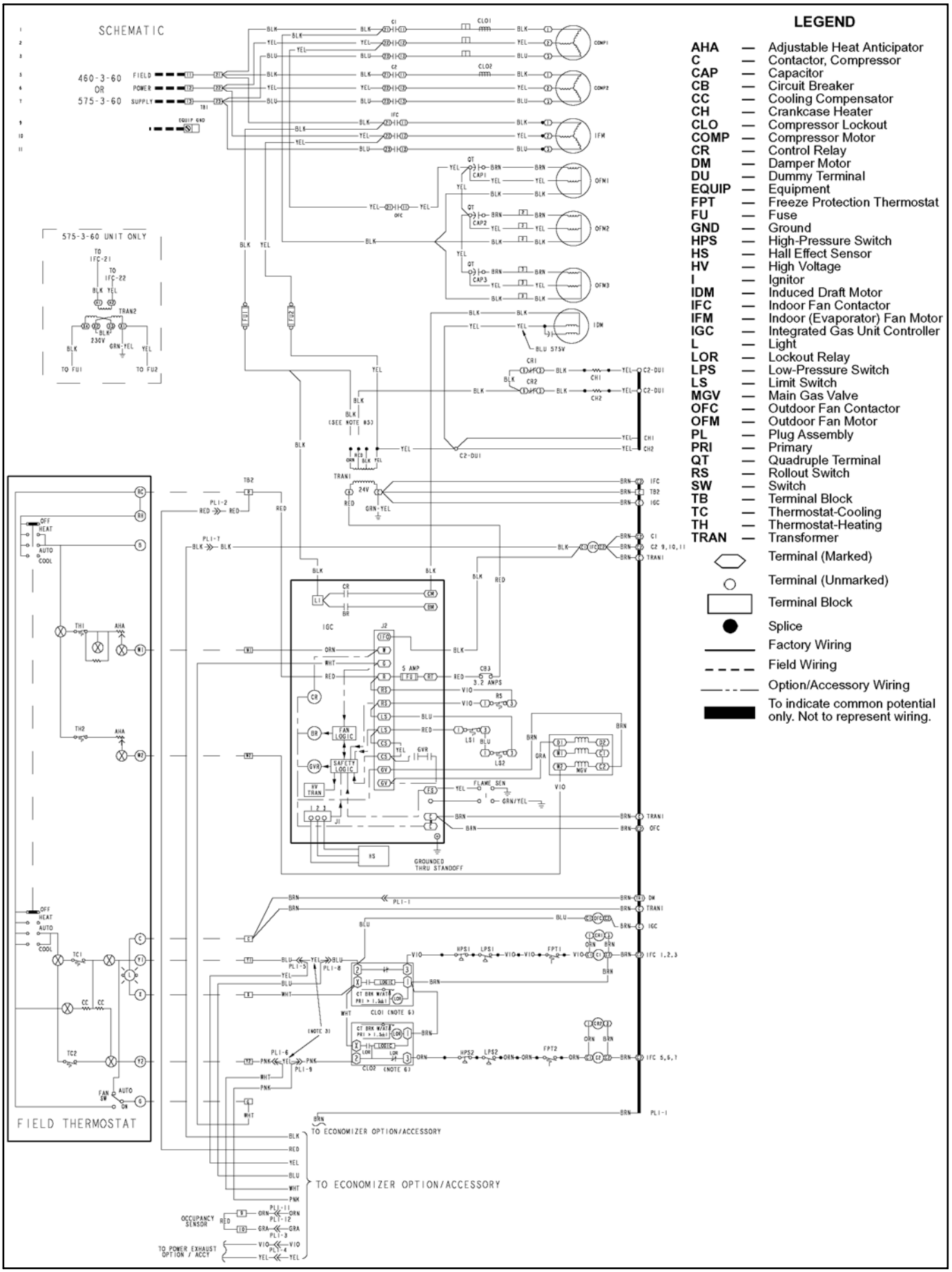
$$\text{\% Voltage Imbalance} = 100 \times \frac{7}{457}$$

$$= 1.53\%$$

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.

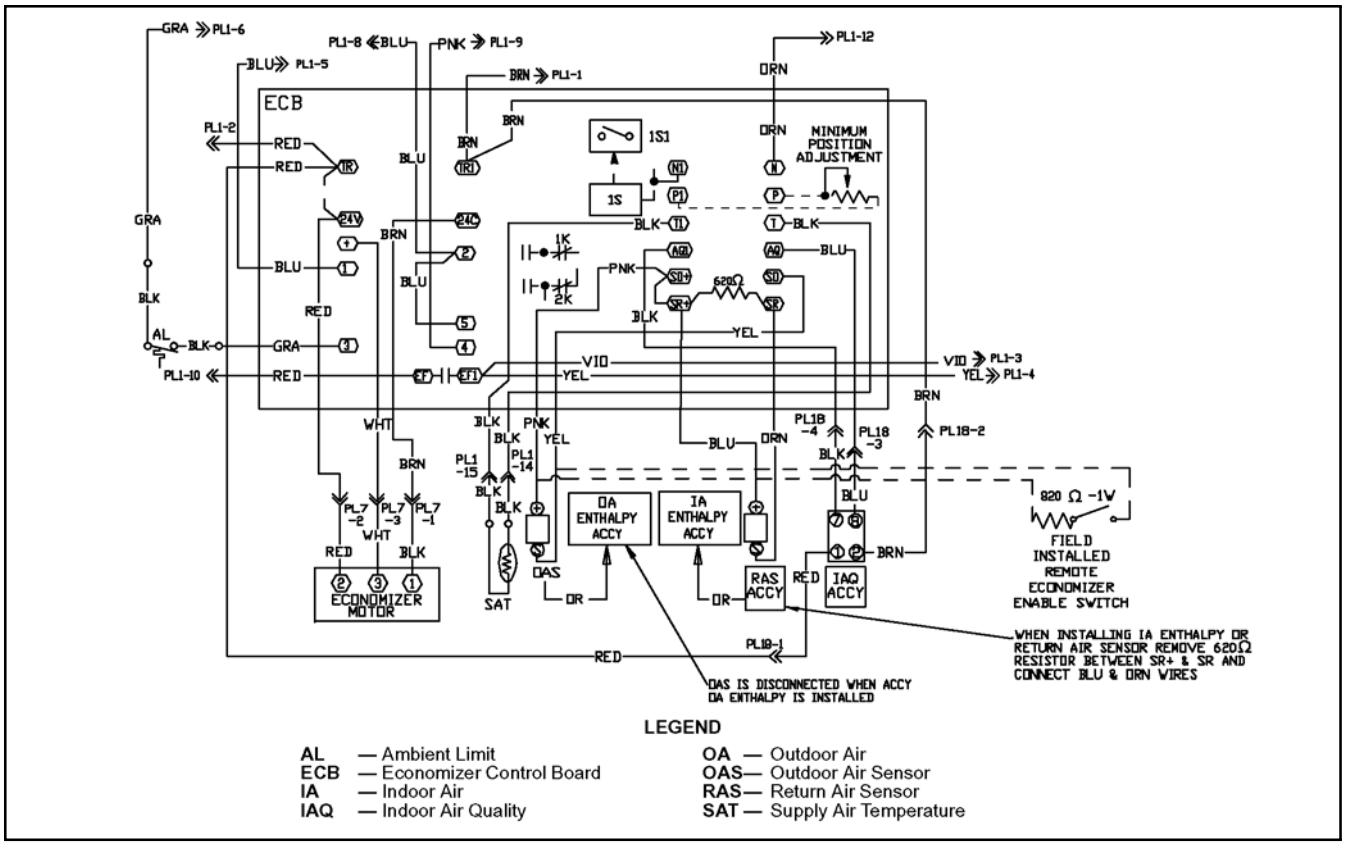
TYPICAL WIRING SCHEMATICS — PGH

PGH155, 460–3–60 Shown



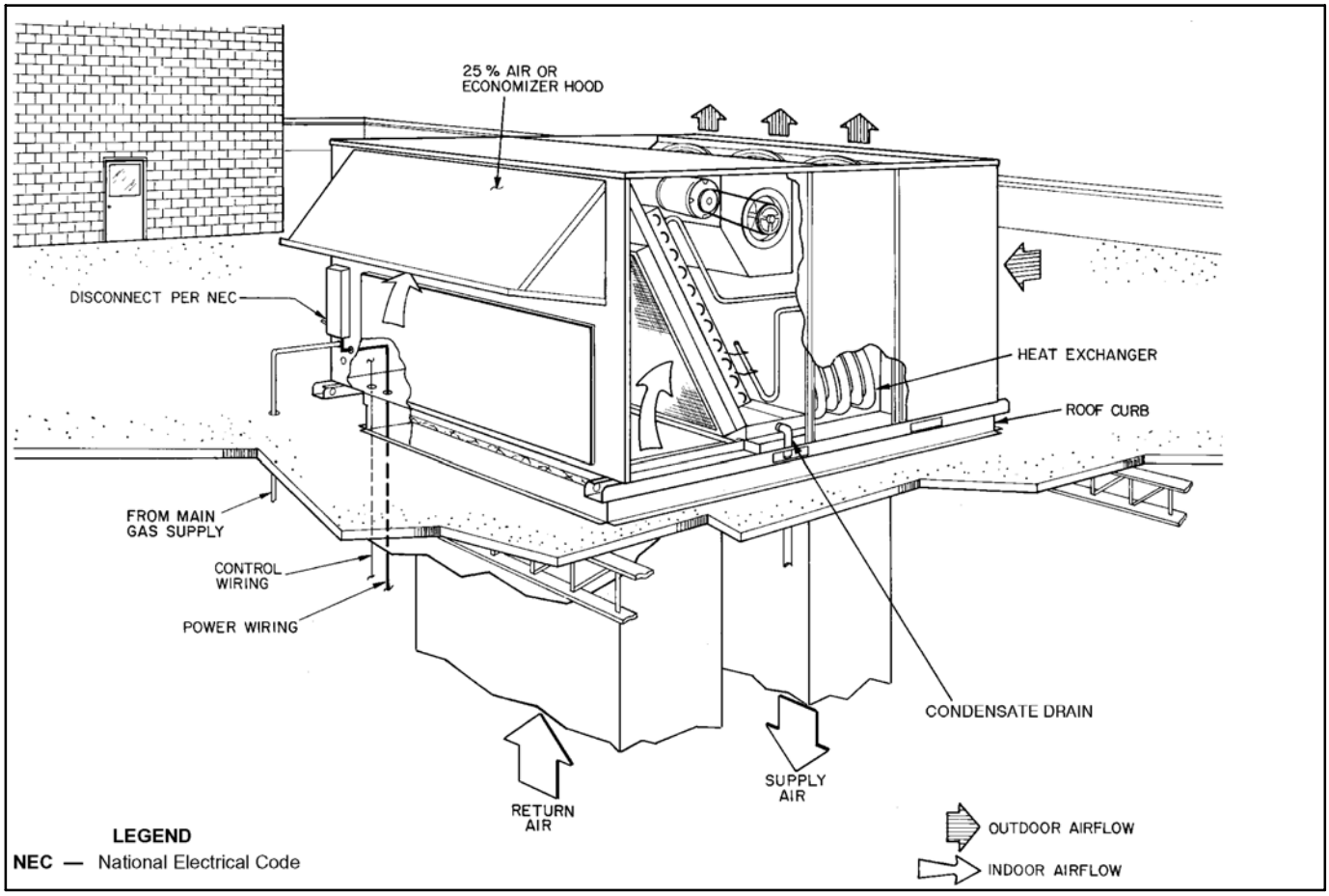
TYPICAL WIRING SCHEMATICS — PGH

Economizer Wiring – PGH155,180



NOTE: Electrical wiring is for DN series economizer.

TYPICAL PIPING AND WIRING — PGH (PGH155 Shown)



GUIDE SPECIFICATIONS — PGH155–180 SIZE UNITS

PACKAGED ROOFTOP ELECTRIC COOLING UNIT WITH GAS HEAT — CONSTANT VOLUME APPLICATION

HVAC GUIDE SPECIFICATIONS

SIZE RANGE: 12.5 to 15 TONS (PGH), NOMINAL (COOLING)

230,000 TO 360,000 BTUH, NOMINAL (INPUT HEATING) (GAS UNITS)

MODEL NUMBERS: **PGH**

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 gas combustion 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 be rated in accordance with ARI Standards 270 and 360 and all units shall be designed in accordance with UL Standard 1995.

NOTE: Size 300 units are beyond the scope of ARI certification guidelines.

B. Unit shall be designed to conform to ASHRAE 15.

C. Unit shall be ETL and ETL, Canada tested and certified in accordance with ANSI Z21.47 Standards as a total package.

D. Roof curb shall be designed to conform to NRCA Standards.

E. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

F. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).

G. Unit shall be manufactured in a facility registered to ISO 9001:2000.

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:

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. Aluminum foil-faced fiberglass insulation shall be used in the gas heat compartment.
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 external high 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.
3. Induced-draft blower shall be of the direct-driven, single inlet, forward-curved, centrifugal type. It shall be made from steel with a corrosion-resistant finish and shall be dynamically balanced.

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.

F. Heating Section:

1. Induced-draft combustion type with energy saving direct–spark ignition system and redundant main gas valve.
2. a. The heat exchanger shall be of the tubular-section type constructed of a minimum of 20-gage steel coated with a nominal 1.2 mil aluminum-silicone alloy for corrosion resistance.
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 acceptable. A polymer strip shall prevent coil assembly 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.
4. Burners shall be of the in-shot type constructed of aluminum-coated steel.
5. All gas piping shall enter the unit at a single location.
6. Gas piping shall be capable of being routed through the roof curb directly into unit.

G. 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.

H. 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).

I. 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.

J. 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 the following minimum protections:
   (1.) High-temperature limit switch.
   (2.) Induced-draft motor speed sensor.
   (3.) Flame rollout switch.
   (4.) Flame proving controls.
   (5.) Redundant gas valve.

K. Operating Characteristics:

1. Unit shall be capable of starting and running at 120°F 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 (PGH155–180).

L. Electrical Requirements:

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

M. 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.
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.

N. 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 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-fan contactor (IFC) and compressor contactor are energized and indoor-fan motor, compressor, and outdoor fan starts. The outdoor-fan motor 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

When the thermostat calls for heating, terminal W1 is energized. To prevent thermostat short-cycling, the unit is locked into the Heating mode for at least 1 minute when W1 is energized. The induced-draft motor is energized and the burner ignition sequence begins. The indoor (evaporator) fan motor (IFM) is energized 45 seconds after a flame is ignited. On units equipped for two stages of heat, when additional heat is needed, W2 is energized and the high-fire solenoid on the main gas valve (MGV) is energized. When the thermostat is satisfied and W1 is deenergized, the IFM stops after a 45-second time-off delay.

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 heat.

When the thermostat calls for heating, power is sent to W1 on the IGC (integrated gas unit controller) board. An LED (light-emitting diode) on the IGC board will be on during normal operation. A check is made to ensure that the rollout switch and limit switch are closed and the induced-draft motor is running. The induced-draft motor is then energized, and when speed is proven with the hall effect sensor on the motor, the ignition activation period begins. The burners will ignite within 5 seconds.

If the burners do not light, there is a 22-second delay before another 5-second attempt. If the burners still do not light, this sequence is repeated for 15 minutes. After the 15 minutes have elapsed, if the burners still have not lit, heating is locked out. To reset the control, break 24-v power to the thermostat.

When ignition occurs the IGC board will continue to monitor the condition of the rollout and limit switches, the hall effect sensor, as well as the flame sensor. If the unit is controlled through a room thermostat set for fan auto., 45 seconds after ignition occurs, the indoor-fan motor will be energized (and the outdoor-air dampers will open to their minimum position). If for some reason the overtemperature limit opens prior to the start of the indoor fan blower, on the next attempt, the 45-second delay will be shortened to 5 seconds less than the time from initiation of heat to when the limit tripped. Gas will not be interrupted to the burners and heating will continue. Once modified, the fan on delay will not change back to 45 seconds unless power is reset to the control.

When additional heat is required, W2 closes and initiates power to the second stage of the main gas valve. When the thermostat is satisfied, W1 and W2 open and the gas valve closes, interrupting the flow of gas to the main burners. If the call for W1 lasted less than 1 minute, the heating cycle will not terminate until 1 minute after W1 became active. If the unit is controlled through a room thermostat set for fan auto., the indoor-fan motor will continue to operate for an additional 45 seconds then stop (and the outdoor-air dampers will close). If the overtemperature limit opens after the indoor motor is stopped within 10 minutes of W1 becoming inactive, on the next cycle the time will be extended by 15 seconds. The maximum delay is 3 minutes. Once modified, the fan off delay will not change back to 45 seconds unless power is reset to the control.

When the thermostat is satisfied and W1 and W2 are deenergized, the IFM continues to run and the economizer damper then moves to the minimum position.

OPERATING SEQUENCE, PGH155,180

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

When the thermostat calls for heating, power is sent to W on the IGC (integrated gas unit controller) board. An LED (light-emitting diode) on the IGC board will be on during normal operation. A check is made to ensure that the rollout switch and limit switch are closed. The induced-draft motor is then energized, and when speed is proven with the hall effect sensor on the motor, the ignition activation period begins. The burners will ignite within 5 seconds.

If the burners do not light, there is a 22-second delay before another 5-second attempt. If the burners still do not light, this sequence is repeated for 15 minutes. After the 15 minutes have elapsed, if the burners still have not lit, heating is locked out. To reset the control, break 24-v power to the thermostat.

When ignition occurs the IGC board will continue to monitor the condition of the rollout and limit switches, the hall effect sensor, as well as the flame sensor. If the unit is controlled through a room thermostat set for fan auto., 45 seconds after ignition occurs, the indoor-fan motor will be energized. If for some reason the overtemperature limit opens prior to the start of the indoor fan blower, on the next attempt, the 45-second delay will be shortened to 5 seconds less than the time from initiation of heat to when the limit tripped. Gas will not be interrupted to the burners and heating will continue. Once modified, the fan on delay will not change back to 45 seconds unless power is reset to the control.

When additional heat is required, W2 closes and initiates power to the second stage of the main gas valve. When the thermostat is satisfied, W1 and W2 open and the gas valve closes, interrupting the flow of gas to the main burners. If the call for W1 lasted less than 1 minute, the heating cycle will not terminate until 1 minute after W1 became active. If the unit is controlled through a room thermostat set for fan auto., the indoor-fan motor will continue to operate for an additional 45 seconds then stop. If the overtemperature limit opens after the indoor motor is stopped within 10 minutes of W1 becoming inactive, on the next cycle the time will be extended by 15 seconds. The maximum delay is 3 minutes. Once modified, the fan off delay will not change back to 45 seconds unless power is reset to the control.

An LED indicator is provided on the IGC to monitor operation. The IGC is located by removing the side panel and viewing the IGC through the view port located in the control box access panel. During normal operation, the LED is continuously on.

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 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 heat.

When the thermostat calls for heating, power is sent to W1 on the IGC (integrated gas unit controller) board. An LED (light-emitting diode) on the IGC board will be on during normal operation. A check is made to ensure that the rollout switch and limit switch are closed and the induced-draft motor is running. The induced-draft motor is then energized, and when speed is proven with the hall effect sensor on the motor, the ignition activation period begins. The burners will ignite within 5 seconds.

If the burners do not light, there is a 22-second delay before another 5-second attempt. If the burners still do not light, this sequence is repeated for 15 minutes. After the 15 minutes have elapsed, if the burners still have not lit, heating is locked out. To reset the control, break 24-v power to the thermostat.

When ignition occurs the IGC board will continue to monitor the condition of the rollout and limit switches, the hall effect sensor, as well as the flame sensor. If the unit is controlled through a room thermostat set for fan auto., 45 seconds after ignition occurs, the indoor-fan motor will be energized (and the outdoor-air dampers will open to their minimum position). If for some reason the overtemperature limit opens prior to the start of the indoor fan blower, on the next attempt, the 45-second delay will be shortened to 5 seconds less than the time from initiation of heat to when the limit tripped. Gas will not be interrupted to the burners and heating will continue. Once modified, the fan on delay will not change back to 45 seconds unless power is reset to the control.

When additional heat is required, W2 closes and initiates power to the second stage of the main gas valve. When the thermostat is satisfied, W1 and W2 open and the gas valve closes, interrupting the flow of gas to the main burners. If the call for W1 lasted less than 1 minute, the heating cycle will not terminate until 1 minute after W1 became active. If the unit is controlled through a room thermostat set for fan auto., the indoor-fan motor will continue to operate for an additional 45 seconds then stop (and the outdoor-air dampers will close). If the overtemperature limit opens after the indoor motor is stopped within 10 minutes of W1 becoming inactive, on the next cycle the time will be extended by 15 seconds. The maximum delay is 3 minutes. Once modified, the fan off delay will not change back to 45 seconds unless power is reset to the control.

When the thermostat is satisfied and W1 and W2 are deenergized, the IFM continues to run and the economizer damper then moves to the minimum position.