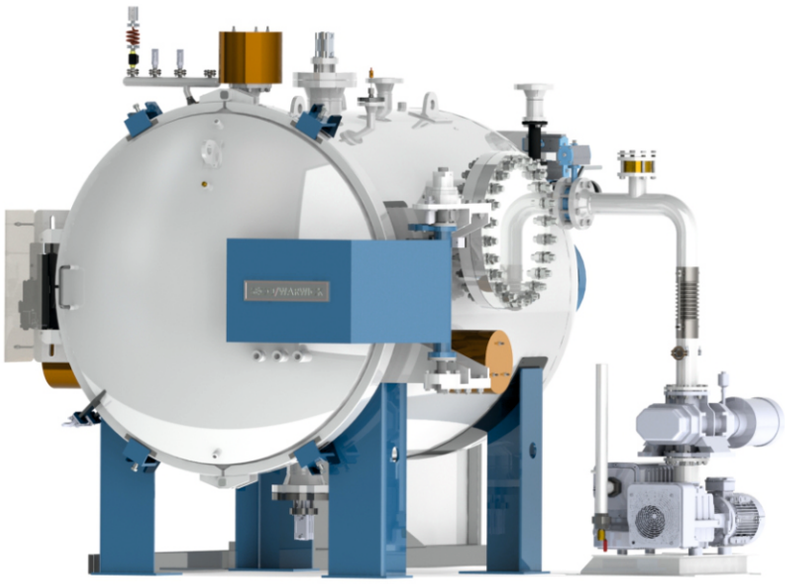


Compact
Vacuum Furnace

- *innovation*
- *performance*
- *reliability*

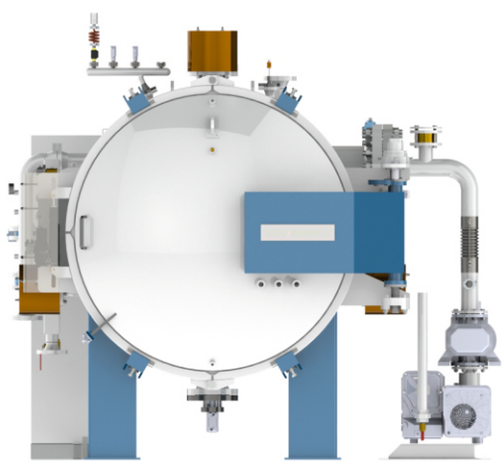
www.secowarwick.com

Why Compact?

- Pump down time to operational vacuum less than 15 min
- Temperature uniformity better then +/-6 °C | +/-10 °F
- Meets requirements of AMS 2750E class 2
- Efficient convection heating in lower temperatures
- Designed for hardening of tool and other steels in gas under pressure of 15 bar
- Perfect for hardening of slender elements
- Hardening and tempering in one cycle
- Process control with load thermocouples
- Meets requirements of NADCA, FORD and GM heat treatment specifications
- Controlled cooling, isoquench, interrupted quench, marquenching and austempering available
- Built-in simulator G-Quench Pro for hardening of tool steel
- Pre-installed package of recipes for selection heat treatment parameters depending on grade of steel and part geometry
- Smart control system enabling the reduction of the power consumption
- Motor supply circuit protected against spikes during startup phase

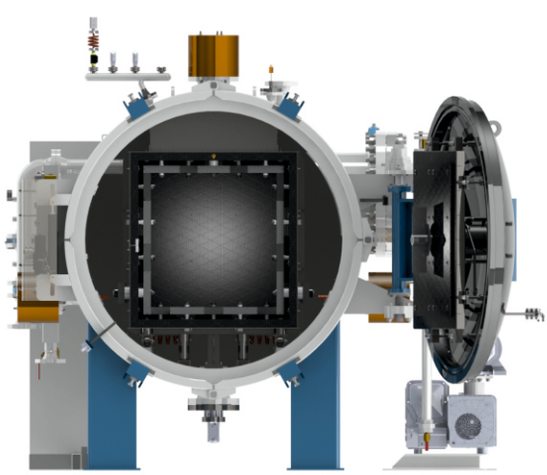
Processes:

- Brazing
- Annealing
- Hardening
- Solution heat treating
- Sintering
- Tempering



Materials:

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



Industries:

- Aviation (NADCAP)
- Automotive
- Machine
- Tool
- Medical
- Nuclear
- Energy
- Electronic
- Metallurgy
- Commercial heat treatment centers
- Special

Options dedicated for the Compact Vacuum Furnaces

Single chamber, horizontal vacuum furnace with graphite rectangular hot zone and integrated, directional gas cooling. High pressure gas quench 15 bar with controlled and isothermal cooling (interrupted quench, austempering, martempering). Meets NADCA, FORD and GM requirements for dies heat treatment.

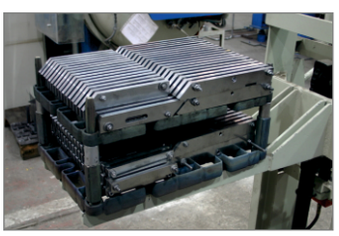
Options variety

- 2 or 15 bar cooling gas pressure
- Partial pressure control
- Convection heating
- High vacuum

Dedicated auxiliary equipment

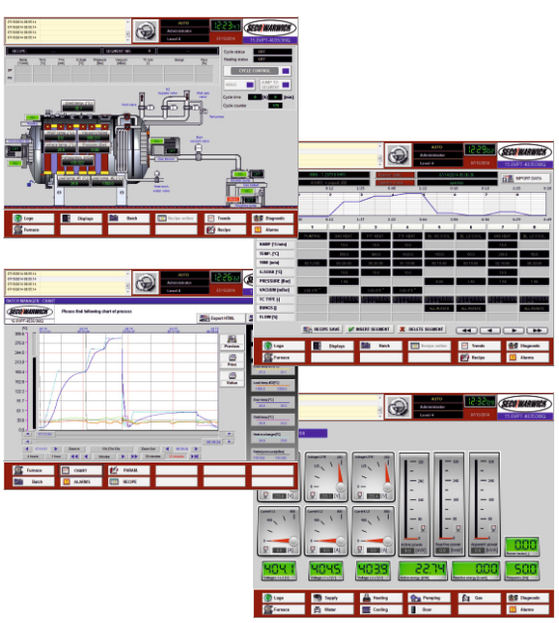
- Manual loader
- Electrical loader

- Casted metal fixture
- Carbon composite fixture
- Closed loop water cooling system
- Gas buffer tank
- Noise protection of the pumping system
- Inlet gas dew point measuring system
- Temperature uniformity frame
- Time-dependent spare parts set



Control system advantages

- Fully automated furnace operation controlled by PLC
- Auto and semi-auto operational mode
- Intuitive window type operation panel
- Monitoring of process parameters
- Visualization and animation of furnaces operation
- Programming processes
- Recording of process parameters and events
- Batch reporting
- Alarming and warning locally and remotely
- Predefined process recipes database
- Energy optimization programming
- Simulation of quenching
- Preventive maintenance program and real time scheduling
- Remote communication, monitoring and control
- Connection to external network
- Data storage



Technical data

Uniform zone WxHxL	Max load	Operating temperature	Convection heating	Temp. uniformity	Heating power	Max. cooling pressure	Operating vacuum
mm/inches	kg lb.	°C °F	°C °F	°C °F	kW	bar abs	mbar | Torr
22/24 400x400x600 16"x16"x24"	300 660	150 – 1350 300 – 2460	to 750 1380	+/-6 +/-10	55	2 or 15	range 10^{-2} (option 10^{-4})
35/36 600x600x900 24"x24"x36"	800 1760				110		
50/48 900x900x1200 36"x36"x48"	1500 3300				220		

SECO/WARWICK Group

POLAND
SECO/WARWICK S.A.
Sobieskiego 8
66-200 Świebodzin, Poland
tel. +48 68 3820 500
fax +48 68 3820 555
info@secowarwick.com.pl
www.secowarwick.com

POLAND
SECO/WARWICK Europe Sp. z o.o.
Świerczewskiego 76
66-200 Świebodzin, Poland
tel. +48 68 3819 800
fax +48 68 3819 805
europe@secowarwick.com.pl
www.secowarwick.com

USA
SECO/WARWICK Corp.
P.O. Box 908
Meadville, PA 16335-6908, USA
tel. +1 814 332 8400
fax +1 814 724 1407
info@secowarwick.com
www.secowarwick.com

USA
RETECH SYSTEMS LLC
100 Henry Station Rd.
Ukiah, CA 95482, USA
tel. +1 707 462 6522
fax +1 707 462 4103
leroy.b.leland@retechsystemsllc.com
www.retechsystemsllc.com

GERMANY
SECO/WARWICK Service GmbH
An der Molkerei 15
D-47551 Bedburg-Hau, Germany
tel. +49 (2821) 713 100
fax +49 (2821) 713 10-29
service@secowarwick.com
www.secowarwick.com

CHINA
SECO/WARWICK RETECH
Thermal Equipment Manufacturing
(Tianjin) Co., Ltd.
7B Second Xeda Road
Tianjin, China 300385
tel. +86 22 238 28 300
fax +86 22 238 28 305
china@secowarwick.com
www.swretech.com.cn

INDIA
SECO WARWICK Allied Pvt. Ltd.
5th Floor, Amfotech It Park
Road No. 8, Wagle Estate
Thane (W) - 400 604, India
tel. +91 22 6730 1400
fax +91 22 6730 1488
swa-info@secowarwick.com
www.secowarwick.com

BRAZIL
SECO/WARWICK do Brasil Industria
de Fornos Ltda.
Parque Industrial II
Jundiai, SP - Brasil
CEP: 13213-170
tel. +55 (11) 3109-5900
fax +55 11 4525-1047
vendas@secowarwick.com
www.secowarwick.com

RUSSIA
SECO/WARWICK Rus Office
Pyzhevskiy pereulok, bld 5/1,
office № 400
119017 Moscow, Russia
tel. +7 499 788 9721
moscow@secowarwick.com.pl
www.secowarwick.com

BELARUS
SECO/WARWICK OOO Minsk Office
8 Mielnikajte str., office 26
220004 Mińsk, Belarus
tel./fax: + 375 17306 23 71
secom@infonet.by
www.secowarwick.com