

Power Convection® Vacuum Furnace Configurations:

Model Number	1HVP 24-36-24 PC	1HVP 24-36-36 PC
Dimensions & Data		
Effective Work Size Performance		
Specifications		
Utilities		

Lorem ipsum dolor sit amet, convallis vestibulum, tempor ante potenti cursus iaculis, posuere ante urna nibh, odio vulputate nec tellus, ut justo ornare rutrum. Mauris nulla libero commodo ac, tellus nisl, metus vivamus eu accumsan volutpat lectus, nunc congue, gravida nulla. Rutrum congue. Montes praesent dolor, lacinia magna dignissim nonummy, in semper lorem placerat tristique eget. At sed rhoncus molestie blandit tempor nunc. Morbi at nullam nibh libero integer mauris, rhoncus a nec scelerisque nulla, orci neque. Leo aliquam. Volutpat non praesent aliquam, porta vitae saepe id lobortis nulla, et magna. Dolor sodales vitae sit, mauris aenean laoreet condimentum magna integer, proin integer vel cras, ut consectetur vestibulum natoque placerat commodo.

Id turpis nulla donec, nam ligula vivamus consectetur dignissim. Aliquam et enim massa, ultricies augue eleifend non odio integer felis, dolor doloremque rhoncus tempor, magna tempus bibendum ultricies taciti. Et tempor facilisis, mauris arcu facilisis nonummy wisi. Posuere integer purus. Erat sit molestie vitae scelerisque mi nam, at mattis nunc lorem egestas, nam mus eros etiam torquent cursus in, arcu quo integer, risus wisi odio vitae dui hymenaeos sollicitudin.

Available Sensors and Controls:

ESA® – Dew Point Sensor with Surface Combustion’s patented design is CQI-9 capable, and offers a low-cost alternative to in-situ probes.

ESA® 8200 – Capable and user friendly: CLX PLC with digital communications and Large HMI with On-Line Help Screens. Control and Trend temperature and dew point; maintenance scheduling; redundant Oxygen probe monitoring.





C6™ E – Micro PLC and economic HMI with temperature and dew point control and alarming.

ESA® 3200 – Micro PLC with Single loop controllers and temperature hi-limits control dew point and RX® flow.

Get started with Surface!

Call Surface with the following information to get your furnace solution underway.

Work Description and your Process needed:

-  cycle
-  operation
-  hours per year
-  available space
-  operating temperature range
-  heat source

We will work with you to develop the best processing solution for your heat treating requirements. This starts with developing a complete process solution and continues through shipment, installation and equipment commissioning.

Once your system is in place we continue working with you for the life of the equipment through our industry leading aftermarket services including customer service, Aftermarket Parts, Rebuild and Upgrade Service. We look forward to working with you.



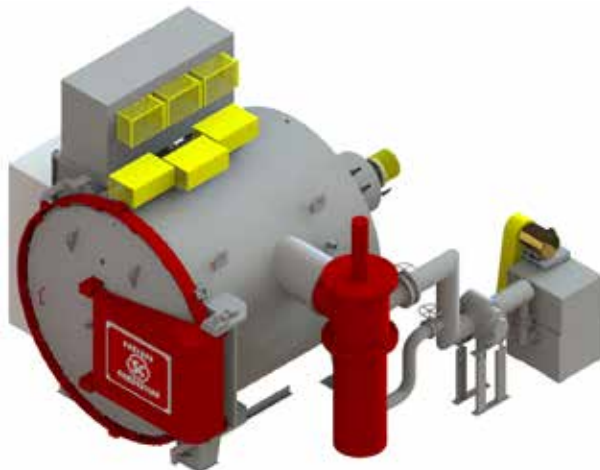
1700 Indian Wood Circle
Maumee, OH 43537 USA

info@surfacecombustion.com
1-800-537-8980

surfacecombustion.com

Power Convection® (PC) Single Chamber Vacuum Furnace

Processing any work load to specific heat treat requirements



The Surface Combustion Power Convection® (PC) Single Chamber Vacuum Furnace are horizontal in design and perform high quality heat treating processes.

The PC Vacuum Furnace is capable of processing a wide range of materials from low-melting point alloys to refractory metals. When combined with the above treating processes, the PC Vacuum Furnace is a versatile furnace capable of processing almost any workload to specific heat treat requirements.

PC Single Chamber Furnance Solution

Maximum Heat Treat Flexibility

Surface Solution:

The Surface Vacuum furnace is manufactured with the same high quality materials and reliability as the rest of our furnaces. The unique ability of the vacuum furnace enables a wide range of processing options because the atmosphere is controlled by the user. Removing the atmosphere reduces the possibility of contamination, prevents oxidation and enables really high temperatures to be achieved. This furnace solution is excellent for bright finishes and high grade steel.



The ability to control the interior of this furnace chamber allows for rapid heating, fast convection cooling and high load capacity. This allows for smaller batch work as needed and faster throughput on all products taking advantage of this system.

Processes Include:

- Annealing
- Brazing
- Hardening
- Magnetic Annealing
- Special Process Control

Application Requirement:

- Quick heating and cooling capability
- High temperature thermal processing
- Consistent temperature (+/-10°)
- Bright finish requirements
- Large work load area

Optional Equipment:

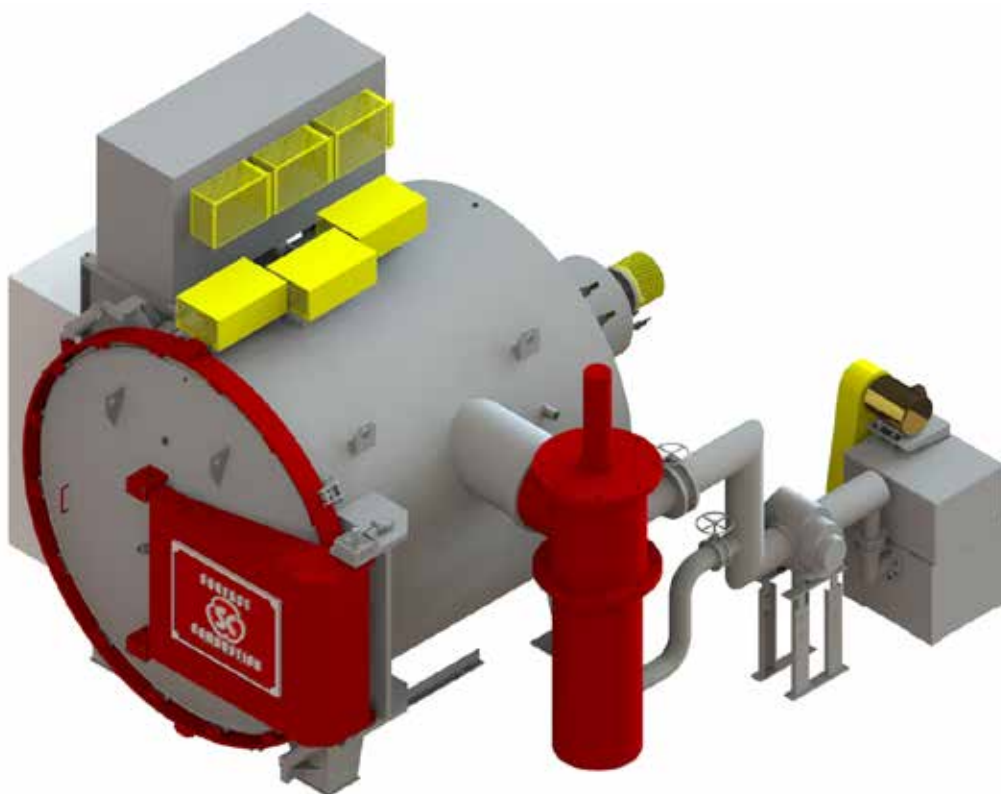
- Increased Capacity Pumping Equipment
- Diffusion Pumping System
- Alternate Hearth Materials
- DataVac® or Other Advanced Process Control Systems
- Furnace Loaders
- Fixtures, Trays and Baskets

Ideal For:

Castings, forgings, aerospace components, bearings, gears, fasteners, stampings



Power Convection® (PC) Single Chamber Vacuum Furnance



A. Autoclave Locking Ring Door

This is designed to prevent air infiltration during the transition from vacuum to positive pressure gas quenching. Vacuum and pressure sealing is provided by a simple, reliable and low cost neoprene gasket. This features also eliminates the need to use hand cracks, or bolts to lock the door in place. The door is actuated by a push bottom and is interlocked with the furnace cycle for safety.

B. Arched Heating Elements

These provide excellent heat release and provide a larger work envelope than octagonal shaped heating element arrangements. The elements are only supported in two places with reduces heat losses and greatly reduces the number of electrical isolation components. The double bolted element design assures a completely circular pattern as well as reduces the risk of element arcing.

C. Low Cost Graphite Elements

These are extremely strong at temperature and are much easier to service than conventional molybdenum elements.

D. Large Effective Workload Area

The chamber provides plenty of room for safe loading. The larger inner diameter of the work envelope assures easy loading and reduces the risk of damaging the heating elements or insulation. The addition, there is plenty of room at both ends which also simplifies loading.

E. Modular Inner Chamber Assembly

This is a simple design which has reduced point for heat loss, as well as a rugged and long life stainless steel construction framework. Graphite and/or fibrous insulating is mounted to the framework to complete the inner chamber assembly. The design is rugged, simple and easy to maintain. Integral cooling nozzles provide easy and efficient cooling.

F. Temperature Uniformity

The 10 (o) variance in temperature is achieved with the circular element design large than standard work envelope, and a thicker insulation package.

G. Efficient Internal Cooling

This is achieved through internal cooling coils and a high capacity fan which eliminates the

need for bulky external coolers. The wind flow pattern provides faster cooling rates by providing a direct wind return pattern to the fan.

H. Heavy Duty Hearth

This design is manufactured from Inconel which provides long service life. Other materials, such as ceramics, graphite and molybdenum are also available.

I. Integral Control Cabinet

This is mounted to the side of the furnace at the factory and eliminates typical field interconnection wiring installation time and costs are reduced.

J. Recording Capabilities

Vacuum level, furnace temperature and up to 10 customer supplied survey thermocouples can be recorded.

K. Proven Components

The Surface standard applies to all the components used in the furnace design. Component manufacturers are chosen for quality and rugged design which provides trouble free operation.