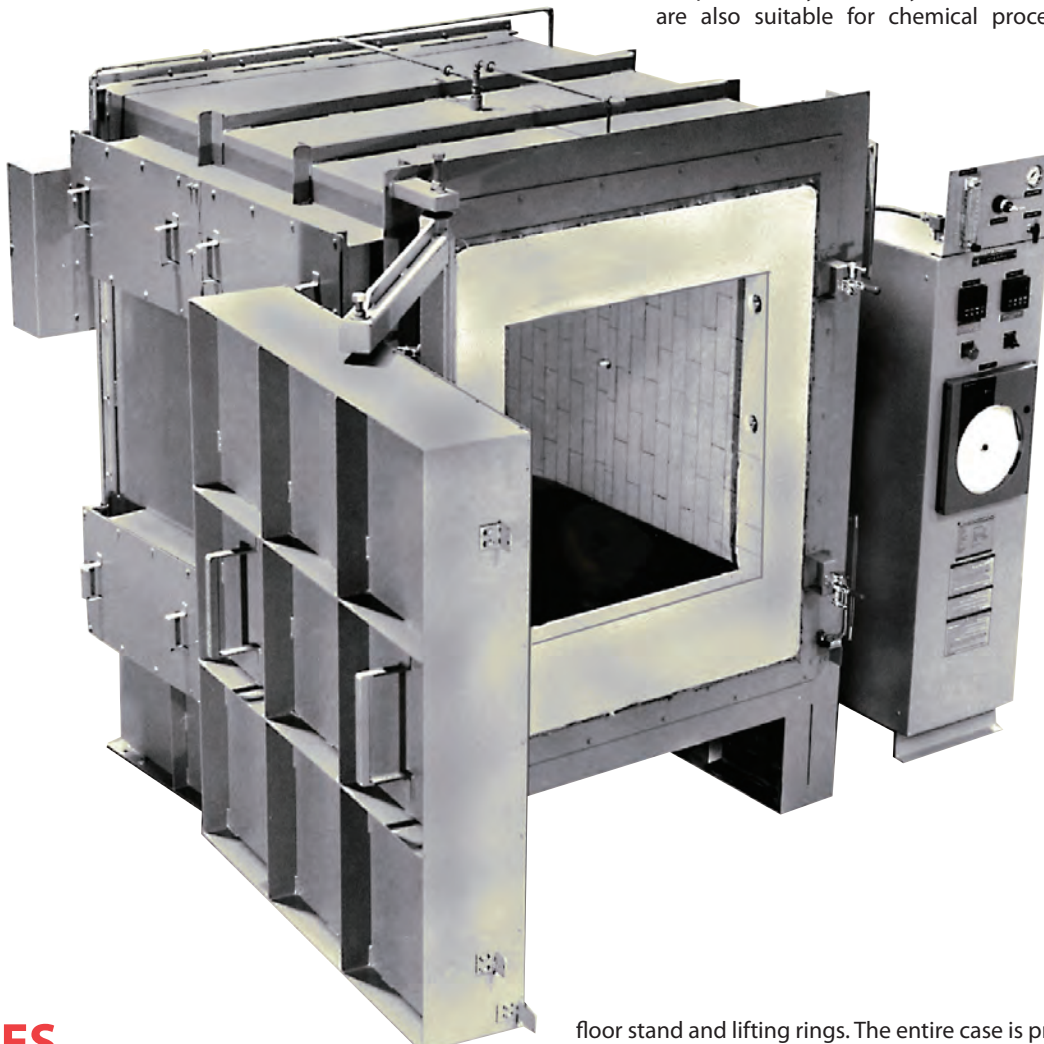


SILICON CARBIDE ELEMENT ELECTRIC FLOOR STANDING BOX FURNACES 2,800°F (1,535°C)

APPLICATIONS

The GF Series Electric Furnaces feature 2,800°F (1,535°C) operation. Silicon carbide elements are controlled with a phase angle fired SCR. The door features a deep plug for minimal heat loss. Because this door must be opened horizontally, the furnace can not be loaded and unloaded easily at high temperatures. These furnaces are excellent for long, high temperature cycles. They are used mostly in ceramics but are also suitable for chemical processing and other fields.



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. Watt density is between 30 and 39. Elements are rated for 3,000°F (1,650°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°F silicone paint and finished in machine enamel.

MULTILAYERED INSULATION; CERAMIC FIBER ROOF AND DOOR PLUG

There is 4-1/2" of 3,000°F (1,650°C) insulating firebrick backed up with 4" of 2,300°F (1,260°C) ceramic fiber. The roof and door are made from 2,850°F (1,565°C) ceramic fiber modules. All insulation is available in pre-

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shaped sections for easy maintenance. As an option, the entire insulation can be ceramic fiber modules for fast heat-up and cooldown. No asbestos is used.

DEEP PLUG DOOR WITH VESTIBULE AND DOUBLE PIVOT HINGE FOR EXTREMELY TIGHT SEAL

The horizontally opening door features a 2"-deep plug for excellent heat blockage, even at elevated temperatures. Double pivoting of hinge allows for parallelogram opening of the plug door. This keeps the hot face from the operator and allows tight sealing of the door. 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°F (+/-15°C)

Uniformity of +/-25°F (+/-15°C) is normal above 1,600°F (870°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 hearth plate for strength and excellent heat transfer. The height from floor to hearth is 32".

DIGITAL PID CONTROL AND HIGH LIMIT SYSTEM

The standard control is a Honeywell UDC 2500 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 cutoff switch are included. A Honeywell UDC 1200 digital high limit backup control with manual reset, backup contactors and separate thermocouple is standard. The customer must connect fused power supply to a single point on panel.

SCR POWER CONTROL AND TAP TRANSFORMER

The power control has a six-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 during operation.

TESTING AND INSTRUCTIONS

The furnace is tested to ensure circuit integrity. A complete instruction manual includes easy startup instructions, theory of operation, maintenance instructions, parts list and a detailed troubleshooting 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, which are warranted for six 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 GF 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. Temperature is limited to 2,500°F (1,370°C) with nitrogen and 2,200°F (1,200°C) with any hydrogen over 4%, but can take the full rated temperature with argon.
- **HIGH DENSITY ELEMENTS:** Provide greater element life than the standard silicon carbide elements, especially in atmosphere applications.
- **RAMP/SOAK PROGRAM CONTROLS**
- **TEMPERATURE RECORDERS:** Round or strip chart
- **VENTURI VENT:** A venturi can be provided for venting or quick cooldown. This can be programmable.
- **COUNTERBALANCED VERTICAL DOORS:** Manual hand crank, pneumatic or electric operation.



SPECIFICATIONS

Model Number	Working Dimensions			Inside Dimensions			Outside Dimensions			K.W.	Max Load Lbs	Ship Weight
	W	H	D	W	H	D	W	H	D			
GF 9	12	8	10	14	15 ½	11 ½	36	62	28	10	50	1,400
GF 29	12	8	20	14	15 ½	21 ½	36	62	38	20	100	1,800
GF 39	12	8	30	14	15 ½	31 ½	36	62	48	30	150	2,200
GF 524	15	15	24	17	26 ½	26	70	61	54	33	125	2,000
GF 814	18	12	24	20	23 ½	26	73	58	54	34	150	2,200
GF 824	18	18	24	20	29 ½	26	73	64	54	41	150	2,700
GF 836	18	18	36	20	29 ½	38	73	64	66	52	225	3,400
GF 236	24	18	36	26	29 ½	38	79	64	66	60	300	4,100
GF 244	24	24	24	26	35 ½	26	79	70	54	54	200	3,900
GF 246	24	24	36	26	35 ½	38	79	70	66	66	300	4,300
GF 248	24	24	48	26	35 ½	50	79	70	78	86	400	5,900
GF 3636	36	36	36	38	47 ½	38	91	82	66	106	450	7,400
GF 3648	36	36	48	38	47 ½	50	91	82	78	127	600	8,600
GF 3672	36	36	72	38	47 ½	74	91	82	102	164	900	10,000

All dimensions are in inches. Weight is in pounds. Typical floor standing control panel is 24" wide by 66" high by 36" deep. 240 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.

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