

PRODUCT CATALOG

FORCED DRAFT DUAL FUEL BURNERS

INNOVATION FUELING PERFORMANCE



**INDUSTRIAL
COMBUSTION**

PRODUCT INFORMATION SPECIFICATIONS

A PIECE OF INDUSTRIAL COMBUSTION HISTORY

Industrial Combustion can trace its origins back to the 1930's and a Chicago firm marketing novel conversion burners. The product was the first air-atomized oil burner that utilized a rotary vane air compressor and an adjustable positive displacement volumetric oil metering pump. This pioneering burner was just a hint of the many designs this firm and its successors were able to offer over the next 70 years.

Superior design is the key to Industrial Combustion products' ongoing popularity. Industrial Combustion, an early pioneer of air-atomization of fuel oil, has led the industry in the development of new burner technologies. Our commitment to research and development assures Industrial customers of having the most technologically advanced burner systems available.

Today, our wide range of products has enabled Industrial Combustion to become a leader in both domestic and International markets. Industrial Combustion burners are still standard equipment with specifying engineers and leading boiler manufacturers. We are also the burner-of-choice when upgrading existing boiler installations for maximum fuel efficiency.



A BURNER FOR EVERY APPLICATION

Industrial Combustion's product line offers a wide choice of burner capacities from 550,000 Btu/hour to greater than 100,000,000 Btu/hour and provide superior performance in boiler, heater, furnace, kiln and dryer applications. All units are designed to perform to maximum efficiency with either gas, oil, or combination fuels. Combination units provide operators the option of choosing the lower cost fuel without costly equipment changeover or adjustments.

THE PERFECT BALANCE

All Industrial Combustion burners feature true forced draft design for superior control of the air/fuel mixture. This perfect balance of air and fuel results in complete combustion and maximum efficiency. All Industrial Combustion burners are designed to work efficiently with all kinds of fuel. Our low-emissions burners come equipped with state-of-the-art technology and control systems.

XL / LNXL SERIES - FLOOR SUPPORTED

Suitable for large firetube and watertube applications; the XL/ Series features a unique and precise air metering system which permits accurate air-to-fuel settings for maximum combustion efficiency. The XL/ Floor Supported Series offers natural gas, propane gas, air atomized #2 oil and combination gas/oil fuel options at capacities from 67,200,000 to 92,400,000 Btu/hour. Through the use of advanced technology, the XL/ Series offers high turndown up to 10:1 on natural gas and up to 8:1 on light oil.

SERIES FEATURES:

- 1800 RPM combustion air fan (Motor HP based on NOx and capacity requirement)
- Parallel positioning is standard for optimal control throughout the firing range
- Low NOx with FGR capabilities (LN Model Only)
- Gas manifold on oil burners standard for easy upgrade to combination units
- Hinged rear door and burner access panels for easy access and maintenance
- Air atomizing with steam atomization optional
- Backward-curved impeller provides adequate combustion air for various furnace pressures
- High turndown ratios



CAPACITIES & SPECIFICATIONS:

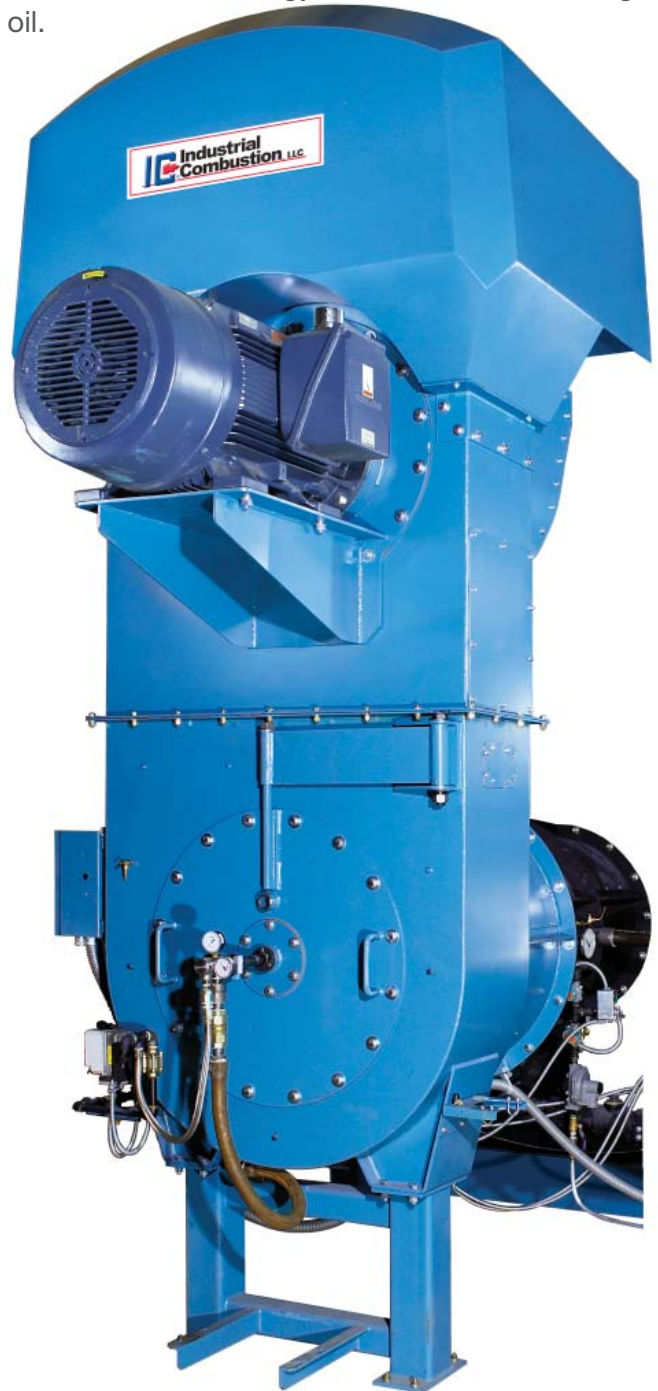
Fuels:	Gas, #2 Oil, or Comb.
Gas Input (Btu/hr):	67,200,000 to 92,400,000
Oil Input (US gph):	480 to 660
Thermal Output (BHP):	1,600 to 2,200
Shipping Weight (lbs):	12,000

XL / LNXL SERIES - FAN OVER

Suitable for large firetube and watertube applications; the XL/ Series features a unique and precise air metering system which permits accurate air-to-fuel settings for maximum combustion efficiency. The XL/ Fan Over Series offers natural gas, propane gas, air atomized #2 oil and combination gas/oil fuel options at capacities from 37,800,000 to 63,000,000 Btu/hour. Through the use of advanced technology, the XL/ Series offers high turndown up to 10:1 on natural gas and up to 8:1 on light oil.

SERIES FEATURES:

- 3600 RPM combustion air fan (Motor HP based on NOx and capacity requirement)
- Parallel positioning is standard for optimal control through out the firing range
- Low NOx with FGR capabilities (LN Model Only)
- Gas manifold on oil burners standard for easy upgrade to combination units
- Hinged rear door and side access covers for easy access and maintenance
- Backward-curved impeller provides adequate combustion air for various furnace pressures
- Air atomizing with steam atomization optional
- High turndown ratios



CAPACITIES & SPECIFICATIONS:

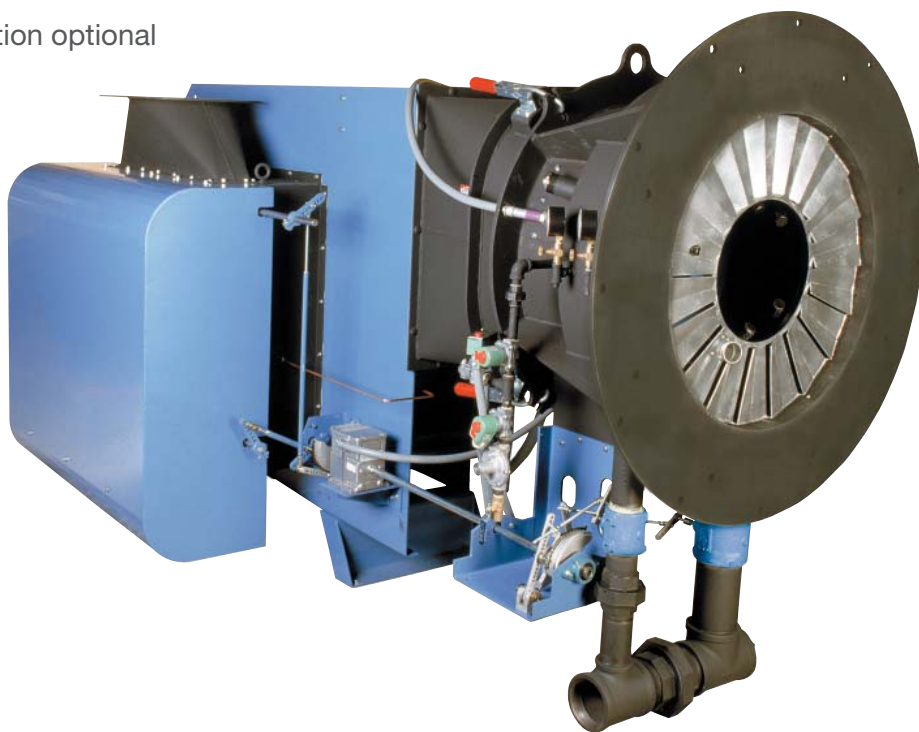
Fuels:	Gas, #2 Oil, or Comb.
Gas Input (Btu/hr):	37,800,000 to 63,000,000
Oil Input (US gph):	270 to 450
Thermal Output (BHP):	900 to 1,500
Shipping Weight (lbs):	12,000

S1 / LNS1 - SERIES

S1/Series burners are suitable for scotch marine and watertube boiler applications. The standard S1/Series offers natural gas, propane gas, air atomized #2-6 oil and combination gas/oil fuel options at capacities from 46,200,000 to 63,000,000 Btu/hour. The low NOx S1/Series offers natural gas, propane gas, air atomized #2 and #6 oil, and combination gas/oil fuel options at capacities from 42,00,000 to 58,800,000 Btu/hour. A true forced draft design provides the ability to deliver rated capacities against furnace pressures up to 8" W.C.

SERIES FEATURES:

- Gas, light and heavy oil fuels
- Cam trim with 14-point adjustment range for consistent air/fuel ratios
- Parallel positioning available for optimal control throughout the firing range
- Low NOx with FGR capabilities
- Top or bottom FGR connection options
- Gas manifold on oil burners standard for easy upgrade to combination units
- Hinged combustion head for easy access and maintenance
- Backward-curved impeller provides adequate combustion air for various furnace pressures
- Air atomizing with steam atomization optional
- High turndown ratios



CAPACITIES & SPECIFICATIONS:

	STANDARD MODELS	LOW NOx MODELS
Fuels:	Gas, #2-6 Oil, or Comb.	Gas, #2,#6 Oil, or Comb.
Gas Input (Btu/hr):	46,200,000 to 63,000,000	42,000,000 to 58,800,000
Oil Input (US gph):	330 to 450	300 to 420
Thermal Output:	1,100 to 1,500	1,000 to 1,400
Shipping Weight (lbs):	6,000	6,500

Note: The Low NOx designation only applies to Natural Gas.

E / LNE - SERIES

Suitable for firetube, firebox and watertube boilers; the E/Series features a low pressure drop head design and low motor horsepower requirements for increased efficiencies. The E/Series offers natural gas, propane gas, air atomized #2 oil and combination gas/oil fuel options at capacities from 8,400,000 to 63,000,000 Btu/hour. Incorporating advanced technology, the E/Series offers low NOx emissions, and up to 10:1 turndown on natural gas and 8:1 turndown on light oil.

SERIES FEATURES:

- Gas and light oil fuels
- Standard emissions & Low NOx capabilities
- Up to 10:1 turndown on natural gas, 8:1 turndown on light oil
- Advanced control options include Parallel Positioning,
- O₂ trim, variable speed drives and more
- Low pressure drop head design
- Low motor horsepower for increased energy efficiency
- Hinged combustion head for easy access and maintenance
- UL & cUL listed through model E-252 including many advanced control options



CAPACITIES & SPECIFICATIONS:

Fuels:	Gas, light oil or combination gas/oil
Gas Input (Btu/hr):	8,400,000 to 63,000,000
Oil Input (US gph):	60 to 450
Thermal Output:	200 to 1,500
Shipping Weight (lbs):	900 to 3,950

D / LND - SERIES

D/Series burners are performance proven in boiler, heater, furnace, kiln and dryer applications worldwide. The standard D/Series offers natural gas, propane gas, air atomized #2-6 oil and combination gas/oil fuel options at capacities from 4,200,000 to 42,000,000 Btu/hour. The low NOx D/Series offers natural gas, propane gas, air atomized #2 and #6 oil, and combination gas/oil fuel options at capacities from 2,511,000 to 37,800,000 Btu/hour. A true forced draft design provides the ability to deliver rated capacities against furnace pressures up to 4" W.C.

SERIES FEATURES:

- Low-pressure air atomizing system on oil with rotary vane compressor
- Cam trim with 14-point adjustment range for consistent air/fuel ratios
- Parallel positioning available for optimal control throughout the firing range
- Low NOx with FGR capabilities
- Piston-type positive displacement oil metering system
- Gas manifold on oil burners standard for easy upgrade to combination units
- Hinged combustion head for easy access and maintenance
- Backward-curved impeller provides adequate combustion air for various furnace pressures
- Nozzle line electric heater standard on medium to heavy oil burners
- Dual gas manifold with two distinct gas zones (<20 PPM only)
- FGR modulating valve
- UL & cUL listed



CAPACITIES & SPECIFICATIONS:

	STANDARD MODELS	<20 PPM MODELS	<30 PPM MODELS
Fuels:	Gas, #2-6 Oil, or Comb.	Gas, #2,#6 Oil, or Comb.	Gas, #2,#6 Oil, or Comb.
Gas Input (Btu/hr):	4,200,000 to 42,000,000	2,511,000 to 25,200,000	3,360,000 to 37,800,000
Oil Input (US gph):	30 to 300	18 to 180	24 to 270
Thermal Output:	100 to 1,000	80 to 600	80 to 900
Shipping Weight (lbs):	1,000 to 4,200	1,000 to 5,000	1,000 to 5,000

Note: The Low NOx designation only applies to Natural Gas.

M - SERIES

M/ Series burners are designed for a wide range of applications such as boilers, heaters, furnaces, kilns and dryers. The M/ Series offers natural gas, propane gas, air atomized #2-6 oil and combination gas/oil fuel options at capacities from 1,400,000 to 10,500,000 Btu/hour. Full modulation and cam trim adjustment provides optimum performance to meet load demand.

SERIES FEATURES:

- Gas, light and heavy oil fuels
- Low-pressure air atomizing system on oil with rotary vane compressor
- Piston-type positive displacement oil metering pump
- Cam trim with 14-point adjustment range for consistent air/fuel ratios on models M34-63
- Nozzle line electric heater standard on medium to heavy oil burners
- Gas manifold on oil burners standard for easy upgrade to combination units
- Hinged combustion head for easy access and maintenance
- Backward-curved impeller provides adequate combustion air for various furnace pressures
- Refractory combustion cone
- Full modulation
- UL & cUL listed



CAPACITIES & SPECIFICATIONS:

Fuels:	Gas, #2-6 Oil, Comb.
Gas Input (Btu/hr):	1,400,000 to 10,500,000
Oil Input (US gph):	10 to 75
Thermal Output:	33 to 250
Shipping Weight (lbs):	450 to 1,250

V / LNV - SERIES

Suitable for firetube, watertube and cast iron boilers; the V/ Series features a unique aerodynamic air damper design which permits accurate air-to-fuel settings for maximum combustion efficiency. The standard V/ Series offers natural gas, propane gas, pressure atomized #2 oil and combination gas/oil fuel options at capacities from 1,300,000 to 16,800,000 Btu/hour. The low NOx V/ Series offers natural gas, propane gas, pressure atomized #2 oil, and combination gas/oil fuel options at capacities from 1,300,000 to 14,700,000 Btu/hour. Through the use of advanced technology, the V/ Series offers high turndown up to 10:1 on natural gas, and low emission capabilities with turndown up to 5:1.

SERIES FEATURES:

- Natural gas, propane gas, pressure atomized #2 oil and combination gas/oil fuel options
- Cam trim with 14-point adjustment range for consistent air/fuel ratios
- Parallel positioning available for optimal control through out the firing range
- Up to 10:1 turndown on natural gas and optional low NOx with up to 5:1 turndown
- Unique aerodynamic air damper design for optimal flow control
- Forced draft for clean and efficient combustions
- Top or rear mount panel options
- Induced FGR
- FGR modulating valve
- FGR shutoff valve
- Cam trim with 14-point adjustment range on FGR
- No. 2 oil capability for back-up fuel
- UL & cUL listed



CAPACITIES & SPECIFICATIONS:

	STANDARD MODELS	LOW NO_x MODELS
Fuels:	Gas, #2 Oil, or Comb.	Gas, #2 Oil, or Comb.
Gas Input (Btu/hr):	1,300,000 to 16,800,000	1,300,000 to 14,700,000
Oil Input (US gph):	9.3 to 120	9.3 to 105
Thermal Output:	31 to 400	31 to 350
Shipping Weight (lbs):	450 to 1,450	550 to 1,550

Note: The Low NOx designation only applies to Natural Gas.

K - SERIES

Suitable for firetube boilers; the K/ Series features a unique aerodynamic air shutter design which permits accurate air-to-fuel settings for maximum combustion efficiency. The K/ Series offers natural gas, propane gas, pressure atomized #2 oil and combination gas/oil fuel options at capacities from 1,250,000 to 14,650,000 Btu/hour.

SERIES FEATURES:

- Natural gas, propane gas, pressure atomized #2 oil and combination gas/oil fuel options
- Cam trim with 14-point adjustment range for consistent air/fuel ratios on models K54-145
- Parallel positioning available for optimal control through out the firing range
- Top or rear mount panel options
- Backward-curved impeller provides adequate combustion air for various furnace pressures
- Gas manifold on oil burners standard for easy upgrade to combination units
- Multi-blade-type air damper systems with silencer
- Forced draft for clean and efficient combustions
- UL & cUL listed



CAPACITIES & SPECIFICATIONS:

Fuels:	Gas, #2 Oil, or Comb.
Gas Input (Btu/hr):	1,300,000 to 14,500,000
Oil Input (US gph):	8.9 to 105.0
Thermal Output:	30 to 348.8
Shipping Weight (lbs):	450 to 1,100

FP - SERIES

Suitable for cast iron, firebox and scotch marine boilers; the FP/ Series are effective where high heat release is required or where a restricted combustion chamber exists. The FP/ Series offers natural gas, propane gas, pressure atomized #2 oil and combination gas/oil fuel options at capacities from 550,000 to 4,200,000 Btu/hour.

SERIES 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 option for low boiler base heights
- Honeywell and Fireeye control options
- Remote oil pump optional
- Pressure atomized
- On/Off standard on models 5-7
- Low-High-Low/Off standard on models 8-25
- Full modulation standard on models 28-42
- UL & cUL listed



CAPACITIES & SPECIFICATIONS:

Fuels:	Gas, #2 Oil, or Comb.
Gas Input (Btu/hr):	550,000 to 4,200,000
Oil Input (US gph):	3.9 to 30.0
Thermal Output:	13 to 100
Shipping Weight (lbs):	200 to 400

PRODUCT SELECTION GUIDE

	XL SERIES	S1 SERIES	E SERIES	D SERIES	M SERIES	V SERIES	K SERIES	FP SERIES
FUEL TYPE								
Gas	X	X	X	X	X	X	X	X
#2 Oil	X	X	X	X	X	X	X	X
#4-6 Oil	-	X	-	X	X	-	-	-
Comb. Gas/Oil	X	X	X	X	X	X	X	X
ATOMIZATION								
Air	X	X	X	X	X	-	-	-
Pressure	-	-	-	-	-	X	X	X
LOW NO_x CAPABILITIES								
< 20 PPM	-	-	-	X	-	-	-	-
< 30 PPM	X	X	X	X	-	X	-	-
*APPLICATION								
Firetube	X	X	X	X	X	X	X	X
Commercial Watertube	-	-	X	X	X	X	-	X
Industrial Watertube IWT	X	-	X	-	-	-	-	-
Firebox	-	-	X	X	X	X	-	X
Cast Iron	-	-	X	X	X	X	-	X

Consult factory for applications not listed above.