weisstechnik®
a schunk company

Product overview Heat Technology.

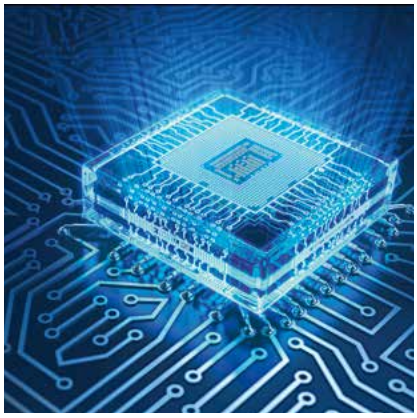
Know-how for your production. Hot. Reliable. **vötsch**oven.

weiss-technik.com

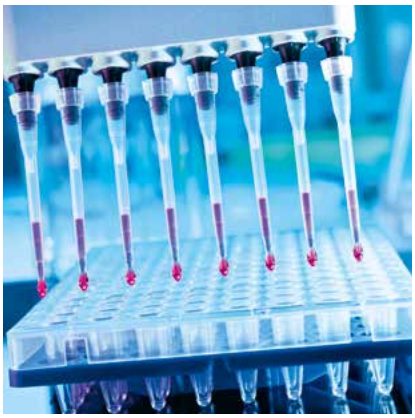
You can count on it!

No matter which industry: we supply perfect thermal conditions.

We love extremes, reproducible results, energy-efficient processes and excellent service. Which is why we offer you exactly that. As a long-standing partner in production, we are aware of the challenges posed by growing requirements, shorter development times and ever more demanding processes.



Your heat experts.

Tailor-made, individualised Heat Technology for your production.

In the area of industrial Heat Technology, our experienced team develops, plans and produces reliable systems for almost every possible application. In our portfolio, you can discover a wide range of heating and drying ovens, industrial furnaces, clean room ovens, hot-air sterilisers, infrared and continuous ovens as well as cutting-edge microwave technology. Alongside our comprehensive selection of series products, we also focus on implementing customer-specific, process-integrated solutions.

BATCH OVENS

- Heating and Drying Ovens **vötsch**oven HeatEvent
- Industrial Laboratory Ovens **vötsch**oven Lab
- Annealing and Heating Furnaces **vötsch**oven VAW
- Clean Room Heating and Drying Ovens **vötsch**oven VTF
- Hot-Air Sterilisers **vötsch**oven VHS

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EXPLOSION PROTECTION

- Guideline: Explosion-Proof Ovens
- Industrial Ovens and Dryers **vötsch**oven HeatEvent F
- Fresh Air Heating and Drying Oven **vötsch**oven VFT 60/90
- Externally Heated Ovens with Recirculating Air **vötsch**oven VTUW
- Externally Heated Ovens **vötsch**oven VTW

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CUSTOMISED SOLUTIONS

- Special sizes
- Vacuum Dry Chambers **vötsch**oven VVT
- Chamber Ovens
- Chest Ovens **vötsch**oven VTUT
- Drawer Type Ovens
- Automation Systems

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ELECTROMAGNETIC WAVES

- Microwave **vötsch**oven VHM
- Microwave Continuous Ovens **vötsch**oven VHMDU
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CONTINUOUS OVENS

- Continuous Ovens **vötsch**oven VDU/VDL
- Continuous Ovens with Infrared **vötsch**oven VDIR
- Automation Engineering

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vötschoven
HeatEvent

Often copied, never matched.

The new generation of vötschoven Heating and Drying Ovens.

Wherever things get hot, decision makers worldwide rely on vötschoven Heating and Drying Ovens. From the electronics and automotive industries to the plastics and metalworking industries up to the chemical and pharmaceutical industries. And with HeatEvent, we are offering a new generation. Discover its many benefits and get your own impression of our innovation.

S!MPAC controlled

Hot. Hotter. HeatEvent.

Our innovative design enables the largest working chamber volume with the smallest footprint. The proven Control System **S!M**PAC adds intelligence and convenience. A comprehensive security package is included so nothing burns.

More free space.

For the first time, the whole interior is now accessible when the door opens by 90°. This allows for a space-saving installation of several ovens directly on the wall and next to each other.

Highly flexible.

The HeatEvent range includes 7 sizes with a working chamber volume of 200 to 8,000 l and with nominal temperatures of up to +350 °C. All units are perfectly suited for your heating and drying processes in production and research. The proven and tested modular design and extensive accessories offer several variations for each application.

Our highlights:

- Smallest footprint with the largest working chamber volume
- Unrestricted access at 90° door opening angle
- Highest reproducibility at short process times
- Web-based User Interface **WEB**Season
- More intelligence and comfort with the proven Control System **S!M**PAC

Highly recommendable! Small, strong, smart.

The new Industrial Laboratory Ovens vötschoven Lab.

Optimal heat for any process.

Be it production, quality assurance or research and development – today, the demand for reliable, fast and energy-efficient heat treatments is greater than ever. Many old devices have been in use for decades and no longer meet the rising requirements. With our Industrial Laboratory Ovens **vötsch**oven Lab we offer you future-proof solutions for your special process.

Perfect protocols with S!MPATI

For hot and heavy applications.

Our Industrial Laboratory Ovens **vötsch**oven Lab with a processing chamber volume between 60 and 200 l are designed especially for heavy-duty applications. Ideal for applications requiring high-precision temperature control in the range between +50 and +300 °C, they guarantee reproducible, reliable results. While offering the same interior space as old units, they are beating them with both higher performance and lower footprint. Our Industrial Laboratory Ovens are now offered in three available stock lines: **vötsch**oven Lab Basic, Premium und Premium Plus. This leaves no serial wish unfulfilled.

Networked to the future!

vötschoven Lab can be integrated into the industry 4.0 world at any time. A PID temperature controller, especially adapted for us, features an Ethernet interface running the TCP/IP protocol. Network connectivity and process documentation are achieved by the **S!M**PATI software. Our reliable and tested controller package additionally features programming, timer and alarm functions.

Our highlights:

- Better performance at smaller footprint
- Innovative and future-proof equipment in series
- Simple networking integration
- Easy exchange of old laboratory ovens


vötschoven
vötschoven
300.0
300.0

Highest quality. Highly reliable.

Our various vötschoven Heating and Drying Ovens.

Heating and Drying Oven HeatEvent 100/150 with pass-through design.

- Countersunk rails for loading with trolley
- Integration into line production
- Secure spatial separation of process steps

ISO 7

Silicone Tempering Oven VTU 125/200 for medical technology

- Loading and tempering via a rotating drum trolley
- Continuous product movement leads to uniformly high product quality
- Easy loading and unloading of the products outside the tempering oven
- ISO-compliant: operation and installation in clean room class ISO 7 (EN ISO 14644-1)

Tempering Oven VTU 140/210/75
for lead frames in electronics production

- Transport device for lead frame strips
- Operation in inert gas atmosphere
- Minimised footprint

Precision Heating Oven HeatEvent 60/60 Isobox
for temperature-critical processes

- Isobox in working chamber for maximum precision
- Highest temperature accuracy worldwide:
  ±0.5 K at a nominal temperature of 220 °C
- Tempering in critical processes or components
- Complies with test standards requiring heating ovens
  with forced air convection

Sintering Oven HeatEvent 60/60-380 °C for PTFE components

- Spatial temperature distribution ±3 K at 375 °C
- Integrated door suction for maximum personnel protection
- Networking via Control System **S!M**PAC, ready for industry 4.0
- Control and traceability via barcode

Industrial Oven HeatEvent 100/150-G for processes in inert gas atmosphere

- Reduction of the oxygen content of the process material through the use of non-flammable inert gases (e.g. N2, Ar)
- Minimal inert gas consumption
- Easy loading with folding access ramp
- Oxygen concentration measurement up to +380 °C

Batch Oven VTU 100/165
for tempering of elastomers

- Post-cross-linking of shaft seals
- Safe removal of fission products
- Perfect temperature distribution with large fresh air volume
- Barcode control for error-free processes and traceability

Drawer Type Oven VTU 100/60/60
for simulation of continuous processes

- Automatically movable drawers and programmable holding times for defined temperature gradients
- 3 independent drawers 100 % extendible
- QA testing of e.g. furniture veneers

Clean room compliant, perfectly safe.

The reliable Clean Room Heating and Drying Ovens vötschoven VTF.

The manufacture of medical devices, electronic components and semiconductors requires reproducible tempering and drying processes under clean room conditions. The **vötsch**oven VTF has been specially designed for this purpose: it is available in 4 sizes with volumes between 60 and 3,125 l and nominal temperatures up to +450 °C.

From class ISO 5 onwards, a HEPA recirculation filter is integrated, and the inner housing is made of welded stainless steel. An ESD-protected version is also available as an option.

Thanks to the pull-out control cabinet, our devices can be placed directly next to each other, which is particularly important in clean rooms.

Compliant:
clean room ISO 4 to ISO 7
ESD
SECS/GEM connection

Our highlights:

- Ideal for clean rooms thanks to its minimal footprint
- Clean room compliant in accordance with EN ISO 14644-1
- Customised adaptation to individual processes

Clean Room Heating Cabinet VTF 100/100 G-180 °C for curing fibre optic splinters

- Use space in ISO 5, installation in ISO 6
- Hybrid device design: processes with filtered fresh air and inert gas processes
- Control cabinet with pull-out device

Clean Room Heating Cabinet VTF 60/60-G-300 °C for wafers

- Working chamber and installation in ISO 5
- Control and monitoring of residual oxygen content
- Heat exchanger for rapid cooling under protective gas
- Silicone-free design with cooling of the Viton seal

Clean Room Oven VTF 50/60/60-G-230 °C for fully automated heat treatments of 300 mm wafers

- Working chamber and installation in ISO 5
- Loading via OHT (Overhead Hoist Transport) system
- Protective gas design with oxygen content control
- SECS/GEM interface, including GEM 300 for data exchange and fully automated process control
- Silicone-free oven design

Curing Oven VTF 125/200 for silicone-coated electronics used in wind turbines

- ESD design
- Working chamber and installation in ISO 7
- Integrated heat exchanger for low-temperature processes

Whenever it needs to be bacteria-free.

The qualified vötschoven **Hot-Air Sterilisers.**

vötschoven Hot-Air Sterilisers come equipped with the latest technology for maximum product protection, such as internal pressure control, door automation, HEPA filter monitoring and **S!M**PAC control.

Various sizes can be manufactured as stand-alone devices or prepared for wall installation. Or with a pass-through version with doors on both front and back to separate the sterile from the unsterile work area. The doors are then equipped with an electrical locking mechanism, so that only one door can be opened at a time (lock function).

Compliant:
ISO 5 + ISO 7
DQ/IQ/OQ

Our highlights:

- ISO-compliant: clean room class ISO 5 and ISO 7 according to EN ISO 14644-1
- Hygienic: electropolished stainless steel inside, stainless steel outer casing
- HEPA filter monitoring
- Complies with directives: pharma qualification package DQ, IQ and OQ version according to GMP and FDA

Silicone Tempering Oven VTU-S 125/125 200 °C GMP for cross-linking silicone with hormone deposits

- HEPA recirculation filter for filtering hormones from the process
- HEPA exhaust air filter with low-contamination filter replacement (bag in/bag out)
- Pharmaceutical-compliant process documentation in accordance with FDA 21 CFR Part 11

Hot-Air Steriliser SteriEvent 75/75

- Drying of water-wet granules

Hot-Air Steriliser VHS 75/75

- Sterilising of thermostable materials

Hot-Air Steriliser 150/150/150 in pass-through design with lock function

- Sterilisation of pharmaceutical containers

Safety knows no compromise.

Manage explosion hazards optimally with vötschoven.

Be on the safe side.

Both unintentionally and intentionally explosive mixtures that can emerge during processes pose a high safety risk. Combustible, inflammable or explosive substances such as liquids or gases escape from the product and enter the interior.

Such mixtures are explosive if the concentration is within certain substance-specific limits. These limits are referred to as lower and upper explosive limits (LEL and UEL) and are specified in the safety data sheet of the substance. In the event of a fire or explosion hazard, special safety measures are required for the unit, depending on the hazard potential.

In close cooperation with you, we can modify, supplement or equip our devices individually with additional safety features, so that they always fully comply with ATEX directives.

Good to know: ATEX directives are binding.

The ATEX (ATmosphère EXplosible) standard specifies the Europe-wide regulation of the safe operation of industrial systems and units in potentially explosive environments or under potentially explosive conditions.

Two directives have been drawn up for its implementation, namely 99/92/EC and 2014/34/EU. Both of these directives are binding and without fulfilling these directives, the installation of potentially explosive or explosion-protected systems is no longer permitted.

Our highlights:

- Optimal risk management
- Individual adaptation of all units
- Compliance with all ATEX requirements
- Coordination with safety officers by our team

This way you can control the risks.

Well-equipped for every type of combustible material.

OVERVIEW BY APPLICATION:

Processes with non-flammable solvents	Processes flammable
	Solvent quantities limited/controllable EN 1539
Processes with water-wet products	Drying of surface coatings, sizing varnish and impregnation resin applications
Series HeatEvent, VTU	Series HeatEvent F, VTL

with
solvents

Solvent quantities
very high
2014/34/EU

Processes with
explosive mixtures

Series
VFT, VTUW, VTW

Processes with
explosives 2014/28/EU,
DIN VDE 0166

Heat treatment and drying
of explosives

Series
VTW

No compromise when it comes to standards!

The safe vötschoven **Industrial Ovens and Dryers.**

Industrial Ovens and Dryers HeatEvent F for flammable substances according to EN 1539

When drying surface coatings, sizing varnish and impregnating resins, the released substances (e.g. solvents) could mix with the process air to create an explosive gas mixture. The HeatEvent F series was specially developed for these applications. It permits a safe control of the processes by limiting the solvent quantities and a constant minimum exhaust airflow rate. This prevents the possible formation of explosive atmospheres inside such units.

Compliant: EN 1539

Our highlights:

- Permanent monitoring of recirculation and exhaust airflow rates
- Sealed welded joints on the inner casing prevent the ingress of flammable substances into the insulation of the unit
- Safety concept for each individual application, considering the hazardous substance and its quantity

Worldwide unique in its class.

Our units reliably meet all your requirements.

Fresh Air Drying Cabinet VFT 60/90
in accordance with the ATEX directive

Compliant: prototype testing ATEX

Process safety guaranteed:
Fresh Air Drying Ovens **vötsch**oven VFT operate on the principle of exclusive fresh air supply. The inherently safe design ensures that explosive mixtures do not come into contact with potential sources of ignition.

Areas of application:

- Drying of flammable solvents of temperature classes T1 to T4 of explosion groups IIA and IIB
- Safe operation according to ATEX directive, including prototype testing

Our highlights:

- Introduction of substantial quantities of solvents in temperature classes T1, T2, T3 or T4
- Protoype testing TÜV 16 ATEX 7810 X
- Reproducible processes through homogeneous temperature distribution throughout the entire use space
- Space-saving thanks to compact design
- Minimal compressed air consumption under normal operating conditions

Great for large solvent quantities.

The explosion-proof vötschoven **Heating and Drying Ovens.**

The series VTUW and VTW (with or without air circulation) operate according to the principle of avoiding ignition sources. Heating is produced via process heat emitted from procedural courses (steam, water, heat transfer oil) or via a separate tempering unit with temperature classes T1 to T4 of explosion groups IIA and IIB. Safe working according to ATEX directive.

Compliant:
EN 1539 dryer type B
ATEX

Our highlights:

- Working chamber design category 2G/zone 1 enables almost unlimited solvent quantities
- Direct installation in zone 2 with design category 3G
- Low energy consumption and short process times thanks to recirculating air operation (in combination with exhaust air operation) with low amounts of fresh air
- Clean room compatible design possible

GMP Drying Oven VTUW 100/150 Ex for pharmaceutical filter cartridges containing alcohol

- Combination of explosion protection, GMP and clean room conditions (ISO 7)

ATEX

Drying Oven VTUW 100/150-G Ex with solvent recovery

- Safe solvent recovery through partial flow condensation
- Low fresh air volumes and therefore reduced energy consumption
- Alternatively, operation in inert gas atmosphere is also possible

Industrial Oven VTUW 100/150-G-170 °C Ex for drying solvent-containing hard-metal green bodies

- Explosion protection for very large quantities of solvents
- Energy-efficient operation due to low exhaust air volumes

Dual-Chamber Heating Cabinet VTL 115/95/130-G-140 °C GMP for cross-linking contact lenses

- Use space for easy cleaning in GMP design
- Protective gas oven according to EN 1539 dryer type B ATEX for introducing unlimited quantities of solvent
- Residual oxygen monitoring with residual oxygen content <0.006 %

GMP
ATEX

Drying Oven VTU 100/150-40 °C GMP Ex
for herbal medicinal products

- Working chamber in GMP design
- Gentle drying of temperature-sensitive raw materials thanks to low drying temperature
- Equipment group II, category 2, zone 1

GMP
ISO 7
ATEX

Fresh Air Ex Drying Oven VFTF 125/200-90 °C GMP Ex C
for pharmaceutical intermediates containing solvents

- GMP-compliant
- ISO-compliant: operation and installation according to clean room conditions class ISO 7
- Equipment group II, category 2, zone 1

ATEX

Drying Oven VTW 75/125-120 °C Ex
for water-wet and solvent-containing granules

- Energy-efficient thanks to indirect heating via saturated steam
- Precise temperature control directly on the process material for a safe process
- Ergonomic and fast loading thanks to transport trolley with charging trays

DIN VDE 0166

Drying Oven VTW 60/125-120 °C Ex
for explosives

- Optimal temperature transfer to the granules through heating plates with direct media flow
- Requirement-compliant working chamber for area E1
- Safe installation in a potentially explosive area E2

Industrial Oven VTU 300/300/450-410 °C for curing in CFRP production

- For thermoplastic cross-linking CFRP-PEEK structures

Industrial Oven VTU 500/450/850-230 °C

- For large components and tools in composite curing processes in the aerospace industry

Achieving optimal solutions together.

Tailor-made vötschoven **Industrial Ovens.**

You and your special requirements are always at the centre of our activities. Be it for a new build, retrofit or modernisation. Together we will find the optimum solution and offer you advice, planning and implementation from a single source. Take advantage of the market leader's many years of experience. We are guaranteed to have the right product solutions for you.

Single Source

Portfolio for all operating requirements.

- Recirculating air operation
- Fresh air operation
- Inert gas operation
- Airflow changing systems
- Accessible/trafficable
- Clean room design

A door isn't just a door.

- Swing door
- Lifting door
- Roll-up door
- Folding door
- Drawer

Loading made easy.

- Levels with shelves/grates
- Trolley, support trolley
- Rotating drum trolley
- Bogie hearth trolley
- Drives and guide systems for high loads
- Integrated mechanical components

Our highlights:

- Consulting, planning, implementation from a single source
- System solutions and components optimally matched to production processes
- Always the right operation mode for the process
- Large selection of different door constructions
- Optimal loading systems

Fast. Safe. Gentle.

The cautious Vacuum Drying Chambers vötschoven VacuBat.

When it really matters.

Patented moisture management

The manufacture of electrodes for batteries requires optimal solutions for dehumidification and drying processes. With our many years of cross-industry experience in industrial heat technology, we have developed the reliable Vacuum Dryers **vötsch**oven VacuBat. This enables us to offer you product-specific, reliable and highly precise drying processes at any time.

What you can rely on.

vötschoven VacuBat is optimally equipped for drying anode and cathode material down to residual moisture levels in the ppm range. In the use space, the temperature-controlled product is exposed to a vacuum. This reduces the boiling point of liquid mixtures (water and flammable solvents) in accordance with the vapour pressure-temperature curve, and they evaporate even at lower temperatures.

The drying processes are particularly gentle on the product and ensure that moisture diffuses out of the product, even in the case of porous materials. For your perfect process.

Our highlights:

- Variable design for optimal integration into your production line
- Footprint-optimised plant technology for minimal space requirements in the drying room
- Appropriate degree of automation tailored precisely to your individual requirements
- Patented moisture management for reliable, energy- and resource-saving processes

Optimal drying process for electrode coils for reliable and powerful batteries.


vötschoven
vötschoven

Fits and makes sense.

Our portfolio ranges from batch to automation systems.

Chamber Oven VTU 75/100-G-200 °C for cross-linking contact lenses in inert gas atmosphere

- Lifting door for automated loading of large quantities and high throughputs
- Inert gas control of the residual oxygen content to ensure the optimal atmosphere in the working chamber

Chest Oven VTUT 520/50/75-350 °C
for heating and warm storage
of pumps and spinning nozzles

- Trouble-free feeding of heavy components using a crane
- Pneumatic lid actuation for ergonomic and safe operation

Drawer Type Oven VTU 175/200/80-200 °C
for curing of cast e-motor windings

- Loading and unloading of partial quantities with only a minor impact on the temperature profile
- Drawers with 100 % extension for easy loading

Heating Oven VTUD 150/175/350-200 °C with loading flaps for heating up plastic sheets

- Can be easily integrated into the production flow thanks to flap opening on front and rear side
- Extendible with telescopic slides for ergonomic loading
- Easy loading and unloading, almost without any impact on the atmosphere in the working chamber

Hybrid Oven VTL 75/125-200 °C with humidity control for oxide layers on decorative aluminium strips

- Selectable operation mode, either as chamber drying oven (EN 1539) or heat treatment with humidity control (compression)
- Particle-free recirculating air thanks to HEPA fresh air and recirculating air filters

Preheating Oven VTL 125/150/125-250 °C with rotary conveyor system for PA pipes

- Loading opening for integration into robotic automation
- Conveyor system with rotary indexing table and 30 storage positions for one-piece flow
- Gentle product handling thanks to suspension system
- Low space requirement due to its compact design

Curing Oven VTU 75/200/75-160 °C with automatic loading and vertical storage system

- Space-saving vertical storage for 10 loading levels
- Automatic loading and unloading conveyor for integration into production line

Preforming Continuous Oven VDU 200/80/300-200 °C

- Automated production of composite preforms for Airbus A350 XWB doors
- AMS 2750E, furnace class 2, instrumentation type C
- Recirculating air system ensures homogeneous temperature distribution
- Short process times due to infrared booster for heating and cooling device for cooling down
- Conveyor system permits one-piece flow and integration into production island

Curing Oven VTU 220/210/270-250 °C for RTM components made of CFRP

- Lifting door for automatic loading and unloading with customer-side handling system
- Suitable for very high product weights
- Operation in a CFRP production facility, e.g. offers protection against fibre filaments

BOSCH

ISO 7

Industrial Oven VDU 200/80/300-200 °C with segmented access in electronics production

- Segmentation of the working chamber opening for trouble-free loading by robotic system results in homogeneous temperature distribution and safe holding times
- Installation and operation suitable for clean room in electronics production (ISO 7)
- Integration into the customer's one-piece flow with a high degree of automation possible

schunk

Heating and Curing Ovens for CFRP production

- Curing with rotation – drawers with integrated rotary drives for filament winding parts
- Homogeneous temperature distribution guarantees reproducible product quality

Curing Oven VTL 430/250/200-250 °C for helicopter cockpit

- Continuous rotation of the CFRP support structure during curing ensures extremely homogeneous temperature distribution within the component
- Extreme form stability due to elimination of gravimetric influences
- Section doors allow tools to be retracted at ground level with little space required
- Redundant ventilation, heating and rotation systems ensure high availability

Heating Oven VTU 375/230/135-200 °C for the post-curing of liquid crystal windows

- Fast heating speeds allow for short process times
- Highest product quality thanks to homogeneous temperature distribution of ±1.5 K
- Loading trolleys for large-scaled and heavy components offer ergonomic handling

Fraunhofer

Test Chamber VTU 150/150/200-250 °C for optical analysis of material expansion

- Heating of vehicle components for optical analysis of thermal expansion during the cataphoretic painting process
- Distortion-free optical measurement results due to large borosilicate window
- Individually switchable headlights for optimum illumination
- Precise temperature controls with 6 flexible product temperature sensors

Height 6.7 m

Drying Oven VTU 200/670/200-75 °C for centrifuge rotors

- Roll-up door for quick and complete opening of the working chamber
- Working chamber height of 6.7 m also allows for long components to be loaded with a small footprint

Karlsruher Institut für Technologie

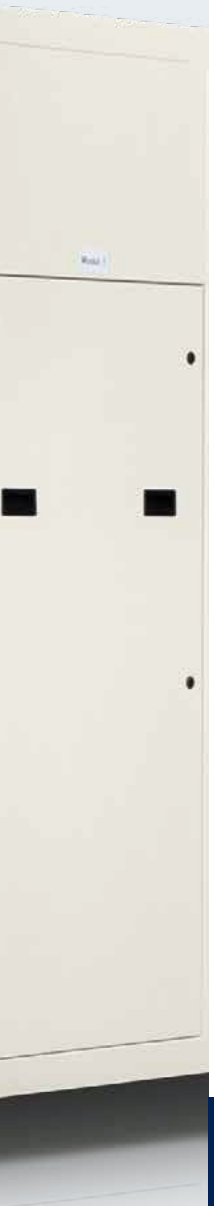
Microwave system VHM Hephaistos

Riding the perfect wave into the future.

Innovative vötschoven **microwave technology.**

Microwaves are a real alternative to conventional heating methods. The volumetric heating, in which the material heats up from the inside, is very appealing in terms of process and material technology. On the other hand, there is selective heating – here, a thermal reaction is triggered only in the absorbent materials. With VHM Hephaistos, vötschoven **now offers you the innovative and patented microwave system suitable for all-purpose use.**

Patented



Partner for a trend-setting research project.

Our microwave system VHM Hephaistos was developed in close cooperation with the Karlsruher Institute of Technology (KIT). It is the result of a joint development project sponsored by the German Federal Ministry of Education and Research (BMBF). Alongside KIT, the Composites Research Center of EADS in Munich, the Institute of Aircraft Design (IFB) at the University of Stuttgart, GKN Aerospace in Munich and Weiss Technik were involved in the project.

Faster production processes. Lower costs.

VHM Hephaistos is an internationally patented system characterised by its hexagonal geometry and very high field homogeneity. This is a major advantage, when thermoforming fibre composites (CFRPs) in the aerospace and automotive industries. The microwave system guarantees you reduced costs due to shorter heating, process and cooling times required for curing CFRP components. The microwave only introduces energy into the component to be heated while the oven itself remains cold. Compared to the process in the autoclave, process times are reduced by up to 50 % and energy consumption is reduced by up to 70 %.

Our highlights:

- High product quality thanks to maximum homogeneity of the microwave fields
- Volumetric and selective heating for energy-efficient processes
- Modular design for flexible adaptation
- Hybrid systems, e.g. in combination with hot air
- Sizes ranging from laboratory scale up to large-scale systems

Micro process times. Macro energy efficiency.

Our solutions for batch, automation and continuous systems.

GKN AEROSPACE

Curing System VHM 180/300 for CFRP structures in the aerospace industry

- Energy-efficient curing of CFRP-based composite components with out-of-autoclave prepregs
- Short heating-up and cooling-down times for a rapid VAP procedure

KIT Karlsruher Institut für Technologie

Continuous Drying Oven VHMDU 100/300 for impregnated foam materials

- Fast drying processes through selective heating
- Hybrid system with hot-air superposition for safe extraction of the water vapour produced
- Microwave-suitable transport system with inlet and outlet filter for safe, continuous process operation

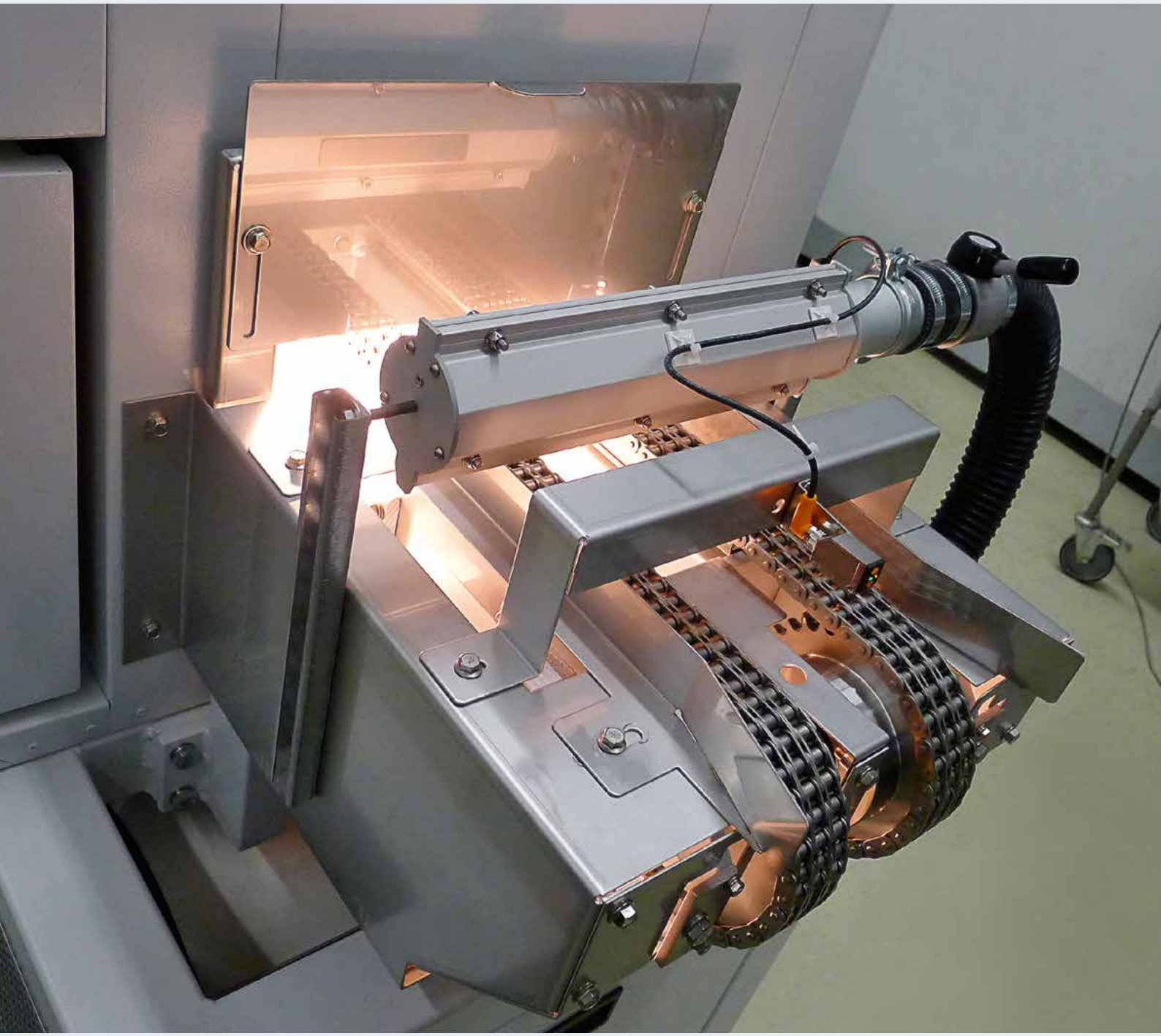
nordlaks

Disinfection Chamber VHM 180/200 DC
for food containers and conveyor belts

- Extremely effective against bacteria in containers and on conveyor belts made of PE, PU or PP
- Lifting door module for automated process

Application System VHMD 100/200
for research and process development

- Universal microwave system, ready for use in our technical centre, also for customer trials
- Batch microwave with arc detector, FOT measurement system, IR camera integration, PID or MPC procedure



Infrared Oven VDIR 30/10/100-200 °C
for drying disc springs after grinding and washing

- IR system with air knife on the input side for pre-drying for short process times
- Safe and energy-efficient thanks to automatic component recognition in the infeed/outfeed area

A brilliant example of efficiency.

High-performance vötschoven **infrared technology.**

Infrared heating is one of the fastest heating processes for near-surface product areas and ensures the shortest process times. The IR radiator systems can be configured in such a way that homogeneous heating with a high power density is possible.

System examples

- Continuous systems for one-piece flow
- Hybrid systems with infrared and recirculating air combination
- IR emitter arrays for integration in process plants
- Long-, medium- and short-wave infrared emitters
- Continuous processing units for sheeting material

Our highlights:

- Short process times
- Optimum adaptation to the process
- Energy saving

Waves with a lot of power – infrared.

Our systems and modules, batch and continuous systems.

ISO 7

Curing Oven VDIR 65/40-200 °C for coated process drums

- IR booster for short process times
- ´Simple, fast loading and unloading with automatic feeding
- Rotation device for a homogeneous burning-in
- Clean room compatible design (ISO 7)

Heating System VDIR 75/50/150-200 °C for melting bitumen mats onto stainless steel sheets

- Short process times thanks to fast heating times
- Homogeneous temperature distribution for the highest product quality
- Optimum use of the available production space due to production on two levels

IR Drying Tunnel
for water-based spray paints on fuel tanks

- Integration into customer's production process
- Energy-efficient (switch on/off if no product is available)
- Maximised throughput rate

IR Oven
for curing of compressors

- Variable power adjustment
- Seamless integration into existing customer systems
- Optimum use of the available production space due to vertical structure
- Can be combined with convection oven
- Increase of production speed

Production all-rounders.

Flexible vötschoven **Continuous Systems.**

Every system is a reliable component in your production line and is individually adapted to the requirements of continuous heat treatment processes. It can also be used for tempering plastics or curing adhesives on electrical components. And it is particularly suitable as a component in automation lines.

Modular

Turn your continuous oven into a unique one.

Our **vötsch**oven Continuous Ovens can be equipped with various conveyor systems. Flexible heating zones, air guiding and cooling zones are also available. In close coordination with our partners, we offer everything from a single source, from conception to implementation, all for your optimally designed system.

Conveying as it fits.

- Chains
- Strap hinges
- Wire link belts
- Roller conveyors
- Overhead tracks
- Fabric and plastic belts

Pretty hot.

- Recirculating air/fresh air system
- Vertical or horizontal air guiding
- Infrared
- Microwave

Cool selection for all situations.

- Fresh air cooling
- Recirculating air water cooling
- Spray-water cooling
- Recirculating air refrigerant cooling

Our highlights:

- Optimal adaptation for every application
- Modular design with different useful widths and lengths
- Special solutions for many industries

Continuous Oven VDL 150/50/500-200 °C

Just let it run.

Our solutions for continuous processes and one-piece flow.

ISO 8

Curing Oven VDL 130/15/400-200 °C for medical products

- Double conveyor belt for high bulk densities
- Short process times due to fresh air cooling zone
- Clean room compatible design (ISO 8)
- Designs according to EN 1539

ISO 7

Tempering Oven VDU 85/20/100-150 °C with cooling zones for expansion joints

- Feed and outlet line for workpiece carriers in front of the furnace enables integration into the production process
- Electronics production clean room class ISO 7, according to EN ISO 14644-1 for particle-free end products

ISO 7

Continuous Oven VDU 110/15/450-120 °C for cross-linking intraocular lenses

- Automatic unloading and sorting (IO/NIO) of products
- Logging of process data in accordance with pharmaceutical standard FDA 21 CFR Part 11
- Airflow for products that require precise temperature distribution better than +/-1 K

Stainless steel 2.4633

Drying Oven VDU 60/60-200 °C K for coatings on wire mesh catalysts

- Controlled extraction of nitrous gases for maximum personnel protection
- Easy handling of the products thanks to automatic transport basket conveyor carriage
- Corrosion-resistant interior made of stainless steel 2.4633 (Alloy 602 CA)

Continuous Oven VTU 75/100-200 °C for heating stator sheet packages

- Integration into customer's automatic production line
- Space-saving meander-shaped chain conveyor
- Positioning unit for product transfer by robot

ISO 7

Continuous Oven VDU 40/25/400-150 °C for curing of coatings on plastic glasses

- Heating zones with spatial temperature distribution of +/-2 K at 150 °C for highest product quality
- Maximum flexibility thanks to 2 independently operating curing lines
- HEPA recirculation filter

Thermofixing System VDU 100/80/500-250 °C for automotive fluid lines

- Independently controllable heating zones for short preheating times
- Rapid cooling thanks to cooling chamber with spray-water cooling

Continuous Tempering Oven VDU 150/60/375-250 °C for air suspension elements

- Automated loading for continuous process
- High product quality due to product-specific air guiding

Curing Oven VDL 160/50/300-150 °C for flapped discs

- Design according to EN 1539 for the use of solvent-based adhesive systems
- 2 conveyor levels for optimised product flow
- Integration into customer's production line

Tempering Oven VDU 120/20/240-200 °C for pressure sensors

- Energy-saving conveyor system with rotating workpiece carriers in the hot area (return transport of empty containers)
- Positioning accuracy +0.5 mm for robot loading
- Fast process times due to independently controllable heating and cooling zones

Thermofixing System VDU 100/100/900-220 °C for PA components

- Independent chain conveyors with heating and cooling zones for maximum throughput
- Cycle time variably adjustable to 48-360 seconds, for optimum adaptation to the production quantity

Drying and Tempering Oven VDU 100/10/650-350 °C for sinter metals as bulk material

- Fast, homogeneous heating and cooling with a vertical flow of the bulk material at high air velocities

Curing Oven VDL 150/50/310-200 °C
for e-mobility

- Space-saving conveyor technology as swing conveyor/paternoster
- Short process times thanks to integrated cooling zone with refrigerator unit
- Product temperature monitoring with IR radiation pyrometer
  for safety and time reduction in the process

Continuous Oven VDU 100/150-150 °C
for sealing compounds in sensors

- Economical solution based on
  a standard batch oven
- Integrated space-saving cooling zone
- Double-stranded chain conveyor
  system for workpiece carrier transport

EN 1539

"Hedgehog" Oven VDL 75/50/350-200 °C for sheet material

- Short installation length with a high number of components thanks to vertical product transport
- Feed and discharge with horizontal plate position
- Oven design according to EN 1539

ISO 7

Continuous Oven VDU 30/15/300-250 °C ISO 7 for leadframes in electronics production

- ISO 7 clean room
- SECS/GEM interface for data exchange
- 3 heating zones and one cooling zone
- Silicone-free oven design with ESD design

Everything from one source.

Head into the future with us.

Alles im Blick. Alles sicher. Alles bestens.

S!M PAC®

The digital measuring and control system S!MPAC.

All heating technology systems are equipped with **S!M**PAC as standard: for simple operation, monitoring and documentation. Up to 100 programs can be saved and conveniently controlled. Remaining program running times are reliably displayed. Individual alarm levels for product protection and a potential-free alarm contact increase safety. Networking and recording with **S!M**PATI are possible at any time with an Ethernet interface.

Future-proof control at all times.

S!M PATI®

S!MPATI makes it possible!

Our control software for environmental simulation, heat and air-conditioning technology is ready to rise to the challenges of industry 4.0. Maximum flexibility and connectivity, simple operation and highest reliability guarantee a trouble-free integration into automated processes at all times. The **S!M**PATI range is rounded off by additional modules such as **S!M**PATI **web, S!M**PATI **e-sign, S!M**PATI **barcode scan** and **S!M**PATI **monitor.**

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S!M PATI® time labs

The visual documentation system S!MPATI time labs.

In addition to, and correlating with, the acquisition of conventional measurement data, special software generates digital camera images at fixed intervals and saves them in a shared archive folder. A combined evaluation of measurement data and imagery data brings new and valuable findings to light. Especially when a special event has taken place.

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Competence and know-how.

Speed and availability are one pillar of our service, competence and know-how the other. Our service technicians are excellently trained specialists in the fields of electrical engineering/electronics, refrigeration technology, control engineering, mechanics and software. With our expert service team, available around the clock, we offer you reliable support on a partnership basis.

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- Wide selection of preventive maintenance
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- Special deployments available any time
- Certified proper disposal of outdated devices

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- Operator obligations
- Legally required repeat tests

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Passionately innovative.

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Experienced engineers and designers develop, plan and produce high-quality, reliable heat technology systems for a broad range of applications from heating and drying cabinets to microwave systems and industrial furnaces.

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Test it. Heat it. Cool it.