MULTI-FUEL COMBUSTION SYSTEMS





A tradition of **Excellence**

General Combustion has been the leader in combustion technology for over 50 years, with an emphasis on fuel efficiency and reliability, General Combustion has continually strived to increase operating economies through sophisticated design and advanced process control systems that create the perfect combination of form and function.

General Combustion has engineered combustion systems that can transform almost any fuel into energy or burn multiple fuels simultaneously. Whether conventional fuels such as oil or coal or synthetic process or refuse solid fuels, General Combustion has designed a system to go beyond the norm, constantly pushing the limits of the imagination. The external endeavor for the perfect blend of nature's basic element to produce the ultimate flame.



With its efficient, compact design, The Astraflame™ burner is extremely reliable and inexpensive to maintain. It fires directly into the dryer, so the energy which would normally be absorbed by refractories and lost to radiation goes to the product, increasing plant production and decreasing fuel consumption. It costs less to install because of its small size and light weight. It can operate on most liquid or gaseous fuels, and is compatible with nearly every control system. The Astraflame™ offers capacities from 25 to 200 BTU/hr and is available in single fuel, or any one combination of oil, natural gas or liquid propane.

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ASTRAFLAME SERIES SPECIFICATIONS							
MODEL	BTU/ (mm)	Motor Hp	EXHAUST (X1000)	HI-ALT 50hz/motor 50hzhp	LENGTH (in.)	WIDTH (in.)	HEIGHT (in.)
AF-8	12	10	6.5	15	81.0	60.50	76.88
AF-15	20	20	14.3	25	84.0	60.50	79.38
AF-25	40	25	23.5	40	84.0	62.25	83.75
AF-40	70	40	40.0	60	85.0	64.25	91.75
AF-50	85	50	48.0	75	86.0	64.25	91.75
AF-60	100	60	60.0	100	86.0	68.75	98.75
AF-75	125	75	71.0	125	88.0	72.00	102.25
AF-100	150	100	85.25	150	89.0	72.00	104.25
AF-125	200	125	114.0	-	90.0	92.00	111.25

ASTRAFLAME SERIES BURNER



ULTRA II SERIES BURNER

Genco's Ultra II™ Burners can be used in any rotary drying process that requires between 25 Million and 150 Million BTU/hr of heat release. The Low NOx, total air system significantly reduces combustion noise while providing total and efficient combustion of conventional fuels - whether oil, gas or LP. With no refractory requirements. You achieve faster heat-up and cooldown, lower maintenance and reduced heat loss. This compact package is ideal where size and weight are critical. The Ultra II™ comes on a unique skidmount for quick and easy installation.



ULTRA II SERIES SPECIFICATIONS							
MODEL	BTU/ (mm)	Motor HP	EXHAUST (X1000)	HI-ALT 50hz/motor 50hzhp	LENGTH (in.)	WIDTH (in.)	HEIGHT (in.)
ULII-25	25	20/5	14.3	25/5	103.19	46.50	80.81
ULII-40	40	25/7.5	23.0	40/7.5	103.19	48.25	80.81
ULII-55	55	40/10	31.5	60/10	105.19	51.88	84.31
ULII-70	70	40/15	40.0	60/15	105.19	51.88	84.31
ULII-85	85	50/20	48.0	75/20	111.19	53.00	85.00
ULII-100	100	60/20	60.0	100/20	111.19	53.00	85.00
ULII-135	135	75/30	74.0	125/30	114.69	58.88	97.31
ULII-150	150	100/30	85.25	-	114.69	58.88	97.31

LOW NOX TOTAL AIR BURNER

The Equinox[™] Combustion system is the latest engineering achievement from Genco, for applications requiring ultra Low NOx emissions. A combustion system so advanced it challenges the imagination with its simplicity and east of operation. Nature's perfect balance of earth, air, and water, make it the most environmentally advanced burner, satisfying the most stringent HMA facility NOx emission requirements.



EQUINOX SERIES SPECIFICATIONS							
MODEL	BTU/ (mm)	MOTOR HP	EXHAUST (X1000)	HI-ALT 50hz/motor 50hzhp	LENGTH (in.)	WIDTH (in.)	HEIGHT (in.)
EF-100	100	60/20	60	100/20	122.25	70.25	85
EF-135	135	75/30	74	125/30	125.50	75.38	97.31
EF-150	150	100/30	85.25		125.50	75.38	97.31

EQUINOX SERIES BURNER

BURNER FEATURES & ADVANTAGES

For over five decades, General Combustion has been the leader in Burner Technology. All Genco Burners give the operator complete control over air, fuel, and operating range. Because of their efficient design, maintenance, and fuel costs are lowered.

2 Stage Quarl Generator	Built-in Flame Shaping	Liquid Filled Gauges
 High swirl, low pressure mixing zone for maximum flame retention Faster heat-up and cool down Lower maintenance cost Maximum heat utilization and low fuel consumption No refractory 	 Adjustable double quarl swirl plates for proper heat balance Multi-variable fuel nozzle 	 Longer Life expectancy Continuous increased accuracy for proper flame adjustment
Single, Compact "mini-skid" Design	All Metal Construction	Low Noise/Less Pollution
 Integrated blower assembly Quick & easy installation Small footprint 	Few Moving partsBuild sturdyIncreased reliability	ULTRA II & EQUINOX BURNERS • Totally enclosed burners • Completely sealed to drum breech
Compressed Air Atomization	Blade Damper	Remote Flame Scanners
 Highly efficient gas/air mixing Easy preheating of plant Less horsepower Better flame stability Built-in air purge 10/1 turn down ratio on natural gas 	 Provides true independent modulation of low pressure air High-torque syncro modulating drive 	 Dual Safety flame scanners Easy access through burner door

VECTOR® BURNER CONTROL

The Vector® burner control is a fully automatic digital control system that minimizes fuel usage and gas emissions while maximizing production capacity. It is designed to control the start-up sequence, firing rate, and safe operation of the burner. The Vector[®] is the latest evolution in process automation that programs and controls the character of the plant draft and fuels over the entire spectrum of operating range for optimum fuel to air ratio.

A large 10" LCD color display with touch-screen, controls the burner functions. A visual display indicates the current burner function, status and alarm conditions via the HMI with audible alarm.

Digital actuators improve performance of the burner providing highly accurate and independent control of air, oil and gas valves. Physical minimum and maximum positions for each servo for air and fuel are set and programmed allowing up to 10 programmable points to create air/ fuel sets points for optimal air to fuel characterization throughout the firing range.

The Vector meets approvals for UC/CUL, FM, and NFPA-86.

GEN 3D® DIGITAL BURNER CONTROL

The GEN 3D[®] is a fully digital PLC based control that automatically manages start-up sequence, firing rate and draft to provide smooth and accurate temperature adjustment and minimize fuel surges and spikes in the process. The control accuracy is increased by the "Advanced Temperature Detection" (ATD) circuit that monitors stack temperature changes due to moisture and feed rate changes and automatically makes corrections to the firing rate.

A large graphical HMI interface displays the current burner function, status, and alarm conditions for the operator, including an exclusive self-diagnostic "first out logic" feature for limits and ignition and purge cycles. A standard built-in modem feature enables remote troubleshooting and diagnostics.

CONTROL AUTOMATION







PI ELECTRIC SERIES HEATER

INLINE THERMAL FLUID HEATER

The **PI**[™] Electric heater is an economically designed immersion heater for use with viscour fuels such as no. 4, 5, and 6 or reclaimed oils. The PI[™] heater can guickly and efficiently boost oil temperatures on demand to achieve optimum viscosity for proper atomization of heavier fuels. An effective compliment to older or existing heating systems, the PI[™] can be added in series to provide additional heat exchange as required. Sizes are available from 48 to 144 Kilowatts.



SA ELECTRIC SERIES HEATER

INLINE THERMAL FLUID HEATER

The SA^{TM} Electric heater is a deluxe preheater for use with viscous fuels such as no. 4, 5, and 6 or reclaimed oils. The SA^{TM} heater can quickly and efficiently boost oil temperature on demand to achieve optimum viscosity for proper atomization of heavier fuels. The design of the SA^{TM} consists of a hollow jacketed cylinder with a series of internal heat tubes. Each tube houses a specially wound wire coil element that is precisely wound to the exacting specification to provide fast and even heat distribution. Sizes are available from 50 to 200 kilowatts.



INLINE THERMAL FLUID HEATER

The *Oil*[™] Electric heater is a deluxe counterflow pre-heater for use with viscous fuels such as no. 4, 5, and 6 or reclaimed oils. The *Oil*[™] heater can quickly and efficiently boost oil temperatures on demand to achieve optimum viscosity for proper atomization of heavier fuels. The design of the *Oil*™ heater consists of a steel cylinder with an internal cylindrical fuel manifold. Heated thermal fluid is circulated through the inner manifold while fuel oil is circulated counter-current through the external jacket, thus providing optimum heat exchange and transfer to the fuel. Sizes are available from 150 to 800.000 BTU/ hr.

The heat exchanger is skid mounted and thermally insulated with an embossed aluminnum skin for maximum efficiency and durability.

HIGH EFFICIENCY FUEL PUMP

Uniform pressure and volume are critical to a well-balanced and efficient combustion system. GENCO'S *HPOD*[™] fuel pump is specifically designed for high-efficiency Gencor combustion systems requiring higher pressure for optimum atomization. The *HPOD*[™] pump unit is capable of displacing light to heavy fuels and is pre-piped to a strainer assembly. A large TEFC motor drives the pump ensuring positive torque and flow.



The heat exchanger is skid mounted and themally insulated with an embossed aluminum skin for maximum efficiency and durability.

OIL SERIES HEATER



HPOD PUMP PACKAGES













5201 N. Orange Blossom Trail Orlando, Florida 32810 Phone: (407) 290-6000 www.gencor.com

