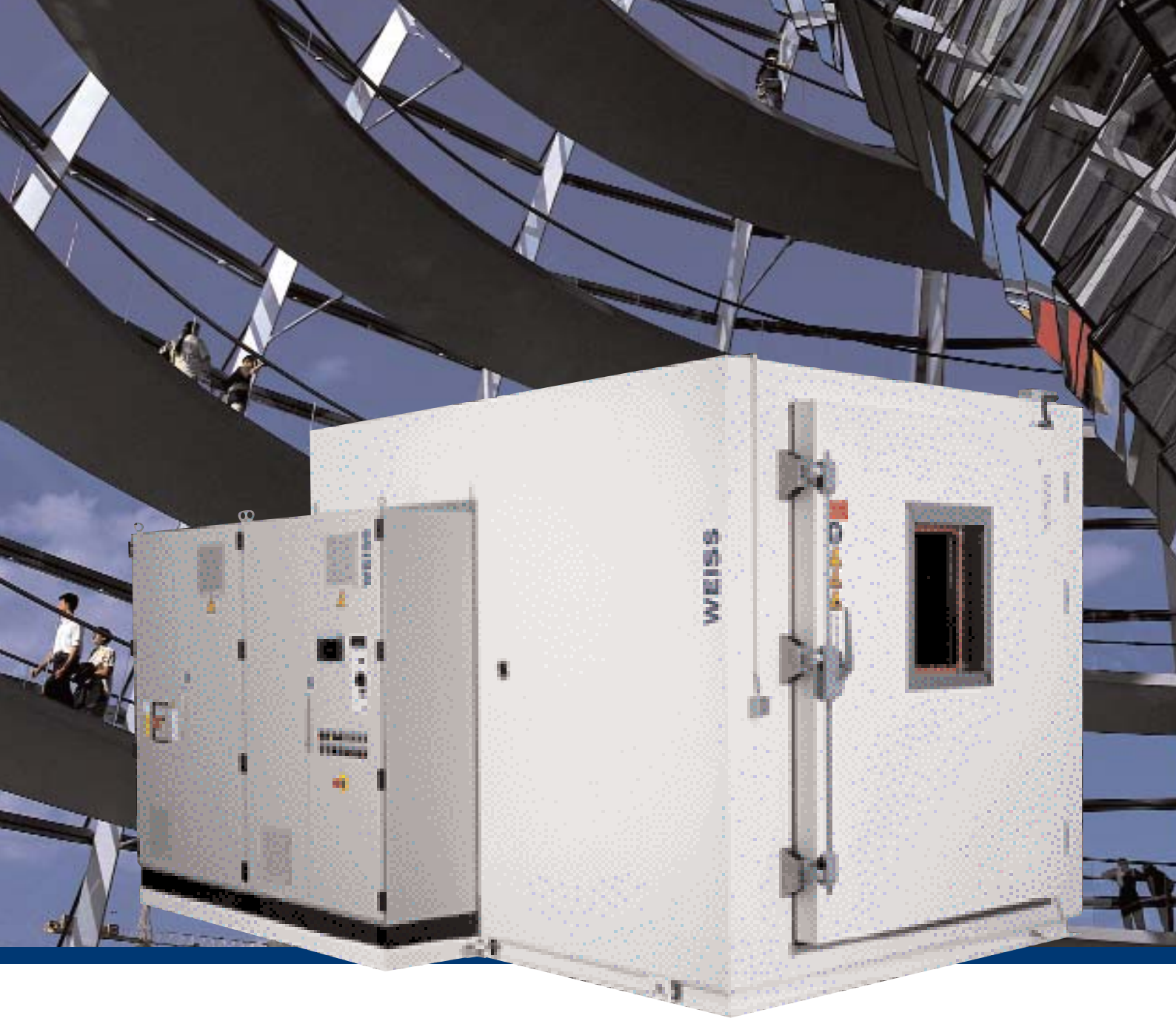


The choice is yours . . .
Space for large test objects

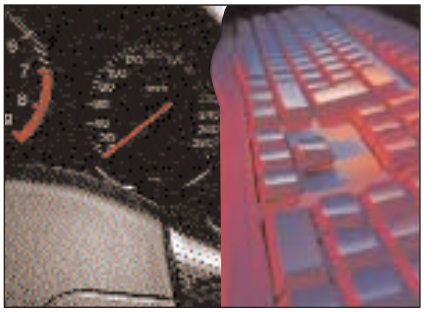
Walk-in temperature and climate test chambers type WT/WK

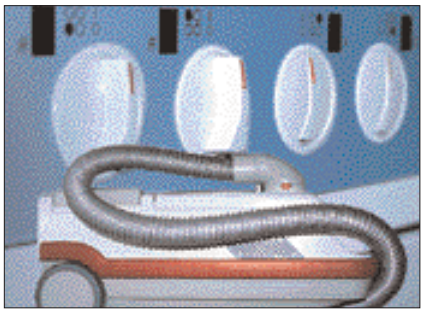
schunk Group

Weiss Umwelttechnik GmbH
Simulationsanlagen • Messtechnik

WEISS TECHNIK

The other dimension . . .





If your standard test chamber is too small . . .

The function and durability of all products can be negatively influenced by various climate conditions.

Our WT and WK series are a range of temperature and climate test chambers especially developed for large test specimens that cannot normally be tested in a standard-sized test chamber.

Some outstanding features . . .

- Size and design mean optimal loading of test specimens
- Modular construction, variable in size and equipment for customer-specific application
- Low costs for investment, operation and maintenance
- Environmental-friendly materials and refrigerants.

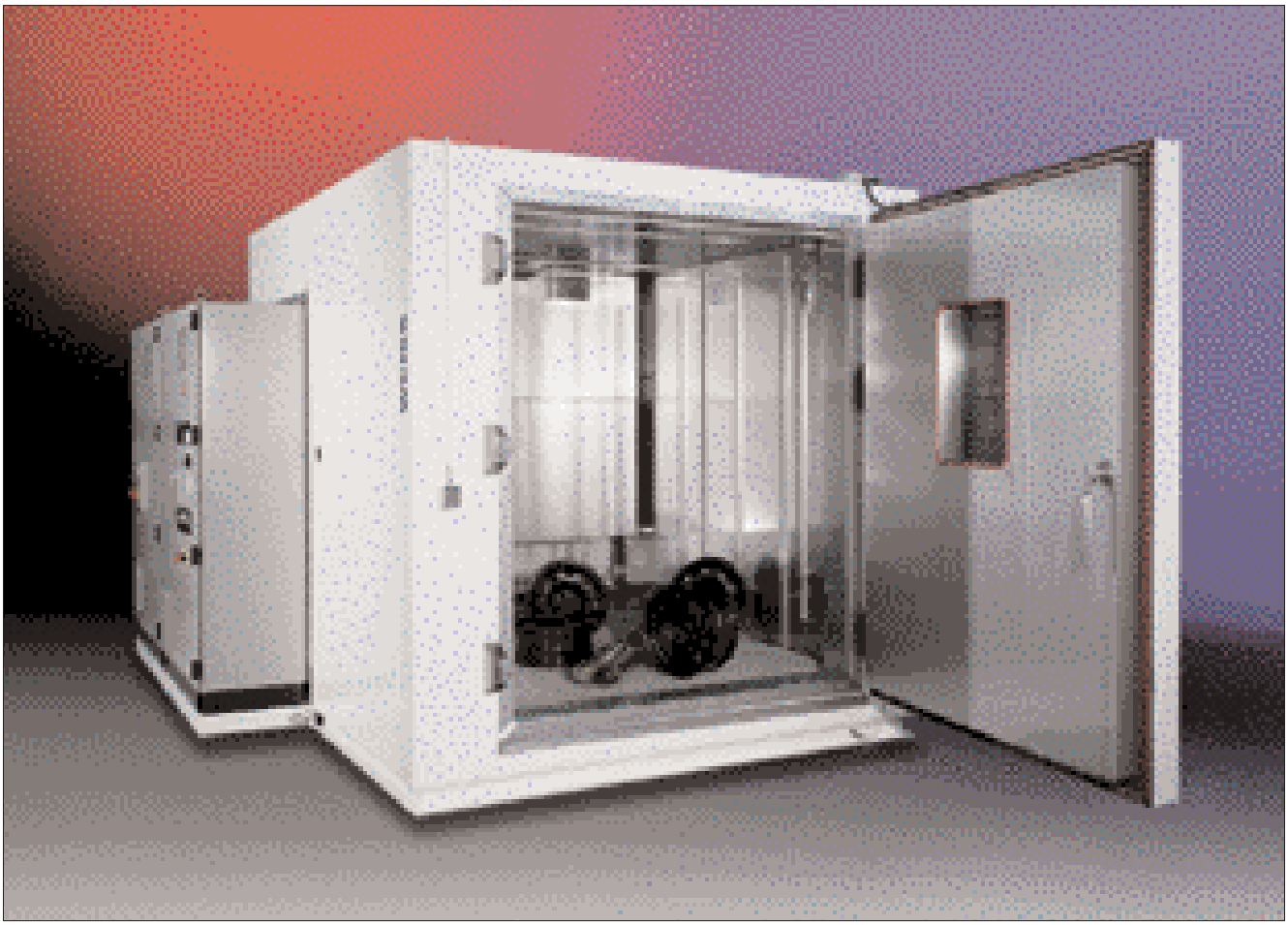
The application . . .

The WT/WK series of temperature and climate test chambers enable reproducible climate and temperature testing in all fields of research, development, production and quality control.

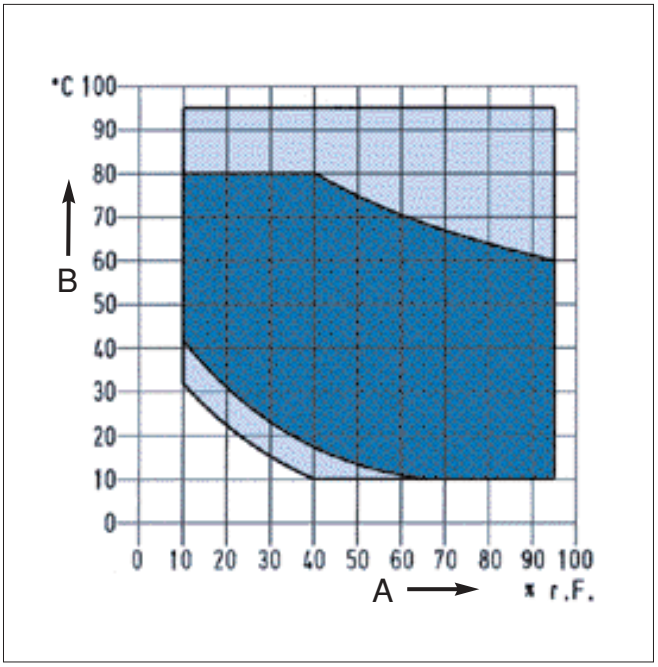
The efficient and homogenous conditioning of the test chambers enables the best temperature and humidity constancy to be achieved, leading to reproducible results regardless of the shape and nature of the test object.

Temperature and climate working range have been designed to fulfil all relevant standards such as DIN, EN, ISO, MIL, IEC, DEF and ASTM.

. . . with the XXL test chamber

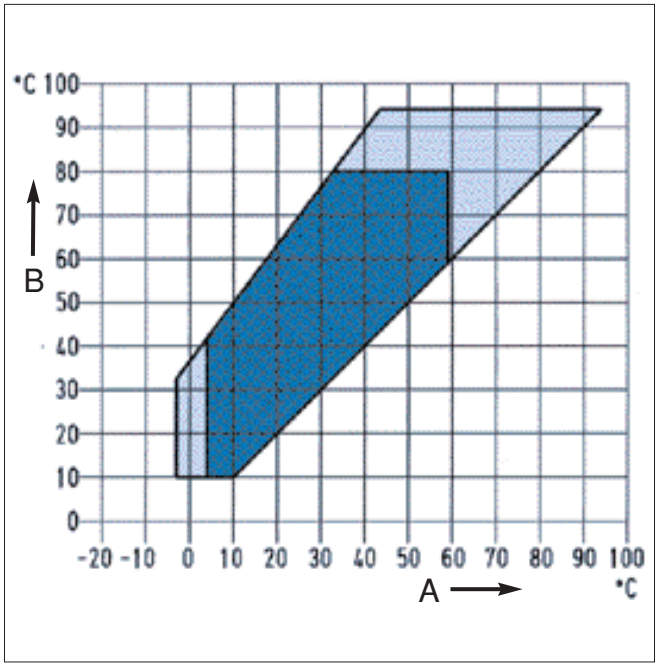


Climate working range for type WK



A = relative humidity [%]…B = test chamber Temperature [°C]

Standard working range Extended working range



A = dew point temperature [°C]…B = test chamber temperature [°C]

Standard working range Extended working range

Function and technique . . .

Function

An air-stream conditioned to precisely the required temperature or climate set values flows constantly through the test chamber.

All components necessary for conditioning the air are contained in the circulation air channel installed on the test chamber rear wall.

The circulating air is extracted from the test chamber and passed over a dehumidifying heat exchanger. The air is then passed through a finned heat exchanger, where it can be cooled if required. A special control prevents condensation from forming on the heat exchanger during climate operation and guarantees optimum temperature and humidity constancy.
Humidification of the test chamber air is via a steam humidifier.

A heating element installed in the air flow after the heat exchanger is used to heat the air. The large fans on the test chamber rear wall transports the conditioned air back into the test space, providing intensive air circulation.

A platinum resistance thermometer Pt 100 (as per DIN IEC 751) measures the temperature and a capacitive humidity sensor measures the relative humidity in the test chamber.

Design

The unit consists of the following assemblies:

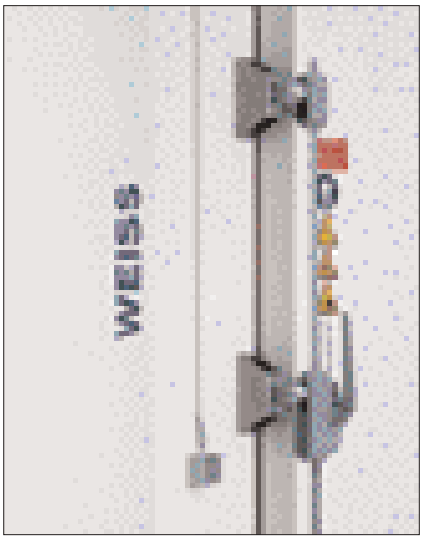
- **Insulated test chamber** (sandwich elements, metal-coated on both sides)
- **Temperature/climate conditioning unit**
- **Machine compartment**
- **Switch cabinet**
- SIMCON/32*-NET **control system with touch panel.**

The wall elements are highly stable and absolutely vapour-tight.

The wall, floor and ceiling elements are CFC-free, free-standing and easy to assemble, the floor is of non-slip design.

The design and seal on the test chamber door ensure that the chamber is absolutely sealed, even under the most extreme climate conditions.

A special handle opens the door from the inside, thus fulfilling all safety regulations.



A heater prevents condensation from forming on the door frame.

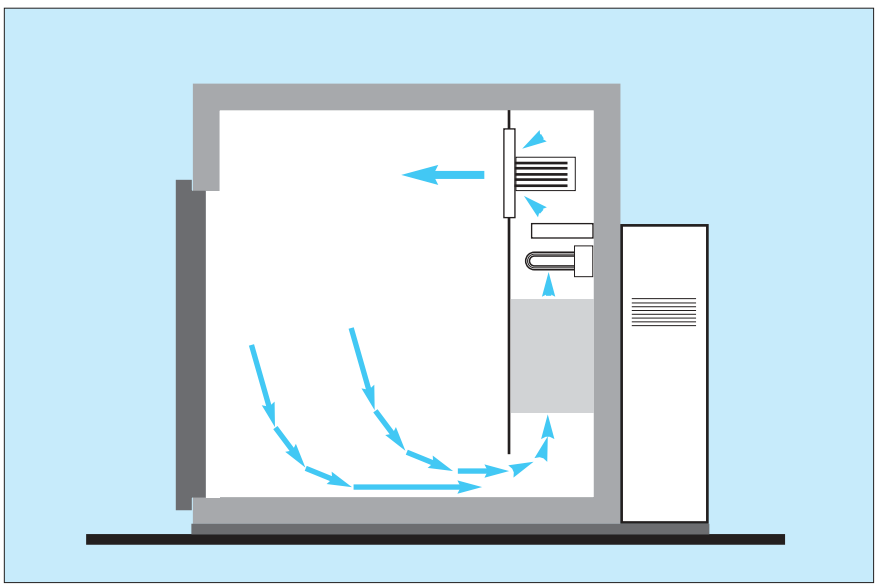
The test space is provided with lighting, an external switch is located next to the door.

All chambers are fitted with two access ports. These ports are located beside the test chamber door and can be used for inserting measuring and control cables, other power connections or auxiliary equipment.

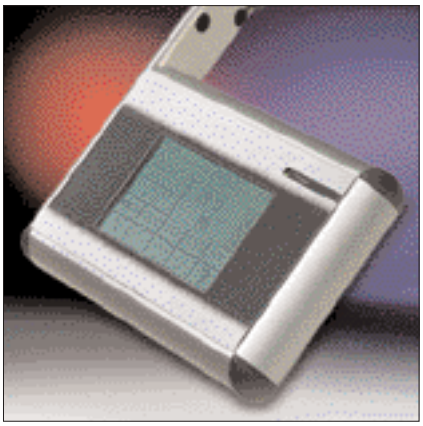
The **climatisation system** is tailored to the test chamber size. Homogenous air circulation guarantees powerful and even climate conditioning throughout the chamber. All specimens are subjected to the same conditions, regardless of form or composition.

The **machine compartment** is mounted on a base frame next to the test chamber and consists of the refrigeration unit with condenser and steam generator (for type WK).

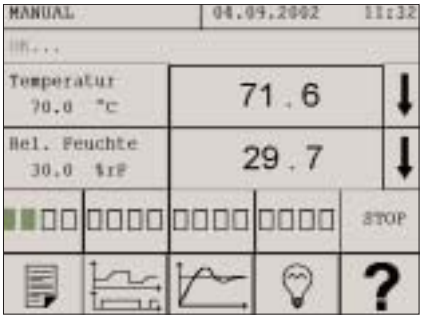
The wiring conforms to accepted technical standards, the accident prevention regulation “Electrical Equipment and Means of Production” (BGV A2) and appropriate VDE/EN regulations.



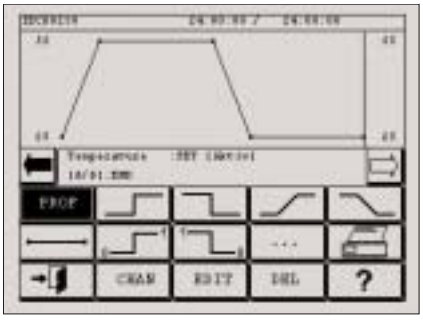
. . . reliably managed and controlled



Touch panel



Main menu



Programme editor

Operation

The control and programme logic is run by the SIMCON/32*-NET digital measurement and control system. In addition to the controls for temperature and humidity, it also contains efficient PLC software, which co-ordinates and monitors all functions and reports malfunctions.

SIMCON/32*-NET was specially developed for use in test systems. With its computing capacity (32 bit), SIMCON/32*-NET fulfils the requirements of process technology and simplifies the input function with a specially developed graphic-capable touch panel, with a resolution of 320 x 240 pixels.

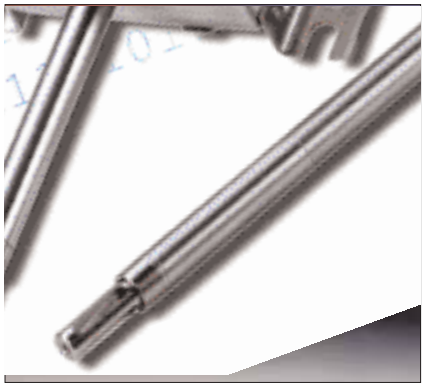
Special features . . .

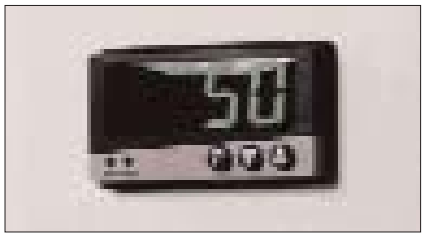
- Touch panel for comfortable input of values and programming, with graphic depiction of nominal and real values, operating time, remaining cycles etc., including help functions
- Programme memory for up to 100 programmes with a total of 1000 sections
- Software support for 4 potential-free entry and 4 exit points
- Password protection, two-stage, to avoid unintentional alteration
- Integrated limit value monitoring system for temperature and humidity
- Check system provides information on malfunctions and collects operating time data and switching frequency of individual system components
- Parallel printer interface (Centronics) for graphic documentation of HP Deskjet Color and EPSON printers
- RS 232 C serial interface, electrically isolated, for connection to a superior computing system (e.g. notebook operating station) or for networking
- Compatible with SIMPATI* simulation management software for comfortable administration and logging of data
- 2 expansion slots for measuring input/output modules.

Detailed equipment data . . .

Standard model

- Special conditioning system in climate working range for high temperature and humidity constancy (for Type WK)
- 2 access ports, 50 mm located beside the door
- Adjustable upper and lower temperature safety cutout as per EN 60 519-2 (1993) with separate sensor, thermic safety class 2
- Contactless switching of heater
- Switch cabinet light with safety socket for servicing
- Water-cooled condenser
- Environmental-friendly refrigerant with relative ozone depletion potential = 0
- Programme control system SIMCON/32*-NET
- Touch panel with simple, menu-controlled operation (no programming knowledge required)
- 32 bit prozessor
- Printer interface centronics
- Machine with self-monitoring system, extended operation circuitry for lifetime optimisation of refrigeration compressors.

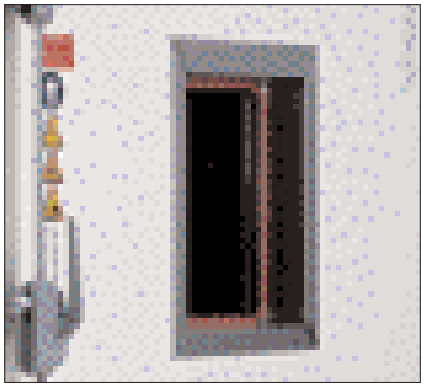




- Digital I/0
  - 4 inputs and 4 outputs (24 VDC) potential-free contact, wired to terminal strip, for free application within programmes or in manual operation
  - a potential-free contact for malfunction signals and operation

Options

- Ethernet-/LAN-interface (100/10 MBit) in combination with SIMPATI* for integration in the network
- SIMPATI* software package



- Observation window 600 x 400 mm, surface heated
- Demineralisation unit for humidifier water
- Freely adjustable air circulation fan speed
- Emergency alarm
- Safety sockets 230 V or 400 V
- Other voltages and frequencies
- Additional Pt 100 sensor
- Registration of temperature and humidity via printer
- Interface adapter for IEEE 488 or RS 485
- Data cable for max. 1000 m distance from PC to test chamber, using RS 485 interface
- Temperature range extension to +180 °C
- Dewpoint temperature range extension to –3 °C
- Psychrometric humidity measuring system
- Air-cooled condenser
- Additional access ports 50 and 100 mm, other sizes on request

Further options on request

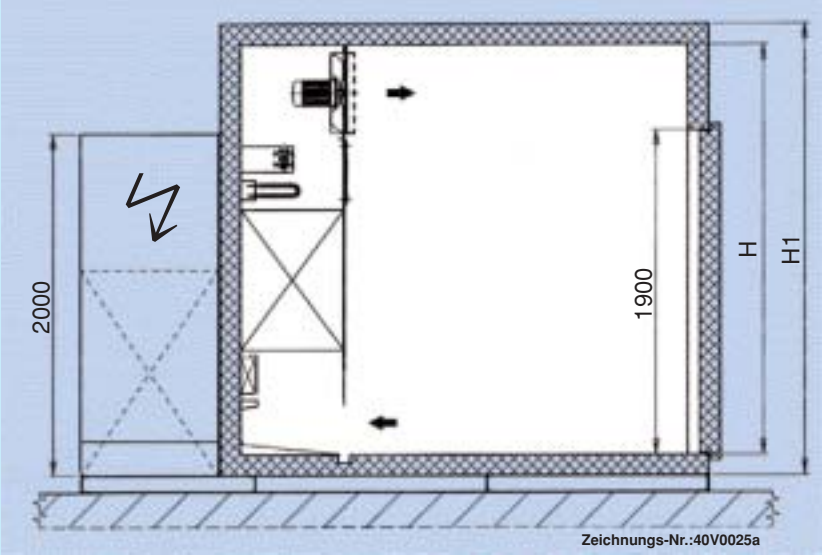
Technical data

Standard model **Temperature test chambers**	**WT…'/+5**	**WT…'/40**	**WT…'/60**
Temperature working range			
Max. temperature[1]	←	+80 °C (+95 °C)	→
Min. temperature[1]	+5°C	–40 °C	–60 °C
Temperature constancy, in time	←	≤ ±1 K	→
Climate test chambers	**WK…'/+5**	**WK…'/40**	**WK…'/60**
Temperature working range			
Max. temperature[1]	←	+80 °C (+95 °C)	→
Min. temperature[1]	+5°C	–40 °C	–60 °C
Temperature constancy, in time	←	≤ ±1 K	→
Climate working range			
Max. temperature[1]	←	+80 °C (+95 °C)	→
Min. temperature	←	+10 °C	→
Dewpoint temperature range			
Max. temperature	←	+59 °C (+94 °C)[2]	→
Min. temperature	←	+4 °C	→
Humidity range	←	10 … 95 % r. h.	→
Humidity constancy, in time	←	≤ ±5 % r. h.	→
Electrical connection for WT and WK	←	400 V/3 PH + N + PE/50 Hz	→

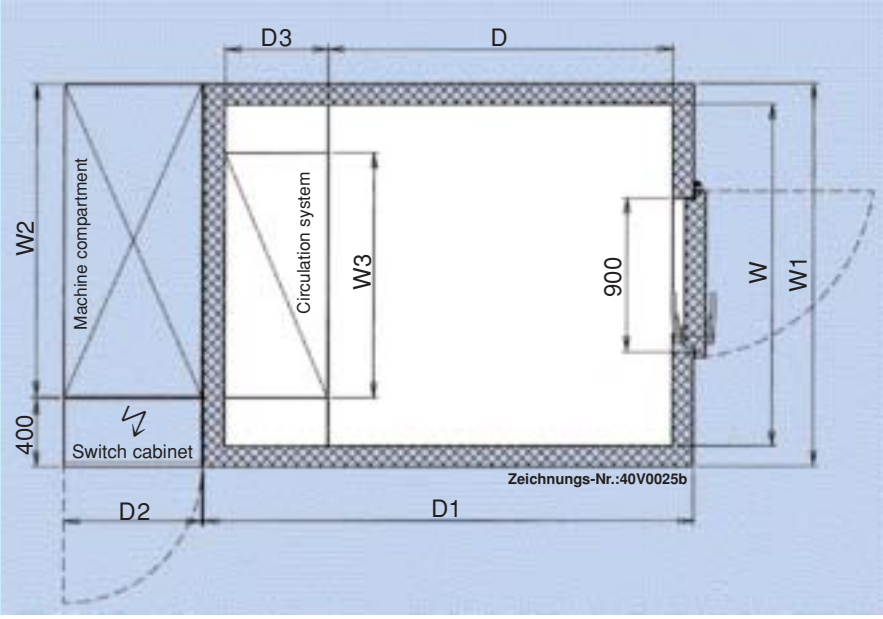
[1] depending on test requirements …[2] only if climate working range is extended to +95 °C
We reserve the right to make alterations.

. . . for variable sizes

SIDE VIEW



TOP VIEW



Dimensions

Type			WT/WK/8'/...		WT/WK/12'/...		WT/WK/16'/...		WT/WK/21'/...	
			to –40 °C	lower –40 °C	to –40 °C	lower –40 °C	to –40 °C	lower –40 °C	to –40 °C	lower –40 °C
Test space dimensions	W	Width mm, approx.	2000	2000	2000	2000	2400	2400	2400	2400
	D	Depth mm, approx.	2000	2000	3000	3000	3000	3000	4000	4000
	H	Height mm, approx.	2000	2000	2000	2000	2200	2200	2200	2200
External dimensions*	W1	Width mm, approx.	2240	2400	2240	2400	2640	2800	2640	2800
	D1	Depth mm, approx.	2840	3000	3840	4000	3840	4000	4840	5000
	H1[1)]	Height mm, approx.	2240	2400	2240	2400	2440	2400	2440	2400
Machine compartment	W2	Width mm, approx.	1840	2000	1840	2000	2240	2400	2240	2400
	D2	Depth mm, approx.	800	800	800	800	1200	1200	1200	1200
Conditioning system	W3	Width mm, approx.	1600		1600		2000		2000	
	D3	Depth mm, approx.	600		600		600		600	
Fans		Quantity	2		2		3		3	

* Insulation value 120 mm at temperatures above –40 °C, 200 mm at temperatures below –40 °C. [1)] plus 100 mm for base frame. Right to alterations reserved.

Test systems for professionals. Test the best . . .

A complete line of systems is available offering test space volumes ranging from approx. 60 litres to 1500 litres, a working range from –75 ... +180 °C and relative humidity values ranging from 10 ... 98 % r.h.

We also offer an extensive line of field-proven test systems specially for simulating exposure to weather, temperature shock, corrosion and long-time tests for application in research, development, quality control and production.

Of course, Weiss – as one of the leading producers of environmental simulation systems world-wide – offers the entire spectrum of high-tech test systems starting from a series of cost-effective test systems up to customized walk-in chambers and in-line systems.

If it's know-how, service and reliability that you are looking for – contact Weiss Umwelttechnik.

Technical Sales Offices

Berlin
13407 Berlin-Reinickendorf · Flottenstrasse 58
Tel. (0 30) 40 99 05-10 · Fax (0 30) 40 99 05-50
eMail: berlin@wut.com

Hamburg
22459 Hamburg-Niendorf · Sperberhorst 6
Tel. (0 40) 68 59 96 · Fax (0 40) 68 52 91
eMail: hamburg@wut.com

Hannover
30853 Langenhagen · Walsroder Strasse 149
Tel. (05 11) 7 28 19-10 · Fax (05 11) 7 28 19-30
eMail: hannover@wut.com

Oberhausen
46045 Oberhausen · Mülheimer Strasse 48
Tel. (02 08) 6 20 65-10 · Fax (02 08) 6 20 65-20
eMail: oberhausen@wut.com

Stuttgart
70567 Stuttgart-Möhringen · Zettachring 10
Tel. (07 11) 90 02 45-10 · Fax (07 11) 90 02 45-30
eMail: stuttgart@wut.com

Nürnberg
90592 Schwarzenbruck · Robert-Bosch-Strasse 15
Tel. (0 91 28) 92 37 55 · Fax (0 91 28) 92 37 65
eMail: nuernberg@wut.com

München
82166 Gräfelfing · Wandlhamer Strasse 31
Tel. (0 89) 89 80 45-10 · Fax (0 89) 89 80 45-30
eMail: muenchen@wut.com

Leipzig
04105 Leipzig · Tschaikowskistrasse 14
Tel. (03 41) 9 84 57-10 · Fax (03 41) 9 84 57-30
eMail: leipzig@wut.com

Subsidiaries

Weiss Umwelttechnik Ges.m.b.H.
A-1230 Wien · Ober-Laaer Strasse 316
Tel. (01) 6 16 66 97 · Fax (01) 6 16 66 97-13
eMail: wien.wuw@schunk-group.com

Weiss Technik Belgium B.V.B.A.
B-1770 Liedekerke
Nijverheidszone · Begijnenmeers 63
Tel. (0 53) 68 10 10 · Fax (0 53) 68 10 20
eMail: sales@weisstechnik.be

Weiss Technik AG
CH-8802 Kilchberg · Böndlerstrasse 29
Tel. (01) 7 16 10 66 · Fax (01) 7 16 10 76
eMail: info@weiss-technik.ch

Weiss Technik France E.U.R.L.
F-78955 Carrières sous Poissy
283, route d'Andrésy
F-78304 Poissy Cedex · B.P. 4015
Tel. (1) 34 01 11 00 · Fax (1) 39 27 37 84
eMail: info@weissfr.com

Weiss Technik Ltd.
GB-Marlow · Buckinghamshire SL7 1NX
Willowbank House · 84 Station Road
Tel. (0 14 94) 43 43 24 · Fax (0 14 94) 43 43 25
eMail: info@weisstechnik.co.uk

Weiss Technik Italia S.r.l.
I-20013 Magenta (Mi) · Via Murri, 22 – 28
Tel. (02) 97 29 16 16 · Fax (02) 97 29 16 18
eMail: info@weissitalia.it

Weiss Enet Industrietechniek B.V.
NL-4004 JP Tiel · Morsestraat 8
Tel. (03 44) 67 04 00 · Fax (03 44) 67 04 05
eMail: info@weissenet.nl

Weiss Environmental Technology Inc.
Menomonee Falls, WI 53051, USA
W146 N9300 Held Drive
Tel. (2 62) 2 53-87 30 · Fax (2 62) 2 55-13 91
eMail: info@schunkgraphite.com

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Weiss Umwelttechnik GmbH
Simulationsanlagen • Messtechnik

35447 Reiskirchen-Lindenstruth / Germany · Greizer Str. 41–49
Telephone (0 64 08) 84-0 · Telefax (0 64 08) 84-87 10
www.weiss.info · www.wut.com · eMail: info@wut.com

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