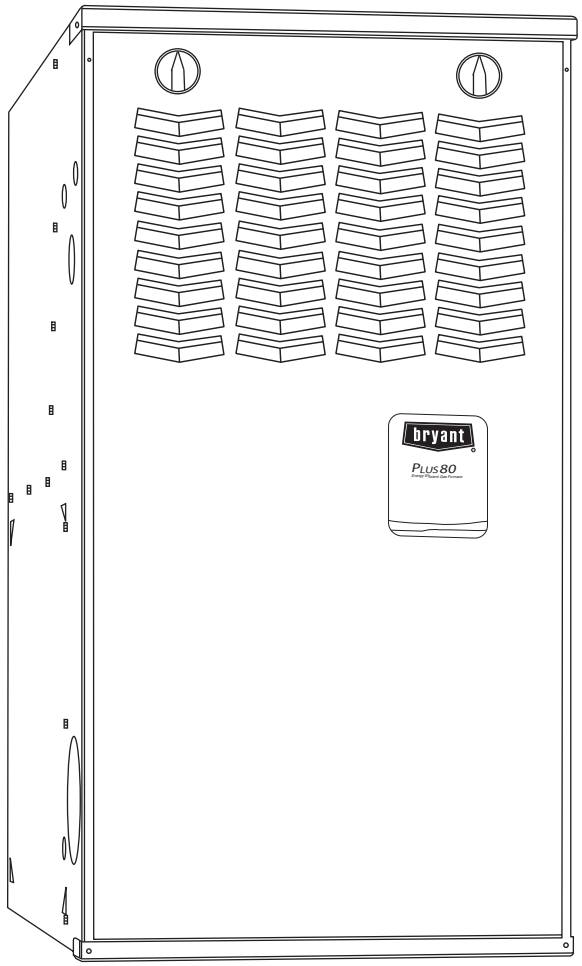
311AAV/311JAV
4-Way Multipoise Induced Combustion Gas Furnace
Sizes 045 thru 155
Series F

Product Data



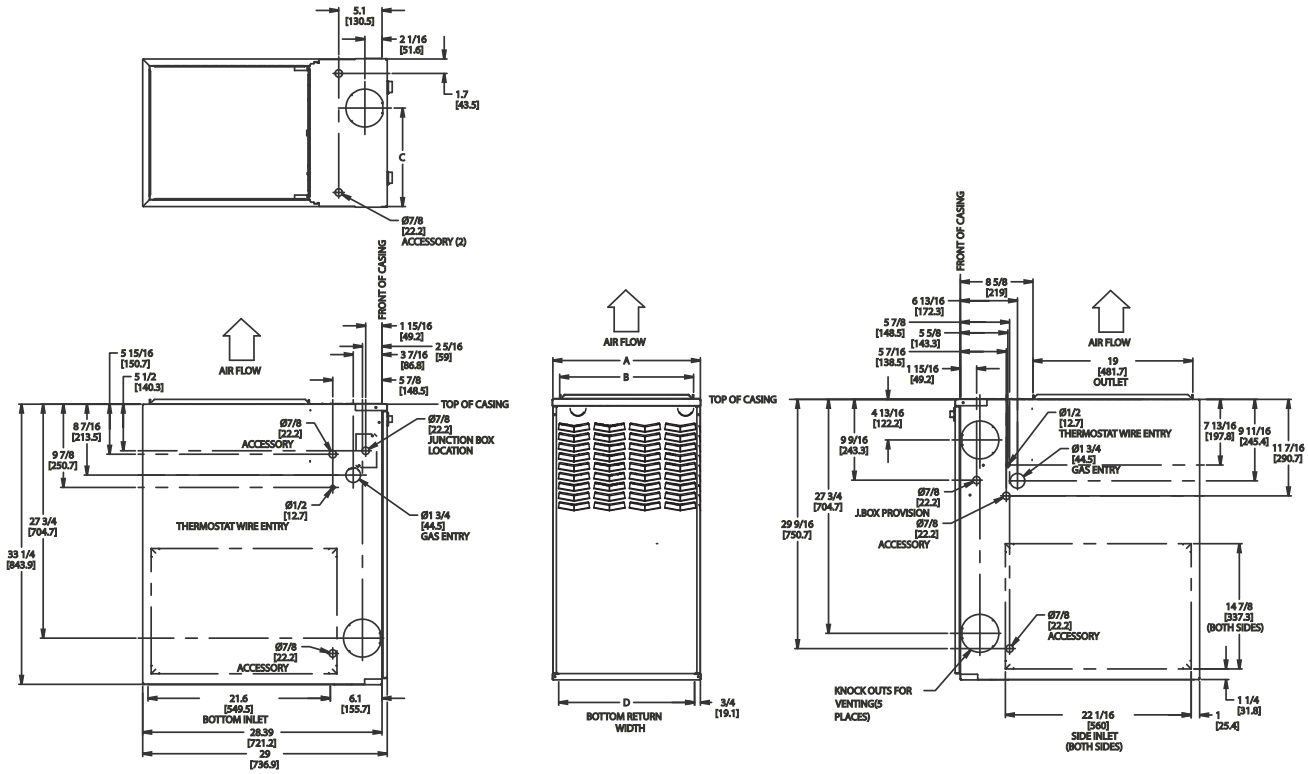
A10253

The Plus 80 Deluxe 4-Way Multipoise Gas Furnace offers outstanding features in an 80% AFUE furnace. Deluxe features include: third fan relay for discrete continuous fan speed, the ability to change continuous fan speeds from the thermostat (Fan on *Plus*™), dehumidify mode, fault code storage, and more. The Plus 80 is very quiet thanks to a new combustion design that eliminates noise, rather than just muffle or box it in. Applications are easy with 4-way multipoise design, through-the-furnace downflow venting, 13 different venting options, and a door designed for easy service access. An inner blower door is provided for tighter sealing in sensitive applications. The 311AAV/JAV furnace is approved for use with natural or propane gas, and the 311JAV is approved for use in Low NOx Air Quality Management Districts.

STANDARD FEATURES

- **Noise elimination combustion system**
- **SmartEvap™ can lower the humidity level in the home by nearly 10%**
- **Four-position furnace: Upflow, Horizontal Right, Horizontal Left, Downflow**
  Thirteen different vent options
- **Compact design only 33-1/3 in. (846 mm) tall**
- **Microprocessor based "smart" control center**
  Fan on *Plus*™-Continuous Fan speed adjustable from thermostat
  Adjustable heating air temperature rise
  Dehumidify mode
  Enhanced diagnostics with LED and reflective sight glass, non-volatile fault code memory, and self-test feature
  On-board fuse for transformer protection
- **Certified to leak 2 percent or less of its nominal air conditioning CFM delivered when pressurized to 1-In. Water Gauge with all present air inlets, air outlets, and condensate drain port(s) sealed.**
- **Patented blocked-vent safeguard to ensure proper furnace venting**
- **Insulated blower compartment**
- **HYBRID HEAT® Dual Fuel System compatible**
- **All models are chimney friendly when used with accessory vent kit**
- **Twinning in Upflow, Downflow, and Horizontal**
- **Perfect Light™ Igniter**
- **Residential installations eligible for consumer financing through the Comfort Credit Program**

DIMENSIONS



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NOTES:

1. Two additional 7/8–in. (22 mm) diameter holes are located in the top plate.
2. Minimum return–air openings at furnace, based on metal duct. If flex duct is used, see flex duct manufacturer's recommendations for equivalent diameters.
   a. For 800 CFM–16–in. (406 mm) round or 14 1/2 x 12–in. (368 x 305 mm) rectangle.
   b. For 1200 CFM–20–in. (508 mm) round or 14 1/2 x 19 1/2–in. (368 x 495 mm) rectangle.
   c. For 1600 CFM–22–in. (559 mm) round or 14 1/2 x 22 1/16–in. (368 x 560mm) rectangle.
   d. For airflow requirements above 1800 CFM, see Air Delivery table in Product Data literature for specific use of single side inlets. The use of both side inlets, a combination of 1 side and the bottom, or the bottom only will ensure adequate return air openings for airflow requirements above 1800 CFM.

FURNACE SIZE	A CABINET WIDTH	B OUTLET WIDTH IN. (MM)	C TOP & BOTTOM FLUE COLLAR IN. (MM)	D BOTTOM INLET WIDTH IN. (MM)	VENT CONNECTION SIZE IN (MM)	SHIP WT LB (KG)	ACCESSORY FILTER MEDIA CABINET SIZE IN. (MM)
024045	14–3/16 (360)	12–9/16 (319)	9–5/16 (237)	12–11/16 (322)	4 (102)	104 (47)	16 (406)
036045	14–3/16 (360)	12–9/16 (319)	9–5/16 (237)	12–11/16 (322)	4 (102)	107 (49)	16 (406)
024070	14–3/16 (360)	12–9/16 (319)	9–5/16 (237)	12–11/16 (322)	4 (102)	111 (50)	16 (406)
036070	14–3/16 (360)	12–9/16 (319)	9–5/16 (237)	12–11/16 (322)	4 (102)	115 (52)	16 (406)
048070	17–1/2 (445)	15–7/8 (403)	11–9/16 (294)	16–1/8 (410)	4 (102)	126 (57)	16 (406)
042090	17–1/2 (445)	15–7/8 (403)	11–9/16 (294)	16–1/8 (410)	4 (102)	127 (58)	16 (406)
048090	21 (533)	19–3/8 (492)	13–5/16 (338)	19–1/2 (495)	4 (102)	140 (64)	20 (508)
060090	21 (533)	19–3/8 (492)	13–5/16 (338)	19–1/2 (495)	4 (102)	146 (66)	20 (508)
036110	17–1/2 (445)	15–7/8 (403)	11–9/16 (294)	16–1/8 (410)	4 (102)	135 (61)	16 (406)
048110	21 (533)	19–3/8 (492)	13–5/16 (338)	19–1/2 (495)	4 (102)	146 (66)	20 (508)
066110	21 (533)	19–3/8 (492)	13–5/16 (338)	19–1/2 (495)	4 (102)	152 (69)	20 (508)
048135	21 (533)	19–3/8 (492)	13–5/16 (338)	19–1/2 (495)	4 (102)*	149 (68)	20 (508)
066135	24–1/2 (622)	22–7/8 (581)	15–1/16 (383)	23 (584)	4 (102)*	163 (74)	24 (610)
060155	24–1/2 (622)	22–7/8 (581)	15–1/16 (383)	23 (584)	4 (102)*	170 (77)	24 (610)

*135 and 155 size furnaces require a 5 or 6–in. (127 or 152 mm) vent. Use a vent adapter between furnace and vent stack. See Installation Instructions for complete installation requirements.

CLEARANCE TO COMBUSTIBLES

⚠ WARNING

FIRE, EXPLOSION, ASPHYXIATION HAZARD

Improper adjustment, alteration, service, maintenance, or installation can cause serious injury or death.

Read and follow instructions and precautions in User's Information Manual provided with this furnace. Installation and service must be performed by a qualified service agency or the gas supplier.

⚠ CAUTION

Check entire gas assembly for leaks after lighting this appliance.

INSTALLATION

1. This furnace must be installed in accordance with the manufacturer's instructions and local codes. In the absence of local codes, follow the National Fuel Gas Code ANSI Z223.1 / NFPA54 or CSA B-149. 1 Gas Installation Code.
2. This furnace must be installed so there are provisions for combustion and ventilation air. See manufacturer's installation information provided with this appliance.

OPERATION

This furnace is equipped with manual reset limit switch(es) in burner compartment to protect against overheat conditions that can result from inadequate combustion air supply or blocked vent conditions.

1. Do not bypass limit switches.
2. If a limit opens, call a quallified serviceman to correct the condition and reset limit switch.

INSTALLATION

MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

This forced air furnace is equipped for use with natural gas at altitudes 0 - 10,000 ft (0 - 3,050m).

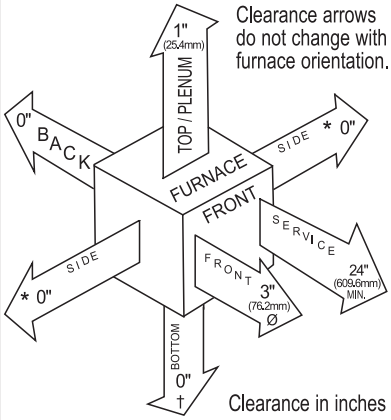
An accessory kit, supplied by the manufacturer, shall be used to convert to propane gas use or may be required for some natural gas applications.

This furnace is for indoor installation in a building constructed on site.

This furnace may be installed on combustible flooring in alcove or closet at minimum clearance as indicated by the diagram from combustible material.

This furnace may be used with a Type B-1 Vent and may be vented in common with other gas fired appliances.

This furnace is approved for UPFLOW, DOWNFLOW, and HORIZONTAL installations.



Vent Clearance to combustibles:
For Single Wall vents 6 inches (6 po).
For Type B-1 vent type 1 inch (1 po).

MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

DOWNFLOW POSITIONS:

† Installation on non-combustible floors only.
For Installation on combustible flooring only when installed on special base, Part No. KGASB0201ALL or NAHA01101SB, Coil Assembly, Part No. CAR, CAP, CNPV, CNRV, END4X, ENW4X, WENC, WTNC, WENW OR WTNW.

Ø 18 inches front clearance required for alcove.

* Indicates supply or return sides when furnace is in the horizontal position. Line contact only permissible between lines formed by intersections of the Top and two Sides of the furnace jacket, and building joists, studs or framing.

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311AAV / JAV

Certified System ISO 9001 QMI-SAI Global

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Always Ask For FACTORY AUTHORIZED PARTS

SPECIFICATIONS

UNIT SIZE		024045	036045	024070	036070	048070	042090	048090
RATINGS AND PERFORMANCE								
Input Btuh*	311JAV Upflow; all 311AAV	44,000	44,000	66,000	66,000	66,000	88,000	88,000
Nonweatherized ICS	311JAV Downflow/Horizontal	42,000	42,000	63,000	63,000	63,000	84,000	84,000
Output Capacity (Btuh)†	311JAV Upflow; all 311AAV	35,000	36,000	53,000	54,000	53,000	71,000	71.000
Nonweatherized ICS	311JAV Downflow/Horizontal	34,000	34,000	51,000	51,000	51,000	68,000	68,000
AFUE†		80.0	80.0	80.0	80.0	80.0	80.0	80.0
Certified Temperature Rise Range – °F (°C)		30-60 (17–33)	20-50 (11–28)	40-70 (22–39)	30-60 (17–33)	25-55 (14–30)	40-70 (22–39)	30-60 (17–33)
Certified External Static Pressure	Heat/Cool	0.10/0.50	0.10/0.50	0.12/0.50	0.12/0.50	0.12/0.50	0.15/0.50	0.15/0.50
Airflow CFM‡	Heating	865	1250	720	1195	1450	1375	1505
	Cooling	835	1160	870	1200	1530	1385	1720
ELECTRICAL								
Unit Volts–Hertz–Phase		115-60-1						
Operating Voltage Range	Min-Max	104-127						
Maximum Unit Amps		5.2	7.0	5.1	6.8	9.5	8.2	10.0
Maximum Wire Length (Measure one way in Ft (M)		49 (14.9)	39 (11.8)	51 (15.5)	40 (12.1)	29 (8.8)	34 (10.3)	28 (8.5)
Minimum Wire Size		14						
Maximum Fuse or Ckt Bkr Size (Amps)**		15						
Transformer (24v)		40va						
External Control	Heating	12va						
Power Available	Cooling	35va						
Air Conditioning Blower Relay		Standard						
CONTROLS								
Limit Control		SPST						
Heating Blower Control		Solid-State Time Operation						
Burners (Monoport)		2	2	3	3	3	4	4
Gas Connection Size		1/2-in. NPT						
GAS CONTROLS								
Gas Valve (Redundant)	Mfr.	White-Rodgers						
	Min. inlet pressure (In. W.C.)	4.5 (Natural Gas)						
	Max. inlet pressure (In. W.C.)	13.6 (Natural Gas)						
Ignition Device		Hot Surface						
Factory-installed orifice		Size 43						
BLOWER DATA								
Direct-Drive Motor HP (PSC)		1/5	1/3	1/5	1/3	1/2	1/3	1/2
Motor Full Load Amps		2.8	5.2	2.8	5.2	5.2	5.2	7.9
RPM (Nominal)-Speeds		1075-3	1075-4	1075-3	1075-4	1075-4	1075-4	1075-4
Blower Wheel Diameter x Width – In. (mm)		10 x 6 (254 x 152)	10 x 6 (254 x 152)	10 x 6 (254 x 152)	10 x 6 (254 x 152)	11 x 8 (279 x 203)	10 x 8 (254 x 203)	10 x 10 (254 x 254)

* Gas input ratings are certified for elevations to 2000 ft. (610 M). In USA, for elevations above 2000 ft. (610 M), reduce ratings 4 percent for each 1000 ft. (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1–2009 Table F.4 or furnace installation instructions.

† Capacity in accordance with U.S. Government DOE test procedures.

‡ Airflow shown is for bottom only return-air supply for the as-shipped speed tap. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return-air supply. An airflow reduction of up to 7 percent may occur when using the factory-specified 4-5/16 in. wide, high efficiency media filter.

** Time–delay type is recommended.

ICS Isolated Combustion System

UNIT SIZE		060090	036110	048110	066110	048135	066135	060155
RATINGS AND PERFORMANCE								
Input Btuh*	311JAV Upflow; all 310AAV	88,000	110,000	110,000	110,000	132,000	132,000	154,000
Nonweatherized ICS	311JAV Downflow/Horizontal	84,000	105,000	105,000	105,000	126,000	126,000	147,000
Output Capacity (Btuh)†	311JAV Upflow; all 310AAV	71,000	89,000	89,000	89,000	107,000	107,000	125,000
Nonweatherized ICS	311JAV Downflow/Horizontal	68,000	85,000	85,000	85,000	102,000	102,000	119,000
AFUE†		80.0	80.0	80.0	80.0	80.0	80.0	80.0
Certified Temperature Rise Range ° F		25-55 (14–30)	50-80 (28–44)	40-70 (22–39)	30-60 (17–33)	50-80 (28–44)	40-70 (22–39)	45-75 (25–42)
Certified External Static Pressure	Heat/Cool	0.15/0.50	0.20/0.50	0.20/0.50	0.20/0.80	0.20/0.50	0.20/0.50	0.20/0.50
Airflow CFM‡	Heating	1990	1335	1515	1900	1525	1850	1790
	Cooling	2025	1355	1680	2220	1710	2110	2230
ELECTRICAL								
Unit Volts–Hertz–Phase		115-60-1						
Operating Voltage Range	Min-Max	104-127						
Maximum Unit Amps		13.6	8.2	10.2	14.8	10.2	14.4	15.0
Maximum Wire Length (Measure one Way in Ft (M)		32 (9.7)	34 (10.3)	28 (8.5)	30 (9.1)	27 (8.2)	30 (9.1)	29 (8.8)
Minimum Wire Size		12	14		12	14	12	
Maximum Fuse or Ckt Bkr Size (Amps)**		20	15		20	15	20	
Transformer (24v)		40va						
External Control	Heating	12va						
Power Available	Cooling	35va						
Air Conditioning Blower Relay		Standard						
CONTROLS								
Limit Control		SPST						
Heating Blower Control		Solid-State Time Operation						
Burners (Monoport)		4	5	5	5	6	6	7
Gas Connection Size		1/2-in. NPT						
GAS CONTROLS								
Gas Valve (Redundant)	Mfr.	White-Rodgers						
	Min. inlet pressure (In. W.C.)	4.5 (Natural Gas)						
	Max. inlet pressure (In. W.C.)	13.6 (Natural Gas)						
Ignition Device		Hot Surface						
Factory-installed orifice		Size 43						
BLOWER DATA								
Direct-Drive Motor HP (PSC)		3/4	1/3	1/2	3/4	1/2	3/4	3/4
Motor Full Load Amps		11.1	5.2	7.9	11.1	7.9	11.1	11.1
RPM (Nominal)-Speeds		1075-4	1075-4	1075-4	1075-4	1075-4	1075-4	1075-4
Blower Wheel Diameter x Width (in.)		11 x 11 (279 x 279)	10 x 8 (254 x 203)	10 x 10 (254 x 254)	11 x 11 (279 x 279)	10 x 10 254 x 254)	11 x 11 (279 x 279)	11 x 11 (279 x 279)

* Gas input ratings are certified for elevations to 2000 ft. (610 M). In USA, For elevations above 2000 ft, (610 M), reduce ratings 4 percent for each 1000 ft. (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1–2009 Table F.4 or furnace installation instructions.

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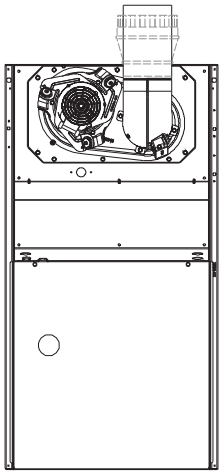
‡ Airflow shown is for bottom only return-air supply for the as-shipped speed tap. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return-air supply. An airflow reduction of up to 7 percent may occur when using the factory-specified 4-5/16 in. (110 mm) wide, high efficiency media filter.

** Time–delay type is recommended.

ICS Isolated Combustion System



SEE NOTES: 1,2,4,7,8,9
UPFLOW

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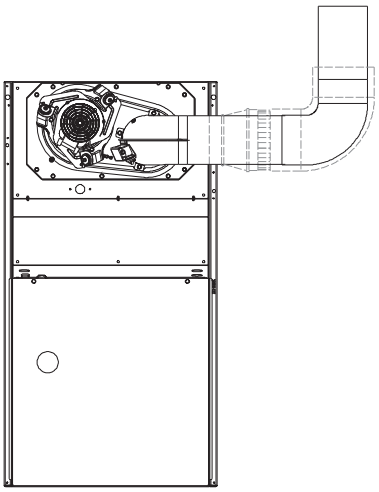
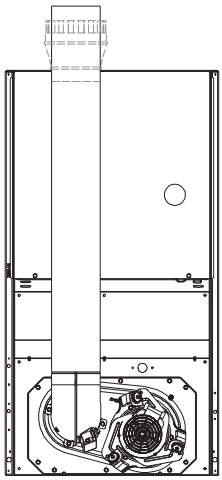


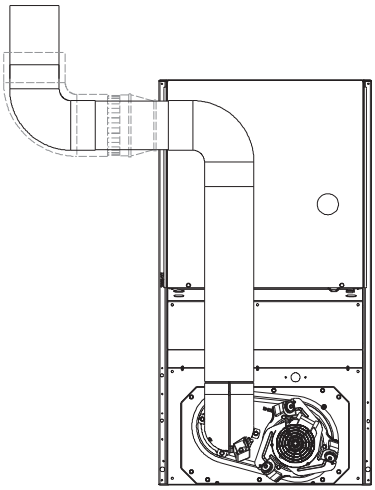
SEE NOTES: 1,2,3,4,7,8,9
UPFLOW

A02059



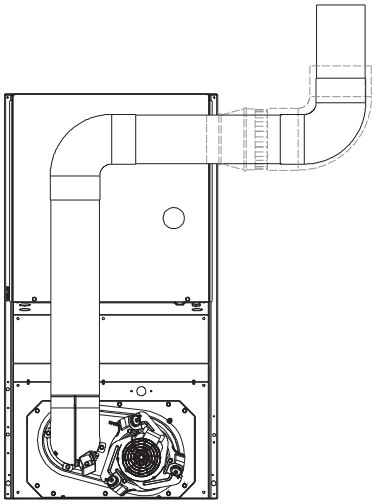
SEE NOTES: 1,2,4,5,7,8,9
DOWNFLOW

A02061



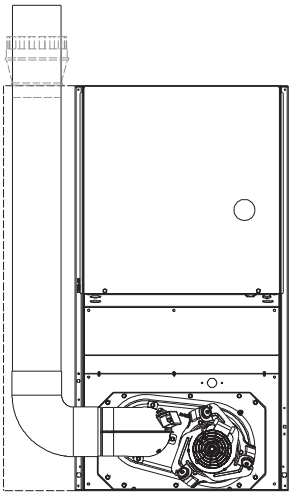
SEE NOTES:1,2,3,4,5,7,8,9
DOWNFLOW

A02060



SEE NOTES: 1,2,3,4,5,7,8,9
DOWNFLOW

A02063



SEE NOTES: 1,2,4,5,6,7,8,9
DOWNFLOW

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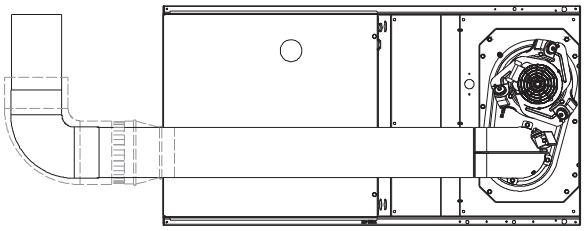
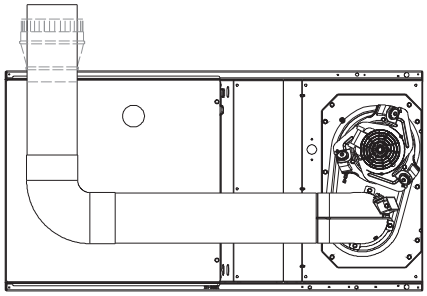
Venting Notes

1. For common vent, vent connector sizing and vent material: United States, latest edition of the National Fuel Gas Code (NFGC), ANSI Z223.1/NFPA 54.
2. Immediately increase to 5-in. (127 mm) vent connector outside furnace casing when 5-in. (127 mm) vent connector required, refer to Note 1.
3. Side outlet vent for upflow and downflow installations must use Type B vent immediately after exiting the furnace, except when Downflow Vent Guard is used in downflow position.
4. Type B vent where required, refer to Note 1.
5. 4 – in. (102 mm) single wall vent must be used inside furnace casing and the Downflow Vent Guard Kit.
6. Accessory Downflow Vent Guard Kit required in downflow installations with bottom vent configuration.
7. Chimney Adapter Kit required for exterior masonry chimney applications. Refer to Chimney Adapter Kits for sizing and complete application details.
8. Secure vent connector to furnace elbow with (2) corrosion-resistant sheet metal screws, space approximately 180° apart.
9. Secure all other single wall vent connector joints with (3) corrosion-resistant screws spaced approximately 120° apart. Secure Type B vent connectors per vent connector manufacturer's recommendations.



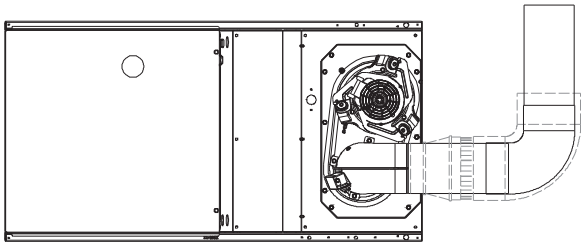
SEE NOTES: 1,2,4,5,7,8,9
HORIZONTAL RIGHT

A02068



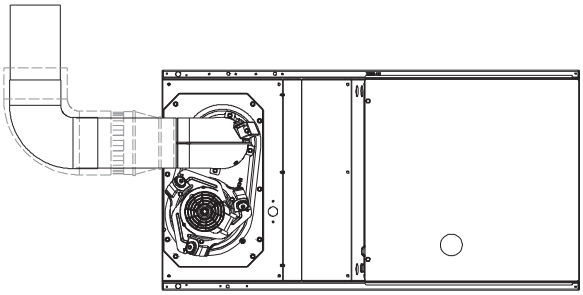
SEE NOTES: 1,2,4,5,7,8,9
HORIZONTAL RIGHT

A02070



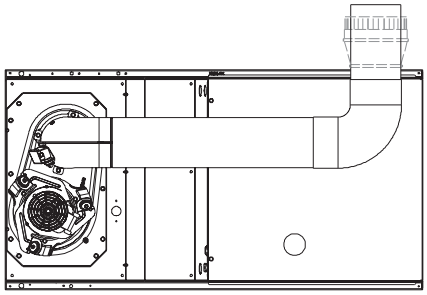
SEE NOTES: 1,2,4,7,8,9
HORIZONTAL RIGHT

A02069



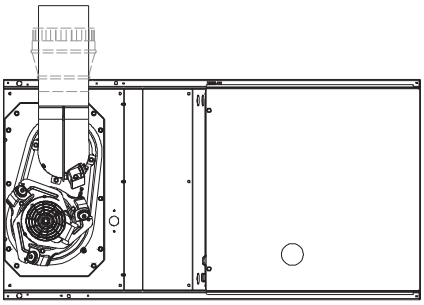
SEE NOTES: 1,2,4,7,8,9
HORIZONTAL LEFT

A02064



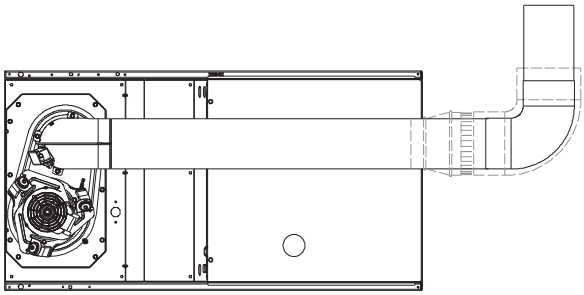
SEE NOTES: 1,2,4,5,7,8,9
HORIZONTAL LEFT

A02065



SEE NOTES: 1,2,4,5,7,8,9
HORIZONTAL LEFT

A02066



SEE NOTES: 1,2,4,5,7,8,9
HORIZONTAL LEFT

A02067

ACCESSORIES

DESCRIPTION	PART NO.	024045	036045	024070	036070	048070	042090	048090	060090	036110	048110	066110	048135	066135	060155
Media Filter Cabinet	FILCABBB0016	X	X	X	X	X	X			X					
	FILCABBB0020							X	X		X	X	X		
	FILCABBB0024													X	X
Cartridge Media Filter	FILBBCAR0016	X	X	X	X	X	X			X					
	FILBBCAR0020							X	X		X	X	X		
	FILBBCAR0024													X	X
EZ Flex Media Filter with End Caps	EXPXXUNV0016	X	X	X	X	X	X			X					
	EXPXXUNV0020							X	X		X	X	X		
	EXPXXUNV0024													X	X
Replacement EZ Flex Filter Media	EXPXXFIL0016	X	X	X	X	X	X			X					
	EXPXXFIL0020							X	X		X	X	X		
	EXPXXFIL0024													X	X
External Bottom Return Filter Rack	KGAFR0401B14	X	X	X	X										
	KGAFR0501B17					X	X			X					
	KGAFR0601B21							X	X		X	X	X		
	KGAFR0701B24													X	X
External Side Return Filter Rack	KGAFR0801SRE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Unframed Filter, 3/4–in. (19 mm)	KGAWF1301UFR†	X	X	X	X	X	X			X					
	KGAWF1401UFR							X	X		X	X	X		
	KGAWF1501UFR													X	X
	KGAWF1306UFR†	X	X	X	X	X	X			X					
	KGAWF1406UFR							X	X		X	X	X		
	KGAWF1506UFR													X	X
Flue Extension	KGAFE0112UPH	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Twinning Kit	KGATW0601HSI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Combustible Floor Base	KGASB0201ALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Downflow Vent Guard	KGBVG0101DFG	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vent Extension Kit	KGAVE0101DNH	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chimney Adapter Kit	KGACA02014FC	X	X	X	X	X	X	X	X	X	X	X			
	KGACA02015FC												X	X	X
Natural–to–Propane Conversion Kit *	KGANP4601ALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Propane–to–Natural Conversion Kit	KGAPN3901ALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Label Kit	KGALB0101KIT	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gas Orifice Kit (Qty 50)	KGAHA0150N42	See Installation Instructions for model, altitude, and heat value usages.													
	KGAHA0250N43 (factory supplied)														
	KGAHA0350N44														
	KGAHA0450N45														
	KGAHA0550N46														
	KGAHA1550N47														
	KGAHA1650N48														
	KGAHA0650P54														
	KGAHA0750P55														
	KGAHA5750125														
	KGAHA5750130														
	KGAHA0850P56														
UV Lights	Model UVL														
Heat/Energy Recovery Ventilator	Models HRV or ERV														
Humidifier	Model HUM														
Electronic or Mechanical Air Cleaner‡	Model EACA, EZXCAB, or FILCAB														

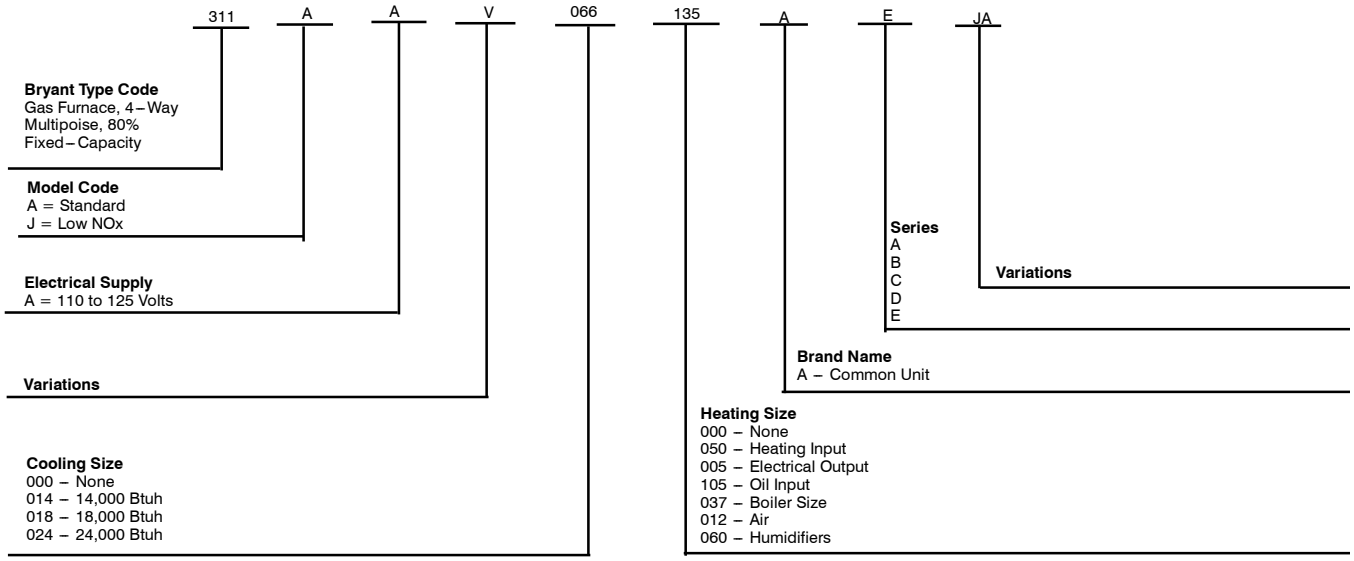
* Factory authorized, field installed. Fuel conversion kits are CSA (formerly AGA/CGA) recognized.
† Suitable for Side Return Filter Rack
‡ An external filter is required for all side return-air installations.
X = Accessory
S = Standard

CONTROLS — THERMOSTAT AND ZONING

DESCRIPTION	PART NO.
NON-PROGRAMMABLE	
For use with 1-speed Air Conditioner – deg. F/C, Auto Changeover	TP–NAC, TC–NAC
For use with 1-speed Heat Pump – deg. F/C, Auto Changeover	TP–NHP, TC–NHP*
For use with 2-speed Air Conditioner – deg. F/C, Auto Changeover	TP–NRH*
For use with multi-use / stage configurations – deg. F/C, Auto Changeover/Temperature and Humidity Control	TP–PRH†
PROGRAMMABLE THERMOSTAT SELECTION	
For use with 1-speed Air Conditioner – deg. F/C, Auto Changeover, 7-Day Programmable	T6–PAC
For use with 1-speed Heat Pump – deg. F/C, Auto Changeover, 7-Day Programmable	T6–PHP*
For use with 2-speed Air Conditioner – deg. F/C, Auto Changeover, 7-Day Programmable	T6–PRH*
For use with 1-speed Air Conditioner – deg. F/C, 5–2 Day Programmable	T6–PAC
For use with multi-stage applications – deg. F/C, Auto Changeover, 7-Day Programmable	T2–PHP‡
For multi-use / stage configurations – deg. F/C, Auto Changeover, 7-Day Programmable/Temperature and Humidity Control	T6–PRH†
ZONING CONTROL SELECTION	
Zone Perfect 3-Zone kit	ZONEBB3ZAC01, ZONEBB3ZHP01
2–Zone Perfect Plus 2-Zone kit/Temperature and Humidity Control	ZONEBB2KIT01-B
4–Zone Perfect Plus 4-Zone kit/Temperature and Humidity Control	ZONEBB4KIT01-B
8–Zone Perfect Plus 8-Zone kit/Temperature and Humidity Control	ZONEBB8KIT01-B

* Model HP and 2S thermostat must be field converted to air conditioner operation.
† Thermidistat Control can be configured for multiple use and staging. It must be configured for each specific application.
‡ Dual Fuel thermostat is used with furnace and heat pump application.

MODEL NUMBER NOMENCLATURE



AIR DELIVERY—CFM (With Filter)*

FURNACE SIZE	RETURN–AIR INLET	SPEED	EXTERNAL STATIC PRESSURE (IN. W.C.)									
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
024045	Bottom or Side(s)	High	1035	995	945	895	835	770	675	565	390	195
		Med–High	865	830	790	745	690	625	545	440	250	195
		Med–Low	760	720	680	635	580	520	445	345	220	195
036045	Bottom or Side(s)	High	1440	1375	1305	1240	1160	1070	975	870	730	560
		Med–High	1360	1300	1240	1175	1115	1040	950	850	725	575
		Med–Low	1250	1210	1160	1100	1040	965	885	790	670	520
		Low	1085	1055	1035	990	945	885	810	715	595	435
024070	Bottom or Side(s)	High	1030	1005	965	925	870	810	740	645	465	280
		Med–High	835	815	790	755	710	660	590	480	325	205
		Med–Low	725	700	675	635	595	545	460	350	250	– –
036070	Bottom or Side(s)	High	1425	1375	1320	1265	1200	1125	1035	940	830	655
		Med–High	1320	1280	1240	1205	1140	1075	995	905	790	620
		Med–Low	120	1175	1145	1105	1050	990	920	840	725	555
		Low	1040	1030	1010	985	945	895	845	765	655	505
048070	Bottom or Side(s)	High	1805	1740	1670	1600	1530	1445	1360	1280	1180	1075
		Med–High	1630	1585	1530	1470	1405	1330	1255	1170	1080	990
		Med–Low	1460	1420	1385	1325	1280	1220	1155	1080	995	910
		Low	1275	1250	1225	1195	1155	1105	1050	980	910	835
042090	Bottom or Side(s)	High	1650	1600	1535	1465	1385	1285	1175	1055	895	645
		Med–High	1515	1485	1440	1380	1300	1220	1115	990	830	600
		Med–Low	1385	1360	1320	1260	1195	1120	1025	915	710	565
		Low	1205	1180	1160	1120	1065	1005	925	810	630	510
048090	Bottom or Side(s)	High	2060	1985	1915	1820	1720	1610	1490	1340	1135	925
		Med–High	1790	1765	1715	1645	1560	1470	1345	1195	1010	820
		Med–Low	1505	1505	1480	1440	1375	1300	1190	1045	890	740
		Low	1225	1225	1220	1195	1155	1085	985	870	735	620
060090	Bottom Only	High	2405	2310	2220	2130	2025	1920	1790	1660	1530	1350
		Med–High	2225	2155	2080	1995	1895	1785	1675	1565	1420	1260
		Med–Low	2020	1955	1880	1805	1730	1630	1535	1420	1275	1135
		Low	1810	1765	1715	1645	1565	1480	1390	1280	1145	1005
	Both Sides or 1 Side & Bottom	High	2530	2450	2365	2270	2165	2065	1940	1805	1670	1505
		Med–High	2285	2215	2150	2075	1985	1890	1780	1660	1525	1360
		Med–Low	1995	1945	1900	1840	1770	1685	1600	1480	1350	1180
		Low	1770	1740	1700	1645	1575	1505	1415	1325	1190	1040
	1Side Only	High	2475	2395	2300	2200	2090	1985	1865	1730	1585	1425
		Med–High	2260	2190	2110	2035	1940	1845	1735	1620	1475	1325
		Med–Low	1950	1910	1855	1795	1730	1650	1555	1445	1310	1150
		Low	1730	1695	1650	1600	1535	1470	1385	1285	1165	1000
036110	Bottom or Side(s)	High	1625	1575	1515	1445	1355	1260	1165	990	785	595
		Med–High	1510	1470	1415	1355	1285	1185	1070	890	725	530
		Med–Low	1360	1335	1295	1250	1180	1100	985	810	670	475
		Low	1195	1180	1155	1115	1065	980	860	740	605	410
048110	Bottom or Side(s)	High	2035	1965	1880	1790	1680	1495	1365	1215	1075	875
		Med–High	1745	1710	1650	1560	1450	1340	1205	1090	955	750
		Med–Low	1530	1515	1470	1400	1310	1215	1095	990	830	670
		Low	1270	1265	1235	1195	1130	1055	970	875	720	600
066110	Bottom Only	High	2530	2470	2400	2320	2220	2115	2000	1865	1730	1590
		Med–High	2230	2205	2165	2110	2035	1950	1855	1740	1615	1485
		Med–Low	1920	1900	1880	1845	1795	1730	1650	1555	1460	1340
		Low	1640	1650	1635	1610	1575	1520	1455	1375	1285	1170
	Bottom Sides or 1 Side & Bottom	High	– –22	– –22	2415	2350	2250	2145	2015	1875	1715	1560
		Med–High	35	00	2155	2100	2040	1955	1850	1740	1595	1470
	1Side Only	High	2540	2495	2430	2355	2265	2175	2065	1935	1785	1650
		Med–High	2125	2120	2105	2060	2010	1940	1840	1730	1615	1485

*A filter is required for each return–air inlet. Airflow performance included 3/4–in. (19 mm) washable filter media such as contained in factory–authorized accessory filter rack. To determine airflow performance without this filter, assume an additional 0.1 In. W.C. available external static pressure.

– – Indicates unstable operating conditions.

AIR DELIVERY-CFM (With Filter)* continued

FURNACE SIZE	RETURN–AIR INLET	SPEED	EXTERNAL STATIC PRESSURE (IN. W.C.)									
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
048135	Bottom or Side(s)	High	2090	2010	1930	1835	1710	1590	1470	1335	1025	835
		Med–High	1790	1755	1705	1640	1550	1465	1360	1210	945	785
		Med–Low	1545	1525	1500	1450	1380	1315	1215	1005	855	670
		Low	1325	1320	1295	1265	1210	1150	995	865	745	540
066135	Bottom Only	High	2485	2400	2310	2215	2110	2000	1880	1725	1535	1355
		Med–High	2195	2150	2090	2000	1920	1825	1720	1565	1405	1255
		Med–Low	1880	1850	1820	1780	1715	1635	1540	1415	1290	1160
		Low	1640	1635	1615	1585	1530	1465	1370	1255	1150	1040
	Bottom, Sides or 1 Side & Bottom	High	– –	– –	2385	2305	2195	2085	1960	1825	1670	1465
		Med–High	2180	2145	2060	2010	1945	1865	1765	1660	1515	1325
	1Side Only	High	– –	– –	2245	2155	2055	1940	1825	1695	1555	1385
		Med–High	2135	2085	2035	1975	1895	1795	1685	1565	1445	1265
060155	Bottom Only	High	2465	2430	2375	2305	2230	2110	2000	1865	1725	1545
		Med–High	2115	2105	2075	2030	1980	1910	1830	1725	1590	1425
		Med–Low	1800	1790	1770	1735	1695	1640	1570	1465	1345	1225
		Low	1570	1565	1550	1525	1495	1445	1370	1270	1175	1070
	Both Sides Or 1 Side & Bottom	High	– –	– –	2375	2285	2200	2105	1995	1870	1730	1570
		Med–High	2155	2135	2095	2040	1975	1895	1790	1685	1550	1400
	1Side Only	High	– –	– –	2260	2180	2085	1975	1865	1740	1605	1455
		Med–High	2140	2095	2040	1975	1890	1810	1705	1595	1480	1325

*A filter is required for each return–air inlet. Airflow performance included 3/4–in. (19 mm) washable filter media such as contained in factory–authorized accessory filter rack. To determine airflow performance without this filter, assume an additional 0.1 In. W.C. available external static pressure.

– – Indicates unstable operating conditions.

Gas Furnace
311AAV/JAV
General

SYSTEM DESCRIPTION

Furnish a _____ fixed capacity gas-fired furnace for use with natural gas or propane (factory authorized conversion kit required for propane); furnish cold air return plenum.

QUALITY ASSURANCE

Unit will be designed, tested and constructed to the current ANSI Z 21.47/CSA 2.3 design standard for gas-fired central furnaces.

Unit will be 3rd party certified by CSA to the current ANSI Z 21.47/CSA 2.3 design standard for gas-fired central furnaces.

Unit will carry the CSA Blue Star® label.

Unit efficiency testing will be performed per the current DOE test procedure as listed in the Federal Register.

Unit will be certified for capacity and efficiency and listed in the latest AHRI Consumer's Directory of Certified Efficiency Ratings.

Unit shall carry the current Federal Trade Commission Energy Guide efficiency label.

DELIVERY, STORAGE AND HANDLING

Unit shall be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

WARRANTY (for inclusion by specifying engineer)

U.S. only. Warranty certificate available upon request.

Products

EQUIPMENT

Components shall include: slow-opening gas valve to reduce ignition noise, regulate gas flow, with electric switch gas shut-off; flame proving sensor, hot surface igniter, pressure switch assembly, flame rollout switch, blower and inducer assembly, 40va transformer; low-voltage (heating) (heating/cooling) thermostat.

Blower Wheel and Blower Motor

Galvanized blower wheel shall be centrifugal type, statically and dynamically balanced. Blower motor of PSC type shall be permanently lubricated with sealed bearings, of _____hp, and shall be multiple-speed direct drive. Blower motor shall be soft mounted to the blower scroll to reduce vibration transmission.

Filters

Furnace may have reusable-type filters. Filter shall be _____ (x) _____in. or mm.

Casing

Casing shall be of .030-in. (.76 mm) thickness minimum, pre-painted galvanized steel.

Inducer Motor

Inducer motor shall be soft mounted to reduce vibration transmission.

Draft Safeguard Switch

Draft Safeguard Switch (blocked vent safeguard) shall be factory installed to reduce the possibility of vent gas infiltration due to a blocked or restricted vent pipe.

Heat Exchangers

Heat exchangers shall be a 4-Pass 20 gage aluminized steel of fold-and-crimp sectional design when applied operating under negative pressure.

Controls

Control shall include a micro-processor based integrated electronic control board with at least 11 service troubleshooting codes displayed via flashing enhanced LED diagnostic light on the control, a self-test feature that checks all major functions of the furnace within one minute, and a replaceable automotive-type circuit protection fuse. Multiple operational settings available including, separate blower speeds for heating, cooling, and continuous fan. Continuous fan speed may be adjusted from the thermostat. Cooling airflow will be selectable between 350 or 400 CFM per ton of air conditioning. Features will also include temporary reduced airflow in the cooling mode for improved dehumidification when a Thermidistat® is selected as the thermostat.

OPERATING CHARACTERISTICS

Heating Capacity shall be _____ Btuh input; _____ Btuh output capacity.

Fuel Gas Efficiency shall be 80% AFUE.

Air delivery shall be _____ CFM minimum at 0.50 In. W.C. external static pressure.

Dimensions shall be: depth _____ in.; width _____ in; height_____in. (casing only). Height shall be_____in. with A/C coil and _____in. overall with plenum.

ELECTRICAL REQUIREMENTS

Electrical supply shall be 115 volts, 60 Hz, single-phase (nominal). Minimum wire size shall be_____AWG; maximum fuse size or circuit breaker shall be _____Amps.

SPECIAL FEATURES

Refer to section of the product data sheet identifying accessories and descriptions for specific features and available enhancements.

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Catalog No. PDS311A.45.7

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

Replaces: PDS 311A.45.6