

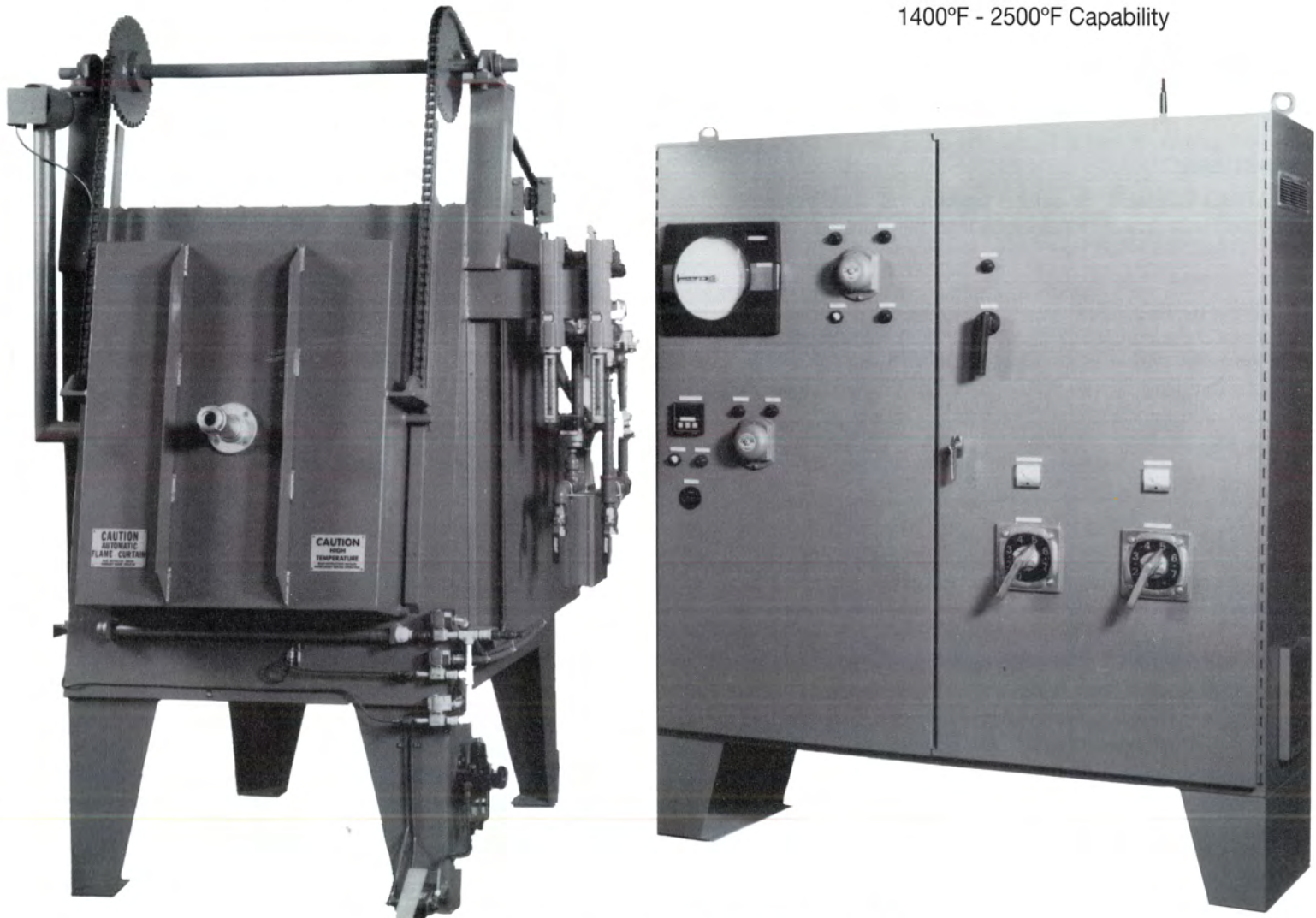


**Thermcraft**  
incorporated

## SERIES BHSF CONTROLLED ATMOSPHERE HEAT TREATING FURNACES

MEETS MILITARY SPECIFICATION  
MIL-F-80079C

1400°F - 2500°F Capability



### MODEL BHSF-242436-1371

- TEMPERATURE UNIFORMITY  $\pm 25^{\circ}\text{F}$
- FLAME SUPERVISION INTERLOCKS
- AUTOMATIC FLAME CURTAIN USING NATURAL GAS OR PROPANE
- AUTOMATIC IGNITION OF FLAME CURTAIN AND BURN-OFF
- HEATS TO OPERATING TEMPERATURE IN LESS THAN ONE HOUR
- ENDOTHERMIC, EXOTHERMIC, AND ENRICHED ATMOSPHERES AS WELL AS NITROGEN, ARGON OR AIR.

# SPECIFICATIONS

**SHELL:** Continuously welded 3/16" plate steel and heavy structural steel members assure furnace's structural integrity. Front frame is 3/4" thick steel plate.

**INSULATION:** Wall and roof insulation consists of ceramic fiber blanket faced with rigid insulating board which is rated to 2800°F. Overall thickness is 9" with resultant outer shell temperature less than 150°F above ambient. Floor and entrance vestibule sides are of insulating firebrick for mechanical strength.

**HEARTH:** Silicon carbide plates 1-1/2" thick are placed on elevating piers to allow heating element placement below. These plates span the width of the furnace chamber to give complete mechanical protection to the elements below.

**DOOR:** The door and furnace front are at an angle to true vertical to provide gravity sealing with steel-to-steel contact. Guides pull the door away from the front plate during movement to prevent insulation abrasion. Operation is via a foot operated control valve and pneumatic cylinder complete with a filter, regulator and lubricator. A limit switch shuts element power off and activates the flame curtain when the door is raised.

**HEATING ELEMENTS:** Silicon carbide rod type elements are used with power density less than 50 watts per square inch. These are positioned below the hearth and above the chamber area.

**POWER CONTROLS:** Power to the elements is provided by a voltage reduction power transformer with voltage selecting tap switches and indicating ammeters allowing adjustment of zone temperatures, in conjunction with a zero-fired silicon

controlled rectifier selected to eliminate electro-magnetic noise. Fused disconnect and electro-magnetic contactor are also included.

**ATMOSPHERE CONTROLS:** Separate Waukee brand endothermic and nitrogen flowmeters indicate and control gas flows. Interlocks prevent insertion of combustible gas below 1400°F and cause automatic furnace shut-down with emergency nitrogen purge in the event of temperature, power, or pilot failures, per current Industrial Fire Protection Association requirements.

**AUTOMATIC PILOTS:** Flame curtain and burnoff pilots automatically ignite when the "controlled atmosphere" mode is selected via a selector switch on the control enclosure. A sensor system then continuously monitors these pilots activating relight and/or system shut-down in event of pilot failure.

**INSTRUMENTATION:** Many types and brands are available. These are quoted separately to meet specific user requirements. Instruments are mounted within a free standing NEMA 12 enclosure measuring 72"H x 72"W x 24"D.

- OPTIONS:**
- a) % carbon indicator.
  - b) automatic carbon control with natural gas, propane or other gas enrichment.
  - c) internal alloy rollers operable to 2000°F.
  - d) external roller table to assist in load/unload operations.
  - e) automatic load/unload carts, computer controlled.

MODEL	CHAMBER			OVERALL			KW	VOLTAGE	PHASE	WEIGHT (LBS.)
	H"	W"	L"	H"	W"	L"				
BHSF-121224-1371	12"	12"	24"	84"	38"	64"	25	230 or 460	3	5,000
BHSF-121536-1371	12"	15"	36"	84"	41"	76"	30	230 or 460	3	5,500
BHSF-121836-1371	12"	18"	36"	84"	44"	76"	30	230 or 460	3	6,000
BHSF-181836-1371	18"	18"	36"	90"	44"	76"	35	230 or 460	3	6,500
BHSF-182436-1371	18"	24"	36"	90"	52"	76"	40	230 or 460	3	7,000
BHSF-242436-1371	24"	24"	36"	96"	52"	76"	45	230 or 460	3	7,500
BHSF-242442-1371	24"	24"	42"	96"	52"	82"	50	230 or 460	3	8,000
BHSF-242448-1371	24"	24"	48"	96"	52"	88"	60	230 or 460	3	8,500
BHSF-243048-1371	24"	30"	48"	96"	58"	88"	70	230 or 460	3	9,000
BHSF-243660-1371	24"	36"	60"	96"	64"	100"	80	230 or 460	3	9,500
BHSF-243672-1371	24"	36"	72"	96"	64"	112"	90	230 or 460	3	10,000

## SERIES BHSF-1371 HEAT TREAT FURNACES



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