



# SPECIAL FURNACE CO INC

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## XLG SERIES

### APPLICATIONS

The XLG furnaces are multi-purpose gas fired box furnaces. They are highly uniform in temperature and feature accurate digital controls and multiple medium or high velocity Eclipse “Thermjet” proportionally controlled burners with an independent combustion blower. The XLG furnaces can be rated as high as 2400°F (1315°C) although typical rating is 2000°F (1093°C). Connected gas pressure can be as low as 1 PSI. Firing with gas can be more economical than firing with electricity. In addition, the circulation of the hot gases, especially with multiple medium velocity burners, promotes good temperature uniformity without the use of high temperature fans. The burners can be adjusted to run lean to provide a slightly reducing atmosphere (although this can not be precisely controlled.) These furnaces are excellent for ceramics processing and most metallurgical work where precise atmosphere control is not required. Systems can be designed with excess air for high uniformity at low temperatures.



### FRONT LOADING MULTI-BURNER VELOCITY GAS FIRED BOX FURNACES

### FEATURES

#### ECLIPSE THERMJET VELOCITY BURNERS

The furnace is heated with three or more “Thermjet” medium or high velocity burners. These typically fire over the load with burner placement balanced to maximize circulation of the combustion products. In some large units they may be configured to fire over and under the load. These are sized for the proper BTU requirements and fuel type of your furnace. In addition the choice of high or medium velocity is an engineering choice dependent on load configuration and furnace size. The burners feature low NOX emissions, integral gas and air orifice plates (for precise gas and

air balancing), high velocity for good temperature uniformity in the furnace, and excellent turn down ratio for a wide range of control. The burners are direct ignition which eliminates the need for a bypass pilot.

#### FM GAS TRAIN

The gas system includes two hydraulic-mechanical shut off valves, manual shut off valve, pressure regulator, and pressure gauges. Each burner has gas and air adjustment and shut off valves. A proportionating valve, controlled by the combustion air, maintains stoichiometric air/gas ratio. Systems can be designed to fire with excess air for high uniformity at low temperatures. (IRI rated gas train is optional.)

**COMBUSTION AIR BLOWER SYSTEM**

Combustion air is provided by a centrifugal combustion blower. A pressure gauge and air pressure switch monitor performance. Each burner has separate orifice plates and butterfly valves for precise balancing of air flow. The control of firing rate is done with a motorized butterfly valve which controls the amount of combustion air relative to a 4-20mA signal from the temperature control.

**ELECTRONIC FLAME SAFETY SYSTEM, SPARK IGNITOR AND PURGE TIMER**

Each burner is ignited with a spark plug automatically actuated from the Eclipse Multi-Flame Series 6000 flame safety system. UV (Ultra Violet) sensors monitor each burner. Before ignition the system goes through a timed purge with the combustion air. Safety interlocks include a combustion air pressure switch and gas high/low pressure switch. The Eclipse Multi-Flame 6000 flame monitoring system keeps the operator apprised of the status of the burners. It includes running time along with voltage signal to each UV sensor. It will alert the operator of any problem with the burners, air flow or gas pressure and will provide "first out" information to actually pinpoint a problem. The operator only needs to press the RESET key to start the burner firing sequence.

**HIGH TEMPERATURE UNIFORMITY**

The furnace is +/-15°F (+/-7°C) above 1200°F (650°C) within the working dimensions. High uniformity at lower temperatures can be achieved with excess air.

**EFFICIENT CERAMIC FIBER INSULATION**

The sides, back, door and top surfaces are typically insulated with 2300°F ceramic fiber modules, 8" thick, 10 LB density, although this is easily modified for different temperature ranges and applications. No asbestos is used. The bottom is insulated with a combination of castable and firebrick. Loads can be directly placed on this strong bottom. Optional castable piers, and ceramic, silicon carbide, serpentine or flat alloy hearth plates are available.

**HEAVY DUTY CASE WITH INTEGRAL STAND**

The furnace case is constructed of heavy gauge steel with structural stiffeners, lifting rings and leveling bolts. The case is primed with a high temperature (800°F) silicone based paint and finished with heat resistant enamel.

**COUNTERBALANCED PNEUMATIC VERTICAL DOOR**

The standard furnace door has a counterbalanced vertical door with a pneumatic opener and hand or foot operated valve. Double pivoted horizontal doors are optional (standard on 6 and 8 foot high models.)

**DIGITAL PID CONTROL SYSTEM WITH HIGH LIMIT**

The standard control is a Honeywell UDC 2300 digital PID 3 mode tuning control. A Honeywell UDC 2300 high limit control is also included. All fuses and controls are located in a NEMA 12 panel. The thermocouple is dual Type K with an Inconel protection tube. A limit switch turns down the burners when the door is opened. Control voltage is 120 volts. The furnace is fully fused. Single point power connection.

**MEETS NEC, OSHA AND FM CODES**

The wiring of the furnace meets the National Electrical Code. The combustion system meets FM standards. IRI standards are available. Furnace meets all OSHA codes in effect at manufacture. Furnace drawings can be submitted to FM or IRI for approval.

**FACTORY TESTING, START UP AND INSTRUCTIONS**

The furnace is completely tested in our factory up to maximum temperature. A very complete instruction manual is included. A factory technician will start up furnace in your factory and make all adjustments on site. **The furnace is warranted for one year.**

**OPTIONS**

- **BLOWER FILTERS**
- **RAMP/SOAK PROGRAM CONTROLS**
- **TEMPERATURE RECORDERS:** Round and strip
- **SPECIAL HEARTH AND LOADERS:** Castable piers, silicon carbide, alloy hearths, load baskets and serpentine alloy hearths are available. Hydraulic lift fork type loaders are available.
- **SPECIAL DESIGNS:** Car Bottoms, Shuttle Types, Elevator Types, Tip Up Types.



**SPECIFICATIONS**

MODEL NUMBER	WORKING DIMENSIONS			INSIDE DIMENSIONS			OUTSIDE DIMENSIONS			TYPICAL BTUS	MAX LOAD LBS	SHIP WGHT
	W	H	D	W	H	D	OW	OH	OD			
XLG 324	36	24	48	48	48	48	120	148	112	1,200,000	1800	5400
XLG 334	36	36	48	48	60	60	120	172	112	1,200,000	1800	5800
XLG 336	36	36	72	48	60	84	120	172	136	1,500,000	2700	7300
XLG 444	48	48	48	60	72	60	132	196	112	1,500,000	2400	6800
XLG 446	48	48	72	60	72	84	132	196	136	2,500,000	3600	8200
XLG 556	60	60	72	72	84	84	144	220	136	3,500,000	4500	9600
XLG 666	72	72	72	84	96	84	156	150*	136	4,000,000	5400	11,000
XLG 668	72	72	96	84	96	108	156	150*	160	5,000,000	7200	13200
XLG 888	96	96	96	108	120	108	180	174*	160	6,000,000	9600	16,600
XLG 8810	96	96	120	108	120	132	180	174*	184	7,000,000	12000	19300

\*The models with 72" and 96" inside height must have horizontal doors. Dimensions are in inches. Weight is in pounds. BTUS are sized for a particular application. Voltage can be 208, 240, 460, 575 or 380, 3 phase. Larger sizes are available; however, loading is best accomplished with a car bottom or other special design version of this furnace. Heavier loading is available. Special sizes are available. Specifications subject to change without notice.