

# SERIES 3560 – Co-Firing Horizontal Front Loading High Vacuum Furnace

## Description

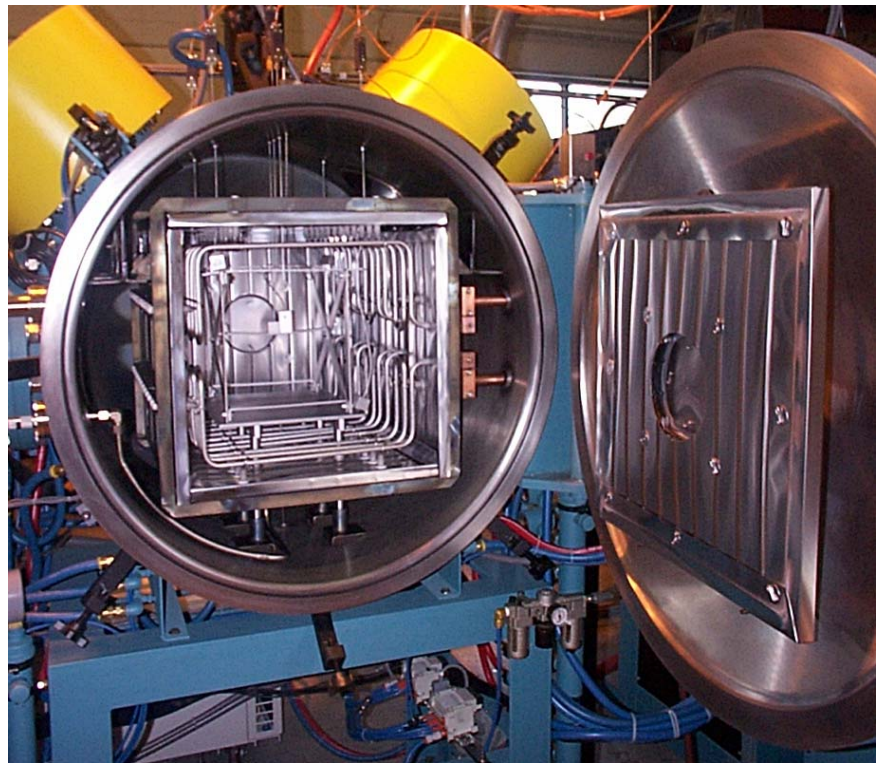
Centorr Vacuum Industries Co-Firing furnaces are batch type horizontal units designed to provide processing of green parts in an accurately controlled repeatable environment.

The furnaces sequentially debind, sinter, and metallize in one continuous cycle and provide precise, programmable temperature and dew point (atmosphere) control. Typical Co-Fired materials include alumina, aluminum nitride, and beryllia. Consistent high quality production is the result.



## Key Benefits and Features

- Cold Wall Vacuum furnace design with stainless steel inner jacket and outer jackets with baffled water cooling.
- Rugged Construction – designed for production environments.
- Repeatable Cycles – fully programmable temperature and dew point control systems.
- Even Temperature Profile – achieved with independently adjustable upper and lower element banks.
- Alarm System – safety interlocks protect against interruption of water, power, or gas supply.
- High Purity Production – assured by carbon-free refractory metal construction.
- Rectangular hot zone cross-section – for optimum loading efficiency.
- Efficient Work Handling – front and rear doors for floor level loading and easy access to all temperature and vacuum sensors.
- Heavy duty rod elements used instead of thin strip or foil elements which can be easily damaged.



- Operation to 2000°C with two- or four-sided heating elements in partial pressures from 10<sup>-3</sup> torr up to 1-3 psig positive pressures of Argon, Nitrogen, and Hydrogen gas.
- PLC with Industrial Programmable Controller or PC system using Specview® or HMI software customized by CVI for vacuum furnaces, with extensive data acquisition; and remote operation capabilities.

STD MODEL*	USABLE SIZE (cu. ft /liters).	EFFECT HOT ZONE WxHxD (in / mm)
I - 3024	1 (28)	12 x 12 x 12 (300 x 300 x 300)
II - 3040	2 (57)	12 x 12 x 24 (300 x 300 x 610)
III - 3056	3 (85)	12 x 12 x 36 (300 x 300 x 914)
4060	4.5 (127)	18 x 18 x 24 (457 x 457 x 610)

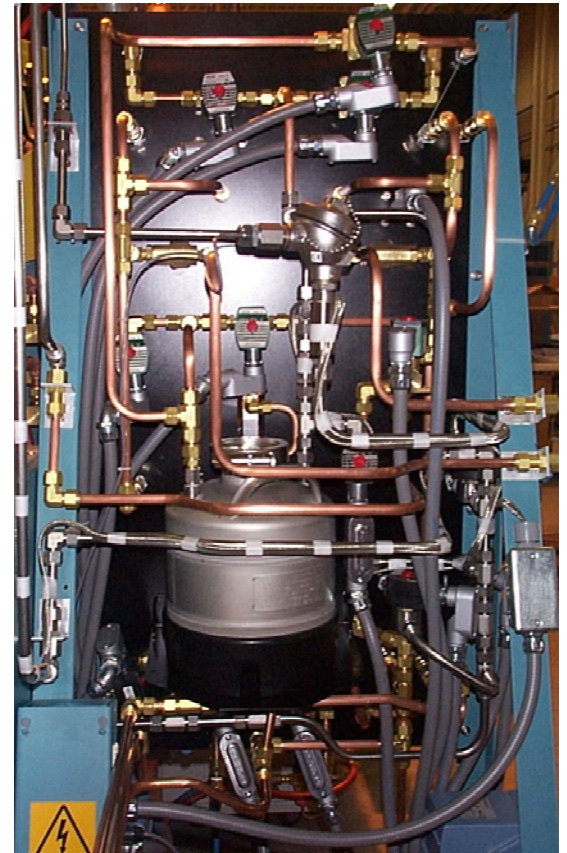
\* Custom sizes available upon request

#### FURNACE APPROVALS

Centorr/Vacuum Industries furnaces are designed to our own internal quality standards developed over our 65+ year history, and are built to the following industry standards: ASTM NFPA 86 NEC (NFPA70)

### Typical Furnace Specifications

- Performance Characteristics** Operating temperatures to 2000°C in a full atmosphere of Ar, N<sub>2</sub>, or H<sub>2</sub> gas.
- Vacuum Chamber** Stainless steel interior with mild steel water jacket with baffles for uniform coolant distribution.
- Hot Zone** Rugged Molybdenum or Tungsten rod elements arranged in upper and lower banks with power independently adjustable to provide optimum uniformity.



**Shielding** Molybdenum and/or Tungsten heat shields retained in removable SS frame.

**Dew Point Control system** Stainless steel bubbler with optional thermostat temperature control. Dew point level is controlled by blending wet and dry gas. Gas lines are heat traced and insulated to prevent condensation. Dew point measured using either ceramic hygrometer or chilled mirror style instruments.

**Hydrogen System** Model G10503A flow through process gas system, contains additional door clamps, pressure relief ports, automatic gas purging system, and necessary interlocks for safe operation.

**Pumping System** Mechanical two-stage rotary vane vacuum pump with optional diffusion, turbomolecular, or cryo pump for operation in high-vacuum range.