ECM USA Inc
VACUUM FURNACES

VESUVE FURNACE

HOT WALL FORCED CONVECTION FURNACES FOR STRESS RELIEVING, TEMPERING, ANNEALING & NITRIDING

The treatment of nitriding is carried out by means of a furnace with air convection forced with a pressure of work ranging between 20 to 50 mbar relative and of a mixture of active gas.

This technology makes it possible to increase the gaseous exchange on the surface of the parts. Moreover, the quality of the treatment will be ensured by the fact that the load is to place in a tight heat-resisting steel muffle.

The active species N result from chemical reactions and the dissociation of ammonia NH3 at the temperature of treatment (500 to 600°C).

ADVANTAGES

- Excellent quality and repeatability of treatments
- Shortened cooling time
- Integration in a flexible line
- User friendly interface and process management

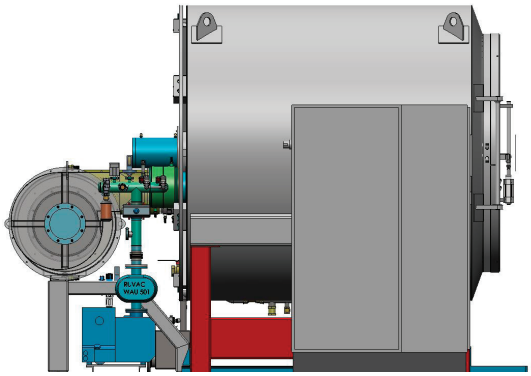
PROCESSES

- Nitriding
- Nitrocarburizing
- Oxynitriding
- Post-oxidation
- Stress Relieving
- Annealing
- Tempering

CHARACTERISTICS

The VESUVE furnace range is a Horizontal loading standard equipped with a door articulated on axis of rotation. The standard installation comprises

- A casing with walls heat isolated thermally from the heaters
- A muffle
- A door with reinforced thermal isolation
- A turbine of convection
- A cabinet of remote control
- A pumping installation ensuring the cycle of purging
- A gas process panel - (NH3-N2) – CO2 – H2S
- A water circuit
- A wing exchanger for accelerated cooling
- Gas exhaust burner



Vesuve Range					
Model	Load dimensions (mm)			Gross weight capacity (Kg)	Heating power (kW)
	Length	Width	Height		
VESUVE 644	600	400	400	200	40
VESUVE 966	900	600	600	600	80
VESUVE 1299	1200	900	900	1200	150

PROCESS CONTROL

Possibility to use controller monitors to regulate potential Kn (with H2 sensor), Ko (with O2 sensor), Kc

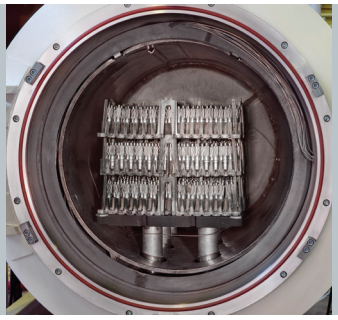
- Processing of temperature, hydrogen and oxygen
- Possibility to enter the process like nitriding
- Special customer process
- Calculation and view of the potentials Kn
- View of H2 volume and the deviated dissociation potential as well as the actual
- Value of the oxygen probe (in case when mounted)
- Graphical view of working point

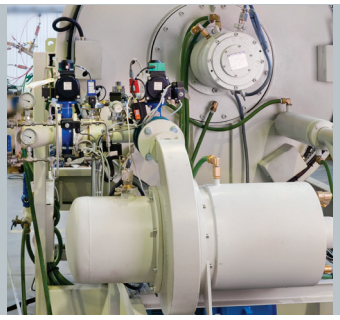
TECHNICAL DETAILS

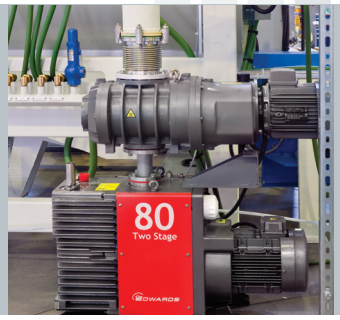
Treatment temperature under gas ..... 450°C to 650°C
Maximum operating temperature ..... 700°C
Temperature uniformity ..... +/-5°C
Vacuum purge ..... from 10 mbar to 10^{-2} mbar
Working pressure ..... 20 to 50 mbar relative

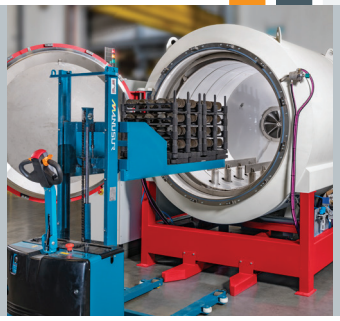
OPTIONS

- Loader: manual or automatic
- Roots pump
- Compatibility with AMS
- Available in vertical loading









ABOUT ECM USA The US subsidiary of ECM Technologies of Grenoble, France, ECM USA is the leading manufacturer of vacuum furnaces and automated solutions provider for all heat treat industries in the Americas. ECM's complete heat treat systems work on one PLC based system, which includes: preheating, automation, heat treating (low pressure carburizing, carbonitriding, neutral hardening - with oil or gas quenching) and tempering equipment.

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