

## Specification Guide

# FOA & HED Series

*Unit Heaters and Duct Furnaces*



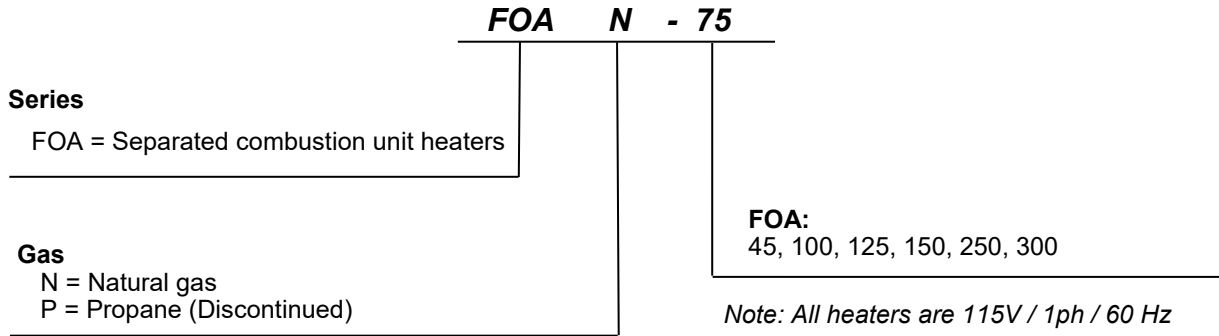
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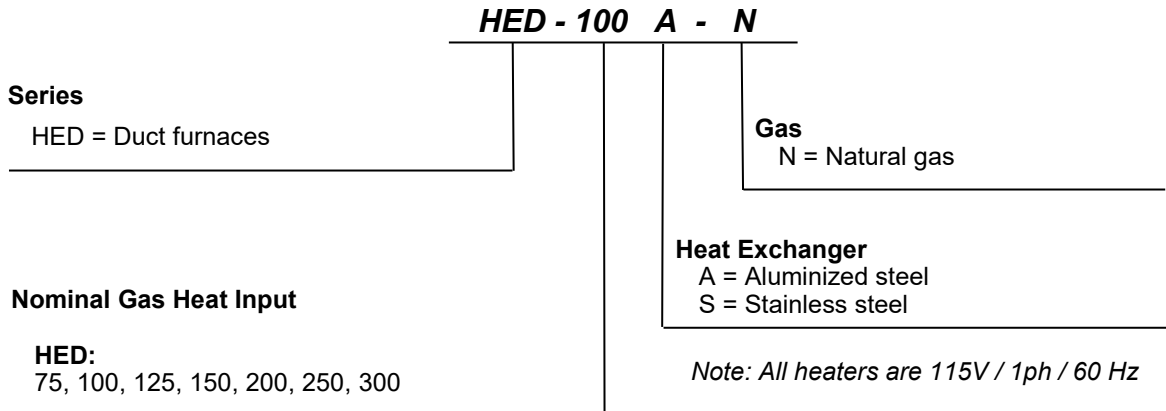
# PRODUCT NOMENCLATURE

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## FOA Nomenclature



## HED Nomenclature



# PRODUCT FEATURES

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## **Efficiency**

ADP gas-fired unit heaters and duct furnaces deliver between 80% and 82% thermal efficiency. This excellent efficiency sets a new standard when using gas-fired unit heaters and duct furnaces.

## **Reliability**

ADP heater designs have proven superior for over a decade and during hundreds of thousands of hours in the toughest winter climates of North America and under extreme conditions in laboratory life cycle testing. ADP unit heaters and duct furnaces have been designed to provide a long, trouble free service life.

## **Quality**

Every heater undergoes continuous quality checks at all stages of manufacturing. After assembly, each heater is test fired and functionally tested to provide final assurance that it is performing in accordance with ADP's rigorous quality standards.

## **Approvals**

All ADP heaters are built in the USA in an ISO 9001:2008 facility. The rating plate of each heater carries the mark signifying that the heater is design certified by CSA. In addition, the heater series is listed by the California Energy Commission (CEC).

## **Warranty**

ADP unit heaters feature a standard 2-year limited warranty. For FOA Series, the warranty provides extended coverage on aluminized heat exchangers for 10 years.

## **Power Exhaust**

All heaters have a sealed flue collector and a power exhaust system which enable conventional vertical venting or horizontal venting. Power exhaust, when used with horizontal venting, lowers operating cost because it reduces stack losses. It also allows the option of not penetrating the roof, or multiple floors. The versatile power exhaust (on some models) reduces installation cost further by allowing the exhaust to be directed upward, left or right, just by rotating the exhaust assembly.

## **In Shot Burners**

These lightweight aluminized steel burners are maintenance-free and never require adjustment. The burner venturi mixes air and gas in the correct proportion for efficient combustion. The entire burner assembly is

removable as one piece for ease of service.

## **Tubular Heat Exchangers**

Constructed of aluminized steel for superior resistance to corrosion and oxidation; for additional protection, some models have an optional stainless steel heat exchanger. The curving design provides for complete exposure of the heating surface to the supply air stream. Rounded surfaces minimize air resistance and permit air to surround all heat transfer surfaces for excellent heat transfer. Tubular design means lighter weight and significantly longer service life due to lower thermal-induced stresses. .

## **Direct Spark Ignition**

In combination with the 24-volt main gas valve with 100% shutoff for safety, the direct spark ignition control provides positive, reliable and safe main burner ignition. This eliminates the need for a pilot light, improving system efficiency and reliability. A separate flame sensor provides proof of main burner ignition. If loss of main burner flame should occur, the control will reinitiate ignition three times before locking out, thus reducing nuisance service calls. The unit will reinitiate ignition after the one hour lockout. The prepurge operation safety removes all gas and flue products from the system prior to ignition.

## **Cabinet**

Constructed heavy gauge painted steel, each cabinet has a two-point suspension system for easy installation (larger and two-fan models have four-point suspensions). Generous use of inside cabinet insulation keeps the outer surface temperature low. The wiring junction box is conveniently located on the side of the cabinet (HED only) for easy access and adequate protection.

**Product Features**

- Perfect for light commercial and greenhouse applications.
- Introduces clean combustible outside air when required.
- Wiring junction box is located outside of unit.
- Ideal for hard-to-heat applications where excessive dust, dirt, humidity, or negative pressure is a concern.
- Heating capacities from 40,000 – 300,000 BTUH.
- Up to 82% thermal efficiency.
- Compact cabinet design on 40,000 – 75,000 BTUH models.
- Hinged door allows easy access to components.
- Sidewall venting eliminates roof penetrations.
- Self-diagnostic board with LED display improves troubleshooting efficiency and accuracy.
- Tubular heat exchangers made of aluminized steel.
- Power exhaust system allows horizontal venting to 25 ft.
- Direct drive propeller fans are dynamically balanced for quiet and smooth operation.



**Technical Data**

	Model	FOA* -45	FOA* -100	FOA* -125	FOA* -150 <sup>[1]</sup>	FOA* -250 <sup>[1]</sup>	FOA* -300 <sup>[1]</sup>
<b>Gas Heating Performance</b>	Heating Capacity Input (BTUH)	40,000	100,000	125,000	150,000	240,000	300,000
	Output Natural Gas (BTUH)	32,400	81,000	101,500	120,000	194,400	240,000
	Output LPG / Propane (BTUH)**	32,400	82,700	101,500	121,500	196,800	243,000
	Thermal Efficiency -- Natural Gas	81%	82%	81%	80%	81%	80%
	Thermal Efficiency -- LPG / Propane**	81%	81%	81%	81%	82%	81%
	Temp Rise (deg F)	45	31	39	38	35	43
<b>Connections</b>	Flue Size Round (in)	3	5	5	5	5	6
	Combustion Air Size Round (in)	3	4	4	4	4	4
	Gas Piping Size (in, NPT)	1/2	1/2	1/2	1/2	3/4	3/4
<b>Fan Data <sup>[2]</sup></b>	Number of Fans	1	1	1	1	2	2
	Diameter (in)	10	16	16	18	16	16
	Number of Blades	5	4	4	4	4	4
	Motor Output (hp)	1/20	1/8	1/8	1/8	1/8	1/8
	Motor Full Load Amps	1.7	2.7	2.7	2.7	2.7	2.7
	Motor RPMs	1650	1075	1075	1075	1075	1075
<b>Physical Data</b>	Air Vol. (CFM)	750	2435	2435	2955	5215	5215
	Overall Dimensions H x W x D (in)	12 x 26 x 24	21 x 36-1/2 x 39-5/8	21 x 36-1/2 x 39-5/8	27 x 36-1/2 x 39-5/8	39 x 36-1/2 x 39-5/8	39 x 36-1/2 x 39-5/8
	Ship Weight (lbs)	84	188	204	261	307	323

\* N = Natural gas; P = LP gas

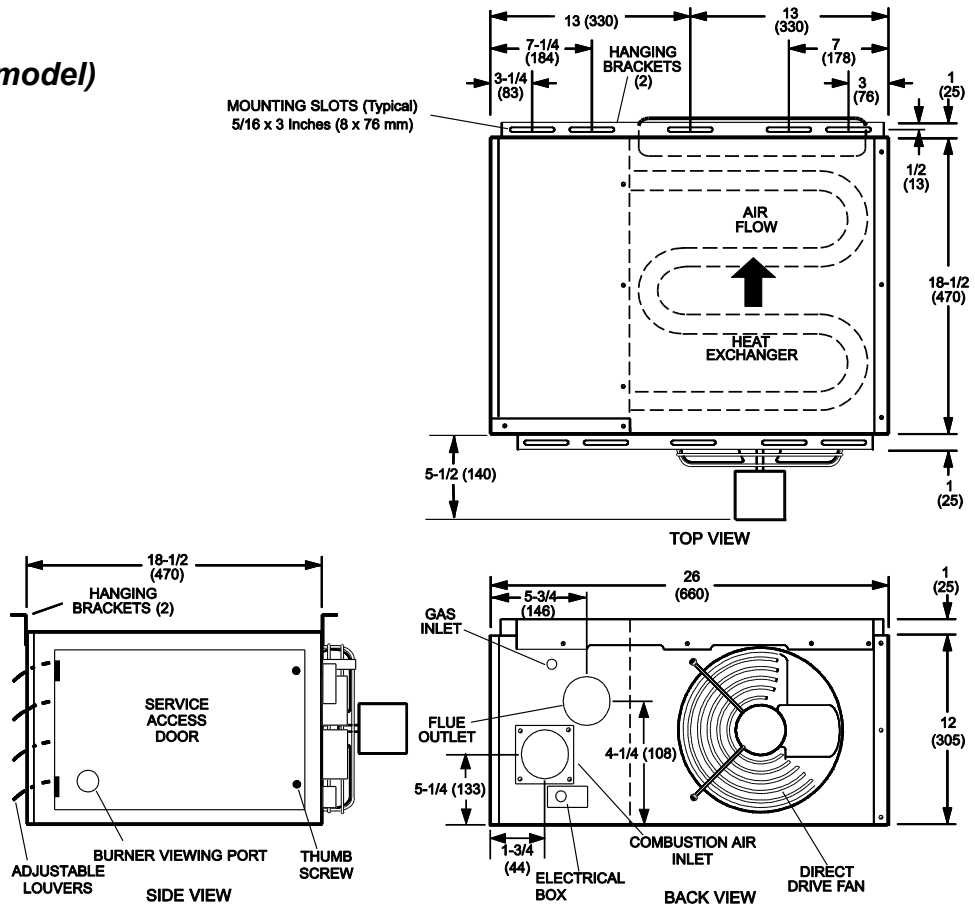
\*\* Propane models discontinued 08/2020

[1] Models not approved for residential applications.

[2] Fan motor type: SP for models 45; PSC for models 100, 125, 150, 250, 300.

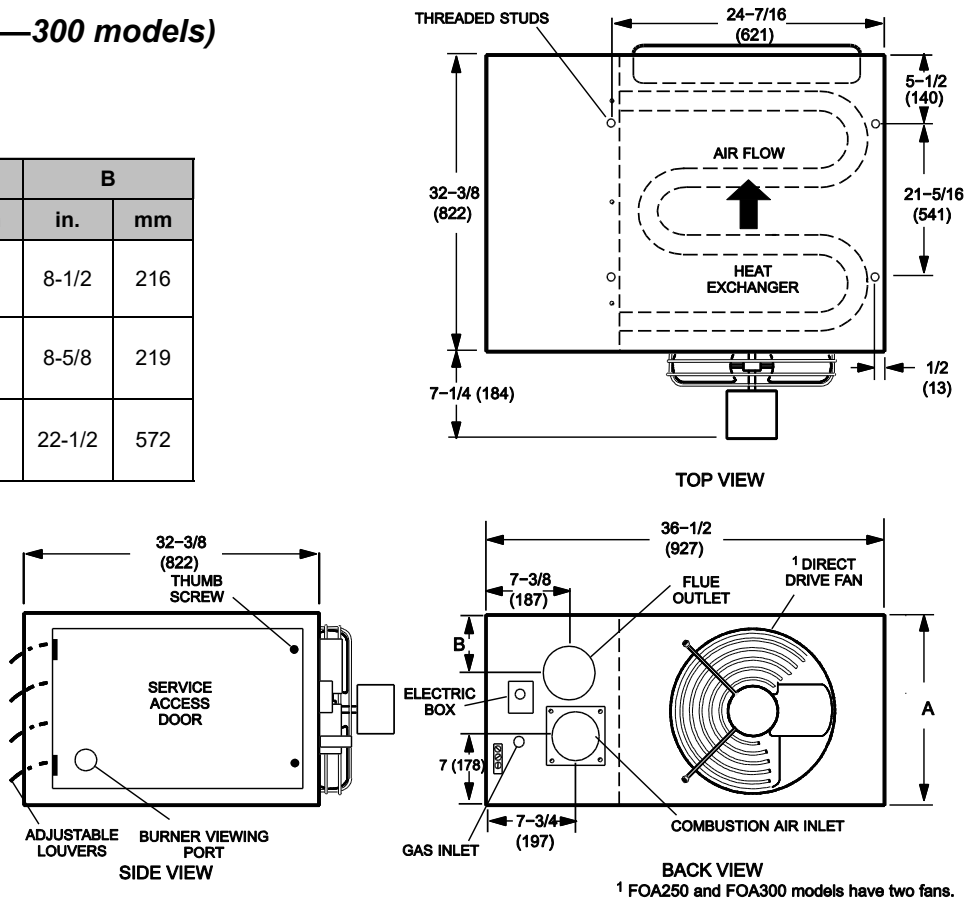
Note: All models are 115 V, 60 Hz, 1 phase.

Dimensions (45 model)



Dimensions (100—300 models)

Model Size	A		B	
	in.	mm	in.	mm
100 125	21	533	8-1/2	216
150	27	686	8-5/8	219
250 300	39	991	22-1/2	572



**Product Features**

- Specially designed for applications requiring duct systems.
- Heating capacities from 75,000 – 300,000 BTUH.
- 80% thermal efficiency.
- Stainless steel heat exchanger is available for longer product life.
- Sidewall venting eliminates roof penetrations.
- Wiring junction box is located outside of unit.
- Self-diagnostic board with LED display improves troubleshooting efficiency and accuracy.
- 3/8 x 16 rivet nuts are located on the top of cabinet for suspending unit using threaded rod.
- Heat exchangers are laboratory life-cycle tested.
- Aluminized steel in shot burners provide efficient trouble free operation.
- Power exhaust system with a sealed flue collector allows conventional vertical or horizontal venting to 35 ft. (depending on unit size).
- Safe direct spark ignition. No standing pilot light.
- Tubular heat exchangers made of aluminized steel or stainless steel.
- Factory installed condensate drain allows for use downstream of cooling systems.

**Technical Data**

	<b>Model</b>	<b>HED-75#</b>	<b>HED-100#</b>	<b>HED-125#</b>	<b>HED-150#</b>	<b>HED-200#</b>	<b>HED-250#</b>	<b>HED-300#</b>
<b>Gas Heating Performance</b>	Heating Capacity Input (BTUH)	75,000	100,000	125,000	150,000	200,000	250,000	300,000
	Heating Output (BTUH)	60,000	80,000	100,000	120,000	160,000	200,000	240,000
	Steady State Efficiency	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%
	Air Volume Throughput (CFM)	780- 2700	870 - 3700	1020 - 4700	1320 - 5600	1480 - 4230	1850 - 5290	2220 - 6200
	Temp Rise (deg F)	21 - 71	20 - 85	20 - 91	20 - 84	35 - 100	35 - 100	36 - 100
<b>Connections</b>	Flue Size Round (in)	4 <sup>[1]</sup>	4 <sup>[1]</sup>	4 <sup>[1]</sup>	4 <sup>[1]</sup>	5 <sup>[2]</sup>	5 <sup>[2]</sup>	5 <sup>[2]</sup>
	Gas Piping Size (in, NPT)	1/2	1/2	1/2	1/2	3/4	3/4	3/4
	Cond. Drain Size (in)	1/4	1/4	1/4	1/4	1/4	1/4	1/4
<b>Physical Data</b>	Overall Dimensions H x W x D (in)	28-5/16 x 19-1/2 x 34-11/16	32-3/16 x 20-1/8 x 40	32-3/16 x 20-1/8 x 40	32-3/16 x 23-1/8 x 40	32-3/16 x 41-1/8 x 40	32-3/16 x 41-1/8 x 40	32-3/16 x 41-1/8 x 40
	Ship Weight (lbs)	115	140	150	165	270	285	305

# A = Aluminized steel heat exchanger; S = Stainless steel heat exchanger; all models are 115 volts, 60 Hz, 1 phase.

[1] 2-1/4 x 4 in. (57 x 102 mm) round flue adaptor is furnished with unit for flue connection.

[2] 2-1/4 x 2-3/4 in. (57 x 70 mm) rectangular to 5 in. (127 mm) round adaptor is furnished with unit for flue connection.

Note: HED duct furnaces are not approved for residential applications.

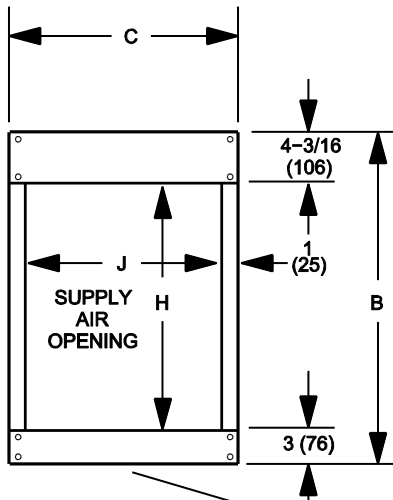
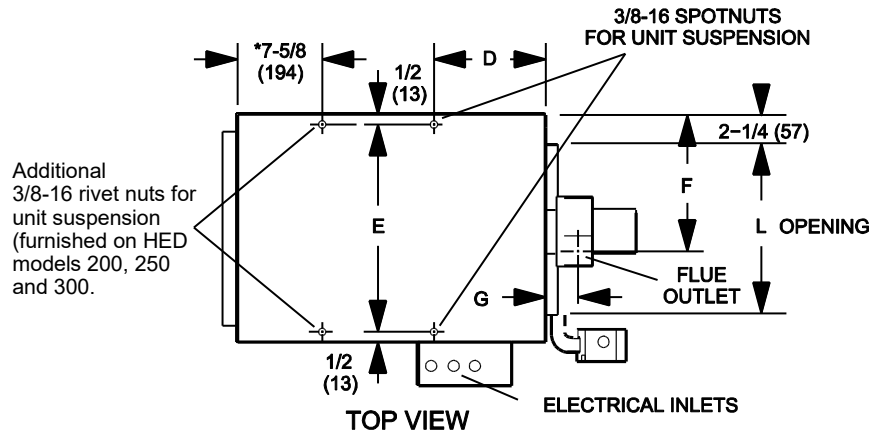
**Performance Ratings**

Unit Size	Air Volume (CFM)	Total Resistance (inches W.C)	Temp Rise (deg F)
<b>75</b>	780	0.01	71
	1000	0.02	56
	1300	0.05	43
	1600	0.07	35
	1900	0.10	29
	2200	0.12	25
	2500	0.17	22
	2700	0.20	21
<b>100</b>	870	0.02	85
	900	0.02	82
	1300	0.03	57
	1700	0.06	44
	2100	0.09	35
	2500	0.12	30
	2900	0.15	26
	3300	0.18	22
	3700	0.23	20
<b>125</b>	1020	0.03	91
	1100	0.03	84
	1600	0.06	58
	2100	0.11	44
	2600	0.16	36
	3100	0.21	30
	3600	0.26	26
	4100	0.31	23
	4600	0.36	20
	4700	0.37	20
<b>150</b>	1320	0.02	84
	1400	0.03	79
	2000	0.07	56
	2600	0.12	43
	3200	0.20	35
	3800	0.28	29
	4400	0.37	25
	5000	0.45	22
	5600	0.55	20

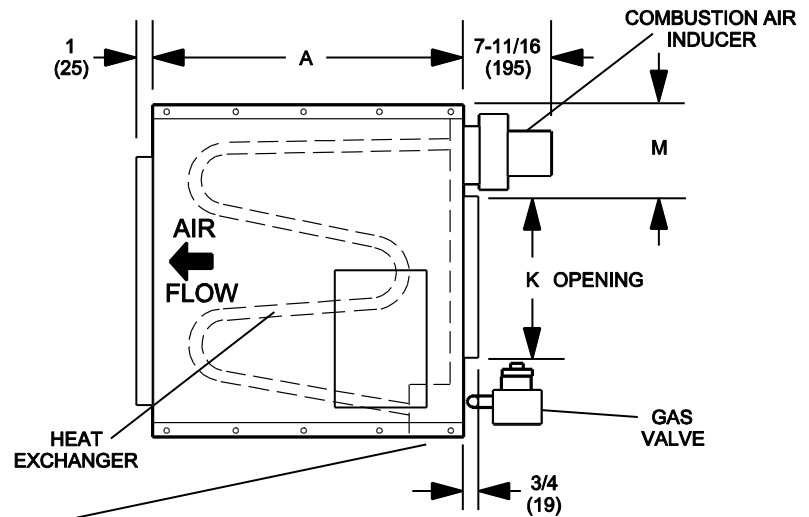
Unit Size	Air Volume (CFM)	Total Resistance (inches W.C)	Temp Rise (deg F)
<b>200</b>	1480	0.03	100
	1500	0.03	99
	2000	0.04	74
	2500	0.07	59
	3000	0.09	49
	3500	0.13	42
	4000	0.15	37
	4230	0.16	35
	<b>250</b>	1850	0.04
2000		0.05	93
2500		0.08	74
3000		0.11	62
3500		0.13	53
4000		0.17	46
4500		0.19	41
5000		0.23	37
5290		0.25	35
<b>300</b>		2220	0.07
	2800	0.11	79
	3400	0.14	65
	4000	0.18	56
	4600	0.23	48
	5200	0.26	43
	5800	0.31	38
	6190	0.33	36
	6200	0.33	36

**Dimensions**

\* NOTE: Two rivet nuts are furnished on HED models 75, 100, 125 and 150. Four rivet nuts are furnished on HED models 200, 250 and 300



END VIEW



SIDE VIEW

CONDENSATE DRAIN LOCATION (On Burner Box)

Model Size		A	B	C	D	E	F	G	H	J	K	L	M
75	in.	26	28-5/16	19-1/2	8-1/2	18-1/2	11-3/4	2-1/2	21-1/8	17-1/2	13-3/8	15	7-5/16
	mm	660	719	495	216	469	298	64	537	445	340	381	186
100 125	in.	31-5/16	32-3/16	20-1/8	10-1/2	19-1/16	11-3/4	3-1/4	25	18-1/8	15-3/8	15-5/8	9-5/16
	mm	795	818	511	267	484	298	83	635	460	391	397	237
150	in.	31-5/16	32-3/16	23-1/8	11-3/8	23-1/16	8-1/2	3-1/4	25	21-1/8	15-3/8	17-1/8	8-15/16
	mm	795	818	587	289	586	216	83	635	537	391	435	227
200 250 300	in.	31-5/16	32-3/16	41-1/8	3-11/16	40	17-1/2	3-1/4	25	39-1/8	15-3/8	35-1/16	9
	mm	795	818	1045	97	1016	445	83	635	994	391	891	229

