

Powder Metallurgy

Vacuum and Pressure Sintering / Sinter-HIP



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COD Sinter HIP furnace combines dewaxing, vacuum sintering and subsequent isostatic densification under pressure gas of hard metals (cemented carbides) or technical ceramics with treatment in fine vacuum, reactive gases and high pressure gas up to 100 bar.

The balance between proven stability and targeted development ensures the COD system to be the best Sinter-HIP system on the market!

Application

Dewaxing

- of green bodies, manufactured with methods like form pressing, extruding or PIM-technique
- with partial pressure (Ar, N₂, H₂)
- with flowing H₂ burn off system
- with pressure control and monitoring of binder evaporation
- for all conventional binders: paraffines, PEG, micro wax, methyl cellulose, etc.

Treatment with Pressure Gas

- for isostatic compaction with inert gas at sinter temperature
- high pressure fast cooling from sinter temperature with optional cooling fan

Sintering

- under vacuum or Hydrogen
- with inert and reactive gases (stationary/flowing)
- with pressure control

Material Application

- Hard metals
- Cermets
- PM-special alloys
- Technical ceramics

Customer Benefits

- The highest product quality through excellent temperature uniformity in both vacuum and pressure operation
- With cost efficiency through energy and gas-saving design
- With individual testing of each system by the TÜV
- Shorter process times by the use of intelligent dewaxing technology and powerful fast cooling
- No system will leave the factory without a positive result for temperature uniformity, vacuum parameters and all specified functions - allowing shorter commissioning times of our customers
- High efficiency, reliability, long service life and ease of operation

Additional Features, Services and Standards

- Other sizes are available in addition to the system shown on the following page
- Horizontal units with round or square spaces are available
- All systems available with pressure levels 60 and 100 bar
- International standards for EU, United States, China, Korea, Russia, etc.
- Vacuum systems customized to the product type and performance
- Different dewaxing systems that can be combined. Double dewaxing for long systems.
- High level of individual configurability of function and facilities
- State-of-the-art system control & user interfaces

Design examples and technical parameters:

Furnace type: COD 733 RL

- Operating pressure: 60/100 bar
- Usable space: up to 3,600 mm
- Usable volume: up to 950 ltr
- Charge load: up to 3,000 kg
- Power rating: up to 900 kVA
- Temperature: 1600 °C



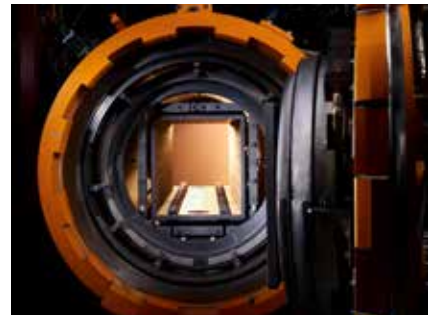
Furnace type: COD 733 R

- Operating pressure: 60/100 bar
- Usable space: 1,600 mm
- Usable volume: 400 ltr
- Charge load: 1,300 kg
- Power rating: 500 kVA
- Temperature: 1600 °C



Furnace type: COD 633 R

- Operating pressure: 60/100 bar
- Usable space: 1,000 mm
- Usable volume: 250 ltr
- Charge load: 800 kg
- Power rating: 400 kVA
- Temperature: 1600 °C



Furnace type: COD 433 R

- Operating pressure: 60/100 bar
- Usable space: 600 mm
- Usable volume: 60 ltr
- Charge load: 200 kg
- Power rating: 170 kVA
- Temperature: 1600 °C



Furnace type: COD 563 R

- Operating pressure: 60/100 bar
- Usable space: 1,000 mm
- Usable volume: 100 ltr
- Charge load: 300 kg
- Power rating: 200 kVA
- Temperature: 2000 °C



PVA Industrial Vacuum Systems GmbH is a subsidiary of PVA TePla AG. The Wettenberg-based company is a leading manufacturer of highly innovative vacuum systems. With more than 1,000 plants on the market and 50 years of experience in the high-temperature field, PVA Industrial Vacuum Systems GmbH builds and markets thermal process plants and systems for the development, manufacture and treatment of high-quality materials at high temperatures. In conjunction with its own Application & Innovation Lab, PVA Industrial Vacuum Systems GmbH also supports its customers with individual system and application developments - right up to series production.



PVA Industrial Vacuum Systems GmbH is an internationally established supplier of systems and facilities for developing, producing, treating and refining sophisticated industrial materials using:

Vacuum	High temperature	Plasma
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