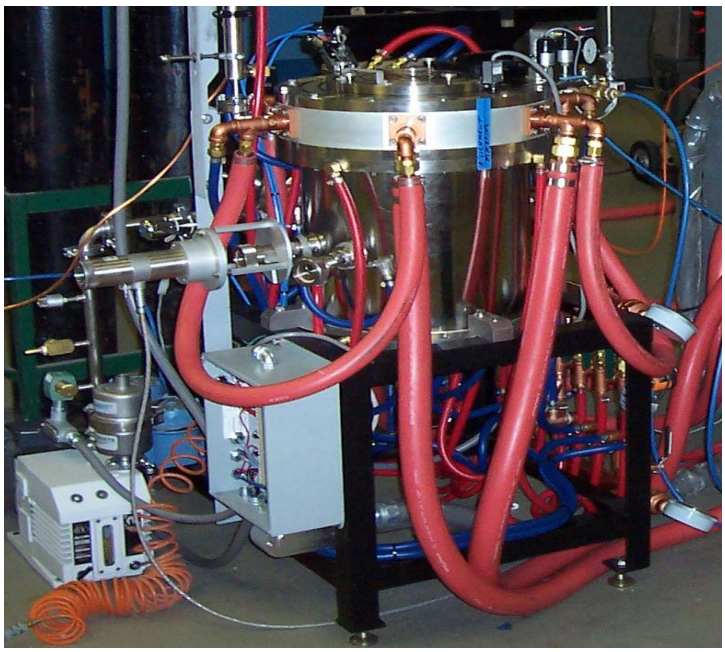
PRODUCT

Information

CENTORR
Vacuum Industries

SERIES 16
TOP LOADING VACUUM FURNACE



MAIN 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

APPLICATIONS

- Brazing, Heat Treating, Crystal Growth, Melting.
- Ceramic Firing, Sintering, Degassing.
- Thermocouple Calibration.

HEAT ZONE SIZE:

3” Dia. x 4” to 12” High
4” Dia. x 5” to 18” High
5” Dia. x 6” to 18” High
61/2” Dia. x 8” to 20” High
8” Dia. x 10” to 20” High
10” Dia. x 10” to 24” High
12” Dia. x 12” to 24” High
14” Dia. x 12” to 24” High

TEMPERATURE:

Up to 1000°C
1650°C
2000°C
2750°C
3000°C

PRESSURE VACUUM:

2 PSIG to 10^{-6} Torr

The Centorr Vacuum Industries’ Series 16 High Temperature High Vacuum or Controlled Atmosphere, Top Loading, Cold Wall, Refractory Metal Heat Zone Furnaces are simple and easy to operate.

A Furnace System typically consists of the Basic Furnace Chamber Assembly, the High Vacuum System or Evacuation System, the Process Gas System, the Power Supply, the Temperature Control Instrumentation, and the Furnace Mounting System.

These furnaces can be built having heat zone sizes of 3” dia. x 4” high to 14” dia. x 24” high, and capable of operating up to 3000 C. It is possible to operate in High Vacuum, in Inert Gas, in Reducing or in Oxidizing Atmospheres. The Vacuum System is capable of attaining 10^{-6} torr. The Furnace Chamber may be backfilled to 2 PSIG.

The Furnace is mounted on an open frame with the Vacuum System immediately behind (or to one side) for maximum efficiency. The Power Supply and Control Console are also located as close as possible to the Furnace Chamber. (In the case of small systems, the power supply is housed inside the control console).

The unit is ready to operate as soon as power is connected to the main circuit breaker, and water inlet and drain connections are made.

The Furnace is completely assembled and thoroughly tested prior to shipping.

CENTORR
Vacuum Industries
Tel: 603-595-7233 Fax: 603-595-9220
Email: sales@centorr.com

BASIC FURNACE CHAMBER ASSEMBLY

The Basic Furnace consists of a double-wall all stainless steel (304L), water-jacketed chamber inside of which is the Heat Zone. The Heat Zone is resistance heated. The Heating Element is made of Refractory Metal (or Kanthal). The Heat Shields are also all Metal. Heat Zone components are easily accessible for inspection or maintenance. A Hearth is provided for work support.

The entire inside of the furnace chamber is designed to conform to the best High Vacuum Practice. Particular attention is given to the choice of heat zone materials and to surface finishes. Ports are provided for Sighting, Thermocouples, Evacuation, Inert Gas inlet and exit, Gauges, etc. Centorr's proprietary Rotatable Sight Window is included as standard equipment. Loading is done through the top Access Lid. Clamps are provided for operation to slightly above ambient pressure.

HIGH VACUUM SYSTEM

Standard High Vacuum Systems consist of High Vacuum Elbow; Diffusion Pump with Cold Trap; Mechanical Pump; Manual, Semi-Automatic, or Fully Automatic Valve System; all Copper Manifold; Viton "O" rings; and Combination Ion Gauge & Two-Station T.C. Gauge Vacuum Instrument.

PROCESS GAS SYSTEM

Process Gas System consists of Vacuum-Tight Gas Inlet Valve and Relief Valve, Bourdon– type Pressure Vacuum Gauge and Manifold.

POWER SUPPLY SYSTEM

Power Supply System consists of Silicon Controlled Rectifier Power Controller (Saturable Core Reactors also available) with Current Limit, Step-down Transformer, Ammeter, Voltmeter, Push Buttons, Indicator Lights, Water Interlocks, all completely wired and packaged in an attractive floor standing cabinet.

Utility requirements are given in KVA at customer's Primary Voltage, Single or Three Phase, and 50 or 60 Hertz.

TEMPERATURE CONTROL INSTRUMENTATION

Centorr/Vacuum Industries can supply from the simplest Manual Power Control to the most elaborate Instrumentation. This can include Automatic closed loop control utilizing Thermocouples, Power Transducers, or Optical Pyrometers for sensing; and incorporating Indicator-Controllers, Recorders, and Programmers. Various types of Micro-Processor Programmers are not available and extremely popular.

FURNACE MOUNTING ASSEMBLY

The Furnace Chamber is mounted on an open support frame. Legs are provided with Leveling Pads.

EVACUATION SYSTEM

For operation in the 10-50 Microns range of vacuum or for evacuation prior to backfilling with Inert Gas or Nitrogen, we include an Evacuation System. This includes a Mechanical Vacuum Pump, Vacuum Valve, and Manifold. Line Filter ahead of the vacuum pump, and Thermocouple type Vacuum Instrument are optionally available.

Centorr/Vacuum Industries, Inc.
55 Northeastern Blvd.
Nashua, NH 03062
Toll Free inside US: 800-962-8631
Tel: 603-595-7233
Fax: 603-595-9220
www.centorr.com
Email: sales@centorr.com

CENTORR Vacuum Industries