

## Model HFL-5748-2IQ

### Vacuum Heat Treating & Brazing Furnace

The Solar Manufacturing Model HFL-5748-2IQ is a horizontal front loading vacuum heat treating and brazing furnace generally designed for high production commercial and captive heat treating shops. It is a high temperature, high vacuum, batch-type furnace with electrical resistance heating elements.

#### Features and Benefits

- Horizontal, front loading design with hinged front door for easy, convenient unobstructed loading/unloading of work loads and fixtures
- Autoclave locking ring closure eliminates door seal problems
- Hot zone measuring 36" W x 36" H x 48" D with 3500 pound capacity
- New Solar PowerSave™ Hot Zone is an energy efficient graphite insulated hot zone for temperature applications up to 2650°F
- Thin curved graphite resistance heating elements for uniform radiant heat up



- High performance internal gas quenching for rapid cooling at positive pressures up to 15 PSIG (2-bar)
- Fully automated PC based and programmable industrial controls package
- Stokes/Varian combination pumping system for reliable vacuum performance year after year
- Designed for easy maintenance and minimal downtime
- Full one (1) year Warranty

#### Hot Zone

- Operating temperature: 2400°F
- Maximum temperature: 2650°F
- Temperature uniformity: approximately  $\pm 10^\circ\text{F}$
- Hearth: graphite support pins and graphite rails
- Heating elements: curved, segmented graphite bands
- Insulation: Four (4) layers of 1/2" high purity graphite felt with 0.060" thick graphite foil between each layer of felt
- Hot Face: 0.040" thick carbon reinforced carbon flexible composite
- Three (3) zones of trim control
- Insulation and heating elements are mounted on a heavy duty (0.090") stainless steel support structure

#### Vacuum Chamber

Double wall, water cooled, horizontal front loading vacuum chamber. Hinged front door with pneumatically operated, autoclave-type locking ring to permit the furnace to safely quench at positive pressures up to 15 PSIG (2-bar). Oversized water inlets and outlets assure maximum water flow.



READY FOR QUICK DELIVERY

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### Gas Quenching System

The new and improved internal gas quench system provides the lowest resistance, highest efficiency gas flow in the industry. A 150 HP motor drives a high-speed turbine fan to recirculate the quench gas straight through the water-to-gas heat exchanger and then into the hot zone at high velocity. The tapered graphite gas nozzles are specifically directed at the work load for optimum cooling.

### Vacuum Pumping System

- Mechanical Pump: Edwards Stokes 412, 300 CFM
- Booster Blower: Edwards Stokes 615, 1600 CFM
- Diffusion Pump: Varian 20"
- Holding Pump: Varian/Agilent DS-602
- High Vacuum Valve: Right angle poppet valve

### Power Supply

Hunterdon, VRT power supply rated at 240 KVA  
460 volt/3 phase/60 Hertz

### Control Cabinet and Instrumentation

All industrial controls and instrumentation are housed in a suitable NEMA 12 control cabinet. The SolarVac 5000™ interactive control system enables the operator to monitor, control, record, and display information graphically to quickly understand the status of the furnace.

- Operator Interface: Proface industrial PC utilizing a 15" color touch-screen monitor and Wonderware software
- Programmable Logic Controller: Allen-Bradley SLC 5/05
- Programmable Controller: Honeywell Model UDC3500
- Overtemperature Controller: Honeywell Model UDC2500
- Graphic Video Recorder: Eurotherm Model 6180 utilizing a 12" color touch-screen monitor



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- Vacuum Gauge Controller: Televac MC300
- Control Thermocouples: Type "S"
- Work Thermocouples: Type "K"

### Equipment and Energy Savings Options

- ConserVac™ energy saving pump control system
- ElementGuard off-line element protection system
- Variable frequency drive for quench motor
- Dedicated rail guided load truck; manual or powered
- Gas backfill reservoir
- RA330 and molybdenum work grids

Additional options are available upon request.

**For a full detailed price proposal with equipment specification, contact Pete Reh, Vice President of Sales at 267-384-5040 X1509.**