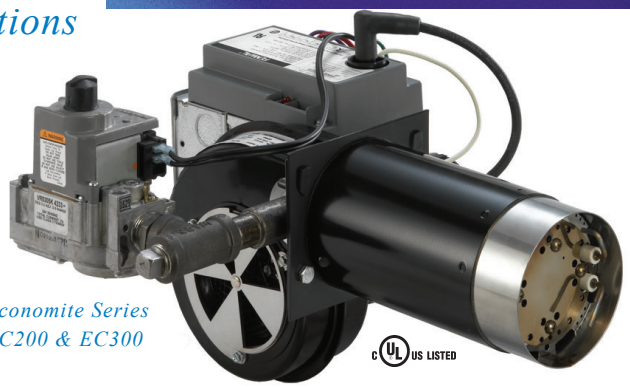
Midco®

Complete Line - Power Burners

Midco®
INTERNATIONAL

Economite® EC Series
Power Gas Burners

The Economite EC Series Power Gas Burners are engineered to match a wide variety of applications or customized to meet OEM applications



Economite Series EC200 & EC300

Features and Benefits

- Interchangeable Stainless Steel Burner Retention Heads
- Integrated Direct Spark Ignition System with Pre-Purge
- Light and Compact Removable Burner Assembly from the Burner Tube and Flange
- Pre-Piped, Pre-Wired, Factory Fired Tested
- Permanently Sealed Ball Bearing Motor
- Compact Design and Small Footprint
- Universal Mounting Flange
- Air Shutter Positive Lock Fitting
- Adjustable External Air Shutter with Indication
- Triple Function Redundant Gas Valve
- Fully Assembled

EC Series
70,000 Btu/Hr
to 300,000 Btu/Hr

Specifications

Model Number	Minimum Firing Rating*	Maximum Firing Rating*	Gas Connection Pipe Size	Gas Pressure Required Natural or Propane	Diameter of Nozzle	Maximum Nozzle Insertion Depth	SCFM**	Design Certification	Primary Safety	Shipping Weight
EC200	70,000	200,000	3/4″ NPT	6.0″ to 14.0″ W.C.	4.0″	6.0″	40.0	U.L./C.U.L. Listed	24V	25 lb
EC300	90,000	300,000	3/4″ NPT	6.0″ to 14.0″ W.C.	4.0″	6.0″	60.0	U.L./C.U.L. Listed	24V	25 lb

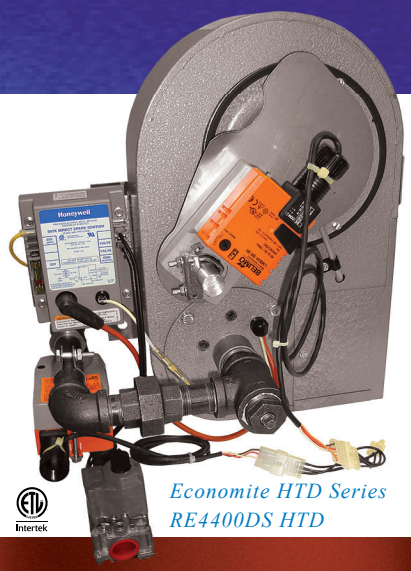
- * BTU/Hr ** SCFM - Standard Cubic Feet/Minute
- Flame Safety: Direct Spark Ignition with 100% shut-off,
- 30 second pre-purge, 3 Function
- Redundant 1/2"NPT Main
- Automatic Gas Valve
- Electrical Supply:
  120/1/60, 3 AMP (Standard)
  230 Volt 50/60HZ (Available - Contact Factory)

Economite® HTD Series
Power Gas Burners
Linkageless Technology

Features and Benefits

- 20 to 1 Turn Down Ratio in a Retention Plate Style Burner
- Fully Modulating with Linkageless Air Fuel Ratio Control
- Includes Ignition System and Gas Train
- Light and Compact Removable Burner Assembly from the Burner Tube and Flange

HTD Series
20,000 Btu/hr (Low Fire)
to 400,000 Btu/hr (High Fire)



Economite HTD Series RE4400DS HTD

Specifications

Model Number	Minimum Firing Rating*	Maximum Firing Rating*	Gas Connection Pipe Size	Gas Pressure Required Natural or Propane	Diameter of Nozzle	Maximum Nozzle Insertion Depth	Motor HP	Design Certification	Primary Safety	Shipping Weight
RE4400DS HTD	20,000	400,000*	3/4″ NPT	7.0″ to 14.0″ W.C.	4″	5.25″	1/6	ETL Listed	24V	45 lb

* BTU/Hr

Economite® RE Series

Power Gas Burners

The Economite RE Series retention head shapes the flame into a compact flame pattern. This design concentrates heat to the most efficient heat exchange surfaces

RE4400DS

Features and Benefits

The RE Series Technology Provides . . .
- a uniform heat throughout the length of the heat exchanger creating consistent heat distribution characteristics
- increased combustion efficiency by reducing the volume of oxygen used for the combustion process
- operation under variable draft or positive pressure conditions

The RE Series Has . . .
- sheet metal construction allowing high volume production resulting in competitive pricing and shorter lead-times
- a simple removable burner cartridge for easy service
- an optional welded flange assembly is available to accommodate OEM specifications
- an external air shutter for easy adjustment
- full burner capacity firing up to 1/2″ W.C. positive combustion chamber pressure
- a universal adjustable mounting flange making installation fast and easy

The RE Series Is . . .
- pre-piped, pre-wired and factory fire tested
- available with UL / FM / GAP valve trains and controls
- customizable in configurations

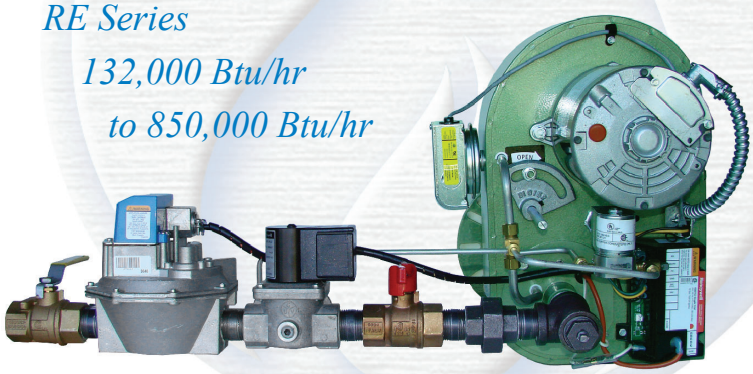
The RE Series is available as an assembled power burner with control system.

Applications

The RE Series is engineered to serve a wide variety of applications or can be customized to accommodate the OEM's specific requirements.

Agricultural Processing
Baking Ovens
Boilers
Coffee Roasting Equipment
Furnaces
Food Service Equipment
Pressure Washers

RE Series
132,000 Btu/hr
to 850,000 Btu/hr



RE4850BA

Specifications

Model Number	Minimum Firing Rating *	Maximum Firing Rating *	Gas Connection Pipe Size	Gas Pressure [3] Required Natural or Propane	Diameter of Nozzle	Maximum Nozzle Insertion Depth	Motor HP	Design Certification or Listed by	Primary Safety Voltage	Shipping Weight
RE4400DS	132,000	400,000	¾″ NPT	7.0″ to 14.0″ W.C.	4.0″	8.0″	1/6 [1]	U.L./C.U.L Listed	24V	40 lb
RE4700BA	230,000	700,000	1″ NPT	7.0″ to 14.0″ W.C.	4.0″	8.0″	1/6 [1]	U.L./C.U.L Listed	24V	47 lb
RE4850BA	280,000	850,000	1″ NPT	7.0″ to 14.0″ W.C.	4.0″	8.0″	1/6 [1]	U.L./C.U.L Listed	24V	55 lb
RE4850A	280,000	850,000	1″ NPT	7.0″ to 14.0″ W.C.	4.0″	8.0″	1/6 [1]	U.L./C.U.L Listed	120V	59 lb
RE6700B	275,000	700,000	1″ NPT	6.0″ to 14.0″ W.C.	6.0″	6.0″	1/7 [2]	U.L./C.U.L Listed	24V	47 lb
RE6850B	275,000	825,000	1″ NPT	6.0″ to 14.0″ W.C.	6.0″	6.0″	1/7 [2]	U.L./C.U.L Listed	24V	50 lb
RE6850	275,000	825,000	1″ NPT	6.0″ to 14.0″ W.C.	6.0″	6.0″	1/7 [2]	U.L./C.U.L Listed	120V	50 lb

- * BTU/Hr
- Electrical Supply 115 / 1 / 60 [1] as standard
- Available in Natural and LP
- LP requires a conversion kit
- [1] Gas Burner Draft Motors 115 / 1 / 60 230 / 1 / 60
- [2] Gas Burner Draft Motors 115 / 1 / 60
- [1 & 2] Contact Midco for 50 Hz Applications (non-UL Listed)
- [3] For Lower Gas Inlet Capacities Contact Midco

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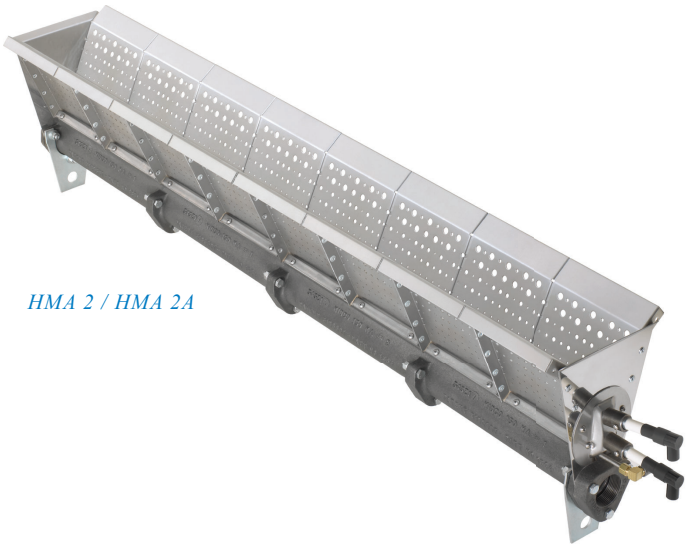
HMA2 / HMA2A Series

Direct Fired Gas Burners
Two Stage Combustion Technology

Our two stage technology provides a higher temperature rise, wider operation range, a shorter stable flame and lower overall emission

Midco International's innovative two stage combustion burner is not just a modification or improvement of the old, but a completely different approach to direct-fired combustion. The two-stage combustion improves control of the flame process, meets and exceeds the ANSI Standards while outperforming the competition. By having two separate flames within the burner combustion zone, the flame is more stable, shorter and cleaner, permitting the reduction of emissions levels and allowing for higher temperature rise and higher tolerance to varying conditions when placed in the profile opening.



HMA 2 / HMA 2A

Features and Benefits

Reduced NO_2 and CO Emissions
- Lower emissions levels that are required to pass the ANSI Z83.4 and Z83.18 standards

Higher Temperature Rise
- The two stage combustion process lowers NO_2 emissions which is the limiting factor in temperature rise

Increased Capacity
- Up to 750,000 BTU's per foot. (Higher BTU levels can be achieved if ANSI Z83 Standards for CO and NO_2 emissions are not of a concern. Process heaters can fire up to 1,000,000 BTU's a foot or more)

Increased Differential Pressure Drop and Higher Velocities
- HMA-2 / HMA-2A burners can operate between 0.05″ to 1.4″ W.C. differential pressure range or in air velocity between 800 fpm to 4000 fpm

Flame Stability
- Two stage combustion provides better flame stability and emission control, allowing for a shorter flame and easier profile configuration

Reduced Shipping Costs
- A smaller, lighter casting than the competition's, can cut freight costs up to 50%

Turndown
- 30-1 turndown can easily be achieved with proper modulation control and valves. (Higher turndown possible depending on equipment design)

Casting Choices
- Burner sections are available in iron, aluminum and nickel plated castings

Straight, elbow and tee sections easily configure to desired capacity maximizing efficiency for installation and performance. Burners may be ignited by proven pilot or direct spark. Pilots are available for flame rectification or ultraviolet detection. Hot surface ignition systems are also available.

Specifications

* Firing rate	Gas Manifold Pressure	Pressure Drop Across Burner	Pilot Capacity	Pilot Manifold Pressure	Burner Turn-down Ratio	Flame Length	Air Velocities Across Burner
Up to 750,000 BTU/hr/ft	NG 4.2 - 8″ W.C. LP 1.6 - 3″ W.C.	0.05 to 1.4″ W.C.	12,000 Btu/hr	NG 3.5″ W.C. LP 2.0″ W.C.	30 to 1	10″ full ** firing rate	800 fpm to 4,000 fpm ***

* Firing rate is dependent on the pressure drop across the burner.
** Flame length depends on design pressure drop and is measured from the end of the baffle.
*** For other operating velocities contact our Engineering Department.

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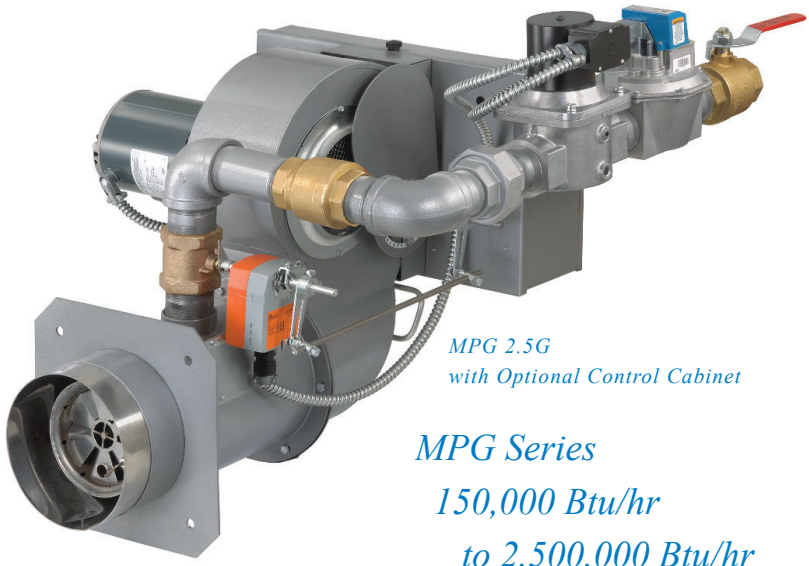
Unipower® MPG Series

Power Gas Burners

Modular assembly engineering enables custom design



MPG 2.5G with Optional Control Cabinet

MPG Series
150,000 Btu/hr
to 2,500,000 Btu/hr

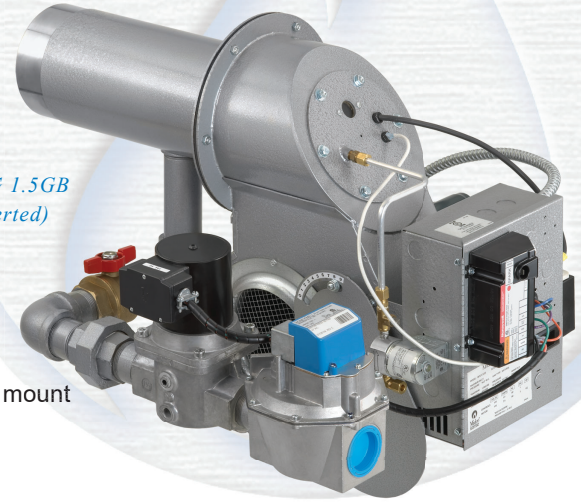
Standard Features

- Factory fire tested
- Assembled main valve train
- Diaphragm and solenoid redundant main gas valves
- Pilot gas pressure regulator, tubing and manual valve shipped loose
- Main gas pressure regulator and manual valve shipped loose where applicable
- Pilot and main gas manifold pressure taps
- Diaphragm type blower air switch standard for UL
- Differential diaphragm type blower air switch standard for UL-C
- Stainless steel nozzle
- Stainless steel burner retention plate
- MPG 1.5G (B) adjustable mounting flange shipped loose
- MPG 2.5G (B) adjustable mounting flange shipped loose
- Control cabinet with terminal strip
- Microprocessor flame safeguard with LED indicating lights (120 volt only)
- Electronic intermittent pilot ignition module (24 volt only)
- On-Off firing with slow opening main gas valve and fixed air shutter
- Blower motor 115 volt 60 hertz
- Inverted blower on bottom

Optional Style of Firing

(120 V MPG Burners only)

- On-Off low fire start
- Hi-Lo-Off low fire start
- Fully modulating 3-1 turn down
- Fully modulating 10-1 turn down
- Modulation input signal 135 ohm, 4-20mA or 0-10 volts DC



MPG 1.5GB (Inverted)

Optional Features

- Unassembled valve train
- Stripped burner basic non-UL (No controls or valve trains)
- Single or dual motorized main gas valves
- High and or low gas pressure switches
- 240 volt motor with contactor
- Welded mounting flange (insertion depth must be specified)
- ASME CSD-1, Factory Mutual, GAP, NFPA components on request
- Large control cabinet with indicating lights burner mounted or remote mount

Specifications

Model Numbers Natural ** Propane ***	Minimum Input Rating *[5]	Maximum Input Rating *[5]	Inlet Gas Pressure Required Natural [1]	Inlet Gas Pressure Required Propane [1]	Burner Manifold Pressure On-Off Natural [2]	Burner Manifold Pressure Propane [2]	Motor HP	Nozzle Insertion Depth [4] Min	Nozzle Insertion Depth [4] Max	Gas Connection NPT Size	Shipping Weight
MPG 1.5G (B)	150,000	1,500,000	5″ W.C.	5″ W.C. [3]	0.01 to 1.20″ W.C.	0.005 to 0.70″ W.C.	1/2	1 3/4″	5 1/2″	1 1/2″	120
MPG 2.5G (B)	250,000	2,500,000	4″ W.C.	4″ W.C.	0.01 to 0.80″ W.C.	0.005 to 0.50″ W.C.	3/4	1 3/4″	5 1/2″	2″	140

- * BTU/HR
- ** 1000 BTU/cu.ft.
- ***2500 BTU/cu.ft.
- (B) 24V Controls and Gas Train

- [1] Maximum inlet pressure both gases: 14″ W.C.
- [2] Values given based on 0″ W.C. firebox pressure, altitudes to 2,000 feet. Derate burner for altitudes over 2,000 feet by 4% for each 1,000 feet over sea level.
- [3] For lower inlet pressures contact the factory
- [4] Dimensions are approximate
- [5] Contact Factory for Hi-Lo-Full Mod Settings

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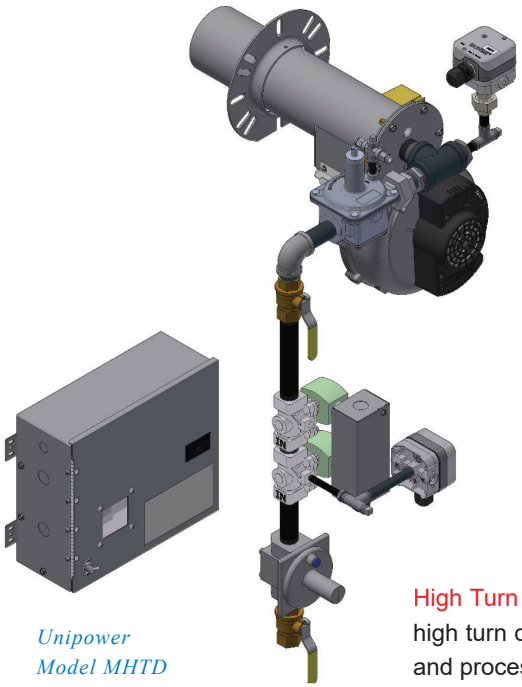
Unipower® MHTD Series

Power Gas Burners - High Turn Down

Unipower MHTD Series
The Midco Advantage



Unipower
Model MHTD

- 0 to 1 turn down
- Precise gas & air modulation
- Low excess air
- Low CO emissions
- Utilizes direct spark ignition
- All wires between burner and control box use easy to install connectors

Available models (Tube sizes):
- MHTD 4″: 500MBH max firing rate
- MHTD 6″: 1000MBH max firing rate

- NG standard, LP optional (call Midco)
- UL Recognized in a vestibule
- Factory fire tested
- Adjustable insertion depth - up to 8″
- Compact and robust design for use in many applications

Unipower MHTD Series
500,000 Btu/hr
to 1,000,000 Btu/hr

Midco Advantage Over the Competition:

High Turn Down: The MHTD series is capable of 10 to 1 turn down ratio. The capability of high turn down burners are well known for providing precise temperature control for heating and processing applications.

Low Excess Air: The MHTD series can operate as low as 15% excess air (3% O_2 at flue) at high fire with low CO emissions. This translates to energy savings and a lower carbon footprint. In comparison, a commercial power burner usually requires 25% excess air for it to operate safely without creating high amounts of CO.

Robust Design: The MHTD burners are simple to setup and service. They are engineered with customer and service personnel in mind. The burner will be completely assembled, set up, and fire tested in factory prior to shipment.

Easy Setup: The MHTD series utilizes easy to install plugs for all connections between the burner and the control box which allows for quick installation.

Specifications

Model	BOM	Control Voltage	Min Firing Rate	Max Firing Rate	Motor HP	Gas Inlet Pressure	Gas Conn Pipe Size	Approx Shipping Weight
MHTD 4″	3642000	120V	50MBH	500MBH	2/5	7″ W.C.	3/4″	Call Midco
MHTD 6″	3664000	120V	90MBH	1000MBH	2/3	7″ W.C.	1″	Call Midco

Unipower® VA Series

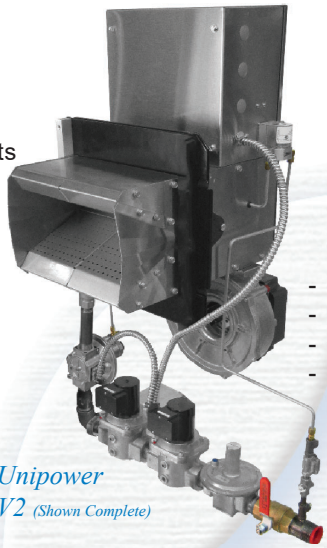
Power Gas Burners - Variable Air

There are so many advantages with the VA Series of burners. Engineered with high turn down attributes for precise temperature control in heating and processing applications, and linkageless set up makes for a smart informed choice in a burner.

Features

- 30 to 1 Turn Down
- Modulation of Gas & Combustion Air
- Easy Fuel Air Adjustment
- Increased Combustion Efficiency
- Low Excess Air
- Quiet Operation
- Pilot Ignition
- Low CO Emissions
- Lower Electric Costs
- Linkageless

Unipower VA Series
760,000 Btu/hr
to 3,800,000 Btu/hr



Unipower V2 (Shown Complete)

Applications

- HTD Indirect Fired Applications
- Direct Fired Applications
- Commercial Heating
- Processing

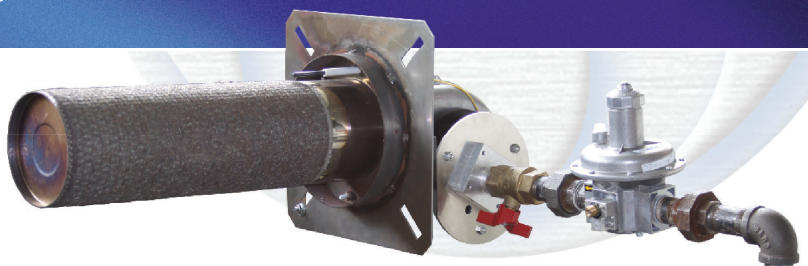
Low NO_x Series

Power Gas Burners

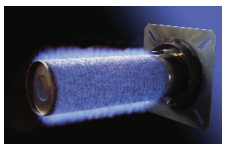
The Midco LNB - Low NO_x gas burner was developed to meet the changing emission requirements by reducing the overall carbon footprint.

Once the air and gas are premixed through a modulating premix gas blower and distributed into a high efficient metal fiber burner head the simple direct spark ignition system ignites the premixed air. No additional pilot burner is required. Premixing the fuel and air before ignition assures complete combustion with minimal levels of CO and NO_x. The modular burner concept keeps the initial investment low and maintenance costs at a minimum compared to flue gas recirculation type burners.

Models: LNB 500 - 100,000 to 500,000 BTU/hr
LNB 1000 - 150,000 to 1,000,000 BTU/hr
LNB 2000 - 400,000 to 2,000,000 BTU/hr



Low NO_x Series
LNB 1000



High Fire
Blue Flame Mode

Low NO_x Series
100,000 Btu/hr
to 2,000,000 Btu/hr

Features

- Low CO emissions
- NOx emissions less than 30ppm corrected to 3% O_2
- High efficiency radiant heat release
- Universal Mounting flange
- Easy Installation
- Easy burner setup

Incinomite® Series

Spark Ignited Gas Burners

Accepted as the benchmark in the incinerator industry the Incinomite burner is engineered with a simple direct spark ignition system and patented automatic burner cooling system.

Supplementary combustion air must be available in the firing chamber for capacities over 540,000 BTU/HR. (J83-DS or J81A-3) or 1,080,000 BTU/HR (J121A-3). For capacities up to 6,000,000 BTU/HR, consult factory.

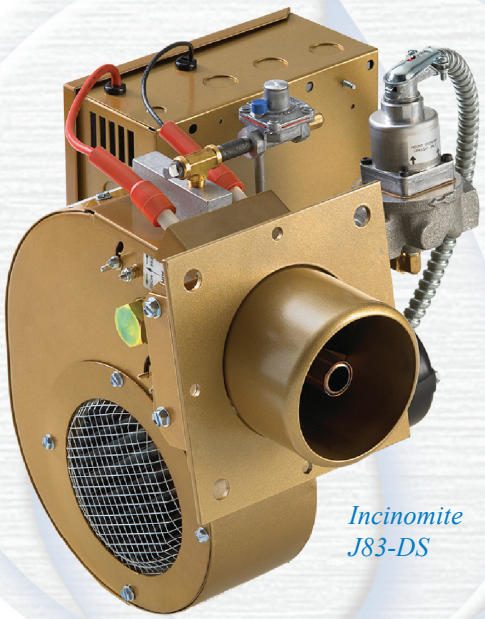
Incinomite Series
100,000 Btu/hr
to 1,200,000 Btu/hr

Applications

Commercial, Industrial
- Incineration
- Ovens
- Immersion
- Process Heating

Features and Benefits

- Adjustable Long Luminous Flame
- Automatic Self-Cooling System
- Quiet Permanently Lubricated Motor-driven High Output Blower
- Automatic Self-cooling System Preventing Burner Damage
- Corrosion Resistant Powder Coated Housing
- Reversible Mounting Flange for Easy Installation
- Flame Safeguard Components and Wiring Outside the Blast Tube and Blower Housing to Reduce Maintenance Costs
- Spark Ignited
- Solid State Components
- Reliable and Safe
- Superior No-Clog Nozzle Design
- Easy Installation and Maintenance
- Rugged, Heavy-Duty Construction
- Shipped Fully Assembled



Incinomite J83-DS

Specifications

Model Number	Type	Input Capacity Min / Max Rating *	Gas Pressure Required Nat / LP	Electric 120/ 1/60	Motor HP	Shipping Weight
J83-DS	Direct main-flame spark ignition	100,000 Min. 800,000 Max.	Natural 5.5 to 14.0″ W.C. Propane 8.0 to 14.0″ W.C.	3 Amps. Max. Running	1/40	29 lb.
J121-DS	Direct main-flame spark ignition	100,000 Min. 1,200,000 Max.	Natural 5.5 to 14.0″ W.C. Propane 8.0 to 14.0″ W.C.	3 Amps. Max. Running	1/6	51 lb.
J81A-3	Spark ignited intermittent proven ignitor (pilot) - 100% shut off	100,000 Min. 800,000 Max.	Natural 5.5 to 14.0″ W.C. Propane 8.0 to 14.0″ W.C.	3 Amps. Max. Running	1/40	38 lb.
J121A-3	Spark ignited intermittent proven ignitor (pilot) - 100% shut off	100,000 Min. 1,200,000 Max	Natural 5.5 to 14.0″ W.C. Propane 8.0 to 14.0″ W.C.	3 Amps. Max. Running	1/6	51 lb.

* BTU/Hr

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