SPECIAL FURNACE CO INC

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GLF SERIES

SILICON CARBIDE ELEMENT ELECTRIC FLOOR STANDING BOX FURNACES 2500°F (1370°C)

APPLICATIONS

The GLF SERIES Electric Silicon Carbide Element Floor Standing Furnaces feature continuous 2500°F (1370°C) operation. This is ideally suited for applications where temperatures between 2000°F (1095°C) and 2500°F need to be reached under normal operating conditions and/or where very long high heat cycles will be run. The silicon carbide elements also have important advantages with certain atmospheres and operating conditions.

PRODUCT BULLETIN NO: GLF-3-00

FEATURES

SILICON CARBIDE HEATING ELEMENTS

Silicon carbide heating elements are mounted over and under the hearth for even heating. All element connections are on the sides. The elements are designed to run at line voltage. They permit the 2500^{O}F (1370^{O}C) maximum temperature under continuous operating conditions. Watt density is between 27 and 39 watts per square inch. Elements are rated for 3000^{O}F (1650^{O}C).

FLOOR STANDING CASE CONSTRUCTION

The case is reinforced 10 gauge and 3/16" sheet steel with an integrated floor stand and lifting rings. The entire case is primed with 800^{O}F silicone paint and finished in machine enamel.

MULTILAYERED INSULATION; FIBER ROOF

There is 4-1/2" of 2800 ^{O}F (1535^{O}C) insulating firebrick backed up with 4" of ceramic fiber. The roof is made from 2600 ^{O}F (1425^{O}C) ceramic fiber modules. Completely shaped firebrick sections install easily for replacement. As an option, the entire insulation except for the door vestibule can be 2600^{O}F fiber modules for fast heat up and cool down. No asbestos is used.

TIGHT PLUG DOOR WITH A DOOR VESTIBULE

The double pivoting of hinge allows parallelogram opening of the plug door which keeps the hot face from the operator and allows tight sealing of the door. The door features a 1" deep plug with heat locks. A vestibule around the perimeter of the door reduces heat loss when the door is opened. This also aids temperature uniformity while protecting the elements from physical damage.

TEMPERATURE UNIFORMITY OF +/-25^{O}F (+/-15^{O}C)

Uniformity of +/-25oF (+/-15^{O}C) is normal above 1600^{O}F (870^{O}C) within 2/3 of the working dimensions.

1-1/2" THICK SILICON CARBIDE HEARTH

The hearth is a 1-1/2" thick silicon carbide plate for strength and excellent heat transfer. Floor to hearth dimension is 32".

DIGITAL PID CONTROL AND HIGH LIMIT SYSTEM

The standard control is a Honeywell UDC 2300 digital PID 3 mode tuning control. All fuses, contactors, and controls are located in a NEMA 1 panel. The thermocouples are Type R. The control voltage is transformed to 120 volts. A NEMA 13 lighted On/Off switch and NEMA 13 door power cut off switch are included. A Honeywell UDC 2300 digital high limit back up control with manual reset, back up contactors and separate thermocouple is standard. Customer must connect fused power supply to single point on panel.

SCR POWER CONTROL AND TAP TRANSFORMER

The power control has a 6 position tap transformer with taps that are changed inside the control panel and a phase angle fired SCR. The SCR adjusts for most voltage changes automatically as needed, eliminating the need to manually change taps while operating the furnace.

TESTING AND INSTRUCTIONS

The furnace is tested to insure proper circuit integrity. A complete instruction manual includes easy start up instructions, theory of operation, maintenance instructions, parts list, and a detailed trouble shooting guide. A ladder logic diagram and panel layout are prepared on CAD for easy readability.

WARRANTY

The furnace is warranted for one year except for elements and thermocouples (warranted for 6 months).

OPTIONS

- **JIC CONTROL OPTION:** This includes a NEMA 12 control cabinet, all oil tight switches and a panel mounted fused disconnect switch.
- **INERT ATMOSPHERE CONTROL:** The GLF furnaces can be fitted for use with inert or combustible atmospheres. Inlet of the atmosphere is through the element connection chamber to maintain cool element connections. This system includes special all aluminum element hardware inside the sealed boxes. The door features a special tadpole gasket. A completely piped flowmeter and regulator with ball valve, pressure gauge and pressure relief valve is included. Complete safety systems for use with combustible atmospheres are available. Panels for mixing nitrogen with hydrogen or nitrogen with natural gas for neutral hardening are available. Request Bulletins MPH and MPN.
- **HIGH DENSITY ELEMENTS:** These will provide greater element life than the standard silicon carbide elements, especially in atmosphere applications.
- **RAMP/SOAK PROGRAM CONTROLS**
- **TEMPERATURE RECORDERS:** Round or strip chart
- **HIGH K.W.:** See specifications for amount
- **VENTURI VENT:** A venturi can be provided for venting or quick cool down. This can be programmable.
- **COUNTERBALANCED VERTICAL DOORS**: Manual hank crank, pneumatic or electric operation.

SPECIFICATIONS

MODEL	WORKING DIMENSIONS			INSIDE DIMENSIONS			OUTSIDE DIMENSIONS			STAND	HIGH	MAX	SHIP
NUMBER	W	H	D	IW	IH	ID	OW	OH	OD	K.W.	K.W.	LOAD LBS	WGHT
GLF 524	15	15	24	17	261/2	26	70	61	50	30	33	175	2000
GLF 814	18	12	24	21	231/2	26	73	58	50	30	34	225	2200
GLF 824	18	18	24	21	291/2	26	73	64	50	37	41	225	2600
GLF 836	18	18	36	21	291/2	38	73	64	62	47	52	325	3200
GLF 236	24	18	36	27	291/2	38	79	64	62	54	60	450	3800
GLF 244	24	24	24	27	351/2	26	79	70	50	50	54	300	3600
GLF 246	24	24	36	27	351/2	38	79	70	62	65	66	450	4000
GLF 248	24	24	48	27	351/2	26	79	70	74	80	86	600	5500
GLF 3636	36	36	36	39	471/2	38	91	82	62	95	106	675	7000
GLF 3648	36	36	48	39	471/2	50	91	82	74	114	127	900	8200
GLF 3672	36	36	72	39	471/2	74	91	82	98	150	164	1350	9600

All dimensions are in inches. Weight is in pounds. Typical floor standing control panel is 24" wide by 66" high by 36" deep. 24 0 or 460 volts is normal. 208, 380 and 575 volts are optional. Three phase is normal, although single phase is available. All circuits are balanced loads. Larger sizes are available by special quote. Specifications are subject to change without notice.