Vacuum Hot Press Furnace Machine Heated Vacuum Press

Item Number: KT-VHP

Introduction

KINTEK Vacuum Hot Pressing Furnace: Precision heating & pressing for superior material density. Customizable up to 2800°C, ideal for metals, ceramics, and composites. Explore advanced features now!

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Overall Specification	• The furnace utilizes a vertical furnace body for heating. Pressure capabilities range from 5 to 800T, with pressurization methods divided into one-way and two-way. Feeding and discharging configurations include top and side options. The system comprises the furnace body, hydraulic system, vacuum system, heating system, water cooling system, and an electronic control system.
Furnace Shell	• Constructed as a double-layer water-cooled structure. The inner layer is made of strictly polished stainless steel, while the outer layer features stainless steel sandblasting matte treatment or carbon steel with anti-rust coating. Cooling water circulates between these layers, ensuring the furnace shell surface temperature does not exceed 60°C. The furnace cover is lifted using a mechanical mechanism and can be manually rotated backward for opening (in one-way pressure models), incorporating a secure locking device.
Furnace Side Access & Monitoring	• The furnace side is equipped with an observation window, an automatic thermocouple entry and exit mechanism, an infrared thermometer, and water-cooled electrodes (for three-phase heating). The thermocouple's automatic entry and exit are electrically operated, with automatic switching for high and low temperatures. For enhanced safety against abnormal furnace temperatures, an over-temperature protection thermocouple is also installed.
Heating Element	• Fabricated from graphite tube (or molybdenum wire), designed for either single-phase or three-phase heating. The rational design of the heating element significantly improves the uniformity of temperature within the furnace.
Insulation Layer	• Made from materials like graphite (or graphite paper) and carbon felt, providing excellent insulation performance. A unique structural design helps to reduce vacuuming time. For molybdenum wire hot pressing furnaces, the insulation layer consists of a metal reflective screen.
Vacuum System	• Comprises a two-stage vacuum pump setup (typically an oil diffusion pump and a mechanical pump) to achieve both high and low vacuum levels. The system uses high-vacuum baffle valves, designed and produced by KINTEK, enabling automatic switching and control of high and low vacuum, integrated with a digital display vacuum gauge and PLC.
Electric Control System Main Circuit	• The main circuit operates on low-voltage, high-current input. The electric control cabinet is manufactured with reference to Rittal standard cabinets, emphasizing human-centered design. The control panel includes graphic simulation screens and buttons for intuitive operation. Temperature and pressure control are managed by imported brand program instruments. The cabinet is equipped with a PLC, allowing the sintering process to be automatically completed according to preset programs. The control system features comprehensive sound and light alarm functions for abnormal conditions such as water cut-off, over-temperature, over-current, and thermocouple automatic switching failure.

Working temperature	1500℃ / 2200℃ (Max, atmosphere dependent)
Heating element	Molybdenum/Graphite (Other options like Tungsten, Induction available)
Working pressure	10-400T (Customizable up to 800T)
Press distance	100-200mm (Customizable)
Vacuum pressure	Up to $6x10^{-3}$Pa (Higher vacuum options available)

Effective working area diameter range	90-600mm (Customizable)
Effective working area height range	120-600mm (Customizable)