

*“Degrees  
Ahead in  
Quality”*



**The BC Series Bottom Loading Furnace is designed to provide years of continuous service while requiring a low investment cost.**

Applications for this furnace include:

- \* Annealing
- \* Brazing
- \* Diffusion Bonding
- \* Ceramic Firing
- \* Degassing
- \* Glass Processing Studies
- \* Melting
- \* Sintering
- \* Carbon Glass & Ceramic Composites

Generally, the basic furnace System includes the following components:

- \* Furnace Assembly
- \* Power Supply
- \* Heat Zone
- \* Evacuation System



The furnace can be rated up to a maximum operating temperature of 3000°C (5432°F) and will operate in vacuum, inert atmospheres, Nitrogen and wet or dry Hydrogen.

#### FURNACE ASSEMBLY:

The chamber, top cover, and bottom access cover are double walled, 304L stainless steel. Each component is electropolished to attain highest vacuum quality. Ports are incorporated in the heat chamber for a sight window, thermocouples and process gas. Power to the heating element is supplied by nickel plated water cooled power feedthroughs located in a ring assembly at the top of the chamber.

#### HEAT ZONE:

The cylindrical element and heat shield assembly are fixed inside the chamber to allow easy loading of the fixtures and materials for processing. Heat zones can be either refractory metal or graphite. Maximum operating temperature of graphite is 2500°C.

#### POWER SUPPLY:

Power supplies can be provided with any of these characteristics: single or three phase, 208, 380 or 480 volts and 50 or 60 Hertz. A typical power supply incorporates a step down transformer, SCR, circuit breaker, contactor, amp and volt meters. Power supplies 25 kVA and above are housed in a free standing cabinet separate from temperature controls.

#### TEMPERATURE CONTROL:

Programmable process temperature controller and separate over temperature limiter are standard. Recorders and data logging devices specific to the Customer's requirements are available as options. Types of sensors include thermocouple, optical pyrometer or power transducer.

#### PUMPING SYSTEM:

Fully automatic PLC controlled pumping systems can be provided for the range of  $10^{-2}$  Torr (rough pump with mechanical pump only) through  $10^{-10}$  Torr (cryo and ion pumps). Our standard system is automatic and consists of a diffusion or turbomolecular high vacuum pump, a rotary vane or oil free scroll type mechanical pump, isolation valves and vacuum gauge controller. The system will consistently operate in the  $10^{-5}/10^{-6}$  Torr range.

#### INERT GAS/NITROGEN SYSTEM :

To allow operation using inert (Noble) gases or Nitrogen, a kit which includes inlet and outlet valves and a pressure/vacuum gauge is supplied.

#### WET OR DRY HYDROGEN SYSTEM:

This is an optional system that can be manual or fully automatic using flow control and variable percent mixing of Hydrogen with other gases. All necessary safety interlocks and devices such as blow-off port, igniter, etc., are included with this system. The system conforms to NFPA 86 Standard for Ovens and Furnaces.



For a comprehensive review of your specific requirements, please contact OXY-GON'S technical sales personnel for a customized proposal with specifications.

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