

## SERIES EP HIGH TEMPERATURE ELEVATED PRESSURE FURNACE

Moderate Pressure (1500 PSI)

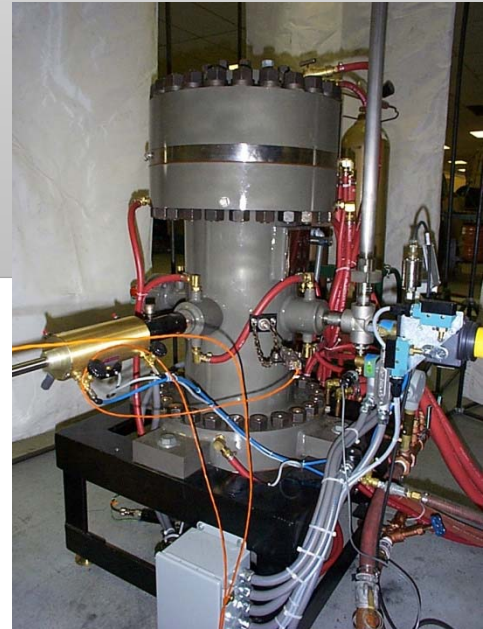
### APPLICATION

Powder Metallurgy  
Pressure Sintering  
Densification  
Materials Research & Development

### SPECIFICATIONS

Operating Temperature: Up to 2200°C  
Operating Pressure: Up to 1500 PSI (105 Kgs/cm<sup>2</sup>)  
Hot Zone Size: 4" Diameter x 8" High (101.6 mm Diameter x 203.2 mm High)  
Cover Lift: Manual  
Evacuation Pump: 13.4 CFM (379.4 LPM)  
Temperature Control: Digital Control Programmer (Micro-processor)  
Furnace Chamber: A.S.M.E. Coded 316 S/S  
Internal Chamber: Water-cooled stainless steel

**Other Heat Zone sizes, temperature and pressure Capabilities also available.**



A typical furnace system consists of the following:

- A. Basic Furnace Chamber Assembly
  1. Heat Zone Assembly
  2. Chamber with frame
  3. Sight Window
- B. Process Gas System  
Evacuation System
- C. Power Supply System
- D. Temperature Control Instrumentation.

### KEY FEATURES

- Low initial cost.
- Efficient, inexpensive to use.
- Uncomplicated design, easy to operate.
- Clean, compact, vacuum tight construction.
- Use in vacuum, inert, nitrogen atmospheres.
- Low thermal mass – rapid heating and cooling.
- Accurate and uniform temperature control.

## BASIC FURNACE CHAMBER ASSEMBLY

The Basic Furnace Chamber Assembly includes the Furnace Chamber which is fabricated of 316 S/S and is built and stamped to ASME code. The High Pressure Chamber is water-cooled. The hot zone is fibrous graphite insulation with a graphite heating element. The furnace cover is raised and lowered manually. A sight port is provided at the front of the chamber in line with the Heat Zone center. Ports are also provided for thermocouple, for process gas inlet and outlet, for evacuation, and for gauges.



## PROCESS GAS SYSTEM

The Process Gas System consists of the evacuation pump with the manifold, trap, valves, pressure gauge, gas pressure controller-indicator, vacuum gauge, pressure relief, and panel mounted controls.

## POWER SUPPLY SYSTEM

Power Supply Systems consist of Silicon Controlled Rectifier Power Controller with Current Limit, Step-down Transformer, Circuit Breaker, Contactor, Control Transformer, Ammeter, Voltmeter, Pushbuttons, Indicator Lights, Water Interlocks, all completely wired and packaged in a floor standing cabinet.

## TEMPERATURE CONTROL INSTRUMENTATION

Centorr Vacuum Industries can supply from the simplest Manual Power Control to the most elaborate instrumentation. This particular furnace is usually supplied with a Digital Control Programmer (Micro-processor) working in conjunction with a W/Re thermocouple and an optical pyrometer. A panel mounted switch permits switching from thermocouple to power transducer mode.