CENTORR Vacuum Industries
800.962.8631 603.595.7233 sales@centorr.com

SERIES 2100/2110 SYSTEM 7™& SUPER 7™ Lab Vacuum Furnace

Description

System VII and Super VII vacuum furnaces broaden the capabilities for vacuum and inert atmosphere metallurgical and ceramic processes with a basic chamber concept that avoids equipment duplication and minimizes cost.

The versatile chamber accommodates accessories carefully designed to conduct all important vacuum metallurgical processes as well as ceramic sintering. Equipment can be chosen to meet one specific need and should requirements change in the future, the basic system can be converted for a different process by merely substituting accessories.

Starting with the multipurpose vacuum chamber, mounted on a standard pumping system, the interchangeable accessories are easily installed to let you melt, sinter, braze, weld, outgas, anneal, heat treat or quench as desired.

Leading Universities and National Laboratories throughout the world have selected Centorr/Vacuum Industries System VII and Super VII furnaces for the following major benefits:

Efficiency - One multi-purpose system for all major vacuum metallurgical capabilities. Components can be added to convert from one process to another as programs, needs, and budgets change.

Economy - Save valuable floor space while avoiding expensive equipment duplication. Meet current requirements while providing the basics for tomorrow's needs.

Convenience - Accessory change-over is fast and easy, using ordinary hand tools. Easy access to pumping components and instrumentation makes maintenance quick and easy.

Key Features

- Cold Wall Vacuum furnace design with stainless steel inner and outer jackets with baffled water cooling.
- Standard units rated at 1315°C, 1650°C, 2000°C in refractory metal and 1315°C, 1600°C, 2300°C, and 2500°C in graphite hot zones.
- Available in two standard sizes of 6”x6”x15” or 8”x8”x20”, with or without internal graphite/refractory metal retorts.
- PLC with Industrial Programmable Controller or PC system using Rockwell FactoryTalk® View HMI software with AB Compactlogix PLC customized by Centorr/Vacuum Industries for vacuum furnaces, with extensive data acquisition; and remote operation capabilities.
- Operation from partial pressures of 10^{-6} torr up to 1-3 psig positive pressures of Argon and Nitrogen
- Optional G-10503A positive pressure Hydrogen gas system available.

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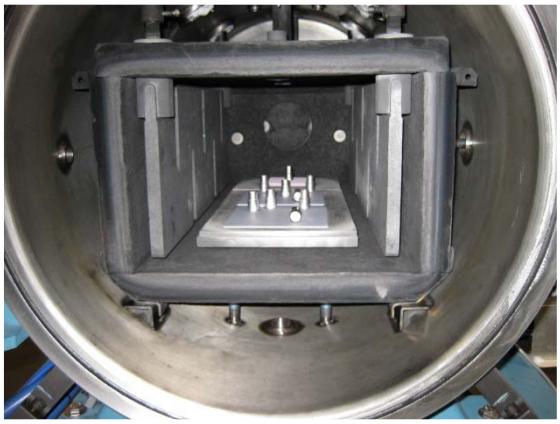
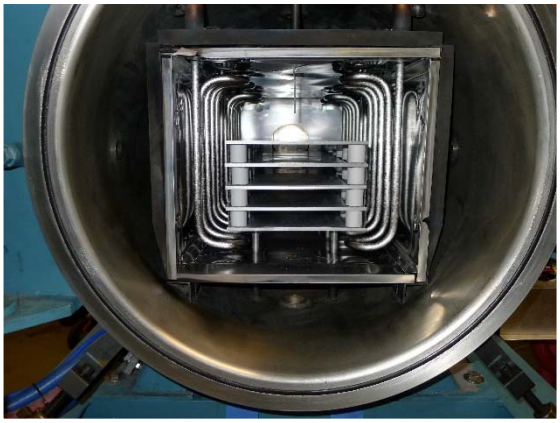
- Optional binder removal systems including our patented Sweepgas™ Vacuum Binder Removal System.
- Low and high vacuum pumping systems include mechanical pumps, diffusion, turbomolecular, or cryogenic high vacuum units with a graphic control panel.
- Single furnace chamber can be designed with interchangeable graphite and metal hot zones for flexibility while processing metals and ceramics.
- Optional skid-mounted design for ease of installation onsite and moving.

MISC. / OPTIONAL FEATURES

- Manual rotameter or Mass Flow Controllers for precise, repeatable gas flow.
- Integrated cooling fans with integral heat exchangers.
- UL / CE / CSA approvals and other non-U.S. standards for compliance.
- Rigid or Flexible water cooled busswork for improved maintenance and best electrical efficiency.
- Induction Melting Furnace kit for casting advanced alloys and clean metals.
- Arc Melting Furnace kit to melt samples for alloy development or phase diagram work. Includes interchangeable hearths for button, bar, or skull melting.





- Inert Gas welding systems for joining reactive refractory metals and other alloys.
- Gas Quenching options when rapid load cooling is required.
- Optional diffusion pumping system with roughing pump and water-cooled baffle, refrigerated baffle, or liquid Nitrogen cold trap.
- Optional binder removal packages including heat-traced/Insulated debind manifolding with combination diffusion pump / Dry Mechanical Pump or OTO (Once-through-oiling) pumps for a variety of binder systems.

STD MODEL*	USABLE SIZE (cu. ft /liters).	HOT ZONE TEMPERATURES (°C)
System 7	0.3 (8.5)	ALLOY 1315/1650/2000 GRAPHITE 1315/1600/2300/2500
Super 7	0.75 (21)	ALLOY 1315/1650/2000 GRAPHITE 1315/1600/2300/2500

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)

MATERIALS PROCESSED

Stainless Steels — Tool Steels
Tungsten Carbide — Inconels

Advanced Ceramics including: AlN, BN, SiC, Si_3N_4, B_4C, ZrB_2. UHTC's and all Carbon, Graphite, and CFC materials.

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