



## Thermal systems by CeraCon.

Automated, standardized but customized.



More than you expect.

**CeraCon**

## **What are thermal processing systems?**

CeraCon thermal processing systems are industrial oven systems to heat up products and parts to a desired temperature of up to 220°C and to cool them down afterwards. The heating process is done by electrically heated circulating air, infrared radiation or induction. The cooling process takes place using air circulation and a heat exchanger.

Due to different basic designs our thermal processing systems ideally fit your process requirements, your production environment and your budget. Static chamber systems are most suitable for starting. Especially our automatic horizontal continuous processing systems, our vertical systems and our paternoster systems ensure an economic, precise and reliable temperature treatment.

Temperature regulation

Cooling down

Warming up

Heating up

Tempering

Cooling



Expansion

Curing

Drying

Testing

## STANDARD HEATING CABINET



The CeraCon standard heating cabinet is a chamber system and due to its solid industrial quality it is suitable for rough production environments. Using a foot pedal the door of the thermal processing system opens automatically. This ensures that the operator has its hands free for manually loading and unloading the machine with parts.

In addition to the CeraCon standard heating cabinet we also design customer-specific chamber systems adapted to the individual component properties and the requirements to temperature and process time.



### Technical data

Heating:	Electrical
Temperature range:	35° C to 220° C
Temperature distribution:	Circulating air
Heating power:	12 KW
Basic dimensions (in mm):	1,565 x 2,000 x 1,560
Dim. Heating room (in mm):	990 x 800 x 1,000
Volume Heating Room:	720 litres

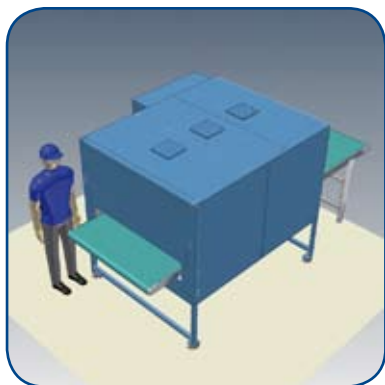
## Characteristics

- » Precise control accuracy of +/- 2K
- » Operation and display by LCD display SIEMENS OP7 control by SIEMENS SPS S7 Type 200
- » Timer for daily and weekly programs
- » Pneumatic safety lift door
- » Energy-saving operation by high-quality insulation
- » Perfect temperature distribution by horizontal air circulation



Horizontal continuous systems

# STANDARD HORIZONTAL CONTINUOUS SYSTEMS



CeraCon standard horizontal continuous systems are designed for precise and cost-efficient automatic heat treatment of your parts. These oven systems are tunnel systems which are equipped with a conveyor belt. Due to standardised dimensions and standard components the oven systems are suitable for a variety of different parts and application processes. Every system has got an inlet and an outlet side as well as 3 to 6 heating zones with different temperature ranges.

## Technical data

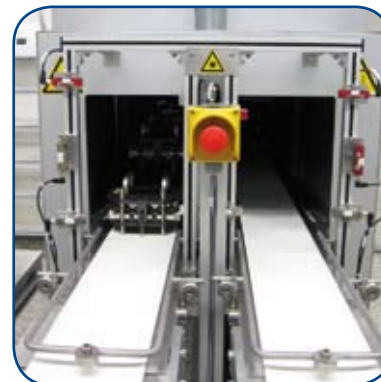
Heating:	Electrical
Temperature range:	50°C to 100°C
Temperature distribution:	Circulating air
Length Heating room:	2,000 to 6,000 mm
Available clearance height:	max. 300 mm
Available clearance width:	1,000 mm
Length Inlet:	500 mm
Length Outlet:	1,000 mm

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Horizontal continuous systems

# CUSTOMER-SPECIFIC HORIZONTAL SYSTEMS



When you buy a CeraCon thermal processing system individual design and standardisation do not exclude each other. We combine different standard components such as drives, programmable logic controllers and pneumatic elements to create your customer-specific solution.

We completely adapt the system to your individual needs regarding the part/work-piece carrier dimensions and weights, the required temperature profile, the process times and the space you have in your production hall.

According to your requirements our engineering team is planning an optimal combination of heating and cooling zones, is choosing the suitable automation and the corresponding control technology.



Vertical systems

# STANDARD PATERNOSTER SYSTEMS

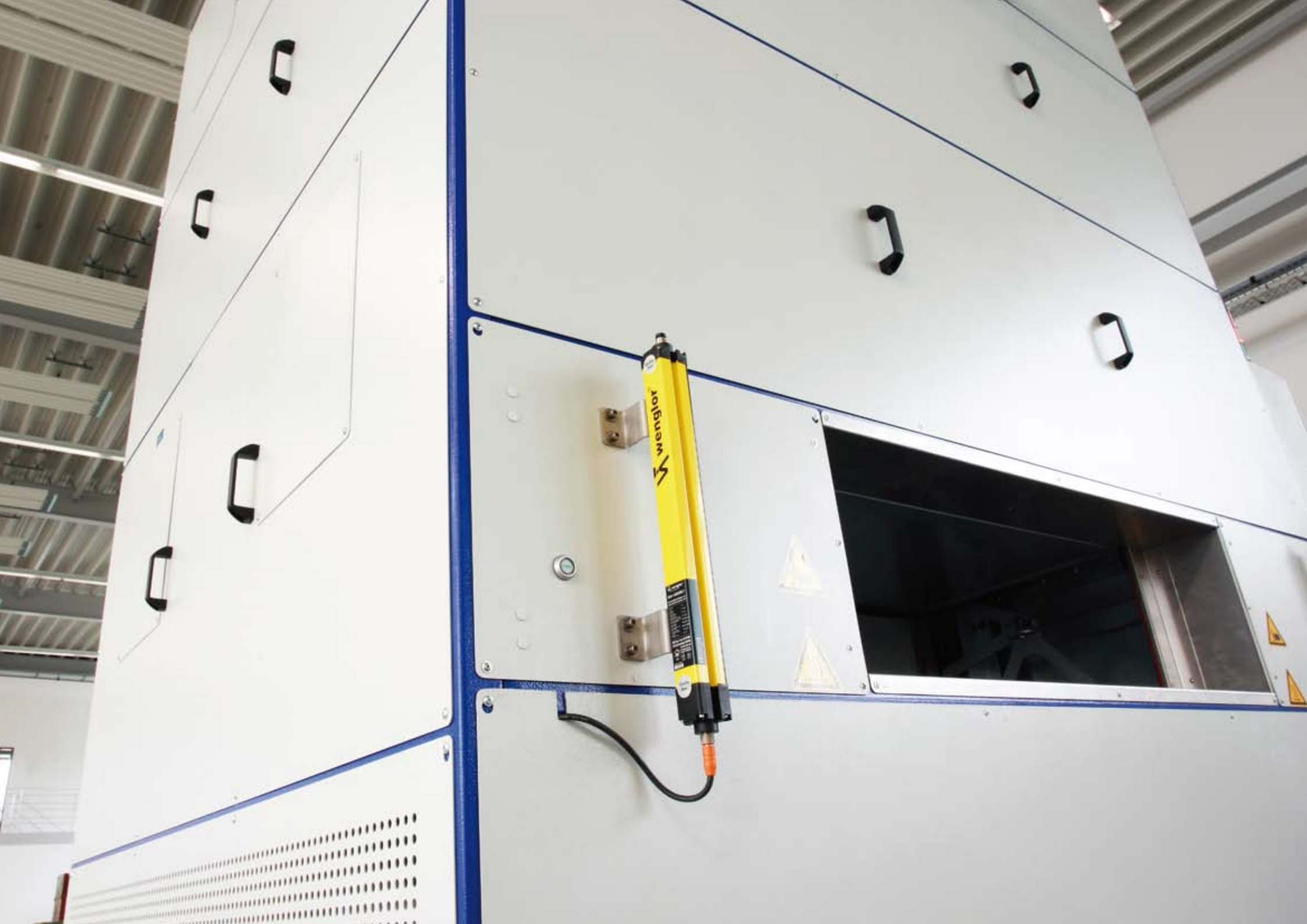
Special thermal systems are paternoster systems. In contrast to the customer-specific vertical systems designed by CeraCon, in paternoster systems the transport of the parts takes place by movable gondolas that are firmly mounted inside the thermal system and that are moving in a circular manner. There is only one single temperature zone inside the process chamber. Normally an operator is equipping the system with parts. The system has got a simple structure and is easily controllable, so that the paternoster systems are extremely reliable and the investment is manageable.

In addition to the standard paternoster systems we also create customer-specific solutions considering your individual component properties, temperature and process time characteristics.



## Technical data

Heating:	Electrical
Temperature range:	50°C to 150°C
Temperature distribution:	Circulating air
Number of baskets:	14 pieces
Usable basket surface:	1,100 x 500 mm
Max. height of parts:	200 mm



Vertical systems  
**CUSTOMER-  
SPECIFIC  
VERTICAL  
SYSTEMS**



CeraCon thermal processing systems in vertical design are extremely space-saving industrial oven systems. In contrast to the horizontal systems these ovens are designed according to customer needs and respect the hall height available at customer site. The result is that you need at about ten times less production space than you need for horizontal designs.

Every single vertical system consists of at least one transport tower with one way up and one way down. First of all the parts have to be moved to the oven inlet. Using carriers of a transport chain system or using a vwb drive technology the parts are then moving up the thermal processing system. At the top of the oven system the parts are transported to the other side before they are moving down in direction of the oven outlet. Every transport section can be equipped with an individual temperature zone. The different zones can be separated by doors to ensure a constant temperature of the desired temperature profile inside, even if in one tower the heating zone is directly next to the cooling zone. A combination of as many towers as you like ensures that even complex temperature profiles and very long curing times can optimally be realised.



The complete transport process is secured by a complex sensor system. All states are displayed on an operating terminal to show the current situation of the system at every moment. Furthermore there are numerous maintenance spots to ensure direct access to the significant spots.

The customer-specific design of the CeraCon vertical systems ensures that these systems can easily be

integrated in already existing production lines. Inline integrations are possible if the work-piece carriers used are temperature-resistant and if the process time is compatible with the cycle time of your production line. Otherwise there is also a "bypass" integration possible, that means the parts to be cured are put on special

multipurpose carriers. This results in more parts on less work-piece carriers, so that there is less space for the vertical system needed.

Vertical systems

## VWB DRIVE TECHNOLOGY



Instead of using transport chains CeraCon vertical systems can also be equipped with our revolutionary drive technology vwb (vertical walking beam), a self-development of CeraCon. This technology is similar to the technology used by classic locomotives. They are equipped with horizontal driving and piston rods that transmit the power of the steam engine to the driving wheel. The important disadvantages of the conventional chain drives are eliminated with the vwb drive technology. Under load and at higher temperature there is no longer warping or extension.



### Advantages and benefit

vwb ensures a constant, completely even position of the part in every system position as well as a jerk-free transport. This means that you parts – even if they are filled up to the border – can cure constantly without spilling over. To abandon transport chains with lots of links dramatically reduces the number of movable elements within a vertical system, so there is less maintenance necessary.



Thermal continuous systems

## TYPICAL APPLICATIONS



Curing of compounds for air bag controls



Tempering of shaft seals to get the final dimension



Gelling of compounds for Xenon headlights



Temperature tests of power electronics for wind turbines



Outgassing of plastics for compartments in the centre console of cars



Stress relief of tail lights after ultrasonic welding

Summarized customer list

**SIEMENS**



**PHILIPS**



**WABCO**



Further core competences of CeraCon!

## **SINGLE-COMPONENT FOAM SEALING TECHNOLOGY**



The Penguin Foam® brand of sealing materials are developed by the Japanese origin company SUNSTAR. The engineering strengths of CeraCon are obvious from the machine and FOAMPLY® system technology created. In combination, SUNSTAR and CeraCon offer you the most innovative foam sealing technology on the market. Combining sealing material with foaming technology and the most suitable integrated process is quality engineered by CeraCon. Moreover, a new technology called S-FIT® ensures that soft foam polyurethane seals can now directly be applied to thermoplastic parts inside an injection moulding machine.

Seals powered by CeraCon technology can be found e.g. in various types of cars of all considerable brands, on switch cabinet doors, within washing machines and dish washers.



### **What are your advantages?**

- » **Single-component process without disturbances**
- » **Very fine, closed-cell foam structure**
- » **Rapidly curing process**

Further core competences of CeraCon!

# CONTRACT GASKETING

“Why buy a cow, when you only want a glass of milk?” This analogy is the very reason CeraCon offers a Contract Gasketing Service. If you are a smaller volume manufacturer or you have intermittent production, where economic justification does not allow your own foaming system, we can provide a high level of service in applying Penguin Foam® to your parts. For our larger volume customers with their own systems this service can also be used to ease production bottlenecks or allow pilot production of new components parts. It also provides assurance to the end user that there are alternative manufacturing sources in the supply chain. The group expertise of CeraCon enables us to offer extensions to this service, where we can happily include additional processes at the request of the customer; therefore supplying complex component parts or complete sub-assemblies.

## What are your advantages?

- » **Steady costs, even if quantities are unsteady**
- » **No investment**
- » **No manpower needed**



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