

Low Torr Range Vacuum Carburizing Furnace HVC-3872-10IQ Series

Features and Benefits

- Horizontal, front loading design with hinged front door for convenient, unobstructed loading/unloading of work loads and fixtures
- Autoclave locking ring closure eliminates door seal problems
- Work Zone Size: Width x Height x Depth: 24" W x 24" H x 72" D 1500 pound capacity
Additional sizes available as required
- Energy efficient graphite provides insulation for high temperature applications up to 2400°F
- Thin profile, curved graphite resistant heating elements minimize mass providing rapid, uniform, radiant heat up and cool down
- High performance internal gas quenching provides rapid cooling at positive pressures up to 10-Bar (135 PSIG)
- Equipped with a fully automated and programmable industrial controls package
- Designed for easy maintenance and minimal downtime

Specifications

The HVC-3872-10IQ model is a horizontal, front loading, internal quench, vacuum carburizing furnace generally designed for high production, commercial, and captive heat treating shops. It is a high temperature, batch type, vacuum carburizing furnace with electric resistance heating elements.

Hot Zone

- Operating temperature: 2200°F
- Maximum temperature: 2400°F
- Temperature uniformity: approximately $\pm 10^\circ\text{F}$
- Hearth: Molybdenum support pins and rails
- Heating elements: curved graphite bands
- Insulation: One (1)" thick, graphite foiled-faced board backed by up to three (3) layers of 0.5" thick graphite felt



Vacuum Chamber

ASME code-stamped, double wall, water cooled, horizontal, front loading vacuum chamber. Hinged front door with pneumatically operated, autoclave-type locking ring permits furnace to safely quench at positive pressures up to 135 PSIG (10 Bar). Oversized water inlets and outlets assure maximum water flow.

Gas Quenching System

The internal gas quench system provides the lowest resistance, highest efficiency gas flow in the industry. A 300 HP motor drives a high-speed radial fan to re-circulate the quench gas straight through a water-to-gas heat exchanger and then into the high velocity, tapered graphite nozzles of the hot zone. The gas nozzles are specifically directed at the work load for improved cooling. A 300 HP, variable frequency drive is also included.

Vacuum Pumping System

- Mechanical Pump: Stokes Model 412, 300 CFM
- Booster Blower: Stokes Model 615, 1600 CFM

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Power Supply

- 120 KVA angle fired SCR, 460 volt, 3 phase, 60 Hz
- Air cooled for reduced maintenance

Control Cabinet and Instrumentation

All industrial controls and instrumentation are housed in a suitable NEMA 12 ventilated control cabinet. The SolarVac 3000 Interactive Control System enables the operator to monitor, control, record, and display information graphically to quickly view furnace status.

- Programmable Logic Controller: Allen Bradley Micrologix 1500
- Programmable Controller: Honeywell Model DCP551
- Overtemperature Controller: Honeywell Model UDC2500
- Graphic Video Recorder: Eurotherm Model 6180 utilizing a 12" color touch screen monitor
- Operator Interface: Allen Bradley PanelView Plus 1500 utilizing a 15" color touch screen monitor
- Vacuum Gauge Controller: Televac MC300
- Control Thermocouples: Two (2) Type "S"
- Work Thermocouples: Type "K"

Optional Equipment:

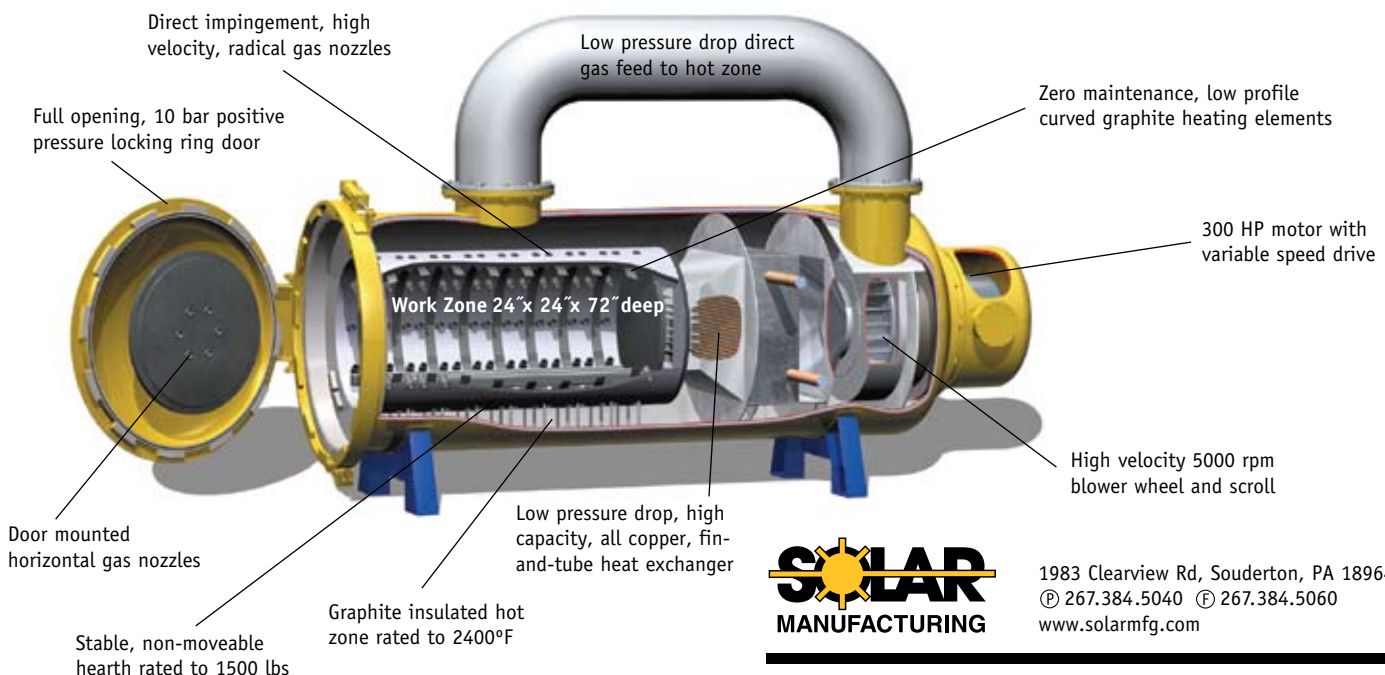
- ConserVac energy saving pump control system
- 16" Diffusion Pump and High Vacuum Valve for general heat treating
- Dedicated rail guided load truck; manual or powered
- Gas Backfill Reservoir
- RA330 and Molybdenum work grids and multi-tier fixtures

Additional options are available upon request.

Solar Manufacturing designs and manufactures vacuum heat treating furnaces, brazing furnaces, and ancillary equipment with a focus on energy efficiency and durability. As a team of specialists with many collective years of experience in vacuum furnace design, we are committed to our objective of providing vacuum furnaces with the lowest cost of ownership achieved through state-of-the-art materials, high performance operation, and robust design.

Solar Manufacturing is a part of Solar Atmospheres, Inc., a progressive company and one of the largest independent commercial heat treaters in the USA. This background affords us a distinct advantage in the industry to assist you in choosing the right vacuum furnace for your application.

For more information or to request a proposal, contact the vacuum furnace specialists at Solar Manufacturing.



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