



# Tempering Bench Furnace



## COMPANION ELECTRIC TEMPERING FURNACE AND QUENCH TANK

Electric Tempering Furnace can be combined with Electric Bench Furnaces or Inert Atmosphere Bench Furnaces to produce a space saving, over and under, heat treating and tempering furnace combination. The top chamber with its manually operated vertical lift door can be selected from among six sizes of 2000°F and 2200°F Bench Furnaces described on Bulletin BF-710 or Inert Atmosphere Bench Furnaces described on Bulletin BF-720. The Quench Tank is a free standing unit available with electric heat.

### STANDARD FEATURES

#### ● Controls

- Digital, microprocessor based, thermocouple actuated, indicating temperature controller
- On-off heat switch
- LED pilot light

#### ● Safety Equipment

- Adjustable, thermocouple actuated, manual reset excess temperature controller
- Separate heating element control contactor
- Door interlock switch turns off power to heating elements and blower when door is opened; restores power when door is closed

#### ● Construction

- Recirculating blower located in back wall
- Heavy gauge aluminized steel cabinet with enamel finish
- Brushed stainless steel control panel face
- Designed to support heat treating furnace
- Well insulated, side-hinged door
- High temperature alloy heating elements supported by rugged ceramic plates
- Energy-saving lightweight ceramic fiber insulation reduces operating costs
- Fast heat-up
- Heating elements located on sidewall and roof for excellent temperature uniformity throughout work space
- Ceramic hearth tray
- 1 year limited warranty

#### ● Optional Quench Tank

- Expanded metal loading basket
- Use with water, oil or synthetic solutions
- $\frac{1}{2}$  HP direct driven mixer
- Rugged subway grate basket support
- Optional electric heater with temperature controller

#### ● All equipment fully assembled and individually factory tested

**MODEL BF-121212  
BENCH FURNACE**



**MODEL BT-122012  
TEMPERING FURNACE**

**QUENCH TANK**

# SPECIFICATIONS

NOT FOR USE WITH FLAMMABLE SOLVENTS OR VAPORS.

Model	Work Space		Outside Dimensions* (WxDxH)	Max Temp	Insulation	Height w/Door Open	Heat Input KW		Operating Characteristics†				Approx Shipping Weight
	Dimensions (WxDxH)	Volume Cu Ft					230V	460V	Control Accuracy	Furnace Uniformity	Rise Time		
											230V	460V	
BT-122012	12" x 20" x 12"	1.67	38" x 40" x 38"	1250°F	5"	38"	15	20	±0.3%	±25°F	23 min	16 min	900 lbs
<b>MODEL BT-122012 TEMPERING FURNACE ASSEMBLED WITH BENCH FURNACE FROM BULLETIN BF-710 LISTED BELOW</b>													
BF-12128	12" x 12" x 8"	0.67	38" x 40" x 62"	2000°F	5"	83"	6	8	±0.3%	±15°F	55 min	45 min	1300 lbs
BF-12128-HT	12" x 12" x 8"	0.67	40" x 40" x 64"	2200°F	6"	85"	6	8	±0.3%	±20°F	80 min	60 min	1340 lbs
BF-121212	12" x 12" x 12"	1.0	38" x 40" x 68"	2000°F	5"	97"	7.5	10	±0.3%	±12°F	50 min	40 min	1350 lbs
BF-121212-HT	12" x 12" x 12"	1.0	40" x 40" x 70"	2200°F	6"	99"	7.5	10	±0.3%	±17°F	65 min	50 min	1400 lbs
BF-12188	12" x 18" x 8"	1.0	38" x 40" x 62"	2000°F	5"	83"	7.5	10	±0.3%	±10°F	65 min	50 min	1425 lbs
BF-12188-HT	12" x 18" x 8"	1.0	40" x 40" x 64"	2200°F	6"	85"	7.5	10	±0.3%	±15°F	75 min	55 min	1525 lbs
BF-121812	12" x 18" x 12"	1.5	38" x 40" x 68"	2000°F	5"	97"	12	16	±0.3%	±10°F	45 min	35 min	1450 lbs
BF-121812-HT	12" x 18" x 12"	1.5	40" x 40" x 70"	2200°F	6"	99"	12	16	±0.3%	±15°F	60 min	45 min	1550 lbs
BF-12248	12" x 24" x 8"	1.33	38" x 40" x 62"	2000°F	5"	83"	12	16	±0.3%	±10°F	50 min	40 min	1475 lbs
BF-12248-HT	12" x 24" x 8"	1.33	40" x 40" x 64"	2200°F	6"	85"	12	16	±0.3%	±15°F	60 min	45 min	1530 lbs
BF-122412	12" x 24" x 12"	2.0	38" x 40" x 68"	2000°F	5"	97"	15	20	±0.3%	±10°F	45 min	35 min	1550 lbs
BF-122412-HT	12" x 24" x 12"	2.0	40" x 40" x 70"	2200°F	6"	99"	15	20	±0.3%	±15°F	60 min	45 min	1610 lbs
<b>MODEL BT-122012 TEMPERING FURNACE ASSEMBLED WITH INERT ATMOSPHERE BENCH FURNACE FROM BULLETIN BF-720 LISTED BELOW</b>													
BAF-12128	12" x 12" x 8"	0.67	38" x 40" x 62"	2000°F	5"	83"	6	8	±0.3%	±15°F	55 min	45 min	1370 lbs
BAF-12128-HT	12" x 12" x 8"	0.67	40" x 40" x 64"	2200°F	6"	85"	6	8	±0.3%	±20°F	80 min	60 min	1410 lbs
BAF-121212	12" x 12" x 12"	1.0	38" x 40" x 68"	2000°F	5"	97"	7.5	10	±0.3%	±12°F	50 min	40 min	1420 lbs
BAF-121212-HT	12" x 12" x 12"	1.0	40" x 40" x 70"	2200°F	6"	99"	7.5	10	±0.3%	±17°F	65 min	50 min	1470 lbs
BAF-12188	12" x 18" x 8"	1.0	38" x 40" x 62"	2000°F	5"	83"	7.5	10	±0.3%	±10°F	65 min	50 min	1445 lbs
BAF-12188-HT	12" x 18" x 8"	1.0	40" x 40" x 64"	2200°F	6"	85"	7.5	10	±0.3%	±15°F	75 min	55 min	1545 lbs
BAF-121812	12" x 18" x 12"	1.5	38" x 40" x 68"	2000°F	5"	97"	12	16	±0.3%	±10°F	45 min	35 min	1470 lbs
BAF-121812-HT	12" x 18" x 12"	1.5	40" x 40" x 70"	2200°F	6"	99"	12	16	±0.3%	±15°F	60 min	45 min	1575 lbs
BAF-12248	12" x 24" x 8"	1.33	38" x 40" x 62"	2000°F	5"	83"	12	16	±0.3%	±10°F	50 min	40 min	1580 lbs
BAF-12248-HT	12" x 24" x 8"	1.33	40" x 40" x 64"	2200°F	6"	85"	12	16	±0.3%	±15°F	60 min	45 min	1625 lbs
BAF-122412	12" x 24" x 12"	2.0	38" x 40" x 68"	2000°F	5"	97"	15	20	±0.3%	±10°F	45 min	35 min	1675 lbs
BAF-122412-HT	12" x 24" x 12"	2.0	40" x 40" x 70"	2200°F	6"	99"	15	20	±0.3%	±15°F	60 min	45 min	1725 lbs

\*BT-122012 depth includes 14" motor mount overhang at rear.  
Assembled dimensions include 10" control panel overhang at right and BT-122012 motor mount overhang at rear.

†Accuracy as percent of controller span. Uniformity at 100°F below maximum temperature. Rise Time in minutes to 100°F below maximum temperature. Tests run with empty furnace. Performance will vary with load and application. See Bulletin TC-920 for additional details.

## STANDARD EQUIPMENT

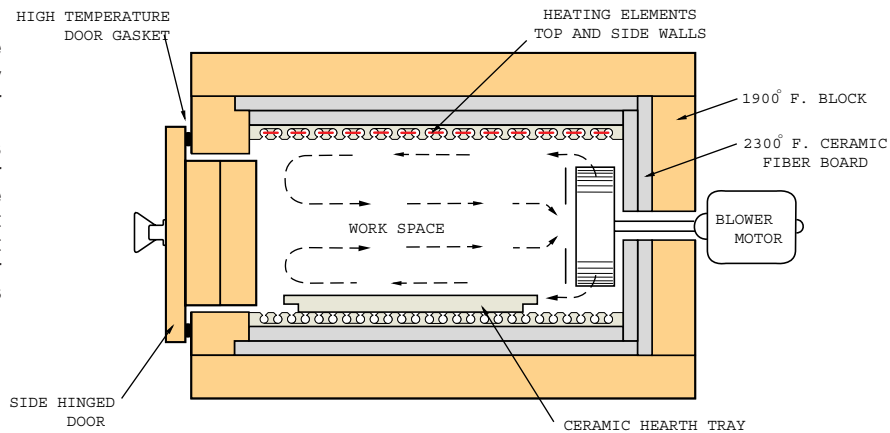
### • Standard Electrical Characteristics

- 208 volts, 1 or 3-phase, 50/60 Hz
- 230 volts, 1 or 3-phase, 50/60 Hz
- 460 volts, 3-phase, 50/60 Hz

— Other electrical characteristics available

Each tempering furnace features completely wired control panel, enclosing terminals for incoming power, temperature controller, heating element control contactor, excess temperature controller, separate contactor interlocked with excess temperature controller, 115 volt control circuit transformer, on-off heat switch and red pilot light. Door interlock switch turns off power to heating elements and blower when door is opened. High temperature enamel painted aluminized steel exterior. Ceramic hearth tray rated for 60 lbs distributed loading. Stainless steel recirculating blower driven through V-belt drive by 1/2 HP motor.

Circulation Diagram (Side View)



## ADDITIONAL EQUIPMENT AVAILABLE\*

- **Programmable Temperature Controller**, microprocessor based, digital indicating, thermocouple actuated, in lieu of standard controller . . . . . **PTC**
- **Recording Thermometer**, thermocouple actuated, 24-hour, 10" diameter circular chart, used in conjunction with standard controller . . . . . **RT**
- **Programmable Recording Temperature Controller**, microprocessor based, thermocouple actuated, digital display, 24-hour, 10" diameter circular chart, in lieu of standard controller . . . . . **PRTC**

- **Digital Timing Temperature Controller**, microprocessor based, digital indicating, incorporates 99 hour 59 minute timer, starts timing when temperature reaches set point and shuts down oven at end of set time . . **DTS3**
- **Shut Down Timer**, with continuous "hold" feature; 1, 5, 10 or 30 hour range . . . . . **SDT**
- **Batch Timer**, for uniformly timing batch operations. Continuous alarm with door interlock; alarms at end of preset time period until door is opened or timer reset; 1, 5, 10 or 30 hour range . . . . . **BT**

- **Alloy Hearth Tray**  
 11" x 11" . . . . . **AH1212**  
 11" x 17" . . . . . **AH1218**  
 11" x 20" . . . . . **AH1220**  
 11" x 23" . . . . . **AH1224**
- **Quench Tank**, carbon steel, 40 gallon capacity, 12" x 20" x 12" deep work basket, subway grating basket support, 1/2 HP direct driven mixer, 23" x 23" x 44" high overall, for 115 or 230/1/60 . . . . . **QT**
- **Quench Tank Electric Heater**, with temperature control . . . . . **QTH**



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\*See Bulletin TC-960 for modifications and other optional equipment.