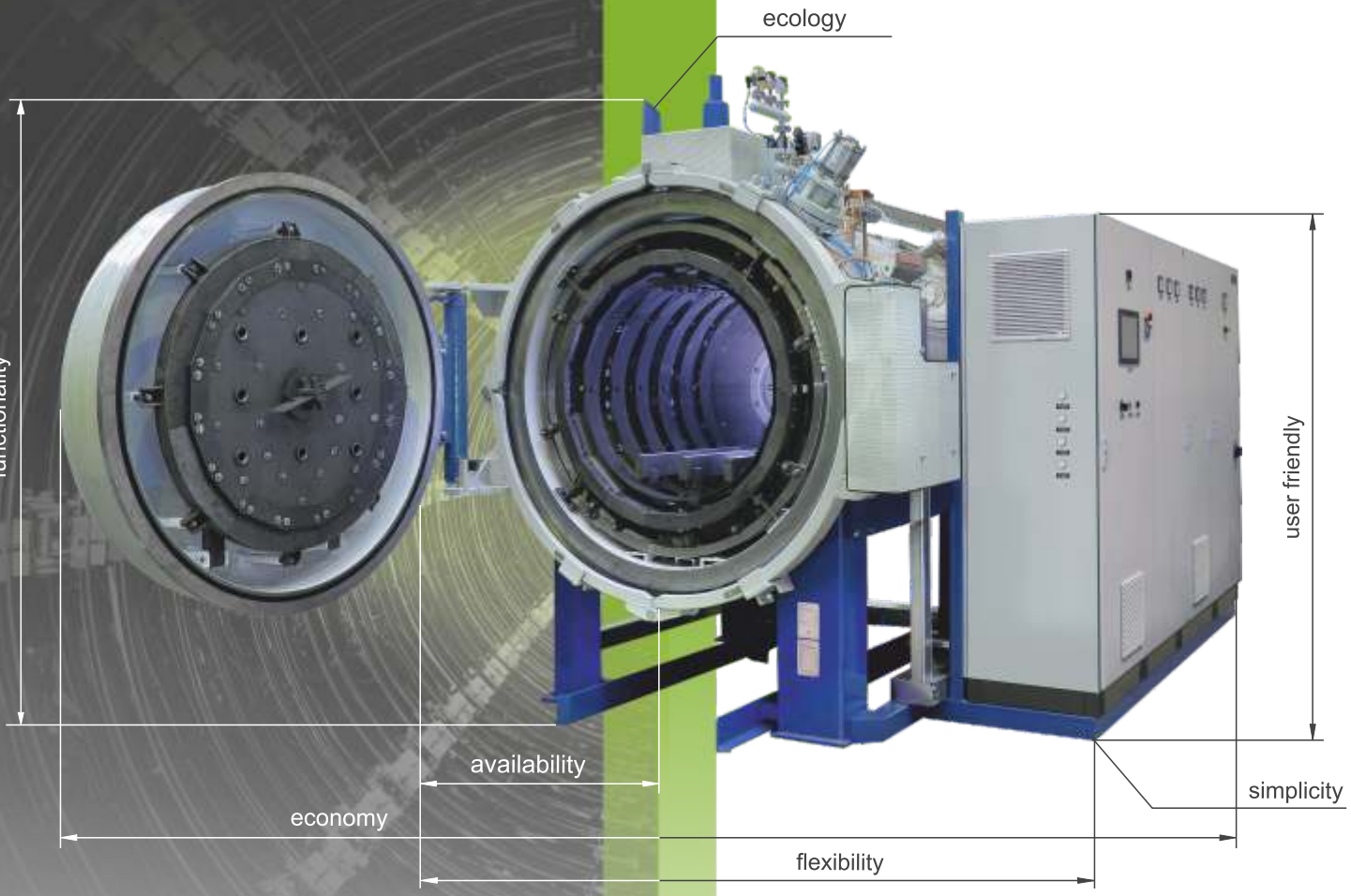
Vacuum Furnace Line

SECO/WARWICK
Heat Processing Equipment



Vector
vacuum furnace line

wide range of heat treatment processes, technologies and applications

low consumption of energy, process gases and other utilities, low emissions as well

tailor-made device, more than you expect

well-timed with the customers needs, manufactured and delivered at a suitable time

simple design, modular, fitted and adjusted to tasks and a plant conditions

guaranted quality and repeatable processes results

Vector

Versatile
Efficient
Customized
Timely
Optimal
Reliable

Processes:

- Brazing
- Annealing
- Hardening
- Low pressure carburizing & nitriding (LPC & LPN)
- Solution heat treating
- Sintering
- Tempering

Materials:

- Tool steels
- Carburizing steels
- HSLA
- Alloyed steels
- Stainless steels
- Alloys and super alloys
- Titanium and titanium alloy

Industries:

- Aviation
- Automotive
- Machine
- Tool
- Energy
- Medical
- Nuclear
- Electronic
- Metallurgy
- Commercial heat treatment
- Special

OPTIONS DEDICATED FOR THE STANDARD VACUUM FURNACES

STANDARD
Single chamber horizontal vacuum furnace that complies with US and UE market industrial standards related to heat treatment equipment (or any other if specified)

OPTIONS
- Vertical orientation
- Graphite or metal hot zone
- Improved temperature uniformity
- Multi-zone temperature control
- Load thermocouples port and control
- High temperature operation
- High vacuum
- Ultra-high vacuum
- Low and cryogenic-temperature trap
- Partial pressure control
- Convection heating
- High pressure gas quench
- Cooling gas flow direction
- Color selection

- Selection of PLC and IPC control system
- Power management control system
- Independent data recording
- Remote control and monitoring
- Air control cabinet conditioned

- Low pressure carburizing (LPC) system - FineCarb®
- High temperature LPC - PreNitLPC®
- Low pressure nitriding - FineLPN®
- Nitriding of stainless steel - SuperExpanite
- Isothermal and controlled quenching
- Deep freezing
- Tempering
- Low pressure carburizing simulation software - SimCarb
- Case hardening simulation software - SimHard
- Tool steel's heat treatment simulation software - G-Quench Pro

DEDICATED AUXILIARY EQUIPMENT
- Manual loader
- Automatic loader
- Casted metal fixture
- Carbon composite fixture
- Closed loop water cooling system
- Gas buffer tank
- Helium recycling system
- Noise protection of the pumping system
- Inlet gas dew point measuring system
- Temperature uniformity frame
- Time-saving spare parts set

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Technical Data

		Vector horizontal					Vector vertical	
		22/24	25/24	35/36	50/48	56/60	50/50	60/60
Uniform zone (WxHxL)	mm inch	400x400x600 16"x16"x24"	600x400x600 24"x16"x24"	600x600x900 24"x24"x36"	900x800x1200 36"x32"x48"	1000x1000x1500 40"x40"x60"	Ø1250x1250 Ø50"x50"	Ø1500x1500 Ø60"x60"
Max. load	kg lb.	200 440	400 880	600 1320	1200 2640	2500 5500	1500 3300	2000 4400
Operating temperature	°C °F	200-1350 400-2450						
Convection heating	°C °F	max 800 (optional 1100) 1500 (optional 2000)						
Temperature uniformity	°C °F	+/- 5 +/- 10						
Heating power	kW	70	90	150	240	375	270	375
Max. cooling pressure	bar	2-6-10-12-15-25						
Operating vacuum	mbar Torr	range 10^{-2} (optional 10^{-5})						

* other size and parameters also available on request

SECO/WARWICK Group

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