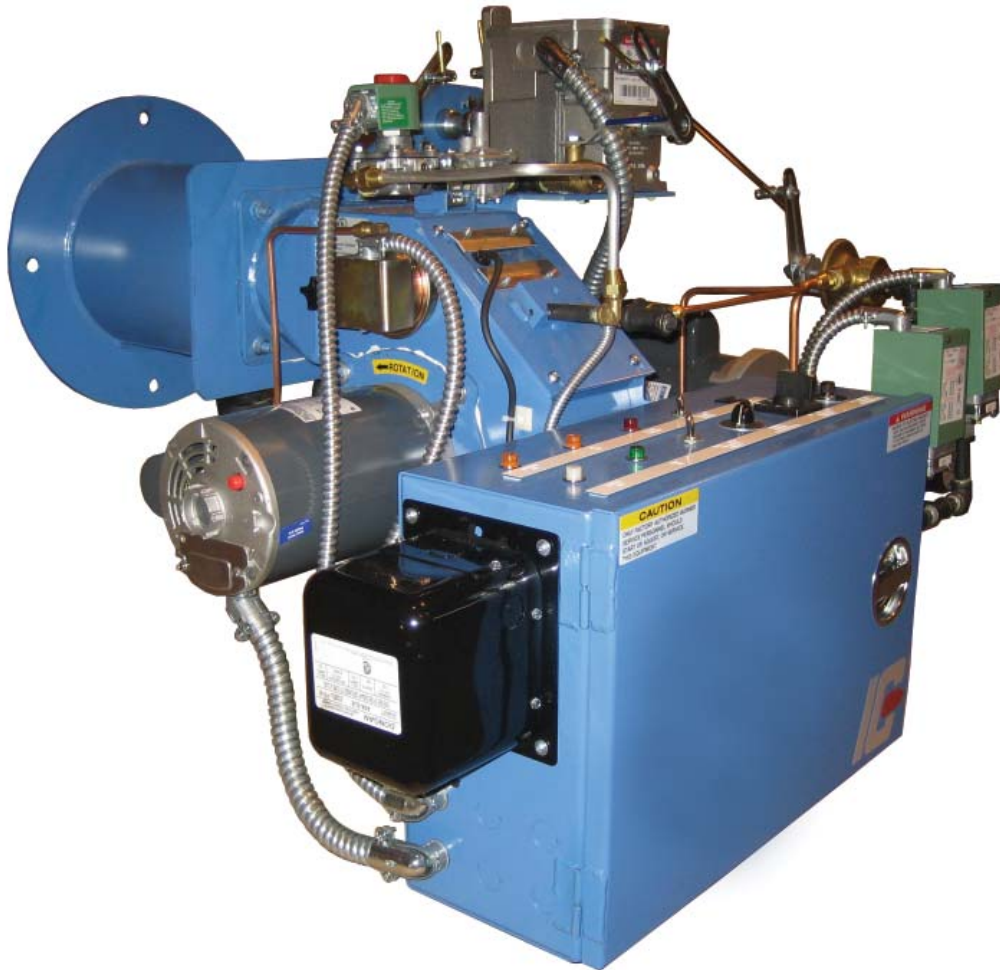


# FP - SERIES

FORCED DRAFT BURNER

- Gas, Light Oil & Combination Gas/Oil Capabilities
- Versatile for Boiler, Furnace & Heater Applications
- 0.550 - 4.2 MMBtu Input Range



**INDUSTRIAL  
COMBUSTION**

INNOVATION FUELING PERFORMANCE

# FP - SERIES SPECIFICATIONS

## FEATURES:

- Gas, light oil and combination gas/oil fuels
- Gas/electric ignition on gas and combination gas/oil units
- Direct spark ignition on oil units
- Upright model optional for low boiler base heights
- Honeywell and Fireye control options
- Remote oil pump optional
- Pressure atomized
- On/Off standard on models FP 5-7
- Low-High-Low/Off standard on models FP 8-25
- Full modulation standard on models FP 28-42
- UL listed

## CAPACITIES & SPECIFICATIONS:

FP Series:	Size 1		Size 2			
	<b>Burner Sizes</b>	5	7	8	9	11
<b>Gas Input (MBtu/hr)</b>	550	700	800	900	1,100	1,200
<b>Oil Input (US gph)</b>	3.9	5.0	5.7	6.4	7.9	8.6
<b>Boiler HP @ 80% Eff.</b>	13	17	19	21	26	29
<b>Blower Motor HP</b>	3/4	3/4	3/4	3/4	3/4	3/4
<b>Oil Pump Motor HP</b>	1/2	1/2	1/2	1/2	1/2	1/2
<b>Shipping Weight (lbs)</b>	200	200	200	200	200	200

FP Series:	Size 3			Size 4			
	<b>Burner Sizes</b>	14	17	20	25	28	36
<b>Gas Input (MBtu/hr)</b>	1,400	1,700	2,000	2,500	2,800	3,600	4,200
<b>Oil Input (US gph)</b>	10.0	12.0	14.5	2,500	21.0	25.0	30.0
<b>Boiler HP @ 80% Eff.</b>	33	40	50	18.0	70	86	100
<b>Blower Motor HP</b>	3/4	3/4	3/4	60	1	2	3
<b>Oil Pump Motor HP</b>	1/2	1/2	1/2	1	1/2	1/2	1/2
<b>Shipping Weight (lbs)</b>	250	250	250	1/2	370	375	400

### Notes:

1. Input is based on fuel Btu content, listed furnace pressure and altitude of 2,000 feet or less. Consult factory for higher altitudes.
2. Consult factory if furnace pressure exceeds listed value.
3. Gas input based on natural gas with 1,000 Btu/cu.ft. and 0.60 gravity.
4. Oil input based on 140,000 Btu/gal.
5. Consult factory for 50Hz. applications.
6. Boiler overall efficiency of 80% estimated.



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# **FP SERIES**

**TECHNICAL DATA INFORMATION PACKET**

**INDUSTRIAL  
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## FP Series Technical Data Sheet

UL listed with choice of  
CSD-1, GAP, and FM for  
U.S. units

### Uncontrolled Emissions Configuration

**.5 - 4.2 MM BTU/H NG; 3.9 - 30.0 GPH #2 OIL**

Standard equipment:	Fuel options:
3450 RPM motor, panel signal lights (Power On, Main Fuel, Ignition, Flame Failure), 120/1/60 control circuit, combustion air proving switch burner mounted panel with standard or inverted configuration. <b>Gas and gas/oil units only:</b> two gas shutoff cocks, one main gas regulator, shipped loose gas train.	<p>Main Fuel: Natural gas (FPG), #2 oil - pressure atomized (FPL) or Combination gas/ #2 oil - pressure atomized (FPLG).</p> <p>Igniter Fuel: Natural gas and/or propane.</p> <p>Fuel changeover switch: Combination gas/oil units only (FPLG).</p>

## Series Features

◇ Optional Feature



Feature	FP-5 to FP-7	FP-8 to FP-12	FP-14 to FP-25	FP-28 to FP-42
<b>Flame Safeguard</b>				
UV Scanner	•	•	•	•
<b>Mode of Operation</b>				
On-Off Firing	•			
Low-High-Off Firing	◇	•	•	◇
Full Modulation Firing	◇	◇	◇	•
Auto-Manual Firing Rate Control	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	•
<b>Ignition</b>				
Gas/Electric Pilot and Ignition Transformer	•	•	•	•
Direct Spark (FPL)	•	•	•	•
Dual Ignition (FPLG)	◇	◇	◇	◇
<b>Oil Components</b>				
Directly Driven Oil Pump Set	•	•	•	•
Simplex Oil Nozzle (2)	• <sup>2</sup>	• <sup>2</sup>	• <sup>2</sup>	• <sup>2</sup>
2-Way Solenoid Valve (2)	•	•	•	•
2-Way Motorized POC (2)	◇	◇	◇	◇
Oil Metering Valve	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>
Hydraulic Oil Cylinder	• <sup>3</sup>	• <sup>3</sup>	• <sup>3</sup>	
<b>Gas Components</b>				
High & Low Gas Pressure Interlocks	◇	◇	◇	•
Diaphragm Valve & Solenoid Valve	•			
Motorized Valve & Solenoid Valve	◇	•	•	•
Motorized Valve w/POC & Solenoid Valve	◇	◇	◇	◇
Motorized Valve w/POC & Motorized Valve	◇	◇	◇	◇

<sup>1</sup> Standard for full modulation

<sup>2</sup> One simplex oil nozzle is standard for sizes 5-12, two simplex oil nozzles are standard for sizes 14-42

<sup>3</sup> Standard for low-high-off/low modulation

# FP Series

## Standard Ratings Sheet

	Gas Input MBH	Oil Input GPH	BHP @ 80% Eff.	Blower Motor HP	Furnace Pressure ("w.c.)	Standard Gas Train Pipe Size (in.)	Min. Gas Pressure ("w.c.)
<b>Model No. &amp; Frame Size</b>							
FP-5-1	550	3.9	13	3/4	.75	1	3.1
FP-7-1	700	5.0	17	3/4	.75	1	4.8
FP-8-2	800	5.7	19	3/4	.75	1	4.7
FP-9-2	900	6.4	21	3/4	.75	1	5.9
FP-11-2	1,100	7.9	26	3/4	.75	1	7.9
FP-12-2	1,200	8.6	29	3/4	.75	1	9.0
FP-14-3	1,400	10.0	33	3/4	.75	1	6.0
FP-17-3	1,700	12.0	40	3/4	.75	1 1/2	6.4
FP-20-3	2,100	14.5	50	3/4	.75	1 1/2	9.0
FP-25-4	2,490	18.0	60	1	.75	1 1/2	9.6
FP-28-4	2,940	21.0	70	1	.75	1 1/2	14.2
FP-36-4	3,600	25.0	86	2	.75	1 1/2	21.1
FP-42-4	4,200	30.0	100	3	.75	2	10.6

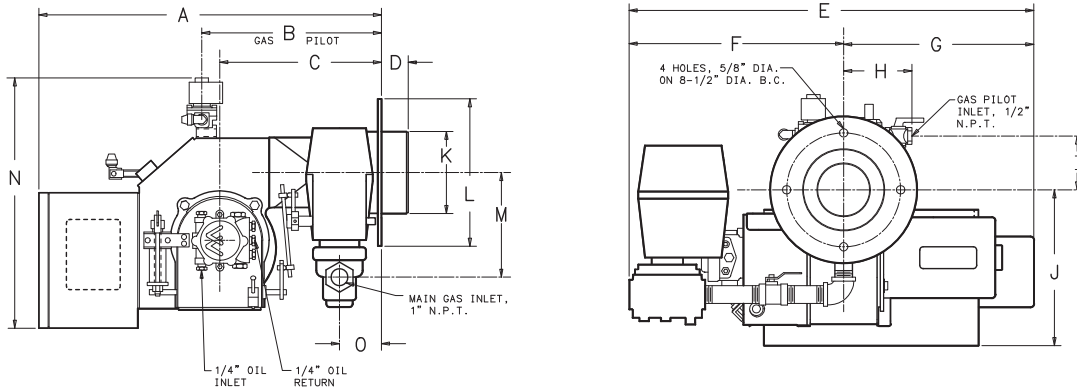
115 / 208 / 230 / 1

208 / 230 / 1

Input is based on fuel BTU content, listed furnace pressure and altitude of 2,000 feet or less. If altitude > 2,000 feet and < 8,000 feet, derate capacity 4% per 1,000 feet over 2,000. Consult factory for higher altitudes. If furnace pressure exceeds listed value, derate capacity 5% for every 0.5" w.c. of pressure in excess of stated. Consult factory if derate exceeds 20%. Gas input is based on natural gas with 1,000 BTU/cu.ft., 0.60 gravity, 0" w.c. furnace pressure and the aforementioned conditions. For total pressure at manifold, add furnace pressure. Oil input based on 140,000 BTU/gal and the aforementioned conditions. Consult factory for 50 Hz. applications.

# FP Series

## Standard Dimension Sheet



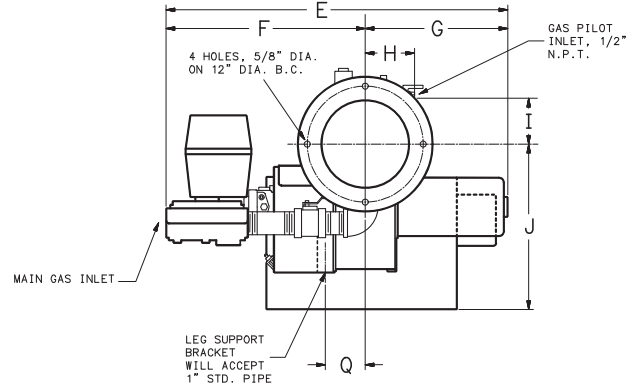
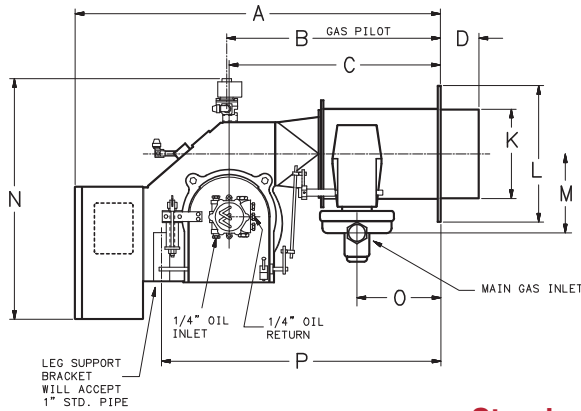
### Standard Configuration

	DIM	Burner Frame Size	
		Size 1	Size 2
Length in inches			
Overall length	A	25 7/8	27 1/4
Width in inches			
Overall width	E	29 3/4	30 1/4
Center line to left side	F	16	16
Center line to right side	G	13 3/4	14 1/4
Height in inches			
Overall height	N	18 5/8	20 1/8
Center line to bottom	J	11 5/8	12 1/4
Blast tube dimensions in inches			
Extension	D	2	2
Diameter	K	6 1/8	6 1/8
Mounting flange dimensions in inches			
Diameter	L	11	11
Gas inlet in inches			
Center line to main gas inlet	M	8	8
Mounting flange to main gas inlet	O	3 1/8	3 1/8
Gas pilot in inches			
Mounting flange to gas pilot	B	12 3/8	12 3/8
Center line to gas pilot inlet (width)	H	4 1/2	4 1/2
Center line to gas pilot inlet (height)	I	4 3/8	4 9/16
Oil pump in inches			
Mounting flange to oil pump	C	9 7/8	10 1/4

Accompanying dimensions, while sufficiently accurate for layout purposes, must be confirmed for construction.

# FP Series

## Standard Dimension Sheet



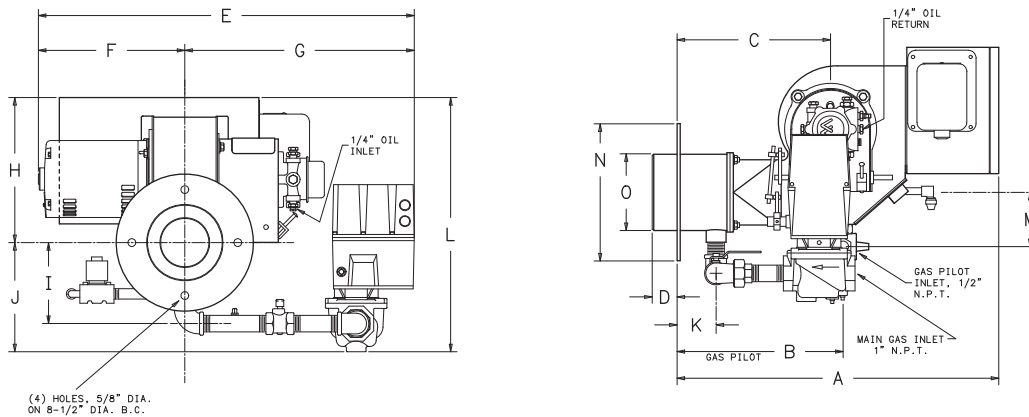
### Standard Configuration

	DIM	Burner Frame Size	
		Size 3	Size 4
Length in inches			
Overall length	A	35	37 7/8
Width in inches			
Overall width	E	32 3/8	35 1/2
Center line to left side	F	18 1/8	20 5/8
Center line to right side	G	14 1/4	14 7/8
Height in inches			
Overall height	N	21 1/8	24 5/8
Center line to bottom	J	16 1/4	16 9/16
Blast tube dimensions in inches			
Extension	D	3 15/16	3 15/16
Diameter	K	8 1/4	9 1/4
Mounting flange dimensions in inches			
Diameter	L	14	14
Gas inlet in inches			
Center line to main gas inlet	M	8 3/8	8 3/8
Mounting flange to main gas inlet	O	7 7/8	8 5/8
Gas pilot in inches			
Mounting flange to gas pilot	B	22	22 1/8
Center line to gas pilot inlet (width)	H	4 1/2	4 1/2
Center line to gas pilot inlet (height)	I	4 9/16	5
Oil pump in inches			
Mounting flange to oil pump	C	21 1/2	21 7/8
Leg support bracket in inches			
Mounting flange to bracket	P	25 1/8	28 1/2
Center line to bracket	Q	3 9/16	4 1/64

Accompanying dimensions, while sufficiently accurate for layout purposes, must be confirmed for construction.

# FP Series

## Standard Dimension Sheet



### Inverted Configuration

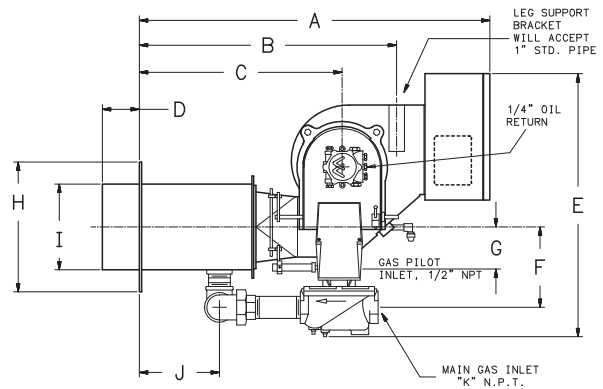
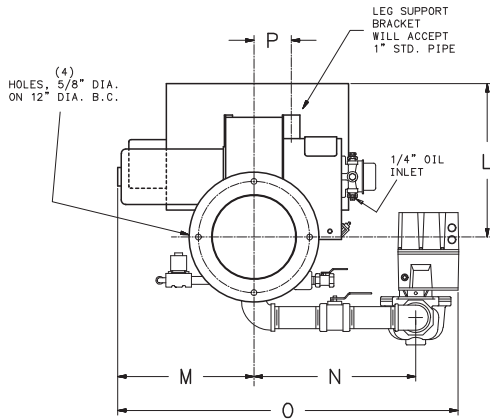
	DIM	Burner Frame Size	
		Size 1	Size 2
Length in inches			
Overall length	A	25 7/8	26 3/4
Width in inches			
Overall width	E	30 1/4	30 3/4
Center line to left side	F	11 3/4	12
Center line to right side	G	18 1/2	18 3/4
Height in inches			
Overall height	L	20 3/8	22 1/2
Center line to top	H	11 5/8	13 3/4
Center line to bottom	J	8 3/4	8 3/4
Blast tube dimensions in inches			
Extension	D	2	2
Diameter	O	6 1/8	6 1/8
Mounting flange dimensions in inches			
Diameter	N	11	11
Gas inlet in inches			
Center line to main gas inlet	I	6 1/2	11 1/2
Mounting flange to main gas inlet	K	3 1/8	3 1/8
Gas pilot in inches			
Mounting flange to gas pilot	B	13 5/16	12 1/8
Center line to gas pilot inlet	M	4 3/8	4 9/16
Oil pump in inches			
Mounting flange to oil pump	C	12 5/16	12 5/16

Accompanying dimensions, while sufficiently accurate for layout purposes, must be confirmed for construction.



# FP Series

## Standard Dimension Sheet



### Inverted Configuration

DIM	Burner Frame Size		
	Size 3	Size 4	
Length in inches			
Overall length	A	35	37 7/8
Width in inches			
Overall width	O	29 5/8	36 3/4
Center line to left side	M	12	14 7/8
Height in inches			
Overall height	E	26 1/4	28 3/8
Center line to top	L	16 3/8	17
Blast tube dimensions in inches			
Extension	D	3 15/16	3 15/16
Diameter	I	8 1/4	9 1/4
Mounting flange dimensions in inches			
Diameter	H	14	14
Gas inlet in inches			
Center line to main gas inlet (Width)	N	15 1/8	17 7/16
Center line to main gas inlet (Height)	F	7 7/8	8 5/8
Mounting flange to main gas inlet	J	7 7/8	8 5/8
Diameter	K	1 1/2	2
Gas pilot in inches			
Center line to gas pilot inlet	G	4	4 1/2
Oil pump in inches			
Mounting flange to oil pump	C	21 1/2	21 7/8
Leg support bracket in inches			
Mounting flange to leg support bracket	B	25 1/8	27 1/2
Center line to leg support bracket	P	3 9/16	4 1/64

Accompanying dimensions, while sufficiently accurate for layout purposes, must be confirmed for construction.

# **INDUSTRIAL COMBUSTION**

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