

*Vector
Vacuum
Furnace*



VECTOR

An Advanced Vacuum Furnace with High Pressure Gas Quench

Vector is a single chamber vacuum quench furnace with 2-25 bar gas quenching capability, which can be used for a wide variety of heat treating processes and applications. Vector furnaces are extremely versatile and capable of excellent temperature uniformity, process control and consistent/repeatable results while heat-treating a wide variety of materials and component parts. Short cycle times save power and process gas consumption.

Vector Vacuum Furnaces

Vector high pressure gas quench furnaces are the ideal solution for heat treating.

Vector furnaces, with their round hot zone configuration, are capable of running most heat treating processes including annealing, brazing, hardening, normalizing, solution heat treatment and sintering. Additionally, they can be used with SECO/VACUUM's patented vacuum-carburizing technology (FineCarb®) and prenitriding (PreNit®). The SimVac® process simulation package is included at no extra charge.

With hundreds of systems installed worldwide, SECO/VACUUM's high pressure quench furnaces have a proven record of high performance technology.

Processes:

- Annealing
- Brazing
- Case hardening (low pressure carburizing)
- Custom processes
- Normalizing
- Sintering
- Solution heat treating
- Tempering

Materials:

- Alloy steels
- Carburizing grades
- Stainless steels
- Tool steels
- Specialty steels & alloys
- Superalloys & exotic materials
- Titanium & titanium alloys

Industries:

- Additive Manufacturing
- Aerospace
- Automotive
- Commercial Heat Treatment
- Electronic
- Energy
- Industrial Products
- Machinery & Equipment
- Medical
- Metallurgy
- Military/Defense
- Nuclear
- Space
- Specialty Applications



The Vector is a single chamber horizontal or vertical vacuum furnace with high-pressure gas quenching capability that complies with industrial standards related to heat treatment equipment. It comes with a full range of options and accessories for performing a wide range of features for heat treaters and can be customized for special applications.

Benefits:



Wide range of heat treatment processes and applications



High speed cycles with high pressure gas quench



Customizable



Environmentally friendly with low emissions of process gases



Fast delivery and simple installation



Guaranteed quality and repeatable process results



Predictive maintenance



Remote control and monitoring



Low consumption of energy, process gases and other utilities



Simple design, modular, fitted and adjusted to tasks and plant conditions

Features:

- Standard horizontal capacity from 440 to 5,500 lbs. and more (200 to 2,500 kg)
- Standard vertical capacity: 3,300 lbs. (1,500 kg) and 4,400 lbs. (2,000 kg)
- Graphite or metal hot zone with maximum vacuum of 10⁻² to 10⁻⁵/10⁻⁶ mbar
- Quench pressure: from 2 up to 25 bar
- Partial pressure and quench gases: N₂, Ar, He, H₂
- The best operational features including uniform heating and quenching, ability to harden a wide range of materials and cross-sections
- Convection heating fan
- Gas cooling utilizing the ConFlap™ system
- Optional equipment for vacuum carburizing technology: FineCarb® / PreNitLPC® and vacuum nitriding LPN
- User friendly HMI, computer control system with SimVac™ simulation software
- AMS2750 specification compliance

Furnace Options:

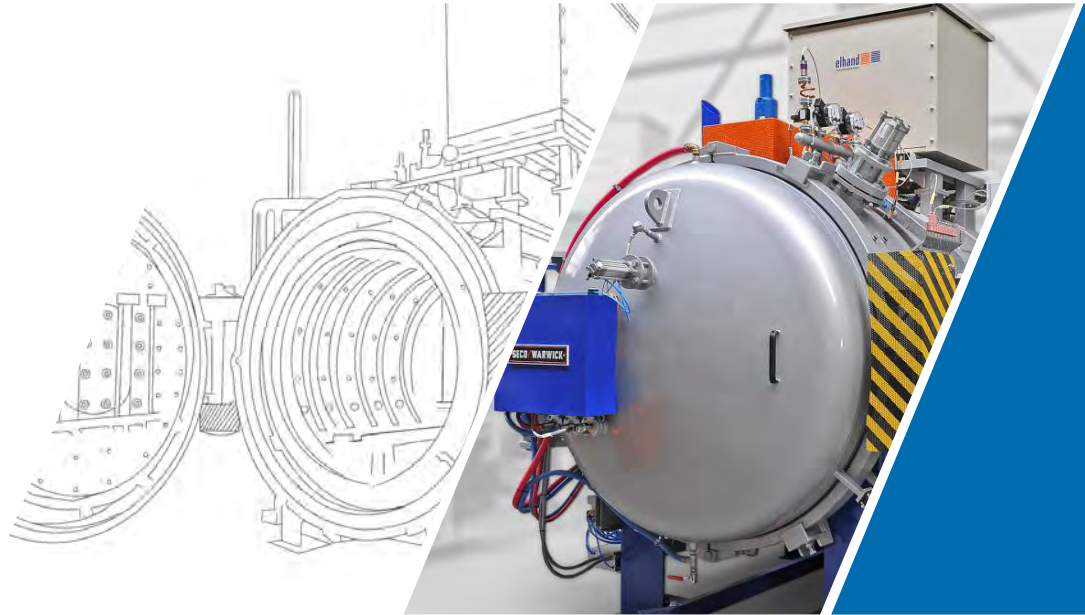
- Horizontal or vertical configurations
- Graphite or all-metal hot zone
- Multi-zone control for improved temperature uniformity
- High temperature operation
- High vacuum or ultra-high vacuum
- Partial pressure control
- Directional cooling gas flow

Vector VIP: Value Incentive Program

The Vector VIP program is a special sales and service package for the most common sizes and configurations of Vector vacuum furnaces. See the table on the back cover for eligible models.

The VIP package offers valuable benefits to our North American heat treat customers, including:

- Competitive pricing
- Fast delivery
- Priority customer support



Standard Sizes:

Style	Horizontal Configuration			Vertical Configuration	
Model	446	669	9912	1212	1515
VIP Models Available		Yes	Yes		
Workload Size* W x H x L or ϕ x H inches (mm)	16 x 16 x 24 (400 x 400 x 900)	24 x 24 x 36 (600 x 600 x 900)	36 x 36 x 48 (900 x 900 x 1200)	50 x 50 (1270 x 1270)	60 x 60 (1520 x 1520)
Max. Gross Load lbs (kg)	450 (204)	1300 (590)	2650 (1202)	3300 (1495)	4400 (1995)

Pressure quenching up to 25 bar on most models.

* Custom sizes, special features and system configurations available

SECO/VACUUM
The North American Vacuum Furnace Company

www.SecoVacUSA.com