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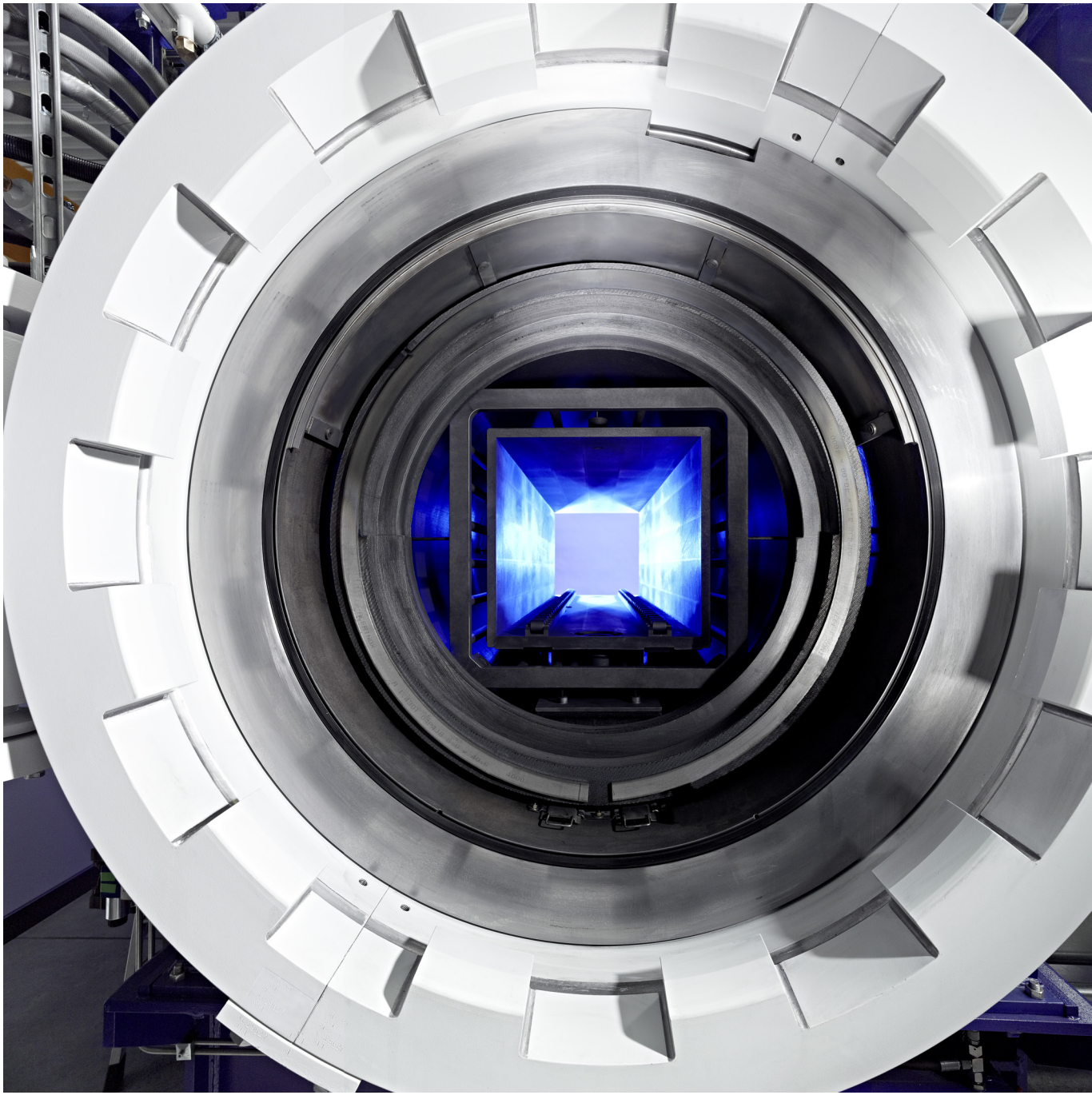


Sinter HIP Furnace COD

Vacuum Systems

PVA TePla

COD

Sinter HIP Furnace COD

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.

With our wealth of experience in having tailored over 200 systems to our customer needs, your system will undoubtedly be built to give you maximum benefits. Prior to your delivery we thoroughly check the equipment safety features and its performance, which makes commissioning in your building particularly easy. 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, N_2, H_2)
- with flowing H_2 burn off system
- with pressure control and monitoring of binder evaporation
- for all conventional binders: conventional paraffines, PEG, micro wax, methyl cellulose, etc.

Treatment with Pressure Gas
- for isostatic compaction with inert gas at sinter temperature
- high pressure rapid cooling from sinter temperature with cooling fan

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

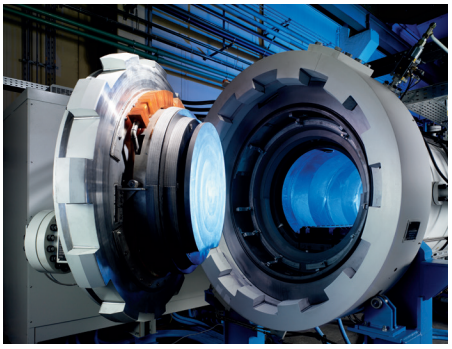
Material Application
- Hard metals
- Cermets
- PM-special alloys
- Technical ceramics

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 safety first! Our experience, high standards during development of the product and our implementation skills, ensure maximum safety
- With individual testing of each system by the TÜV
- With full compliance with the machine directive throughstringent quality control measures
- With shorter process times with the use of intelligent de-waxing technology and powerful quick cooling
- No system will leave the factory without a positive result for temperature uniformity, vacuum parameters and all specified functions - allowing shorter commissioning times for our customers
- High efficiency, reliability, long service life and ease of operation

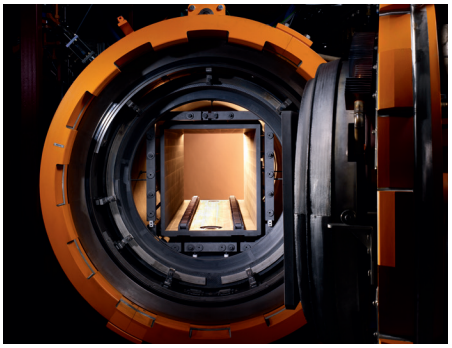
Additional Features, Services and Standards
- Other sizes are available in addition to the system shown on the following page
- Horizontal units with round or square spaces are available
- All systems available with pressure levels 60 and 100 bar
- International standards for EU, United States, China,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

Design examples and technical parameters:

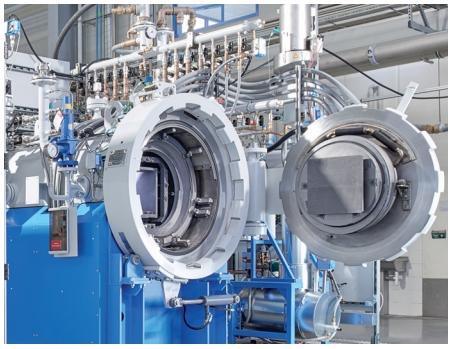
Furnace type:	**COD 733 RL**
Operating pressure:	60/100 bar
Usable space:	up to 3,000 mm
Usable volume:	up to 800 ltr
Charge load:	up to 2,500 kg
Power rating:	up to 750 kVA



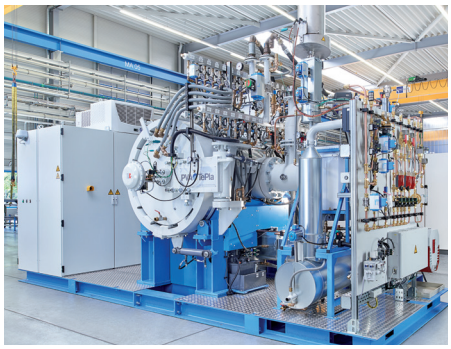
Furnace type:	**COD 733 R**
Operating pressure:	60/100 bar
Usable space:	1,600 mm
Usable volume:	400 ltr
Charge load:	1,300 kg
Power rating:	500 kVA



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



Furnace type:	**COD 533 R**
Operating pressure:	60/100 bar
Usable space:	1,000 mm
Usable volume:	100 ltr
Charge load:	300 kg
Power rating:	200 kVA



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

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 Divison.

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.

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