

Everything  
is clean ...

**Vötsch**  
*Industrietechnik*

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VTF Clean Room Heating and Drying Ovens  
Standard devices and individual systems for industry and research

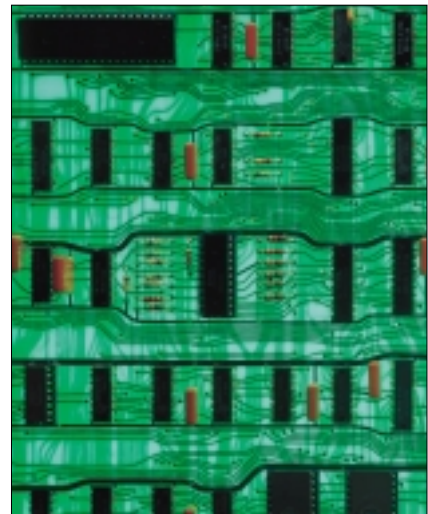
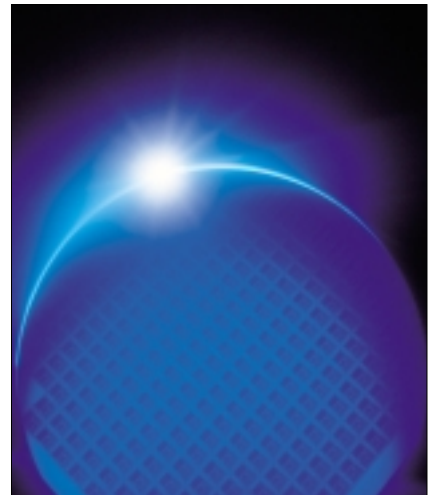
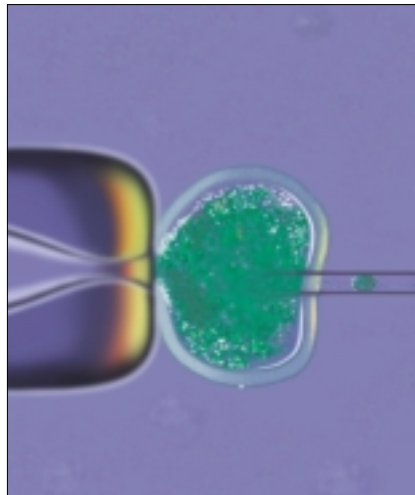
# Heat applications ...

## The need ...

The speedy development in many fields of the industry such as microstructure technology, electronics, genetic engineering and biotechnology demands an extension of production facilities under clean-working conditions. Production under clean conditions improves the standard of quality in research, development and production.

Heating and drying processes, such as e.g. during the production of integrated circuits, under the highest possible degree of cleanliness are a precondition for a low failure rate and hence for profitable results.

Many VTF clean room heating and drying ovens by Vötsch Industrietechnik GmbH have been developed in close co-operation with leading corporations in the semiconductor industry. This co-operation has resulted in products which fulfil even the highest demands in the field of clean-room technology.



## The fields of application ...

- micro-electronics
- microstructure technology
- process engineering
- optics
- precision engineering
- research and development
- medical technology
- food-processing industry
- biotechnology
- pharmaceuticals

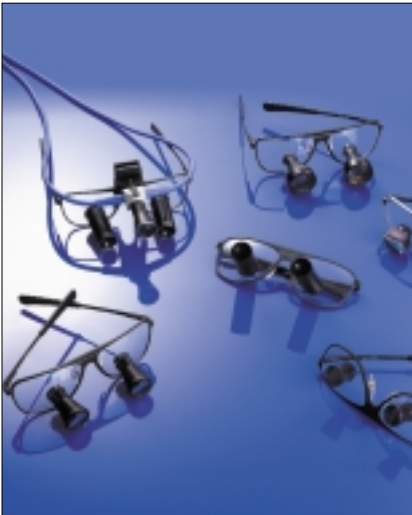
...under clean working conditions



The solution...

The VTF clean room heating and drying ovens are available in a total of 7 sizes with workspace volumes between 60 l and 3,125 l and with nominal temperatures of 230 °C, 300 °C and 350 °C.

The laminar flow technique creates a laminar, low-turbulence state of flow with a particularly homogeneous distribution of temperature thus ensuring optimum, reproducible production results.



High-efficiency particulate air filters (HEPA) in the fresh and circulating air ducts ensure that the workspace is granted the clean room class 100 (according to US Federal Standard 209).

...with obvious advantages

- optimum production results on account of the highest possible cleanliness corresponding to clean room class 100 in the work space
- high process temperatures of up to 350 °C under clean room conditions throughout the entire program cycle
- homogeneous, spatial temperature distribution throughout the entire temperature range
- shortened process cycles on account of short regeneration periods
- outer casing sealed for installation in clean room areas
- solutions for the integration into automated production lines also as clean room tunnel systems.



# Functional technology...

## Basic equipment

- stainless steel workspace (1.4301) executed without joints
- outer casing coated
- operating and control system integrated into the outer casing
- **MINCON/32\*** operating and control system, entering of parameters and monitoring of the program over the touch panel
- high-efficiency particulate air filters (HEPA) used for filtering the circulating air
- differential pressure filter display
- filter test nozzle



## Options

- push-through design (as gate between the clean room and the grey area)
- outer casing in stainless steel (1.4301), polished (grain 180)
- outer casing sealed for installation in clean room
- outer casing with wall frame for flush mounting
- fresh air fan
- supply air filter (fine filter and high-efficiency particulate air filter F5, F7, H13)
- filter monitoring
- charging trolley/ancillary trolley
- Vötsch software package **SIMPATI\*** (allows up to 32 systems to be networked)
- this version of the device also available in clean room class 10,000



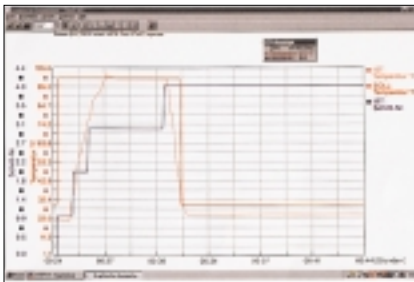
...with up-to-date, convenient control system



Operating and controlling the system with **MINCON/32\***...

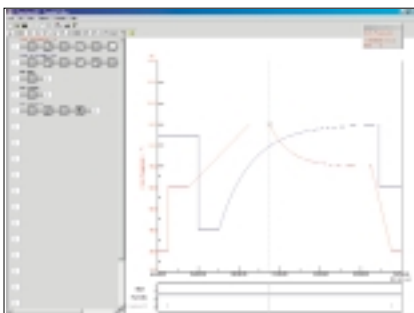
All Vötsch clean room heating and drying ovens are equipped with the **MINCON/32\*** operating and control system.

**MINCON/32\*** is a self-monitoring, digital measuring and control system. The input of process parameters and programs as well as the output of actual values, operating and error messages is done by means of a touch panel.



### Special features

- convenient input of measuring values and program operation with graphic representation of the rated and actual values on the touch panel
- program memory for up to 100 programs with a total of 1,000 sections
- two-level password protection against unauthorized access
- integrated limit monitoring for temperature
- serial interfaces RS 232 C and RS 485
- operating and error messages are displayed on the touch panel
- compatible with the Vötsch software package **SIMPATI\*** for PCs for convenient administration and archiving of data sets
- special operator interface for use in production facilities (simplified starting/stopping of processes).



Vötsch **SIMPATI\*** software package for PCs

The Vötsch software **SIMPATI\*** can be used for complete documentation and graphic interpretation. By installing it on an optional notebook or PC, the user can create program profiles and document all process parameters under Windows. Parallel to that, the user can use the full capacity of the PC under Windows.

### Advantages of the software

- allows you to program and select programs for automatic processes, no need for costly programming
- in addition to operating and controlling, documentation, visualisation and administration of process data are also possible
- process data can be printed out as graphs and copied into other programs for interpretation
- up to 32 plants can be networked
- compatible via internal interfaces (with Microsoft Word, Microsoft Paint, Microsoft Excel, National Instruments Labview)
- access via PC networks or your own browser
- transmitting messages via e-mail to an existing mail server (SMTP)
- uploading of programs, production data (product, operator, plant) possible through **bar codes** (optionally).

## Technical data ...

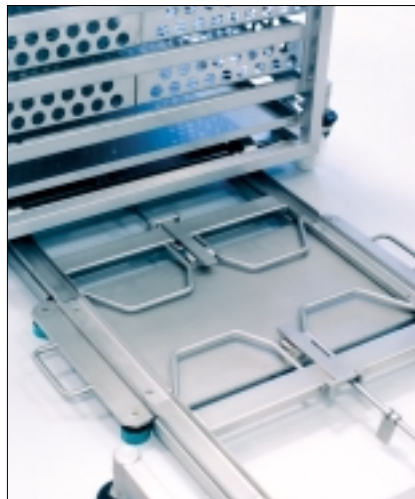
Size/Model		VTF 50/35	VTF 50/60	VTF 60/60	VTF 75/100	VTF 100/150	VTF 125/200
Interior dimensions							
Width	mm	500	650	600	750	1,000	1,250
Height	mm	350	280	600	1,000	1,500	2,000
Depth	mm	500	350	625	750	1,000	1,250
Exterior dimensions							
Width	mm	800	1,020	1,000	1,880	2,130	2,380
Height	mm	1,700	1,060	1,965	2,200	2,700	3,200
Depth	mm	900	1,360	1,000	1,070	1,320	1,570
Work space volume	l	87	63	225	562	1,500	3,125
Rated temperature	°C	230	230	230/300	230/300/350	230/300/350	230/300/350
Heating capacity (at 230 °C)	kW	6	12	14.4	16.2	27	36
Connected load (at 230 °C)	kVA	7	14	16	18	29	38
Rated voltage	V/Hz	400/50/60	400/50/60	400/50/60	400/50/60	400/50/60	400/50/60
Air flow direction		↓	↓	↓	←	←	←

### Safety devices

Our clean room heating and drying ovens are produced according to the state of the art in technology. Of course, this principle also applies to our safety devices.

### Major components

- temperature limiter for protecting the system
- adjustable temperature limiter for protecting the products
- differential pressure monitoring for the high-efficiency particulate air filters (optionally)
- low surface temperature on the outer casing
- unlocking unit on the inside of the door as of size 75/100



Series	VTF	VTF	VTF	VTF	VTF	VTF
Size	50/35	50/60	60/60	75/100	100/150	125/200
Nominal temperature 230 °C	●	●	●	●	●	●
Nominal temperature 300 °C	-	-	○	○	○	○
Nominal temperature 350 °C	-	-	-	○	○	○
<b>Design features</b>						
Outer casing coated as per RAL 9002	●	●	●	●	●	●
Outer casing in stainless steel 1.4301, polished (grain 180)	○	○	○	○	○	○
Push-through version	-	-	-	○	○	○
Outer casing for installation in clean room	-	○	○	○	○	○
Floor version for charging trolley	-	-	-	○	○	○
Switchbox integrated in outer casing	●	●	●	●	●	●
Nozzle for validation, DN 25	●	●	●	●	●	●
<b>Other features</b>						
Work space clean room class 100	●	●	●	●	●	●
Fresh air fan, 1-step	○	-	○	○	○	○
Fresh air fan, 2-step (for drying and cooling stages)	○	-	○	○	○	○
Circulating air filter (HEPA)	●	●	●	●	●	●
Fresh air filter (HEPA )	●	-	●	●	●	●
Filter monitoring (differential pressure)	●	●	●	●	●	●
Internal pressure monitoring	○	○	○	○	○	○
<b>Operating and controlling, accessories</b>						
Vötsch <b>MINCON/32</b>	●	●	●	●	●	●
Vötsch software <b>SIMPATI</b> *	○	○	○	○	○	○
Electrical door locking unit	○	○	○	○	○	○
1-channel temperature recorder	○	○	○	○	○	○
6-channel temperature recorder	○	○	○	○	○	○
Stainless steel wire mesh shelves	○	○	○	○	○	○
Pair of supporting brackets, stainless steel 1.4301	○	○	○	○	○	○
Charging trolley, stainless steel 1.4301	-	-	-	○	○	○
Ancillary trolley for charging trolley, stainless steel 1.4301	-	-	-	○	○	○

- standard
- option
- not applicable

## Competence and dedication to our customers

- individual consultation
- project planning and development
- production and installation
- commissioning and briefing
- calibration
- maintenance, spare parts service, repair work
- recycling of redundant units
- training

## We offer more than simply warmth...

- clean room tunnels
- heating and drying ovens
- vacuum heating and drying ovens
- heating and tempering furnaces up to 750 °C
- chest ovens for simple top loading
- drawer-type ovens
- heating ovens for inert gas operation for controlled atmosphere applications in order to avoid oxidation
- conveyor belt and paternoster oven systems for continuous heating processes
- accessories and software for process documentation as stipulated in EN ISO 9001 in order to ensure controlling, monitoring and documenting as well as networking of up to 32 plants.



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