



Resistance Heated High Vacuum Heat Treatment Furnace MOV

MOV

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Special features

- Useable volume 0.1 to 1,200 liters
- Maximum operating temperature 2,400°C
- Stepless, process-optimized regulation of the heating elements via the thyristor controller
- Easy and safe control of the process cycles
- Clearly structured construction of the total furnace with high flexibility from modular extensions and innovative process control
- Ultimate vacuum up to 1×10^{-8} mbar
- Fully automatic control of the heat treatment process
- Temperature homogeneity in the useable space $\leq \pm 5K$

Benefits for users

- Excellent thermal characteristics and utilization of energy in combination with a low leakage rate of $\leq 1 \times 10^{-5}$ mbar l/s
- Uniform and reproducible trial processes
- High efficiency from low-loss feed of the energy and appropriate interpretation of the furnace
- Short evacuation and cycle times
- Reliability, long life span, convenience and therefore high economy levels
- Universal insert at thermal treatment processes with particularly demanding requirements
- Process and menu guidance by PC with data recording and data storage

Executions

Heater material

- Stainless steel, Molybdenum
- Tantalum, Tungsten

Loading executions

- Horizontally
- Vertically: Top- or Bottom Loading



Laboratory Furnace:	024	054	064
Useable volume (liter):	0.1 / 0.66	0.1 / 0.66	0.1 / 0.66
Ultimate vacuum (mbar):	10^{-6}	10^{-6}	10^{-6}
Max. temperature (°C):	1,100	1,700	2,500



Horizontal:	143	243	343	443	743	843
Useable volume (liter):	8	20	30	60	420	1,200
Ultimate vacuum (mbar):	10^{-6}	10^{-6}	10^{-6}	10^{-6}	10^{-6}	10^{-6}
Max. temperature (°C):	1,350	1,350	1,350	1,350	1,350	1,350



Vertical (Top Loader):	141	241	641	741	261 W
Useable volume (liter):	4.4	20	200	3,000	10
Ultimate vacuum (mbar):	10^{-6}	10^{-6}	10^{-6}	10^{-6}	10^{-6}
Max. temperature (°C):	1,350	1,350	1,350	1,350	2,400



Vertical (Bottom Loader):	542	642	842
Useable volume (liter):	150	200	600
Ultimate vacuum (mbar):	10^{-6}	10^{-6}	10^{-6}
Max. temperature (°C):	1,350	1,350	1,350

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High vacuum heat treatment furnaces with power-regulated resistance heater elements made of metal for manufacturing and technological laboratory applications. Universal use for thermal treatments where particularly demanding requirements and sophisticated materials are involved.

Application

Heat treatment

- Bright- and stress-free annealing
- Degassing and cleaning
- Sintering process
- Annealing
- Vacuum and protective gas brazing

Special furnaces

- Diffusion bonding furnaces
- Vacuum heat treatment furnaces with pressing unit

Material application

- Refractory metals
- Super alloys
- Precious metal alloys
- Stainless steel

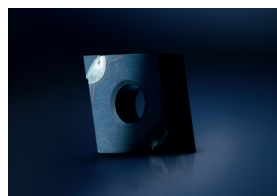


Diffusion Bonding Furnace

Characteristics

MOV systems are cold-wall furnaces with water-cooled double wall vessels of stainless steel. The material to be treated is heated by full metal resistance heater. Here the heat transfer takes place directly via heat radiation from the heater to the thermal treatment product. Thermal insulation is provided by metal sheets and multi layer foils. The all-metal design of the MOV systems is particularly well suited for high vacuum operations.

Due to its high vacuum conduction, short pumping times and low ultimate vacuum pressure are ensured. Appropriate accessory equipment also allows operation under partial pressure or overpressure protective or process gas atmosphere.



PVA TePla – The Company

As a vacuum specialist for high-temperature and plasma treatment processes, PVA TePla is one of the world's leading plant engineering companies. Its core competencies are in the fields of hard metal sintering and crystal growing as well as the use of plasma systems for surface activation and ultra-fine cleaning.

With its systems and services, PVA TePla enables and supports the innovative manufacturing processes and developments of its customers, primarily in the semiconductor, hard metal, electrical/electronic and optical industries - as well as the energy, photovoltaic and environmental technologies of tomorrow.

Vacuum Systems – The Products

The core competency of PVA Industrial Vacuum Systems is to build resistance and inductively heated systems for vacuum and high temperature applications and heat treatment.

Especially graphite resistance heated vacuum (COV) and pressure (COD) systems for the universal application of dewaxing, vacuum sintering and the subsequent isostatic pressing of metals, carbides, alloys and ceramics are main products of the Industrial Systems Division.

Metallic heated high-vacuum heat treatment furnaces (MOV), designed for typical applications like vacuum brazing, degassing, sintering and cleaning are further successful products.

Inductively heated melting and casting systems (VSG) for melting of metals, alloys and special materials under high-vacuum, fine-vacuum or inert gas atmosphere and heat treatment furnaces (IOV) for sintering and carburising applications round up PVA Industrial Vacuum Systems' product range of vacuum systems.