

SERIES 3300 - Horizontal Front Loading High Vacuum Hot Wall Furnace



Description

The Series 3300 vacuum furnace design is Centorr Vacuum Industries production oriented offering for a variety of heat treatment and annealing applications. The basic design comprises a multi-zone working hot zone available in lengths from 3-10 meters, rated to 900°C max temperatures. A long list of optional equipment makes this one of the most versatile custom-designed furnaces available today. The single or double-ended varieties of this furnace offer semi-continuous operation in a high-vacuum environment, with loads up to 1000kgs in size, and offers faster turnaround time and throughput.

The Series 3300 furnace line contains features only found on high-end heat treat furnaces, such as a stainless steel or Inconel hot wall retort liner, heavy duty Nichrome ribbon heating elements in a refractory brick hot wall furnace; and multiple high-vacuum systems for each processing zone. This design offers resistance to oxidation, fast heating and cooling, and excellent process cleanliness.

Standard Furnace instrumentation includes a programmable controller with PLC for process control. Name brand vacuum sensors and gauges are available on all systems as well as analog/ digital chart recorders. A full complement of program interlocks and safeties ensures safe and efficient furnace operation and reduces the chance of operator vacuum pumping errors.

The Series 3300 furnace line is available with high-vacuum pumping systems utilizing primarily Diffusion pumping systems, with or without cold traps and refrigerated baffles. With several units in the field operating since the 1960's, the Series 3300 design is one of the most proven production designs for Nuclear heat treating and annealing furnaces worldwide.

Key Features

- Hot Wall Vacuum furnace design with stainless or Inconel retort liners.
- Heavy duty Nichrome ribbon elements used instead of thin strip or foil elements which can be easily damaged. Hot zones use hard refractory brick lining for continuous duty operation and hot zone life measures in decades of service.
- Operation to 900°C with multi-zone control in high-vacuum or partial pressures of Argon.
- PLC with Industrial Programmable Controller or PC system using Intellution™ FIX32 HMI software customized by CVI for vacuum furnaces, with extensive data acquisition; and remote operation capabilities.
- High and low vacuum pumping systems including diffusion pumps with refrigerated or Polycold style baffles. Mechanical rotary piston pumps and Roots style blowers.

- G-10504A Partial Pressure control system (1-1000 microns) available.
- Graphic control panel shows location of vacuum pumps and system status using indicator lamps, and provides for manual operation of the furnace.
- Robust fan cooling system with optional water-cooled heat exchanger for fast cooling cycles.
- Integrated water cooling piping with color-coded hoses.
- Analog Ammeters and Voltmeters on control cabinet for each leg of the power supply for operator feedback.
- Customized loading systems and fixturing available optionally upon request.
- Suitable for processing Stainless Steels, Zirconium alloys, Ti, Nickel, and Superalloys.

Optional Features

- Integrated cooling fans available with or without integral heat exchangers.
- CE and NFPA approval standards for compliance available.
- Rigid or Flexible water cooled busswork for improved maintenance and best electrical efficiency.
- Integrated water flow indicators/flow switches with low water alarm setpoint for safe operation.



FURNACE APPROVALS

Centorr Vacuum Industries furnaces are designed to our own internal quality standards developed over our 60 year history, and are built to the following industry standards:
ASTM NFPA 86 NEC (NFPA70)