



SPECIAL FURNACE CO INC

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XLB SERIES



APPLICATIONS

The XLB furnaces achieve high precision by featuring highly accurate digital PID controls, mercury contactors for fast cycle times, two zone control (top and bottom), and very even spacing of elements. They reach 2350°F (1285°C) with the standard iron-aluminum-chrome elements or 2100°F (1150°C) with the optional nickel-chrome elements. The XLB is bench mounted. It features a spring loaded vertical lift plug door. The furnace shown has silicon carbide hearth, fan, and 100 mm strip chart recorder options.

BENCH MOUNTED HIGH PRECISION 2350°F (1285°C) ELECTRIC BOX FURNACES

FEATURES

HIGH TEMPERATURE UNIFORMITY

The furnace is uniform to within +/-20°F (+/-10°C) at 1800°F (975°C) within 2/3 of furnace. Optional recirculating systems are available for tighter uniformity of up to +/-10°F.

TWO ZONE CONTROL FOR CLOSE GRADIENTS

The elements are divided into top and bottom zones. The control output is routed through two input switches which allow adjustment of the total time on to each zone. There are thermocouples mounted in the top and bottom with a selector switch to read the temperature differential.

EVEN ELEMENT PLACEMENT

Elements are evenly spaced around the top, bottom and sides. On the XL112, XL124 and XL126 there are 12 elements evenly divided on each of these surfaces. The XL 894 has 5 elements on the top and bottom and 3 on each side.

CERAMIC ELEMENT HOLDERS

The elements are supported in proprietary ceramic element holders. These provide perfect support for the coiled element as well as excellent radiating characteristics. The smooth surface prevents premature failure of the element as it expands and contracts.

EFFICIENT MULTILAYERED INSULATION

The furnace is insulated with 2-1/2" of low K factor refractory firebrick as the primary insulation. This is backed up by 2" of very low K factor mineral wool board on all surfaces except the bottom which has 2" of hard calcium silicate back up for solid hearth support. Top is 4-1/2" firebrick for strength. This yields an excellent combination of strength, insulating quality and fast heat up and cool down time. All refractory is coated with a special facing that prolongs firebrick life and helps prevent spalling and dusting. The refractory sections are available completely shaped for easy replacement without cementing. All sections fit together with engineered heat locks which improve the insulating integrity of the furnace. No asbestos is used.

FAST HEAT UP AND COOL DOWN TIMES

An empty XLB furnace will heat up to 2000°F (1093°C) in approximately one hour. The higher K.W. option will trim this. Cool down to 500°F (260°C) is approximately 10 hours. The venturi option speeds cooling.

HEAVY DUTY BENCH MOUNTED CASE

The furnace case is constructed of 10, 14 and 16 gauge steel with stiffeners. The entire case is primed with 800°F silicone paint and finished in machine enamel. Lifting rings are provided.

CERAMIC HEARTH INCLUDED

The standard hearth is a 3/4" thick ceramic plate elevated on ceramic standoffs 1-1/2" above the bottom elements. This air space aids uniformity.

SPRING LOADED VERTICAL PLUG DOOR

The furnace door is a spring loaded swing up vertical door. The spring holds the door tightly closed, counterbalances it while opening, and holds it up while open. The hot face of the door is kept from the operator. There is a 1/2" refractory plug which protrudes into the furnace chamber and provides an effective heat lock. There is a 2" refractory to refractory seal around the perimeter of the door. Pneumatically operated vertical doors are optional.

DIGITAL PID CONTROL SYSTEM

The standard control is a Honeywell UDC 2300 digital PID 3 mode tuning control with two displays. All fuses, transformers, contactors, and controls are located in a NEMA 1 panel. Quiet, long life mercury power contactors are standard; SCR power controls are optional. The thermocouples are Type K.

Thermocouple break protection is included. Limit switches shut off furnace power if the door is opened or the element cover plate is removed. Control voltage is 120 volts. The control circuit and each power branch circuit are fully fused. A NEMA 13 lighted On/Off switch is included. Customer must connect fused power supply to single point on panel.

TESTING AND INSTRUCTIONS

The furnace is power tested to insure proper watt ratings. 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

- **OVERTEMPERATURE SYSTEM:** Honeywell UDC 2300 digital high limit back up control with manual reset, back up contactors and separate thermocouple.
- **JIC CONTROL OPTION:** This includes a NEMA 12 control cabinet, all oil tight switches and a panel mounted fused disconnect switch. Zone switches are percentage timers.
- **HIGH K.W.:** See Specifications for amount.
- **INERT ATMOSPHERE CONTROL**
- **RAMP/SOAK PROGRAM CONTROLS**
- **TEMPERATURE RECORDERS:** Round and strip.
- **SCR POWER CONTROL:** For greater precision. It is also possible to put the element circuits on separate SCRs and bias the control output digitally for precision zone control.
- **HIGH TEMPERATURE FAN:** Increases uniformity to +/-10°F. Limited to 1875°F operation.
- **SPECIAL HEARTHS:** Silicon Carbide or alloy hearth increases maximum load capacity by 1-1/2 times.
- **ANGLE IRON FLOOR STAND:** Hearth level is approximately 40" from floor with this stand.

SPECIFICATIONS

MODEL NUMBER	INSIDE DIMENSIONS			OUTSIDE DIMENSIONS			STAND K.W.	HIGH K.W.	AMPS AT 240	MAX LOAD LBS	SHIP WTGT
	IW	IH	ID	OW	OH	OD					
XL 112	13	12	12	50	38	28	6.1	8.0	22.1	75	290
XL 124	13	12	24	50	38	40	9.8	13.0	35.3	150	350
XL 126	13	12	36	50	38	52	13.0	17.0	31.2	225	450
XL 894	18	9	24	55	35	40	12.0	16.0	32.5	250	600

Dimensions are in inches. Weight is in pounds. Working dimensions should be approximately 2" less in each direction than inside dimensions. 240 or 480 volts are normal. 208, 380 and 575 volts are optional. 3 phase is normal although single phase is available. 480 volt amps are 1/2 of 240 volt amps. Specifications are subject to change without notice.