



ENGINEERING DATA

13GEP
MERIT® SERIES
Residential - R-410A

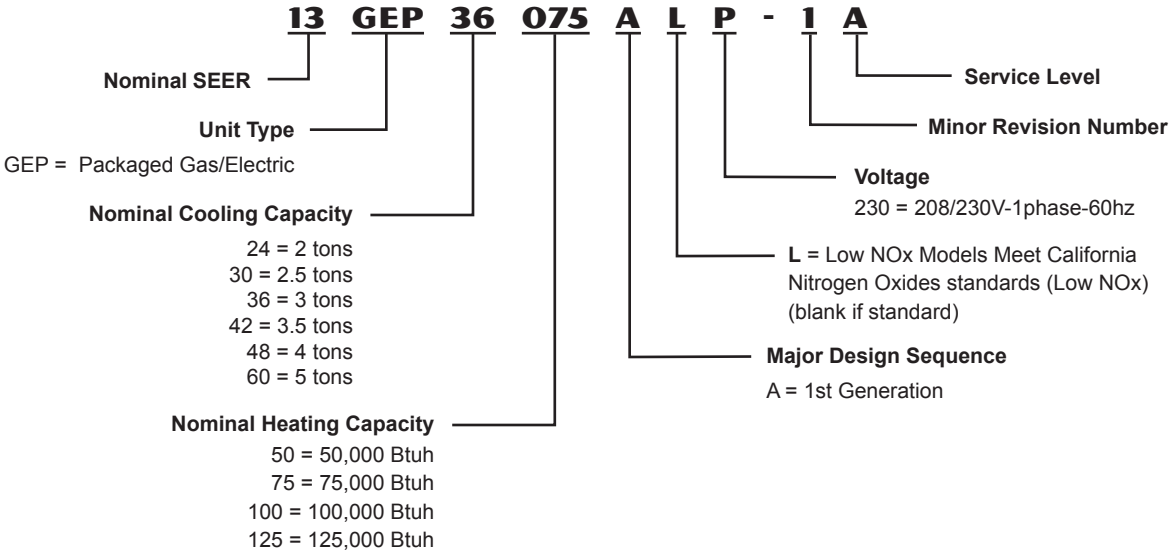
Bulletin No. 210602
April 2011
Supersedes March 2011



SEER - 13.00
AFUE - 80%
2 to 5 Tons

Cooling Capacity - 22,800 to 56,000 Btuh
Gas Input Heat Capacity - 50,000 to 125,000 Btuh

MODEL NUMBER IDENTIFICATION



FEATURES

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EQUIPMENT WARRANTY

Heat Exchanger - twenty year limited warranty in residential applications and ten years in non-residential applications.

Compressor - five year limited warranty in residential installations and five year in non-residential installations.

All other covered components - five years in residential installations and one year in non-residential installations.

Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

APPLICATIONS

Designed for outdoor installations at ground level or rooftop for residential applications.

APPROVALS

Heating ratings are according to Department of Energy (DOE) test procedures and Federal Trade Commission (FTC) labeling regulations and are Certified by AHRI.

Low NOx "L" models meet California Nitrogen Oxides (NOx) standards.

Cooling system rated according to DOE test procedures.

Cooling system rated in accordance with AHRI standard 210/240.

Units are listed by ETL for the U.S. and Canada.

Packaged unit and components within bonded for grounding to meet safety standards required by ETL.

Each unit test operated at the factory before shipment ensuring dependable operation at start-up.

HEATING SYSTEM

Heat Exchanger

Aluminized steel tapered S-curve.

Crimped no-weld construction.

Compact design reduces space requirements in unit cabinet.

Heat exchanger has been laboratory life cycle tested.

Inshot Burners

Aluminized steel inshot burners provide efficient trouble free operation.

Burner venturi mixes air and gas in correct proportion for proper combustion.

Burner assembly is removable from the unit as a single component for ease of service and each burner may be removed individually.

Gas Control Valve

24 volt redundant combination gas control valve combines manual shut off valve (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control.

Combustion Air Inducer

Heavy duty combustion air inducer prepurges heat exchanger and safely vents flue products.

Blower is controlled by the ignition control board.

Pressure switch proves blower operation before allowing gas valve to open.

Combustion air inducer operates during heating cycle.

Inducer also operates for the first 10 seconds of every cooling cycle to prevent insects from nesting in the flue outlet during cooling season.

Limit Controls

Automatic reset, primary and secondary limits are accurately located.

Primary limit factory installed on heating vestibule panel on all units, secondary limit (42, 48 and 60 models only) factory installed on blower housing.

Flame Rollout Switch

Manual reset switch is factory installed on burner box.

Switch provides protection from abnormal operating conditions.

Ignition Control Board

Ignition control board with LED diagnostics.

OPTIONS

ALPG/Propane Conversion Kit

Required for field changeover from natural gas to ALPG/Propane.

FEATURES

REFRIGERATION SYSTEM

R-410A Refrigerant

Non-chlorine, ozone friendly, R-410A.

Unit pre-charged with refrigerant.

See Specification table.



Evaporator and Condenser Coils

Copper tube with aluminum fin coils.

PVC (polyvinyl chloride) coated coil guard protects condenser coil.

Evaporator Coil Drain Pan

Corrosion resistant plastic drain pan.

Condenser Fan

Weather protected heavy duty condenser fan motor with coated steel fan blades for long life.

Totally enclosed motor.

Fan guard constructed of corrosion-resistant PVC (polyvinyl chloride) coated steel.

High Pressure Switch

Shuts off unit if abnormal operating conditions cause the discharge pressure to rise above setting.

Protects compressor from excessive condensing pressure. Automatic reset.

COMPRESSOR

Heavy duty, hermetically sealed reciprocating compressor on 24 through 48 models.

Scroll compressor on 60 models.

Overload protected.

Running gear spring mounted within sealed housing (except 60 models).

Resiliently mounted on rubber mounts.

OPTIONS.

Time-Off Control

Prevents compressor short-cycling and allows time for suction and discharge pressure to equalize. Permits compressor start-up in an unloaded condition. Automatic reset with 5 minute delay between compressor shut-off and start-up.

SUPPLY AIR BLOWER

Direct Drive Blower

Each blower assembly statically and dynamically balanced.

Blower assembly easily removed for servicing

Multi-speed, direct drive blower motor.

Change in blower speed is easily accomplished by simple wiring change on blower motor.

See Blower Performance tables

CONTROLS

24 Volt Transformer

40VA transformer furnished and factory installed in control area.

OPTIONS

Thermostat

See Thermostat bulletins in Controls section and Lennox Price Book for a complete list of thermostats.

CABINET

Conditioned areas insulated with foil faced insulation to minimize heat loss and reduce operating sound levels.

Powder paint for maximum durability.

Easy service access.

PVC (polyvinyl chloride) coated steel wire guard provides complete coil protection.

Interchangeable panels for horizontal to down-flow airflow conversion furnished (shipped for horizontal).

Gas Piping Inlets, Electrical Inlets and Service Valves

Gas piping and field wiring inlets are located in one area of the cabinet. See dimension drawing.

Gauge ports are located outside the cabinet.

AIR FILTER (NOT FURNISHED - REQUIRED)

Filter rails for mounting 1 inch filter are furnished in cabinet. Filter is not furnished and must be field provided.

See Specifications Table for sizes.

SPECIFICATIONS

General Data		Model No.	13GEP24 050ALP	13GEP30 050ALP	13GEP30 075ALP	13GEP36 075ALP	13GEP36 100AP
Nominal Tonnage			2	2.5	2.5	3	3
Gas Heat Available - See page 6			50,000	50,000	75,000	75,000	100,000
Cooling Performance	Total cooling capacity - Btuh		22,800	28,000	28,000	34,000	34,000
	Total unit watts		2070	2545	2545	3090	3090
	¹ SEER (Btuh/Watt)		13.00	13.00	13.00	13.00	13.00
	EER (Btuh/Watt)		11.00	11.00	11.00	11.00	11.00
	² Sound Rating Number (dB)		78	79	79	78	78
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A	R-410A
	Charge		5 lbs. 2 oz.	5 lbs. 2 oz.	5 lbs. 2 oz.	7 lbs. 10 oz.	7 lbs. 10 oz.
Condensate drain size (fpt) - in.			3/4	3/4	3/4	3/4	3/4
Outdoor Coil Fan	Motor horsepower		1/4	1/4	1/4	1/4	1/4
	Diameter - in. & No. of blades		18 - 4	18 - 4	18 - 4	18 - 4	18 - 4
Indoor Blower	Blower wheel size dia. x width - in.		10 x 8	10 x 8	10 x 8	10 x 8	10 x 8
	Motor horsepower		1/2	1/2	1/2	1/2	1/2
⁵ Filter Dimensions (filter not furnished)			(1) 24 x 28 x 1	(1) 24 x 28 x 1	(1) 24 x 28 x 1	(1) 24 x 28 x 1	(1) 24 x 28 x 1
Net weight of basic unit - lbs.			357	362	372	392	402
Shipping weight of basic unit (1 Pkg.) - lbs.			370	375	385	405	415
Electrical characteristics (60 hz)			208/230V-1ph-60hz				

ELECTRICAL DATA

Line voltage data - 60hz 1 phase			208/230V	208/230V	208/230V	208/230V	208/230V
³ Maximum overcurrent protection (amps)			20	25	25	30	30
⁴ Minimum Circuit Ampacity			15.7	19.3	19.3	21.7	21.7
Compressor	Rated load amps		8.3	11.2	11.2	13.1	13.1
	Locked rotor amps		43	54	54	74	74
Outdoor Coil Fan Motor	Full load amps		1.2	1.2	1.2	1.2	1.2
Indoor Blower Motor	Full load amps		4.1	4.1	4.1	4.1	4.1

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Compressor Timed-Off Control	47J27	•	•	•	•	•
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NOTE-Extremes of operating range are plus and minus 10% of line voltage.

¹ Rated in accordance with AHRI Standard 210/240; 95°F outdoor air temperature, 80°F db/67°F wb entering evaporator air.

² Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

³ HACR type circuit breaker or fuse.

⁴ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

⁵ Filters are not furnished and must be field provided.

SPECIFICATIONS

General Data		Model No.	13GEP42 075ALP	13GEP48 100ALP	13GEP60 100ALP	13GEP60 125AP
		Nominal Tonnage	3.5	4	5	5
Gas Heat Available - See page 6			75,000	100,000	100,000	125,000
Cooling Performance	Total cooling capacity - Btuh		40,000	46,000	56,000	56,000
	Total unit watts		3635	4180	5090	5090
	¹ SEER (Btuh/Watt)		13.00	13.00	13.00	13.00
	EER (Btuh/Watt)		11.00	11.00	11.00	11.00
	² Sound Rating Number (dB)		80	80	80	80
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A
	Charge		6 lbs. 6 oz.	6 lbs. 8 oz.	8 lbs. 12 oz.	8 lbs. 12 oz.
Condensate drain size (fpt) - in.			3/4	3/4	3/4	3/4
Outdoor Coil Fan	Motor horsepower		1/3	1/3	1/3	1/3
	Diameter - in. & No. of blades		22 - 4	22 - 4	22 - 4	22 - 4
Indoor Blower	Blower wheel size dia. x width - in.		10 x 10	10 x 10	11 x 10	11 x 10
	Motor horsepower		3/4	3/4	1	1
⁵ Filter Dimensions (filter not furnished)			(1) 30 x 30 x 1	(1) 30 x 30 x 1	(1) 30 x 30 x 1	(1) 30 x 30 x 1
Net weight of basic unit - lbs.			420	435	480	490
Shipping weight of basic unit (1 Pkg.) - lbs.			435	450	495	505
Electrical characteristics (60 hz)			208/230V-1ph-60hz			

ELECTRICAL DATA

Line voltage data - 60hz 1 phase		208/230V	208/230V	208/230V	208/230V
³ Maximum overcurrent protection (amps)		40	40	60	60
⁴ Minimum Circuit Ampacity		27.5	28.4	38.7	38.7
Compressor	Rated load amps	16.0	16.7	25.0	25.0
	Locked rotor amps	88	84	134	134
Outdoor Coil Fan Motor	Full load amps	1.7	1.7	1.7	1.7
Indoor Blower Motor	Full load amps	5.8	5.8	5.8	5.8

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Compressor Timed-Off Control	47J27	•	•	•	•
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NOTE-Extremes of operating range are plus and minus 10% of line voltage.

¹ Rated in accordance with AHRI Standard 210/240; 95°F outdoor air temperature, 80°F db/67°F wb entering evaporator air.

² Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

³ HACR type circuit breaker or fuse.

⁴ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

⁵ Filters are not furnished and must be field provided.

SPECIFICATIONS - GAS HEAT

Unit Model No.	13GEP24050ALP 13GEP30050ALP	13GEP30075ALP 13GEP36075ALP 13GEP42075ALP	13GEP36100AP	13GEP48100ALP 13GEP60100ALP	13GEP60125AP	
Heat Option	050	075	100	100	125	
Heating Capacity Btuh	Input	50,000	75,000	100,000	100,000	125,000
	Output	40,000	60,000	80,000	80,000	100,000
¹ A.F.U.E.	80%	80%	80%	80%	80%	
Temperature Rise - °F	30 - 60	35 - 65	45 - 75	40 - 70	45 - 75	
Gas Supply Connection (FPT) - in.	1/2	1/2	1/2	1/2	1/2	
Min. Recommended Gas Supply Pressure	5 in. w.g. Natural Gas, 11 in. w.g. ALPG/Propane					

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

ALPG/Propane Conversion Kit	42K91	42K91	42K91	42K91	42K91

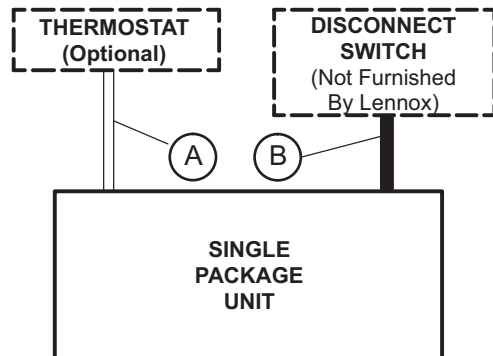
¹ Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations.

HIGH ALTITUDE DERATE

Units may be installed at altitudes up to 2000 feet above sea level without any modification. At altitudes from 2001 to 4500 feet, units must be derated 5%. For elevations above 4500 feet, refer to the National Fuel Gas Code Z223.1 (latest edition) or the Canadian Installation Codes CAN/CGA-B149.1 & B149.2 for additional details.

NOTE - This is the only permissible derate for these units.

FIELD WIRING



- A - Four Wire Low Voltage (Electro-mechanical)
- Five Wire Low Voltage (Electronic)
- B - Two Wire Power (See Electrical Data Table)

- Field Wiring Not Furnished -

INSTALLATION CLEARANCES

	in.	mm
Front (heat exchanger access)	24	610
Right Side (blower access)	24	610
Left Side (evaporator coil access)	24	610
Back	0	0
Top	48	1219

MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL

	in.	mm
Front	24	610
Back	2	51
Right Side (vent cover)	15	381
Left Side	12	305
Top	48	1219
Below Unit	0	0

COOLING RATINGS

Model No.	Indoor Temp DB/WB °F	Outdoor Temp - DB														
		65°F			82°F			95°F			105°F			115°F		
		Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW
13GEP24	85/72	27,800	0.59	1.66	25,900	0.61	1.90	24,400	0.63	2.09	22,800	0.67	2.23	21,600	0.71	2.24
	80/67	26,400	0.65	1.65	24,900	0.68	1.89	22,800	0.71	2.07	21,600	0.75	2.19	17,700	0.82	2.18
	75/63	25,100	0.69	1.64	22,500	0.71	1.87	20,500	0.73	2.04	18,100	0.81	2.15	15,000	0.88	2.14
	75/57	23,000	1.00	1.62	21,500	1.00	1.85	20,300	1.00	2.03	18,400	1.00	2.15	15,400	1.00	2.14
13GEP30	85/72	36,100	0.60	2.04	33,200	0.63	2.35	31,100	0.65	2.58	28,200	0.68	2.74	25,300	0.71	2.79
	80/67	34,100	0.67	2.02	31,200	0.71	2.33	28,000	0.74	2.55	25,100	0.80	2.66	21,700	0.82	2.73
	75/63	32,400	0.70	2.01	28,200	0.75	2.29	25,000	0.79	2.51	22,000	0.84	2.65	18,900	0.89	2.68
	75/57	29,700	1.00	1.98	26,900	1.00	2.27	24,900	1.00	2.50	22,100	1.00	2.64	19,300	1.00	2.68
13GEP36	85/72	39,000	0.62	2.35	37,500	0.64	2.77	36,300	0.65	3.10	34,200	0.68	3.43	31,900	0.70	3.48
	80/67	36,800	0.69	2.34	36,100	0.71	2.73	34,000	0.72	3.09	31,000	0.76	3.33	29,000	0.78	3.47
	75/63	35,600	0.72	2.33	32,900	0.75	2.74	30,700	0.77	3.06	28,500	0.80	3.38	26,100	0.83	3.44
	75/57	32,000	1.00	2.29	31,000	1.00	2.71	30,300	1.00	3.03	28,100	1.00	3.35	25,800	1.00	3.40
13GEP42	85/72	51,800	0.63	2.81	47,800	0.66	3.27	44,800	0.68	3.64	41,000	0.70	3.89	37,100	0.72	3.88
	80/67	48,900	0.70	2.80	44,500	0.73	3.24	40,000	0.76	3.57	36,500	0.80	3.81	30,800	0.85	3.76
	75/63	46,100	0.73	2.79	40,900	0.76	3.19	37,000	0.79	3.50	32,000	0.86	3.73	27,000	0.92	3.70
	75/57	42,500	1.00	2.74	38,600	1.00	3.17	35,600	1.00	3.50	31,500	1.00	3.72	27,400	1.00	3.68
13GEP48	85/72	58,200	0.64	3.30	53,700	0.66	3.83	50,300	0.68	4.23	44,800	0.72	4.49	39,300	0.75	4.52
	80/67	54,900	0.70	3.27	51,500	0.71	3.79	46,000	0.76	4.18	41,500	0.80	4.39	33,300	0.86	4.39
	75/63	51,600	0.73	3.24	45,900	0.77	3.74	41,500	0.80	4.12	34,900	0.86	4.33	28,400	0.91	4.32
	75/57	47,800	1.00	3.20	43,900	1.00	3.71	40,900	1.00	4.10	35,300	1.00	4.31	29,600	1.00	4.30
13GEP60	85/72	67,500	0.62	3.83	63,500	0.64	4.54	60,700	0.65	5.08	56,500	0.66	5.65	52,200	0.67	5.60
	80/67	63,600	0.68	3.80	59,800	0.71	4.45	56,000	0.72	5.06	54,300	0.74	5.62	47,000	0.77	5.58
	75/63	60,300	0.71	3.77	55,500	0.73	4.48	52,200	0.75	5.02	47,300	0.78	5.57	42,400	0.81	5.52
	75/57	53,400	1.00	3.73	49,200	1.00	4.43	46,200	1.00	4.97	42,100	1.00	5.54	38,300	1.00	5.49

BLOWER DATA

13GEP24 BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)		
	Tap 1	Tap 2	Tap 3
0.10	500	830	950
0.20	480	790	920
0.30	420	760	890
0.40	340	710	850
0.50	290	640	810
0.60	240	600	740
0.70	---	560	700
0.80	---	520	660

NOTE - All air data measured external to unit with dry coil and less filter.
¹ For downflow air volume, add 0.10 in. w.g. to duct static.

13GEP42 BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)		
	Tap 1	Tap 2	Tap 3
0.10	860	1460	1600
0.20	780	1400	1560
0.30	710	1340	1500
0.40	660	1280	1450
0.50	600	1230	1400
0.60	560	1180	1320
0.70	---	1140	1230
0.80	---	1100	1150

NOTE - All air data measured external to unit with dry coil and less filter.
¹ For downflow air volume, add 0.10 in. w.g. to duct static.

13GEP30 BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)		
	Tap 1	Tap 2	Tap 3
0.10	630	1020	1100
0.20	550	990	1060
0.30	470	960	1030
0.40	420	920	1010
0.50	380	890	990
0.60	320	850	950
0.70	---	790	900
0.80	---	740	840

NOTE - All air data measured external to unit with dry coil and less filter.
¹ For downflow air volume, add 0.10 in. w.g. to duct static.

13GEP48 BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)		
	Tap 1	Tap 2	Tap 3
0.10	970	1680	1890
0.20	890	1640	1820
0.30	820	1590	1730
0.40	780	1540	1620
0.50	740	1450	1540
0.60	680	1330	1430
0.70	---	1260	1300
0.80	---	1180	1210

NOTE - All air data measured external to unit with dry coil and less filter.
¹ For downflow air volume, add 0.10 in. w.g. to duct static.

13GEP36 BLOWER PERFORMANCE

¹ Horizontal Airflow

External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)		
	Tap 1	Tap 2	Tap 3
0.10	760	1250	1370
0.20	680	1210	1330
0.30	600	1180	1280
0.40	550	1130	1250
0.50	490	1090	1210
0.60	---	1060	1170
0.70	---	1010	1120
0.80	---	960	1040

NOTE - All air data measured external to unit with dry coil and less filter.
¹ For downflow air volume, add 0.10 in. w.g. to duct static.

13GEP60 BLOWER PERFORMANCE

¹ Horizontal Airflow

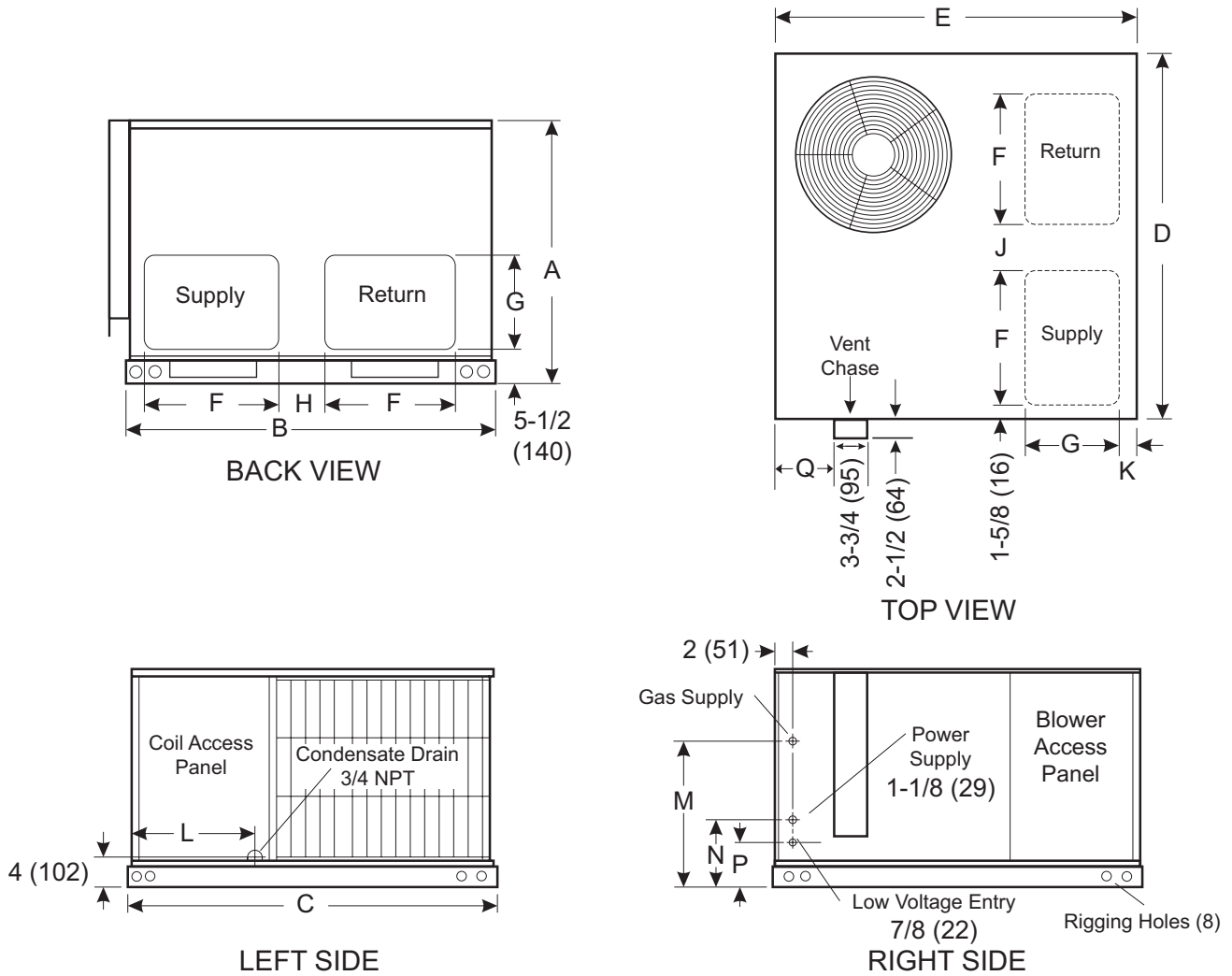
External Static Pressure in. w.g.	Air Volume at Specific Blower Taps (cfm)		
	Tap 1	Tap 2	Tap 3
0.10	1200	1870	2010
0.20	1130	1840	1970
0.30	1070	1800	1930
0.40	990	1760	1890
0.50	930	1700	1850
0.60	860	1650	1810
0.70	---	1600	1760
0.80	---	1550	1700

NOTE - All air data measured external to unit with dry coil and less filter.
¹ For downflow air volume, add 0.10 in. w.g. to duct static.

MOTOR SPEED TAP SETTINGS

Tap 1	Fan Only
Tap 2	Low Static Cooling
Tap 3	High Static Cooling
Tap 4 and 5	Taps 4 and 5 designed for Heating mid-point temperature rise:
Tap 4	Nominal 0.2 ext. static pressure
Tap 5	Nominal 0.5 ext. static pressure

DIMENSIONS - INCHES (MM)



Model No.	A		B		C		D		E		F		G	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
13GEP24050ALP 13GEP30050ALP 13GEP30075ALP 13GEP36075ALP 13GEP36100AP	32-1/2	826	46-1/2	1181	46-1/2	1181	45-5/8	1159	45-5/8	1159	17-1/2	445	11-1/2	292
13GEP42075ALP 13GEP48100ALP 13GEP60100ALP 13GEP60125AP	34-1/2	876	55-1/2	1410	50-1/2	1283	54-5/8	1387	49-5/8	1260	21-1/2	546	12	305

Model No.	H		J		K		L		M		N		P		Q	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
13GEP24050ALP 13GEP30050ALP 13GEP30075ALP 13GEP36075ALP 13GEP36100AP	4	102	4	102	1-3/4	44	15-5/8	397	20-1/2	521	9-7/8	251	9-3/8	238	4-1/8	105
13GEP42075ALP 13GEP48100ALP 13GEP60100ALP 13GEP60125AP	6-1/4	159	5-5/8	143	2-3/8	60	17-1/8	435	20-3/4	527	10-3/8	264	6	152	5-1/4	133

REVISIONS

Sections	Description of Change
Document	Corrected all Model Numbers.



Visit us at www.lennox.com

For the latest technical information, www.lennoxdavenet.com

Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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