

## ECONOMICAL, BENCH MOUNTED 2,350°F (1,287°C) ELECTRIC BOX FURNACE

### APPLICATIONS

The GS 1714 Bench Furnace is an excellent general-purpose bench mounted box kiln. The spring-loaded vertical door makes loading and unloading effortless, even at high temperatures. Elements are located uniformly around the sides, top and bottom. A sophisticated program control allows up to six programs to be stored. Standardized production makes the price and value of this furnace ideal.



# FEATURES

## UNIQUE DYNAGLOW ELEMENT HOLDERS

Elements provide easier maintenance and more efficient firing of the kiln, and help prevent dusting. They won't fall out of the roof.

## 2,350°F (1,287°C), CONE 10

Use for heat treating, tempering, annealing, solution heat treating, glass, ceramics, enameling and many other applications.

## DYNATROL PROGRAM CONTROL INCLUDED

Six programs with eight segments each (two programs can be linked for a total of 16 segments).

## SHEATHED THERMOCOUPLE INCLUDED

## ELEMENTS ON TOP, BOTTOM AND SIDES RESULT IN TIGHT GRADIENT UNIFORMITY

A nine-point temperature uniformity survey demonstrated better than +/- 7-1/2°F (a total variation of 15°F) from corner to corner in the chamber from 500°F to 2,000°F.

## COUNTERBALANCED VERTICAL DOOR

Lift easily with one hand. Air-cooled handle stays cool to touch.

## SLOT IN DOOR

There is a 1-1/2" wide by 2-1/2" high slot in the bottom of the door. You can work through the slot while opening and closing the door. Includes removable insulated plug with a handle. The slot is approximately 3/4" above the hearth plate.

## BENCH MOUNTED ON HEAVY-DUTY BASE

The bench mounted case is constructed of CNC precision punched and welded heavy gauge steel. It is painted with a tough, baked-on epoxy powder coating.

## FOUR LIFTING HANDLES

Makes moving easy. Two people can pick up the kiln.

## CERAMIC HEARTH PLATE INCLUDED

Hearth is 16" wide by 13" deep with 1/2" high ceramic standoffs.

## COATED HARDENED FIREBRICK REDUCES DUSTING

We coat our firebrick with a proprietary reflective ceramic coating that penetrates, binds and hardens the surface of the entire interior of the kiln.

## FIREBRICK & BACKUP MULTILAYERED INSULATION

3" firebrick on top (for extra strength), 2-1/2" on other surfaces. Brick is backed up with 2" of mineral wool. It only takes about 850 watts to maintain temperature at 2,000°F. Backup insulation keeps case relatively cool to touch.

## MULTI-VOLTAGE MAKES IT EASY TO HOOK UP

Furnace will operate on any single-phase voltage, from 200 volts to 240 volts, 50 Hz or 60 Hz. Truly a universal machine.

## DOOR CUT OFF LIMIT SWITCH

Turns power off when door opens.

## ON/OFF TOGGLE SWITCH AND CONTROL FUSE

## POWER PLUG INCLUDED

30-amp NEMA 14-30 four-prong plug with ground and neutral (typical dryer cord). Neutral is not used.

## ADVANCED FOAM-IN-PLACE PACKAGING

Packed in a protective skidded carton with advanced foam-in-place packaging for trouble-free common carrier shipment.

# OPTIONS

- Kiss Software (remote control and data-logging)
- Honeywell Controls (DCP 50 program control and UDC1200 High Limit Control)
- Bartlett Overtemperature Control and backup contactor system with separate thermocouple
- Angle Iron Stand for 40" hearth height
- Vent System
- Extra Ceramic Shelves
- Extra Posts (1/2", 1", 2", 4", 6", 8", 10")



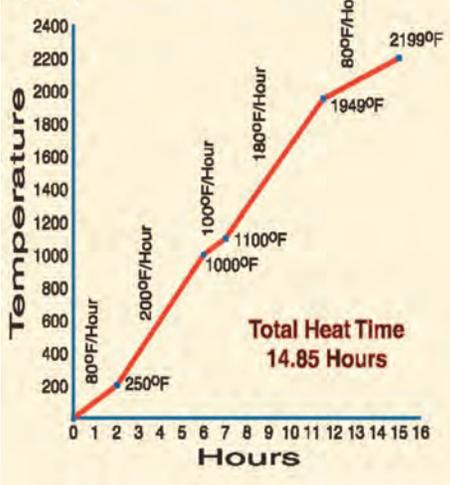
Power Supply Required	Multi Voltage - operate on any single phase voltage from 200 volts to 240 volts, 50 Hz or 60Hz	Firing Capacity Max Load	Interior			Exterior			Shipping Dimensions Weight and Class
			Width	Height	Depth	Width	Height	Depth	
30 Amp, Fuse 30 Amps, 14-30P cord supplied (neutral not used).	At 240 Volts: 6000 watts, 25.0 Amps At 220 Volts: 5042 watts, 22.9 Amps At 208 Volts: 4507 watts, 21.7 Amps At 200 Volts: 4167 watts, 20.9 Amps	1.71 cubic feet 2958 cubic inches .048 cubic meters  125 Pounds Max Load	17"	12"	14 1/2"	26"	32"	34"	44" by 44" by 40" high. Shipped in a skidded carton. Ship Weight: 375 lbs Shipping class is 85.
			Hearth Plate			Height with door open is 45" tall			
			Width	Depth	Thick				
			16"	13"	5/8"				

# THE DYNATROL PROGRAM CONTROL

## Four “Easyfire” Preset Firing Profiles

Make it easy to fire ceramics. Even people who are shy of programming can work with this control. Slow Bisque, Fast Bisque, Slow Glaze and Fast Glaze all have time-proven profiles for the vast majority of ceramic firing. Just enter cone number and optional delay time, soak time, candling time and alarm.

A typical profile programmed into the DynaTrol using the “Easy-Fire” Mode (“Slow Bisque” to Cone 6)



## Six User-Defined “Varyfire” Profiles

Allow you to have six separate repeatable stored programs with up to eight segments (cooling or heating ramps, temperature set point and an optional hold time per segment). The DynaTrol allows you to soak at a low temperature for a long time (i.e., you can have an automatic drying period) and then automatically ramp up to your high fire at different rates. You can ramp slowly through critical periods or soak at endpoint temperatures for more consistent maturing of work. It also allows a controlled cooldown to avoid heat shock. You can link two of these profiles to make one 16-segment program.

**Delay Start** By up to 99 hours, 99 minutes. Allows you to plan end of firing conveniently. This can also be useful for saving energy costs by firing kiln with night electric rates. This is a feature that could become very important.

**Candle** Low-temp soak at 150°F for up to 99 hours, 99 minutes to dry ware thoroughly. This feature can keep your pots from blowing up (water expands 1,170 times when it turns to steam).

**Soak** Final set point for up to 99 hours, 99 minutes. Soaking can dramatically improve firing results. It is hard to do on a manual kiln. Points to your real firing experience.

**PID Tuning Control** Sophisticated mathematical functions in the control work behind the scenes to minimize temperature overshoot.

**Thermocouple Offset** Allows you to individually bias thermocouples to adjust for thermocouple drift or kiln uniformity adjustments.

**Cone Offset** Allows you to match the “EasyFire” cone set.

**Adjustable Lag** Adjusts the allowable differential between zones from 5°F to 99°F. This gives you control over the trade-off between speed of firing and zone uniformity. A feature called “Autolag”, which can be turned on or off, automatically turns off the Lag until the critical part of the firing. This speeds up the firing process.

**Program Review** See the entire program before or while running it.

**Segment Review** Lets you review the segment you are on. Also shows you what your current set point is during the program as it is changing.

## Audible Temperature Alarm

Can alert you at any point in program. For instance, the control can alert you that the kiln is close to maturity so you can watch it reach final set point or use it to tell you when to turn off the vent.

## Change of Program During Firing

Make adjustments as needed.

## Last Temperature Reached

Shown at end of EasyFire program.

## Cone/Temperature Equivalent

**Look Up Table** Convert cone numbers to degrees.

**Dust-Sealed Panel** Graphically numeric keypad makes programming easy.

**Error Checking** Can be turned off. Error checks include stopping program if kiln is rising too slowly or if one zone is 100°F off set point, as well as other error checks.

**Automatic Restart** After brief power interruption with alert. Control logic deter-

mines whether it is better to continue or shut down.

## Thermocouple Burnout Protection

Kiln will shut down automatically if all thermocouples burn out. It continues to fire if one or two thermocouples burn out.

**Digital Indication** See temperature in either degrees F or C. You can scroll through all three thermocouple readings to see what each zone is doing.

## Cold Junction Compensation

Automatically compensates for varying ambient temperatures to make control more accurate. Control can operate in ambient temperatures of 32°F to 125°F (0°C to 50°C). Segment review button lets you see ambient board temperature.

## Number of Zones is Programmable

You can easily change the control from a three zone to a two or even single zone control. This is useful on L&L's unique sectional kilns where you can remove or add sections.

## Monitor DynaTrol from a Computer

KISS Software package, 25 foot cable and RS485/232 converter that plugs into a Windows-based computer are available. Download profiles, chart/graph actual firing, or monitor kiln temperatures - all in Windows.

