



COMMERCIAL

PGS

Product Specifications

STANDARD EFFICIENCY PACKAGE GAS / ELECTRIC UNIT - 172 to 214 MBtuh

REFRIGERATION CIRCUIT

- All models are equipped with high efficiency scroll compressor on each circuit.
- Dual, electrically and mechanically independent circuits.
- Refrigerant filter drier and evaporator freeze thermostat
- High and Low pressure switches for excellent compressor protection.

BUILT TO LAST

- Tubular, dimpled heat exchanger.
- Pre-painted galvanized steel cabinet for long life and quality appearance.
- Commercial strength base rails with built-in rigging capability.
- Non-corrosive, sloped condensate drain pan, meets ASHRAE 62-89.

EASY TO INSTALL AND SERVICE

- Combination gas heating and electric cooling, self contained for year-round comfort. Unit shipped ready for downflow applications with conversion to horizontal airflow accomplished with accessory horizontal discharge roof curb.
- Thru-the-base utility connections.
- Exclusive integrated gas control board with diagnostics.
- 25% Manual outside air damper.
- Direct-spark ignition systems.
- Two inch return air filters.

WARRANTY

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



UNIT PERFORMANCE DATA

Model Number *	COOLING			HEATING		Unit Dimensions H X W X L	Unit Weight
	Rated Capacity BTUH	E.E.R	IPLV	Input (MBTUH) Std. Stage 2 / Stage 1	Efficiency (Steady State) (AFUE) Std.		
PGS180H230A	172,000	8.5	9.2	230,000 / 172,000	81	45" x 86-1/8" x 87-3/8"	1650
PGS180L230A	172,000	8.5	9.2	230,000 / 172,000	81	45" x 86-1/8" x 87-3/8"	1650
PGS180H300A	172,000	8.5	9.2	300,000 / 225,000	81	45" x 86-1/8" x 87-3/8"	1650
PGS180L300A	172,000	8.5	9.2	300,000 / 225,000	81	45" x 86-1/8" x 87-3/8"	1650
PGS180S300A	172,000	8.5	9.2	300,000 / 225,000	81	45" x 86-1/8" x 87-3/8"	1650
PGS210H275A	188,000	8.7	9.5	275,000 / 206,000	81	45" x 86-1/8" x 87-3/8"	1800
PGS210L275A	188,000	8.7	9.5	275,000 / 206,000	81	45" x 86-1/8" x 87-3/8"	1800
PGS210H360A	188,000	8.7	9.5	360,000 / 270,000	81	45" x 86-1/8" x 87-3/8"	1800
PGS210L360A	188,000	8.7	9.5	360,000 / 270,000	81	45" x 86-1/8" x 87-3/8"	1800
PGS210S360A	188,000	8.7	9.5	360,000 / 270,000	81	45" x 86-1/8" x 87-3/8"	1800
PGS240H275A	214,000	8.4	8.4	275,000 / 206,000	81	47-1/4" x 86-1/8" x 87-3/8"	1850
PGS240L275A	214,000	8.4	8.4	275,000 / 206,000	81	47-1/4" x 86-1/8" x 87-3/8"	1850
PGS240H360A	214,000	8.4	8.4	360,000 / 270,000	81	47-1/4" x 86-1/8" x 87-3/8"	1850
PGS240L360A	214,000	8.4	8.4	360,000 / 270,000	81	47-1/4" x 86-1/8" x 87-3/8"	1850
PGS240S360A	214,000	8.4	8.4	360,000 / 270,000	81	47-1/4" x 86-1/8" x 87-3/8"	1850

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

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Table of Contents

	Page
Features/Benefits	1
Model Number Nomenclature	2
Unit Specifications	3-6
Dimensions	7-8
Performance Data	9-14
Typical Installation	15
Accessories	16-19
Controls and Application Data	20
Guide Specifications	21

MODEL NUMBER IDENTIFICATION GUIDE							
MODEL NUMBER	P	G	S	180	H	300	A
PRODUCT FAMILY Package Units							Sales Code
TYPE H= Heat Pump G = Gas/Electric A = Air Conditioner							GAS HEATING OPTIONS (BTUH) 230 = 230,000 275 = 275,000 300 = 300,000 360 = 360,000
							VOLTAGE / PHASE / HERTZ H = 208/230-3-60 L = 460-3-60 S = 575-3-60
DESIGN SERIES S = Standard Efficiency							COOLING CAPACITY (NOMINAL BTUH) 180 = 15 Ton 210 = 17-1/2 Ton 240 = 20 Ton

UNIT SPECIFICATIONS - MODELS						
COOLING	PGS180H	PGS180L	PGS180S	PGS210H	PGS210L	PGS210S
ARI Rated Capacity Btuh (Net)	172,000			188,000		
Nominal Tons	15			18		
Standard CFM	5250			6000		
EER	8.5			8.4		
IPLV	9.2			9.5		
Sound Rating (Bels)	8.8			8.8		
Base Unit Operating Weights (lbs)	1650			1800		
ELECTRICAL						
Volts/ 3 Phase/ 60Hertz	208/230	460	575	208/230	460	575
Voltage Range Min/Max	187 / 253	414 / 508	518 / 632	187 / 253	414 / 508	518 / 632
Power Supply MCA	73.8 / 74.3	37.9	29.7	85 / 85	41	33
Power Supply MOCP*	90 / 90	50	35	110 / 110	50	45
COMPRESSOR						
SCROLL						
(Quantity)...Model	(2)...SR*942AE			(1)...SM120 / (1)...SR*782AE		
No. of Circuits	2			2		
RLA / LRA	Circuit #1	25.6 / 190	13.5 / 95	10.2 / 75	33.0 / 237	16.2 / 130
	Circuit #2	25.6 / 190	13.5 / 95	10.2 / 75	23.0 / 184	10.2 / 90
Oil (Oz.) per circuit	90, 90			110, 72		
REFRIGERATION TYPE						
R-22						
Expansion Device	TXV			TXV		
Operating Charge (lb. oz.) **	CKT 1 = 10-13 CKT 2 = 10-5			CKT 1 = 15-2 CKT 2 = 11.5		
CONDENSER FAN						
Propeller Type						
Nominal CFM	10,350			9,300		
Quantity..Diameter (in.)	3...22			3...22		
Motor Hp...RPM (each)	1/2...1050			1/2...1050		
Watts Input (Total)	1100			1100		
FLA	1.7	0.8	0.75	1.7	0.8	0.8
CONDENSER COIL						
Cross Hatched 3/8 in. Copper Tubes, Aluminum Lanced						
Rows...Fin/In.	2...17			3...15		
Total Face Area (Sq. Ft..)	21.7			21.7		
EVAPORATOR COIL						
Cross Hatch 3/8 in. Copper Tubes, Aluminum Lanced, Face Split						
Rows...Fins/Inche	2...17			3...15		
Total Face Area (sq. ft.)	17.5			17.5		
EVAPORATOR FAN						
Centrifugal Type						
Quantity...Size (in.)	2...10 x 10		2...10 x 10	2...12 x 12		
Type Drive	Belt		Belt	Belt		
Nominal CFM	6000		6000	7200		
Motor Hp, RPM, Max. Continuous Bhp	3.7, 1725, 4.25	3.7, 1725, 4.25	3.0, 1725, 3.45	5, 1745, 5.9	5, 1745, 5.9	5, 1745, 5.9
FLA (Each)	10.5 / 11.0	4.8	3.9	15.8 / 15.8	7.9	6.0
Motor Frame Size	56H		56H	184T		
Fan RPM Range	891 - 1179		1159 - 1429	910 - 1095		
Motor Bearing	Ball		Ball	Ball		
Maximum Allowable RPM	1550		1550	1550		
Motor Pulley Pitch / Diameter Min/Max. (in.)	3.1-4.1	3.1-4.1	4.3-5.3	4.9-5.9		
Motor Shaft Diameter (in.)	7/8		7/8	1-1/8		
Fan Pulley Pitch Diam (in)	6.0		6.4	9.4		
Belt, Quantity...Type... Length (in.)	1.BX.42		1.BX.45	1.BX.50		
Pulley Center Line Distance (in)	13.5-15.5		13.5-15.5	13.3-14.8		
Speed Change per Full Turn of Movable Pulley Flange (RPM)	48		44	37		
Pulley Max. full Turns From Closed Postion	5		5	5		
Factory Setting	3.5		3.5	3.5		
Factory Speed Setting RPM	1035		1296	1002		
Fan Shaft Diam. at Pulley	1-3/16		1-3/16	1-7/16		
SEE LEGENDS AND NOTES ON FOLLOWING PAGES						

UNIT SPECIFICATIONS - MODELS				
COOLING	PGS240H		PGS240L	PGS240S
ARI Rated Capacity Btuh (Net)	214,000			
Nominal Tons	20			
Standard CFM	6600			
EER	8.4			
IPLV	8.4			
Sound Rating (Bels)	9.5			
Base Unit Operating Weights (lbs)	1850			
ELECTRICAL				
Volts/ 3 Phase/ 60Hertz	208/230	460	575	
Voltage Range Min/Max	187 / 253	414 / 508	518 / 632	
Power Supply MCA	109 / 109	54	44	
Power Supply MOCP*	125 / 125	70	50	
COMPRESSOR		SCROLL		
(Quantity)...Model	(1)...SM120 / (1)...SM110			
No. of Circuits	2			
RLA / LRA	Circuit #1	33.0 / 237	16.2 / 130	12.7 / 85
	Circuit #2	29.5 / 237	14.1 / 130	11.3 / 85
Oil (Oz.) per circuit	110, 110			
REFRIGERATION TYPE		R-22		
Expansion Device	TXV			
Operating Charge (lb. oz.) **	CKT 1 = 16-3 CKT 2 = 14.8			
CONDENSER FAN		Propeller Type		
Nominal CFM	13,650			
Quantity..Diameter (in.)	2...30			
Motor Hp...RPM (each)	1...1075			
Watts Input (Total)	3400			
FLA	6.6	3.3	3.4	
CONDENSER COIL		Cross Hatched 3/8 in. Copper Tubes, Aluminum Lanced		
Rows...Fin/In.	3...15			
Total Face Area (Sq. Ft..)	21.7			
EVAPORATOR COIL		Cross Hatch 3/8 in. Copper Tubes, Aluminum Lanced, Face Split		
Rows...Fins/Inche	3...15			
Total Face Area (sq. ft.)	17.5			
EVAPORATOR FAN		Centrifugal Type		
Quantity...Size (in.)	2...12 x 12			
Type Drive	Belt			
Nominal CFM	8000			
Motor Hp, RPM, Max. Continuous Bhp	7.5, 1745, 8.7	7.5, 1745, 9.5	7.5, 1745, 8.7	
FLA (Each)	25.0 / 25.0	13.0	10.0	
Motor Frame Size	213T			
Fan RPM Range	1002-1225			
Motor Bearing	Ball			
Maximum Allowable RPM	1550			
Motor Pulley Pitch / Diameter Min/Max. (in.)	5.4-6.6			
Motor Shaft Diameter (in.)	1-3/8			
Fan Pulley Pitch Diam (in)	9.4			
Belt, Quantity...Type... Length (in.)	1.BX.54			
Pulley Center Line Distance (in)	14.6-15.4			
Speed Change per Full Turn of Movable Pulley Flange (RPM)	37			
Pulley Max. full Turns From Closed Postion	5			
Factory Setting	3.5			
Factory Speed Setting RPM	1120			
Fan Shaft Diam. at Pulley	1-7/16			
SEE LEGENDS AND NOTES ON FOLLOWING PAGES				

UNIT SPECIFICATIONS (CONT)		MODELS			
FURNACE SECTION		PGS180(H,L,S)230A	PGS180(H,L,S)300A	PGS210(H,L)275A	PGS210(H,L,S)360A
Rollout Switch Cutout Temp (F) +		190	190	190	190
Burner Orifice Diameter (in. .drill size)					
Natural Gas		136...29	136...29	136...29	136...29
Thermostat Heat Anticipator Setting (amps)					
208/230 v and 575v	Stage 1	0.98	0.98	0.98	0.98
208/230 v and 575v	Stage 2	0.44	0.44	0.44	0.44
460 v	Stage 1	0.80	0.80	0.80	0.80
460 v	Stage 2	0.44	0.44	0.44	0.44
Gas Input (Btuh)					
Stage 2 / Stage 1		230,000 / 172,000	300,000 / 225,000	275,000 / 206,000	360,000 / 270,000
Output Capacity (Btuh)		243,000	243,000	292,000	292,000
Efficiency (Steady State) (%) AFUE		81	81	81	81
Temperature Rise Range		15-45 / 30-60	15-45 / 30-60	15-45 / 20-50	15-45 / 20-50
Manifold Pressure (in. wg)					
Natural Gas		3.3	3.3	3.3	3.3
Liquid Propane		3.3	3.3	3.3	3.3
Gas Valve Quantity		1	1	1	1
Gas Valve Pressure Range	Psig	0.235-0.487	0.235-0.487	0.235-0.487	0.235-0.487
	in. wg	5.5-13.5	5.5-13.5	5.5-13.5	5.5-13.5
Field Gas Connection Size (in.)		3/4	3/4	3/4	3/4
HIGH-PRESSURE SWITCH (psig)					
Internal Relief (Differential) Cutout		426	426	426	426
Reset (Auto.)		320	320	320	320
LOSS-OF-CHARGE SWITCH (psig) (LOW-PRESS.)					
Cutout		27	27	27	27
Reset (Auto.)		44	44	44	44
FREEZE PROTECTION THERMOSTAT (F)					
Opens		30 +/- 5	30 +/- 5	30 +/- 5	30 +/- 5
Closes		45 +/- 5	45 +/- 5	45 +/- 5	45 +/- 5
RETURN-AIR FILTERS (THROWAWAY)					
Quantity...Size (in.)		4...20 x 20 x 2	4...20 x 20 x 2	4...20 x 20 x 2	4...20 x 20 x 2
		4...16 x 20 x 2	4...16 x 20 x 2	4...16 x 20 x 2	4...16 x 20 x 2

UNIT SPECIFICATIONS (CONT)		MODELS	
FURNACE SECTION		PGS240(H,L,S)275A	PGS240(H,L,S)360A
Rollout Switch Cutout Temp (F) +		190	190
Burner Orifice Diameter (in. .drill size)			
Natural Gas		136...29	136...29
Thermostat Heat Anticipator Setting (amps)			
208/230 v and 575v	Stage 1	0.98	0.98
208/230 v and 575v	Stage 2	0.44	0.44
460 v	Stage 1	0.80	0.80
460 v	Stage 2	0.44	0.44
Gas Input (Btuh)			
Stage 2 / Stage 1		275,000 / 206,000	360,000 / 270,000
Output Capacity (Btuh)		292,000	292,000
Efficiency (Steady State) (%) AFUE		81	81
Temperature Rise Range		15-45 / 20-50	15-45 / 20-50
Manifold Pressure (in. wg)			
Natural Gas		3.3	3.3
Liquid Propane		3.3	3.3
Gas Valve Quantity		1	1
Gas Valve Pressure Range	Psig	0.235-0.487	0.235-0.487
	in. wg	5.5-13.5	5.5-13.5
Field Gas Connection Size (in.)		3/4	3/4
HIGH-PRESSURE SWITCH (psig)			
Internal Relief (Differential) Cutout		426	426
Reset (Auto.)		320	320
LOSS-OF-CHARGE SWITCH (psig) (LOW-PRESS.)			
Cutout		27	27
Reset (Auto.)		44	44
FREEZE PROTECTION THERMOSTAT (F)			
Opens		30 +/- 5	30 +/- 5
Closes		45 +/- 5	45 +/- 5
RETURN-AIR FILTERS (THROWAWAY)			
Quantity...Size (in.)		4...20 x 20 x 2	4...20 x 20 x 2
		4...16 x 20 x 2	4...16 x 20 x 2

LEGEND

Bhp = Brake Horsepower

TXV = Thermostatic Expansion Valve

Bels - Sound Levels

EER - Energy Efficiency Ratio

IPLV - Integrated Part Load Values

MCA - Minimum Circuit Amps

MOCP - Maximum Over-current Protection

FLA - Full Load Amps

LRA - Locked Rotor Amps

RLA - Rated Load Amps

* Fuse or HACR circuit breaker

**Circuit 1 uses the lower portion of the condenser coil and lower portion of the evaporator coils; and Circuit 2 uses the upper portion of both coils. +Rollout switch is manual reset.

NOTE: The PGS180-240 units have a low-pressure switch (standard) located on the suction side.

NOTE: Minimum allowable temperature of mixed-air entering the heat exchanger during first-stage heating is 45F. There is no minimum mixed-air temperature 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.

NOTES:

1. In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the over-current 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 voltage imbalance.

% Voltage Imbalance

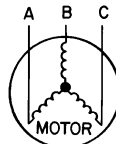
$$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

LEGENDS AND NOTES

NOTES: 1. Rated in accordance with ARI Standards 210/240, latest revision (for sizes 090 & 120) or 360, latest revision (for size 150).
2. ARI ratings are net values, reflecting the effects of circulating fan heat.
3. Ratings are based on:
Cooling Standard: 80F db, 67F wb indoor entering air temperature and 95F db air entering outdoor unit.
IPLV Standard: 80F db, 67F wb indoor entering air temperature and 80F db entering air temperature.

EXAMPLE: Supply voltage is 460-3-60.

$$\begin{array}{l} \text{A} \quad \text{B} \quad \text{C} \\ \text{AB} = 452 \text{ v} \quad \text{Average Voltage} = \frac{452 + 464 + 455}{3} \\ \text{BC} = 464 \text{ v} \\ \text{AC} = 455 \text{ v} \\ \quad \quad \quad = \frac{1371}{3} \\ \quad \quad \quad = 457 \end{array}$$



Determine maximum deviation from average voltage.

$$(\text{AB}) 457 - 452 = 5 \text{ V}$$

$$(\text{BC}) 464 - 457 = 7 \text{ V}$$

$$(\text{AB}) 457 - 455 = 2 \text{ V}$$

Maximum deviation is 7 v.

Determine percent voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{457} = 1.53\%$$

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

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

PGS180 / 210 BASE UNIT DIMENSIONS

Unit	Unit Weight		Corner A		Corner B		Corner C		Corner D		Dim. X		Dim. Y	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	inches	mm	inches	mm
PGS180	1650	748	423	192	386	175	403	183	438	199	41	1046	41	1040
PGS210	1800	816	432	196	410	186	461	209	472	214	39	991	43	1092

1. Dimensions in () are in millimeters.

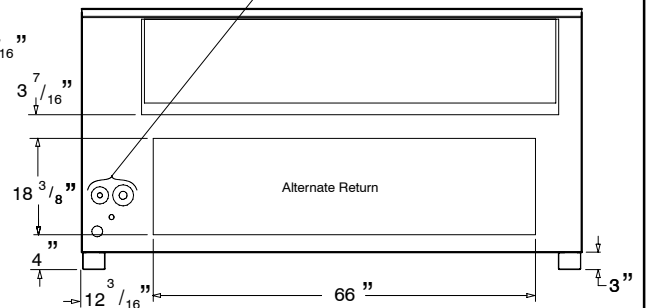
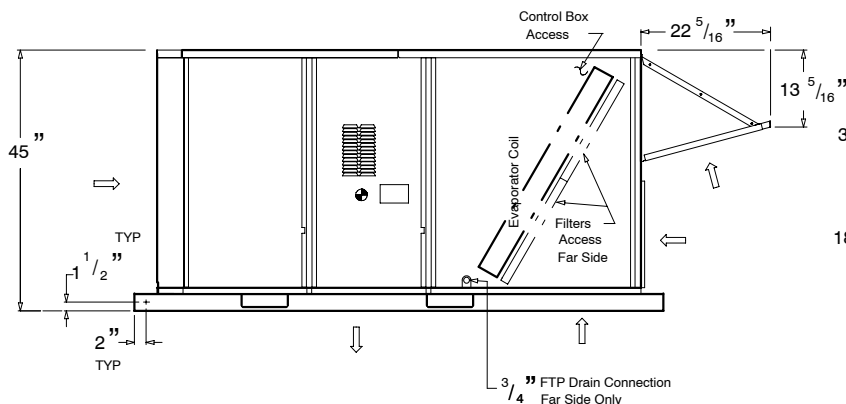
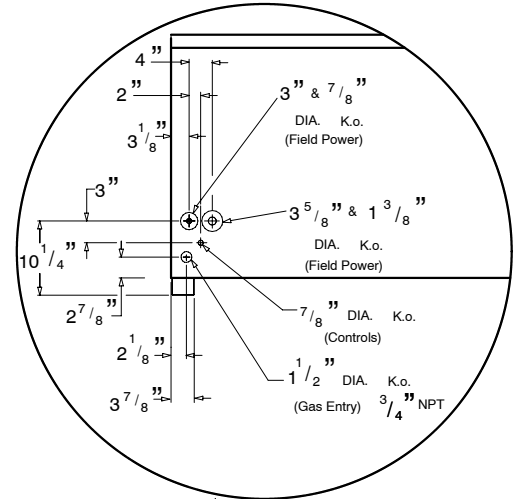
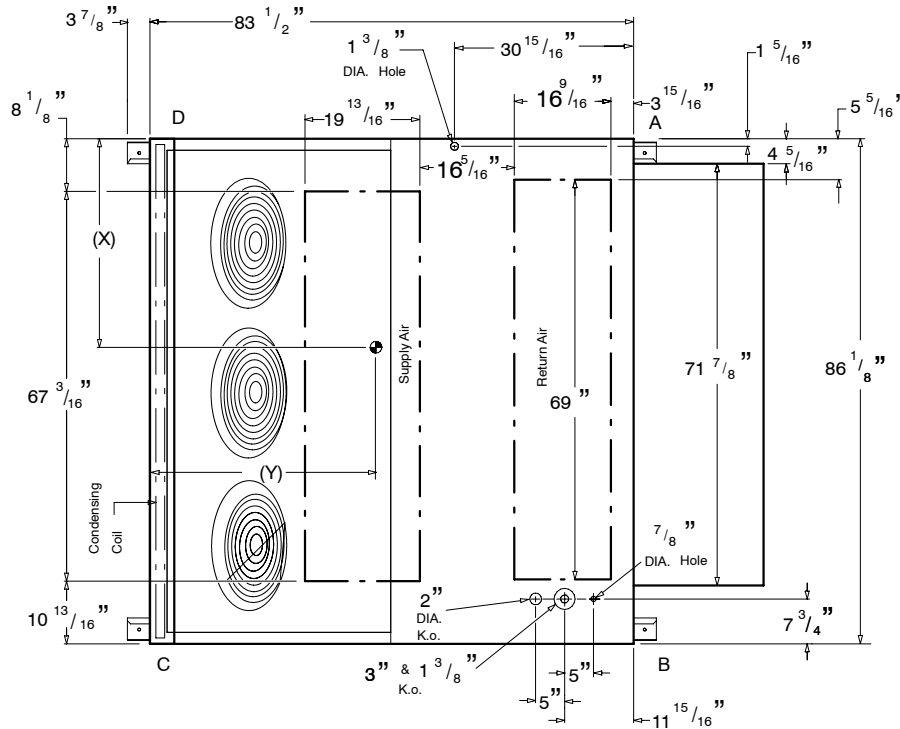
2.  Center of Gravity.

3.  Direction of Airflow

4. Ductwork to be attached to accessory roof curb only.

5. Minimum clearance:

- Rear: 84" (2134) for coil removal. This dimension can be reduced to 48" (1219) if conditions permit coil removal from the top.
 - 48" (1219) to combustible surfaces, all four sides (includes between units).
 - Left Side: 48" (1219) for proper condenser coil airflow.
 - Front: 48" (1219) for control box access.
 - Right side: 48" (1219) for proper operations of damper and power exhaust if so equipped.
 - Top: 72" (1829) to assure proper condenser fan operation.
 - Bottom: 14" (356) to combustible surfaces (when not using curb).
 - Control Box side: 36" (914) to ungrounded surfaces, non-combustible
 - Control Box Side: 42" (1067) to block or concrete walls, or other grounded surfaces.
 - Local codes or jurisdiction may prevail.
6. With the exception of clearance for the condenser coil as stated in Note 5, a removable fence or barricade requires no clearance.
7. Dimensions are from outside of corner post. Allow 0'-5/16" on each side for top cover drip edge.



38-11-38a

PGS240 BASE UNIT DIMENSIONS

Unit	Unit Weight		Corner A		Corner B		Corner C		Corner D		Dim. X		Dim. Y	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	inches	mm	inches	mm
PGS240	1850	839	443	201	406	184	476	216	525	238	41	1043	38	973

1. Dimensions in () are in millimeters.

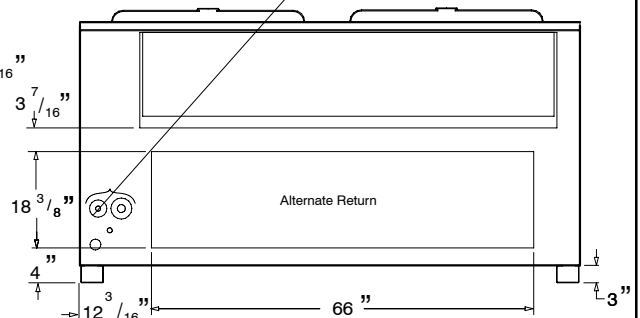
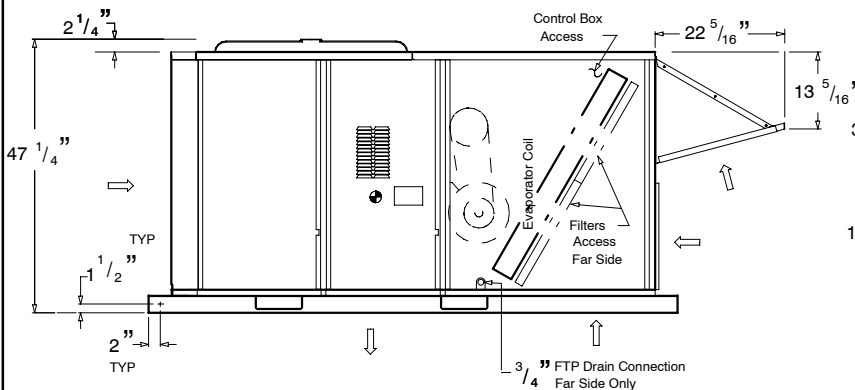
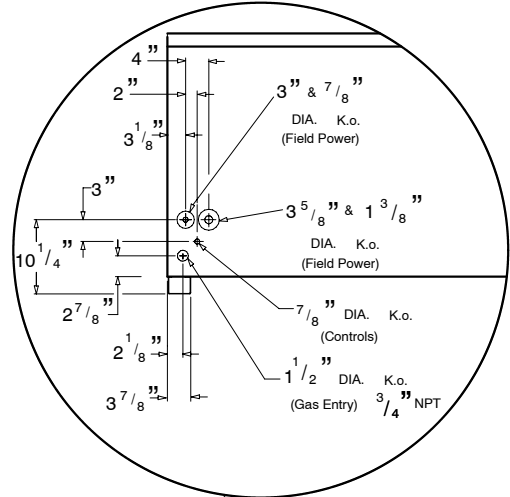
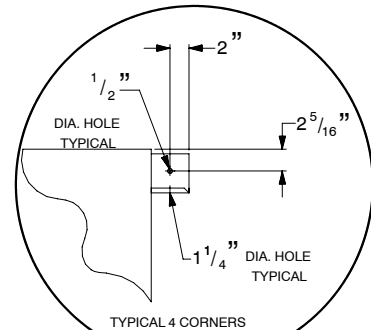
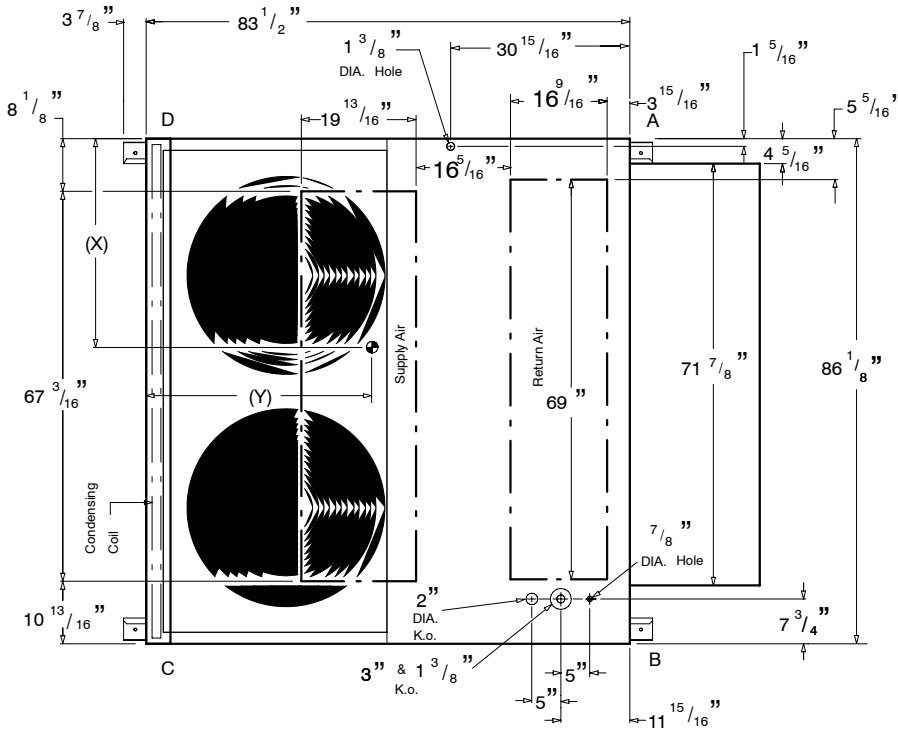
2.  Center of Gravity.

3.  Direction of Airflow

4. Ductwork to be attached to accessory roof curb only.

5. Minimum clearance:

- Rear: 84" (2134) for coil removal. This dimension can be reduced to 48" (1219) if conditions permit coil removal from the top.
 - 48" (1219) to combustible surfaces, all four sides (includes between units).
 - Left Side: 48" (1219) for proper condenser coil airflow.
 - Front: : 48" (1219) for control box access.
 - Right side: 48" (1219) for proper operations of damper and power exhaust if so equipped.
 - Top: 72" (1829) to assure proper condenser fan operation.
 - Bottom: 14" (356) to combustible surfaces (when not using curb).
 - Control Box side: 36" (914) to ungrounded surfaces, non-combustible
 - Control Box Side: 42" (1067) to block or concrete walls, or other grounded surfaces.
 - Local codes or jurisdiction may prevail.
6. With the exception of clearance for the condenser coil as stated in Note 5, a removable fence or barricade requires no clearance.
7. Dimensions are from outside of corner post. Allow 0'-5/16" on each side for top cover drip edge.



38-11-38

EXPANDED PERFORMANCE DATA (COOLING) 15 Ton (Gross Capacity)

Airflow			Outdoor Ambient Temperature - Degrees F, Dry Bulb														
			75			85			95			105			115		
			Entering Indoor Air Temperature - Degrees F, Wet Bulb														
IDB	CFM (BF)		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
80	6750 (0.28)	MBU	183	203	221	183	196	213	177	189	205	171	181	197	165	173	188
		S/T	0.88	0.70	0.52	0.88	0.71	0.53	0.89	0.72	0.54	0.89	0.73	0.55	0.88	0.75	0.55
		kW	12.8	13.2	13.5	14.3	14.7	15.1	15.9	16.2	16.6	17.5	17.9	18.3	19.3	19.6	20.1
	6000 (0.25)	MBU	185	200	218	179	193	210	173	186	203	167	179	194	160	171	186
		S/T	0.86	0.68	0.51	0.87	0.69	0.52	0.88	0.70	0.52	0.88	0.71	0.54	0.89	0.73	0.54
		kW	12.8	13.1	13.5	14.2	14.6	15.0	15.8	16.1	16.6	17.4	17.8	18.2	19.1	19.6	20.0
	5250 (0.23)	MBU	182	197	214	175	190	207	169	183	199	162	176	191	156	168	183
		S/T	0.83	0.66	0.55	0.85	0.67	0.51	0.86	0.68	0.51	0.88	0.69	0.52	0.88	0.70	0.52
		kW	12.7	13.1	13.4	14.1	14.5	14.9	15.7	16.0	16.5	17.2	17.7	18.1	19.0	19.5	19.9

FORMULAS AND NOTES FOR USING EXPANDED PERFORMANCE DATA

To find leaving wet bulb and dry bulb from the expanded performance charts, use the following formulas.

- Direct interpolation is permissible. Do not extrapolate.
- The following formulas may be used:

$$t/db = t\ edb - \text{sensible capacity Btuh} / (1.10 \times \text{cfm})$$

$$t/wb = \text{Wet bulb temp. corresponding to enthalpy of air leaving evaporator coil (h/wb)}$$

$$h/wb = h\ ewb - \text{total capacity Btuh} / (4.5 \times \text{cfm})$$
 where h ewb = Enthalpy of air entering evap. coil
- The SHC is based on 80F edb of air entering evap coil.
Below 80F edb, subtract (corr factor x cfm) from SHC.
Above 80F edb, add (corr factor x cfm) to SHC.

LEGEND

MBH = Total Capacity (Gross)
 S/T = Sensible to Total Ratio
 KW = Compressor Motor Power Input.
 IDB = Indoor Dry Bulb
 edb = Entering Dry Bulb
 ewb = Entering Wet Bulb
 t/db = Leaving Dry Bulb
 t/wb = Leaving Wet Bulb
 h/wb = Enthalpy of Leaving Wet Bulb
 SHC = Sensible Heat Capacity

Bypass Factor (BF)	Entering Air Dry-Bulb (F)				
	79	78	77	76	75
	81	82	83	84	85
Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18
0.10	0.98	1.96	2.94	3.92	4.91
0.20	0.87	1.74	2.62	3.49	4.36
0.30	0.76	1.53	2.29	3.05	3.82
0.40	0.65	1.31	1.96	2.62	3.27
0.50	0.55	1.09	1.64	2.18	2.73
0.60	0.44	0.87	1.31	1.74	2.18
0.70	0.33	0.65	0.98	1.31	1.64

$$\text{Correction Factor} = 1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$$

EXPANDED PERFORMANCE DATA (COOLING) 17-1/2 Ton (Gross Capacity)

Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm													
		5400							6000						
		Evaporator Air — Ewb (F)/BF													
		54/0.49	58/0.31	62/0.20	67/0.18	72/0.16	76/0.19	80/0.05	54/0.53	58/0.35	62/0.23	67/0.19	72/0.17	76/0.19	80/0.05
75	TC SHC kW	194	198	206	223	243	260	277	200	203	210	227	246	263	—
		194	178	169	146	121	99	79	200	191	177	152	125	102	—
		13.6	13.7	13.9	14.2	14.6	15.0	15.2	13.7	13.8	14.0	14.4	14.7	15.1	—
85	TC SHC kW	189	192	200	217	235	252	269	195	195	204	220	239	255	—
		189	176	166	143	118	97	76	195	195	174	149	123	100	—
		15.1	15.2	15.4	15.9	16.3	16.6	16.9	15.3	15.3	15.7	16.0	16.4	16.8	—
95	TC SHC kW	183	184	193	209	227	243	—	189	190	196	212	230	246	—
		183	181	162	140	115	94	—	189	190	170	146	120	97	—
		16.8	16.8	17.1	17.6	18.0	18.4	—	17.0	17.0	17.2	17.6	18.1	18.5	—
105	TC SHC kW	177	178	185	201	218	234	—	183	185	189	204	221	237	—
		177	178	159	137	112	91	—	183	185	166	143	116	94	—
		18.6	18.6	18.8	19.3	19.8	20.2	—	18.8	18.6	18.9	19.4	19.9	20.3	—
115	TC SHC kW	171	171	177	192	209	224	—	176	177	181	195	212	226	—
		171	171	154	133	109	88	—	176	177	161	139	113	90	—
		20.5	20.5	20.7	21.2	21.8	22.1	—	20.7	20.7	20.8	21.3	21.8	22.2	—
117	TC SHC kW	170	170	176	191	207	222	—	175	175	180	193	210	224	—
		170	170	154	132	108	87	—	175	175	160	138	112	90	—
		20.9	20.9	21.1	21.6	22.1	22.5	—	21.1	21.1	21.2	21.7	22.2	22.6	—
120	TC SHC kW	168	168	173	188	204	—	—	173	173	177	191	207	—	—
		168	168	152	131	107	—	—	173	173	159	137	111	—	—
		21.5	21.5	21.7	22.2	22.7	—	—	21.7	21.7	21.8	22.3	22.8	—	—

Temp (F) Air Entering Condenser (Edb)		Evaporator Air Quantity — Cfm													
		7000							8000						
		Evaporator Air — Ewb (F)/BF													
		54/0.58	58/0.42	62/0.29	67/0.21	72/0.20	76/0.20	80/0.05	54/0.62	58/0.48	62/0.36	67/0.23	72/0.22	76/0.21	80/0.04
75	TC SHC kW	209	209	215	232	251	268	—	216	217	221	236	255	272	—
		209	209	189	162	132	106	—	216	217	198	171	138	109	—
		13.9	13.9	14.1	14.5	14.9	15.2	—	14.1	14.1	14.2	14.5	15.0	15.3	—
85	TC SHC kW	203	204	209	224	243	260	—	211	211	215	228	247	263	—
		203	204	185	159	129	103	—	211	211	192	168	135	107	—
		15.5	15.5	15.7	16.1	16.5	16.9	—	15.7	15.7	15.8	16.2	16.6	17.0	—
95	TC SHC kW	197	197	202	216	235	251	—	204	204	209	220	238	254	—
		197	197	180	156	126	100	—	204	204	185	165	132	104	—
		17.2	17.2	17.4	17.8	18.2	18.7	—	17.4	17.4	17.6	17.9	18.3	18.7	—
105	TC SHC kW	191	191	195	208	225	241	—	197	197	202	211	228	244	—
		191	191	175	152	123	97	—	197	197	177	161	128	100	—
		19.0	19.0	19.2	19.5	20.0	20.5	—	19.2	19.2	19.3	19.6	20.1	20.6	—
115	TC SHC kW	184	184	188	199	215	230	—	190	190	194	202	218	—	—
		184	184	168	149	119	94	—	190	190	170	158	125	—	—
		21.0	21.0	21.1	21.5	22.0	22.4	—	21.1	21.1	21.2	21.6	22.1	—	—
117	TC SHC kW	183	183	187	197	214	228	—	188	188	192	200	216	—	—
		183	183	166	148	118	93	—	188	188	171	157	124	—	—
		21.3	21.4	21.5	21.8	22.4	22.7	—	21.5	21.5	21.7	22.0	22.5	—	—
120	TC SHC kW	180	180	185	194	210	—	—	186	186	190	197	—	—	—
		180	180	163	147	117	—	—	186	186	172	156	—	—	—
		21.9	22.0	22.1	22.4	23.0	—	—	22.1	22.1	22.2	22.5	—	—	—

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:

- Direct interpolation is permissible. Do not extrapolate.
- The following formulas may be used:

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

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

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

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

- 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						
0.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.
0.10	0.98	1.96	2.94	3.92	4.91	
0.20	0.87	1.74	2.62	3.49	4.36	
0.30	0.76	1.53	2.29	3.05	3.82	
0.40	0.65	1.31	1.96	2.62	3.27	
0.50	0.55	1.09	1.64	2.18	2.73	
0.60	0.44	0.87	1.31	1.74	2.18	
0.70	0.33	0.65	0.98	1.31	1.64	

Interpolation is permissible.

Correction Factor = $1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$.

EXPANDED PERFORMANCE DATA (COOLING) 20 Ton (Gross Capacity)

Airflow			Outdoor Ambient Temperature - Degrees F, Dry Bulb														
			75			85			95			105			115		
			Entering Indoor Air Temperature - Degrees F, Wet Bulb														
IDB	CFM (BF)		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
80	9000 (0.24)	MBU	250	267	290	243	258	281	235	249	270	228	239	260	220	229	249
		S/T	0.89	0.72	0.53	0.89	0.73	0.54	0.89	0.74	0.55	0.89	0.76	0.56	0.88	0.77	0.57
		kW	15.8	16.1	16.6	17.6	18	18.4	19.5	19.8	20.3	21.6	21.9	22.4	23.9	24.2	24.7
	8000 (0.23)	MBU	241	259	286	237	254	276	229	245	267	221	236	256	213	226	246
		S/T	0.88	0.70	0.52	0.88	0.70	0.53	0.89	0.72	0.53	0.89	0.73	0.54	0.89	0.74	0.55
		kW	15.6	15.9	16.5	17.4	17.8	18.3	19.3	19.8	20.2	21.4	21.8	22.3	23.7	24	24.6
	7000 (0.21)	MBU	238	254	281	231	250	272	223	241	262	215	232	252	207	222	242
		S/T	0.85	0.68	0.51	0.86	0.68	0.51	0.87	0.69	0.52	0.88	0.70	0.52	0.88	0.72	0.53
		kW	15.5	15.9	16.4	17.3	17.7	18.2	19.2	19.6	20.1	21.2	21.7	22.2	23.5	23.9	24.5

FORMULAS AND NOTES FOR USING EXPANDED PERFORMANCE DATA

To find leaving wet bulb and dry bulb from the expanded performance charts, use the following formulas.

- Direct interpolation is permissible. Do not extrapolate.
- The following formulas may be used:

$$t/db = t\ edb - \text{sensible capacity Btuh} / (1.10 \times \text{cfm})$$

$$t/wb = \text{Wet bulb temp. corresponding to enthalpy of air leaving evaporator coil (h/wb)}$$

$$h/wb = h\ ewb - \text{total capacity Btuh} / (4.5 \times \text{cfm})$$
 where h ewb = Enthalpy of air entering evap. coil
- The SHC is based on 80F edb of air entering evap coil. Below 80F edb, subtract (corr factor x cfm) from SHC. Above 80F edb, add (corr factor x cfm) to SHC.

LEGEND

MBH = Total Capacity (Gross)
 S/T = Sensible to Total Ratio
 KW = Compressor Motor Power Input.
 IDB = Indoor Dry Bulb
 edb = Entering Dry Bulb
 ewb = Entering Wet Bulb
 t/db = Leaving Dry Bulb
 t/wb = Leaving Wet Bulb
 h/wb = Enthalpy of Leaving Wet Bulb
 SHC = Sensible Heat Capacity

Bypass Factor (BF)	Entering Air Dry-Bulb (F)				
	79	78	77	76	75
	81	82	83	84	85
Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18
0.10	0.98	1.96	2.94	3.92	4.91
0.20	0.87	1.74	2.62	3.49	4.36
0.30	0.76	1.53	2.29	3.05	3.82
0.40	0.65	1.31	1.96	2.62	3.27
0.50	0.55	1.09	1.64	2.18	2.73
0.60	0.44	0.87	1.31	1.74	2.18
0.70	0.33	0.65	0.98	1.31	1.64

$$\text{Correction Factor} = 1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$$

PGS SERIES EVAPORATOR FAN PERFORMANCE

CIRCULATING BLOWER PERFORMANCE - PGS180 - Low Heat Model																				
Airflow CFM	EXTERNAL STATIC PRESSURE (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts
4500	809	1317	906	1502	994	1690	1078	1882	1156	2077	1230	2275	1301	2477	1369	2683	1434	2891	1497	3103
4800	850	1516	942	1706	1027	1899	1107	2094	1183	2293	1255	2495	1324	2700	1390	2909	1454	3120	1515	3334
5100	892	1733	972	1928	1061	2125	1138	2325	1211	2528	1281	2733	1349	2942	1413	3153	1475	3367	1535	3584
5400	934	1970	1017	2169	1096	2371	1170	2575	1241	2781	1309	2990	1374	3202	1437	3416	1498	3633	-	-
5700	976	2225	1058	2429	1132	2635	1204	2843	1272	3053	1338	3266	1402	3481	1463	3699	-	-	-	-
6000	1019	2500	1096	2709	1168	2919	1238	3131	1304	3345	1368	3562	-	-	-	-	-	-	-	-
6300	1063	2795	1136	3008	1206	3223	1273	3439	1337	3657	-	-	-	-	-	-	-	-	-	-
6600	1106	3111	1177	3329	1244	3547	1309	3767	-	-	-	-	-	-	-	-	-	-	-	-
6900	1150	3448	1218	3670	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CIRCULATING BLOWER PERFORMANCE - PGS180 - High Heat Model																				
Airflow CFM	EXTERNAL STATIC PRESSURE (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts
4500	819	1335	914	1518	1001	1705	1093	1894	1160	2088	1234	2284	1304	2484	1371	2688	1435	2895	1497	3104
4800	861	1538	951	1726	1035	1916	1113	2110	1188	2307	1259	2507	1327	2711	1393	2917	1456	3126	1517	3338
5100	904	1759	989	1952	1069	2147	1145	235	1218	2545	1287	2749	1353	2955	1417	3165	1478	3377	1537	3592
5400	947	1999	1028	2197	1105	2396	1179	2598	1248	2802	1315	3009	1380	3219	1442	3432	1502	3646	-	-
5700	990	2259	1068	2461	1142	2665	1213	2871	1280	3079	1345	3289	1408	3503	1468	3718	-	-	-	-
6000	1034	2539	1109	2745	1180	2953	1248	3163	1313	3375	1376	3589	-	-	-	-	-	-	-	-
6300	1078	2840	1150	3050	1218	3262	1284	3476	1348	3692	-	-	-	-	-	-	-	-	-	-
6600	1123	3161	1192	3376	1258	3592	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6900	1167	3504	1234	3723	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CIRCULATING BLOWER PERFORMANCE - PGS210/240 - Low Heat Model																				
Airflow CFM	EXTERNAL STATIC PRESSURE (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts
5500	755	1908	831	2171	901	2443	968	2723	1031	3009	1091	3302	1149	3602	1204	3907	1258	4217	1309	4533
6000	810	2287	881	2556	947	2833	1010	3116	1070	3406	1127	3702	1183	4003	1236	4310	1288	4622	1337	4939
6500	866	2710	932	2985	994	3266	1054	3554	1111	3847	1166	4146	1219	4450	1270	4759	1320	5073	1368	5391
7000	923	3177	985	3458	1044	3744	1100	4036	1155	4333	1207	4635	1258	4942	1307	5253	1355	5569	1402	5890
7500	980	3690	1038	3976	1094	4267	1148	4564	1200	4864	1250	5170	1299	5480	1346	5794	1392	6113	1437	6435
8000	1038	4251	1093	4542	1146	4838	1197	5138	1246	5443	1294	5752	1341	6065	1387	6383	1392	6704	1475	7028
8500	1096	4859	1148	5156	1198	5456	1247	5761	1294	6070	1340	6382	1385	6699	1429	7019	1472	7343	1514	7670
9000	1154	5517	1204	5818	1251	6423	1298	6432	1343	6745	1388	7062	1431	7382	1473	7705	1515	8032	-	-
9500	1213	6224	1260	6531	1306	6840	1350	7154	1394	7471	1436	7791	1478	8114	1519	8441	-	-	-	-
10,000	1272	6983	1317	7294	1360	7608	1403	7926	1445	8247	1486	8570	-	-	-	-	-	-	-	-

CIRCULATING BLOWER PERFORMANCE - PGS210/240 - High Heat Model																				
Airflow CFM	EXTERNAL STATIC PRESSURE (in. wg)																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts	RPM	Watts
5500	795	2043	866	2306	934	2578	998	2856	1059	3142	1117	3434	1173	3732	1227	4036	1279	4345	1329	4629
6000	854	2452	921	2722	984	3098	1044	3281	1102	3570	1158	3865	1211	4165	1263	4471	1313	4782	1361	5097
6500	914	2909	977	3184	1036	3465	1093	3752	1148	4045	1201	4343	1252	4646	1302	4954	1350	5267	1396	5584
7000	975	3414	1034	3695	1090	3981	1144	4272	1196	4569	1246	4870	1295	5176	1343	5487	1389	5802	1434	6121
7500	1037	3969	1092	4255	1145	4546	1196	4842	1256	5142	1294	5447	1340	5756	1386	6070	1431	6387	1474	6709
8000	1099	4575	1150	4866	1201	5162	1249	5462	1297	5766	1343	6075	1388	6388	1431	6704	1474	7024	1516	7348
8500	1161	5232	1210	5529	1258	5829	1304	6134	1349	6443	1393	6755	1436	7071	1478	7390	1520	7713	-	-
9000	1223	5943	1270	6245	1315	6550	1360	6869	1403	7171	1445	7487	1486	7807	1527	8130	-	-	-	-
9500	1286	6708	1331	7014	1374	7324	1416	7638	1457	7954	1498	8274	1538	8597	-	-	-	-	-	-
10,000	1349	7528	1392	7839	1433	8154	1473	8471	-	-	-	-	-	-	-	-	-	-	-	-

LEGEND

Watts = Input Watts to motor. Airflow based on dry coil with filters.

EVAPORATOR FAN DATA FOR PGS180, 210, 240

EVAPORATOR FAN MOTOR DATA FOR PGS180, 210, 240

UNIT	Unit Voltage	Maximum Acceptable Continuous BHP	Maximum Acceptable Operating Watts	Maximum Amp Draw
PGS180	208/230	4.25	3,775	10.5
	460	4.25	3,775	4.8
	575	3.45	3,065	3.9
PGS210	208/230	5.90	5,180	15.8
	460	5.90	5,180	7.9
	575	5.90	5,180	6.0
PGS240	208/230	8.70	7,915	22.0
	460	9.50	8,640	13.0
	575	8.70	7,915	10.0

FAN RPM AT MOTOR PULLEY SETTINGS FOR PGS180, 210, 240

UNIT	MOTOR PULLEY TURNS OPEN*										
	1	1- 1/2	2	2- 1/2	3	3- 1/2	4	4- 1/2	5	5- 1/2	6
PGS180H,L	1179	1150	1121	1093	1064	1035	1006	978	949	920	891
PGS180S	1429	1403	1376	1349	1323	1296	1269	1242	1215	1188	1159
PGS210H,L,S	1095	1077	1058	1040	1021	1002	984	965	947	928	910
PGS240H,L,S	1225	1209	1187	1165	1143	1120	1098	1076	1053	1031	1002

* Due to belt and pulley size, pulley cannot be set to 0 or 1/2.

AIR QUANTITY LIMITS FOR PGS180, 210, 240

UNIT	Minimum Airflow (Cfm)	Minimum Heating (Cfm)		Maximum Airflow (Cfm)
		Low Heat	High Heat	
PGS180	4500	3800	5450	7500
PGS210	5400	4750	5450	9000
PGS240	6000	4750	5450	10,000

EVAPORATOR FAN MOTOR EFFICIENCY &

UNIT PGS	Motor Efficiency &
180	85.8
180 (575)	81.7
210	87.5
240	88.5

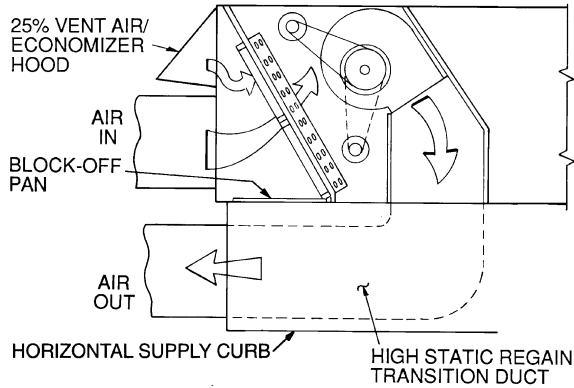
OUTDOOR SOUND POWER

UNIT	SOUND RATING (dB)	OCTAVE BANDS							
		63	125	250	500	1000	2000	4000	8000
PGS180	88 Bels	90.8	88.7	86.4	84.3	83.5	78.4	75.6	66.8
PGS210	88 Bels	90.8	88.7	86.4	84.3	83.5	78.4	75.6	66.8
PGS240	94 Bels	98.7	92.3	93.8	90.9	89.6	85.9	80.3	74.3

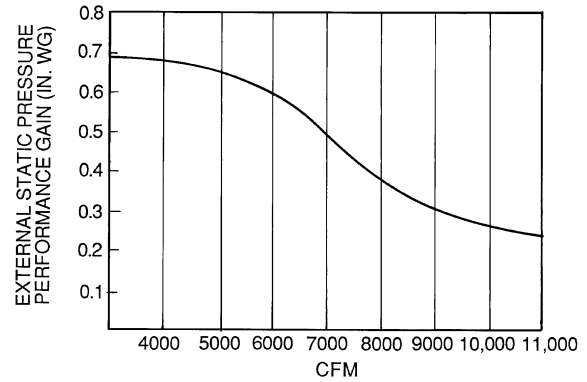
GAS HEAT FAN PERFORMANCE LOSS

PGS180			PGS210 / 240		
Airflow cfm	Low Heat - in. wg	High Heat - in. wg	Airflow cfm	Low Heat - in. wg	High Heat - in. wg
4500	0.16	0.17	5500	0.23	0.31
4800	0.17	0.19	6000	0.26	0.37
5100	0.19	0.20	6500	0.30	0.43
5400	0.20	0.22	7000	0.33	0.49
5700	0.21	0.24	7500	0.37	0.56
6000	0.23	0.26	8000	0.41	0.63
6300	0.24	0.28	8500	0.46	0.70
6600	0.26	0.30	9000	0.50	0.78
6900	0.28	0.33	9500	0.55	0.87
7200	0.29	0.35	10,000	0.60	0.96
7500	0.31	0.37	-	-	-

HORIZONTAL SUPPLY/RETURN FAN PERFORMANCE WITH HIGH STATIC REGAIN ADAPTER CURB



NOTE: The high static regain adapter accessory may be used to provide horizontal supply/return.



NOTE: The high static supply/return adapter accessory improves fan performance by increasing external static pressure by amount shown above.

Altitude Compensation* - PGS180-240

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.

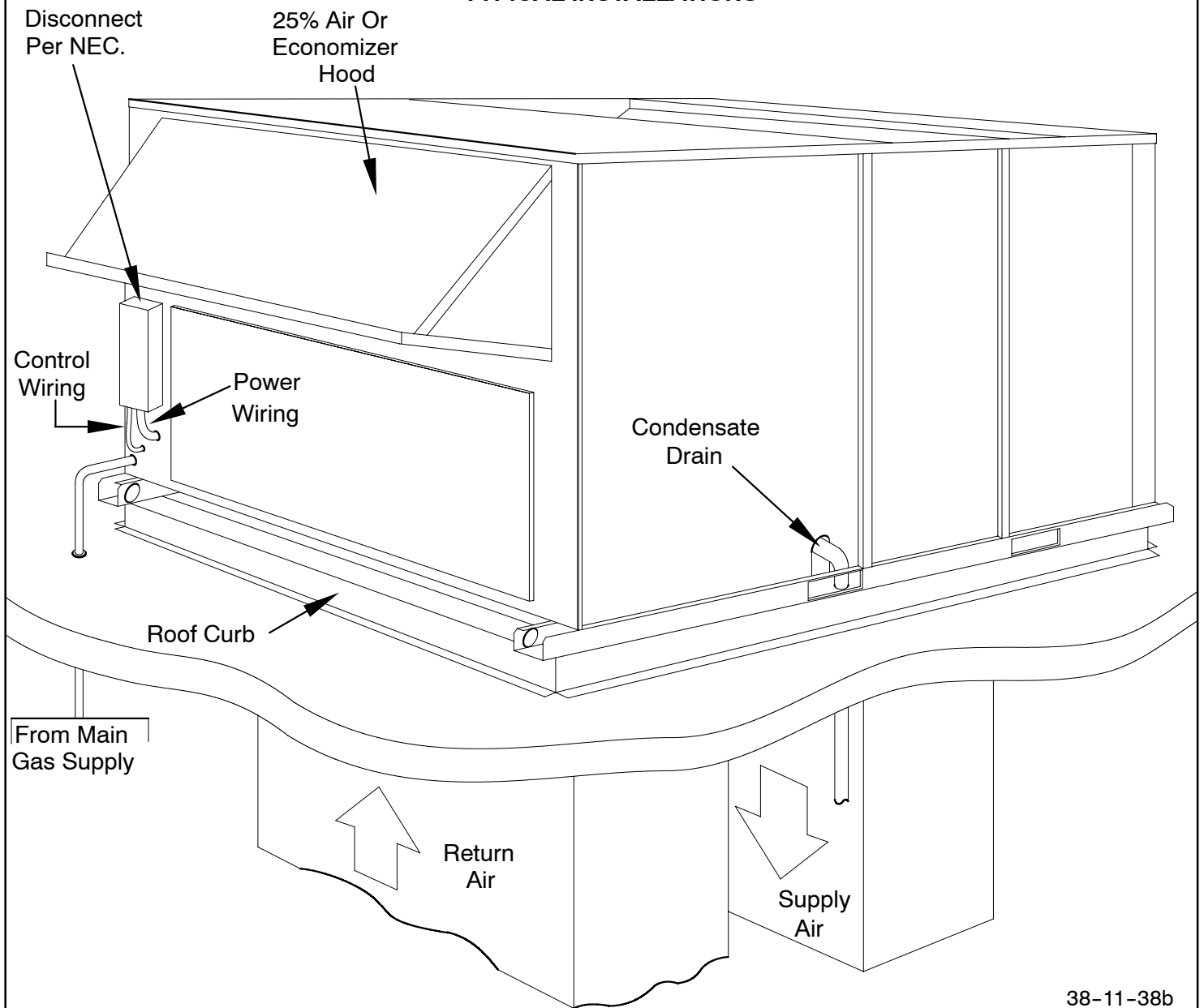
** Orifices available through your local distributor .

Altitude Derating Factor* - All Units

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 sea level. For example, at 4000 ft, if the heating value of the gas exceeds 1000 Btu/ft³, 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.

TYPICAL INSTALLATIONS

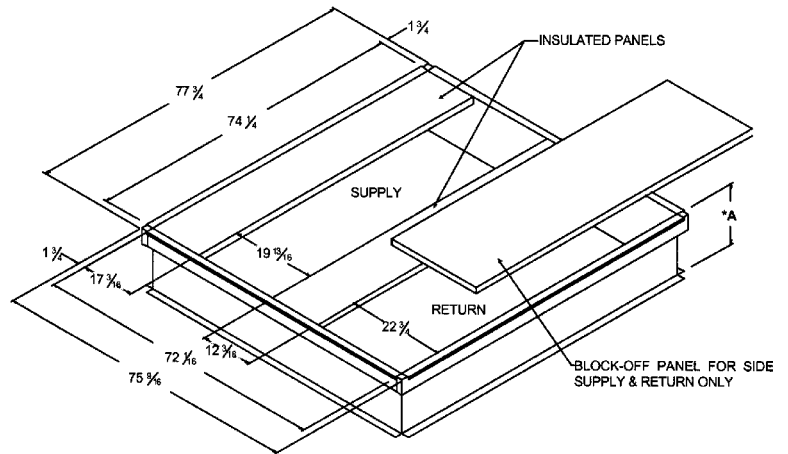


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ACCESSORIES

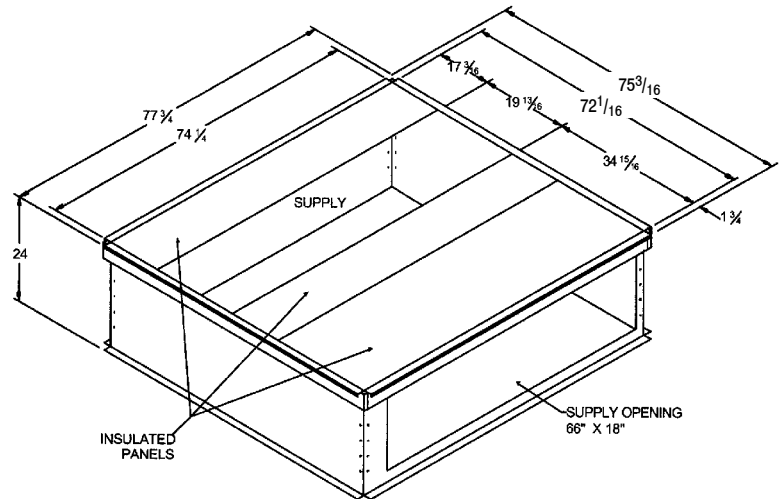
VERTICAL DISCHARGE ROOF CURBS

Description	Model Number	Where Used
14" High	AXB060CMA	180, 210, 240
24" High	AXB060CHA	180, 210, 240



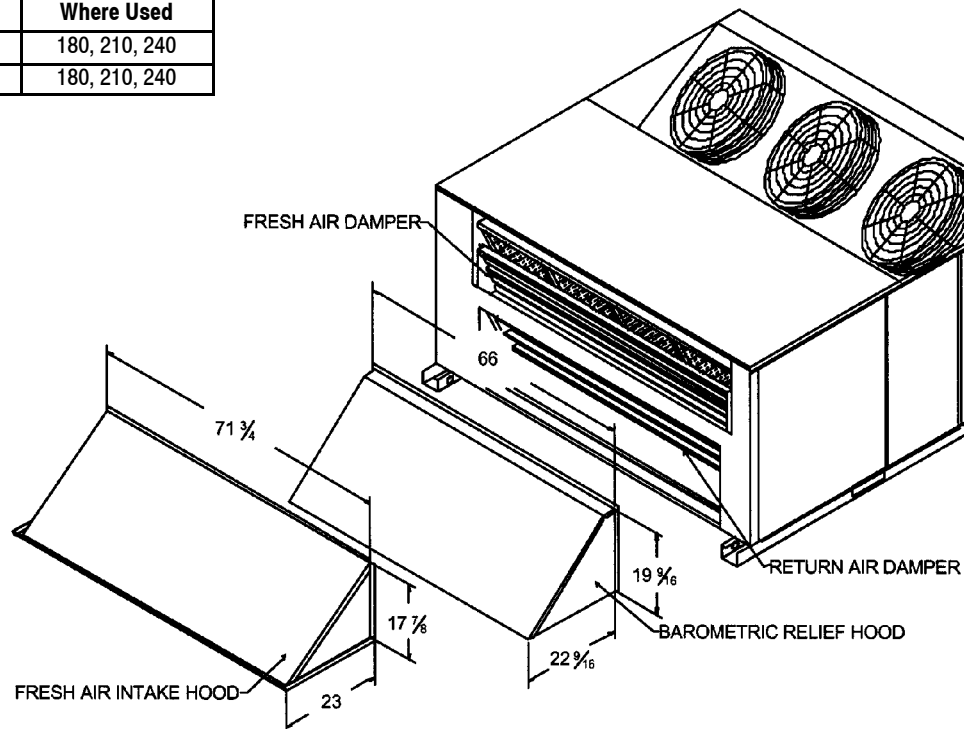
HORIZONTAL DISCHARGE ROOF CURBS

Description	Model Number	Where Used
24" High	AXB065CHA	180, 210, 240
24" High w/ Duct	AXB165CHA	180, 210, 240



ECONOMIZER - HORIZONTAL / DOWNFLOW

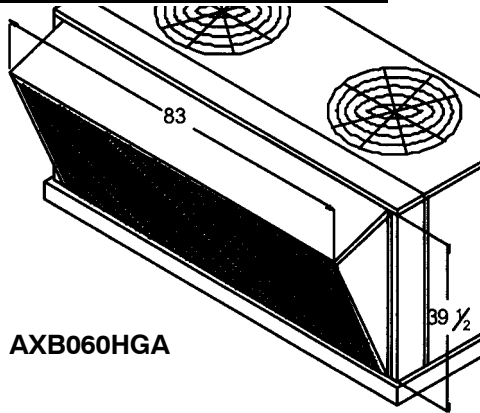
Description	Model Number	Where Used
Fully Modulating	AXB060EMA	180, 210, 240
Three Position	AXB060EPA	180, 210, 240



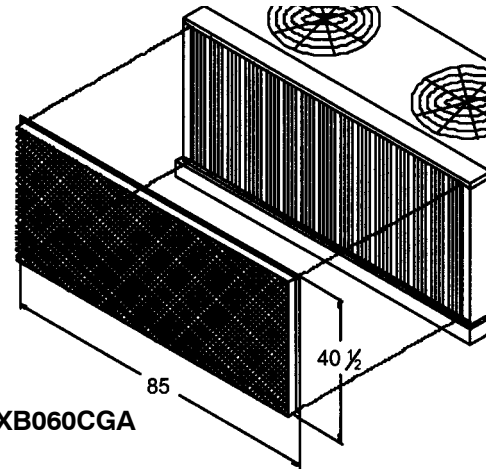
ACCESSORIES (CONT.)

COIL PROTECTION

Description	Model Number	Where Used
Coil Guard	AXB060CGA	180, 210, 240
Hail Guard	AXB060HGA	180, 210, 240



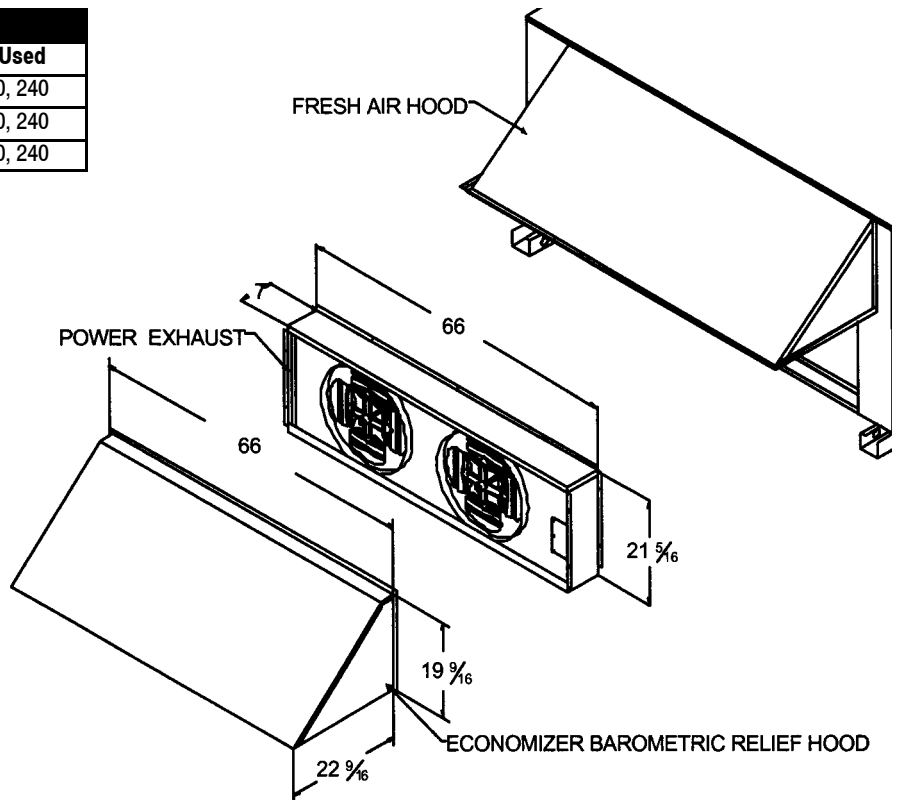
AXB060HGA



AXB060CGA

POWER EXHAUST

Description	Model Number	Where Used
208/230 Volt	AXB060PEH	180, 210, 240
460 Volt	AXB060PEL	180, 210, 240
575 Volt	AXB060PES	180, 210, 240



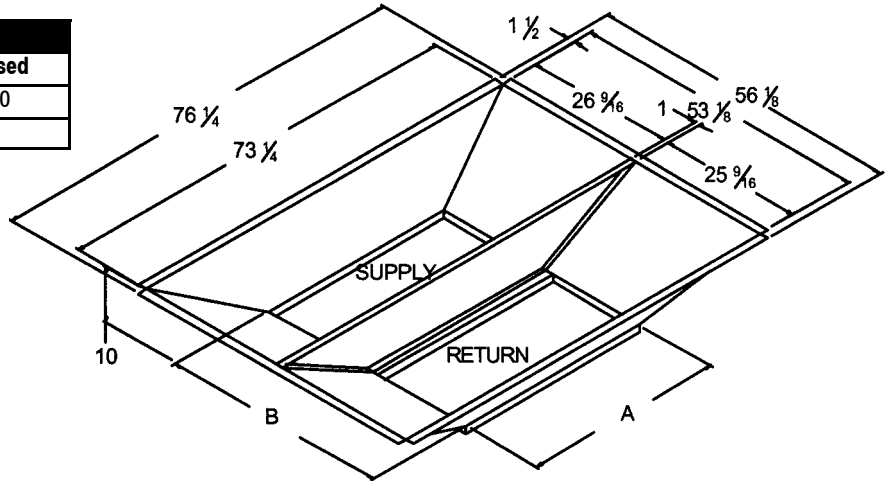
POWER EXHAUST PERFORMANCE DATA

Model	Volt/Phase/ Hertz	Motor			Unit					
		Qty	HP	RPM	Cir. Qty	LRA	FLA	MCA	Fuse Size	@0.1 CFM
AXB060PEH	208-230/3/60	2	3/4	1075	1	24.9	10.0	12.6	15	9,600
AXB060PEL	460/3/60	2	3/4	1075	1	N/A	4.4	5.6	8	9,600
AXB060PES	575/3/60	2	3/4	1050	1	N/A	3.0	3.8	5	9,600

ACCESSORIES (CONT.)

CONCENTRIC DUCT KIT

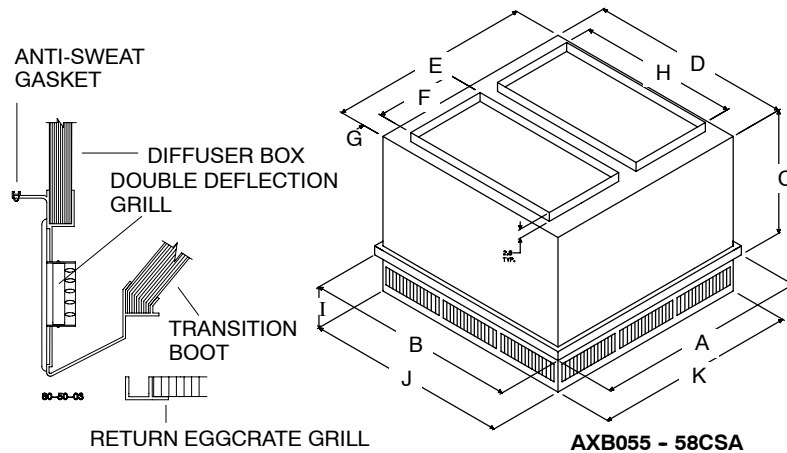
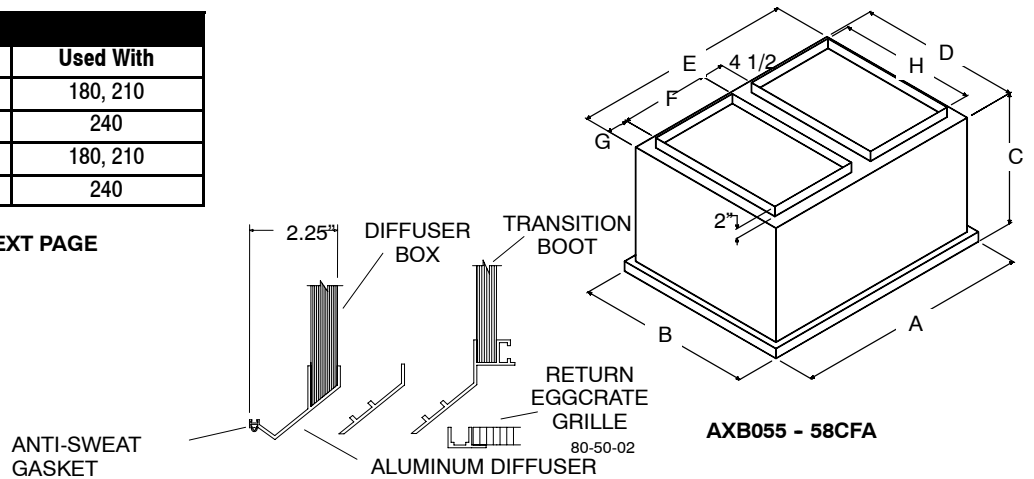
Description	Model Number	Where Used
18" x 36"	AXB160CTA	180, 210
24" x 48"	AXB260CTA	240



CONCENTRIC DIFFUSER

Description	Model Number	Used With
Flush Mount	AXB055CFA	180, 210
Flush Mount	AXB058CFA	240
Step Down	AXB055CSA	180, 210
Step Down	AXB058CSA	240

SEE PERFORMANCE DATA ON NEXT PAGE



DIMENSIONS

Model Number	A	B	C	D	E	F	G	H	I	J	K	Duct Size
AXB055CFA	47-5/8	47-5/8	29-1/4	45	45	18	2-1/4	38	N/A	N/A	N/A	18 x 36
AXB058CFA	59-5/8	59-5/8	35-1/4	57	57	24	2-1/4	48	N/A	N/A	N/A	24 x 48
AXB055CSA	47-5/8	47-5/8	24-5/8	45	45	18	2-1/2	36	10-1/8	45-1/2	45-1/2	18 x 36
AXB058CSA	59-5/8	59-5/8	30-5/8	57-1/2	57-1/2	24	2-1/2	48	11-1/8	57-1/2	57-1/2	24 x 48

ACCESSORIES (CONT.)

CFA SERIES PERFORMANCE DATA

Part No. AXB	CFM	Static Pressure In. WC	Throw Feet	Neck Velocity FPM	Jet Velocity FPM	db Sound Level
055CFA	5600	.36	28-37	1000	2082	45
	5800	.39	29-38	1036	2156	45
	6000	.42	40-50	1071	2230	45
	6200	.46	42-51	1107	2308	50
	6400	.50	43-52	1143	2379	50
	6600	.54	45-56	1179	2454	50
058CFA	7200	.39	26-35	996	2093	45
	7400	.41	28-37	1024	2151	45
	7600	.43	29-38	1051	2209	45
	7800	.47	40-50	1079	2276	45
	8000	.50	42-51	1107	2326	50
	8200	.53	43-52	1134	2384	50

CSA/CFA NOTES:

1. All data is based on the Air Diffusion Council guidelines.
2. Throw data is based on Terminal Velocities of 75 FPM using isothermal air.
3. Throw is based on diffuser blades being directed in a straight pattern.
4. Actual sound levels are less than those shown.
5. Minimum height 9' above floor.

7 DAY PROGRAMMABLE COMMERCIAL THERMOSTAT

Model Number	Used With
1170830	180, 210, 240

FRESH AIR DAMPERS

Description	Model Number	Used With
35% Motorized	AXB060FMA	180, 210, 240

PART NUMBERS FOR APPROVED HIGH STATIC CONVERSIONS*

Unit Size (Tons)	Voltage	Motor	Motor Pulley	Blower Pulley	Belt	Circuit Breaker	Circuit Breaker Bracket
15 & 17-1/2	208/230 & 460	No Change	1170553	1171427	No Change	N/A	N/A
15	575	N/A	N/A	N/A	N/A	N/A	N/A
20	All Voltages	No Change	1171414	1170569	1171528	N/A	N/A

* Available thru service parts only.

CSA SERIES PERFORMANCE DATA

Part No. AXB	CFM	Static Pressure In. WC	Throw Feet	Neck / Jet Velocity FPM	db Sound Levels
055CSA	5600	.36	39-49	920	30
	5800	.39	42-51	954	30
	6000	.42	44-54	1022	30
	6200	.46	45-55	1056	30
	6400	.50	46-55	1090	30
	6600	.54	47-56	1124	30
058CSA	7200	.39	33-38	827	25
	7400	.41	35-40	850	25
	7600	.43	36-41	873	25
	7800	.47	38-43	896	30
	8000	.50	39-44	918	30
	8200	.53	41-46	941	30

NATURAL TO LP CONVERSION KIT

Model Number	Used With
AXB265LPA	180, 210, 240

LOW AMBIENT KIT

Model Number	Used With
AXB160LAA (10°)	180, 210
AXB260LAA (25°)	240

CONTROLS

OPERATING SEQUENCE

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

NOTE: The PGS180–240 units have 2 stages of heat. 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 lighted, 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.

A 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.

APPLICATION DATA

1. DUCTWORK – Ductwork should be attached to the curb on all units. Interior installation may proceed before unit is set in place on roof. If ductwork will be attached to the unit, do not drill in condensate drain pan area – leaks may result.
2. THRU-THE-CURB SERVICE CONNECTIONS – Roof curb connections allow field power wires, control wires, and gas supply to enter through the roof curb opening.
3. THERMOSTAT – Use of 2-stage cooling thermostat is recommended for all units. A 2-stage cooling thermostat is required on units with accessory economizer to provide integrated cooling.
4. HEATING-TO-COOLING CHANGEOVER – All units are automatic changeover from heating to cooling when automatic changeover thermostat and subbase are used.
5. AIRFLOW – Units are draw-thru on cooling and blow-thru on heating.
6. MAXIMUM AIRFLOW – To minimize the possibility of condensate blow-off from evaporator, airflow through units should not exceed 500 cfm/nominal ton on size 180–240 units.
7. MINIMUM AIRFLOW – The minimum airflow for cooling is 300 cfm/nominal ton on size 180–240 units.
8. MINIMUM AMBIENT COOLING OPERATION TEMPERATURE – Units are designed to operate at outdoor temperatures down to 40 F.
9. MAXIMUM OPERATING OUTDOOR-AIR TEMPERATURE – For cooling, this temperature is 120 F for 180 unit and 125 F for 240 unit. Refer to Cooling Capacities tables.
10. HIGH ALTITUDE – A change to the gas orifice may be required at high altitudes. Refer to Altitude Compensation charts.
11. MINIMUM TEMPERATURE – Air entering the heat exchanger in heating must be a minimum of 50 F continuous and 45 F intermittent. For entering-air temperatures below 45 F both stages of heat must be energized together to minimize condensation issues and ensure proper unit operation.
12. INTERNAL UNIT DESIGN – Due to the internal unit design (draw-thru over the motor), air path, and specially designed motors, the full horsepower (maximum continuous bhp) listed in the Physical Data table and the notes following each Fan Performance table can be utilized with extreme confidence. Using motors with the values listed in the Physical and Fan Performance Data tables will not result in nuisance tripping or premature motor failure. The unit warranty will not be affected.

CONDENSER FAN:

The unit shall have a single direct drive propeller fan/motor assembly mounted directly to a vertical-discharge grille panel that is easily removable. Motors shall have permanently lubricated sleeve bearings and inherent overload protection.

EVAPORATOR BLOWER:

The units shall have a single belt driven evaporator blower. The motor shall have permanently lubricated ball bearings and internal overload protection. An adjustable motor drive sheave for matching air flow requirements shall be standard. Additionally high static accessory kits shall be available for air flows above the standard requirement.

HEATING SECTION:

The units shall have aluminized steel tubular heat exchangers located on the discharge side of the evaporator blower and equipped with a two-stage gas valve. The units shall have in-shot burners that are ignited by an electronic spark with flame proving feature and protected by both a limit switch and flame roll-out switch.

COILS:

The evaporator and condenser coils shall be fabricated with aluminum fins mechanically bonded to copper tubing. Both coils shall be pressure tested prior to assembly into the unit and electronically leak tested after assembly onto the unit. The evaporator coil shall be protected from dust and debris on the return air side by factory installed 2" air filters.

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