



# **Vacuum-Temperature and Vacuum-Climature Test Chambers**

**Series WT/D and WK/D**



# Equipment . . .

## Construction features and functional principle

The outer casing is made of corrosion-resistant, galvanised sheet steel with an environmentally friendly coating. The test chamber door is hinged on the left and has optimum contact pressure when closed.

The machine unit with the cooling units and vacuum device is located in a maintenance-friendly position. The entire power electronics is located in a switch cabinet at the right side wall of the test chamber. Every electronic function circuit has its own safety mechanism which switches off the relevant function circuit and/or the entire test chamber when faults occur.

The test space is made of high-quality stainless steel and is vacuum- and vapour-tight welded. The evaporator, heating elements and the large ventilation equipment with external drive motors are installed behind the conduit which is at the back of the test space.

The test chamber is equipped with separate sensors to protect the specimens irrespective of the temperature control system. Additional ducts in the side panels are provided for the electrical connections of the specimens from the outside.

Evacuation is effected by the vacuum system, in which the test space atmosphere is diluted continuously until it reaches the required vacuum.

The temperature conditioning system of the WK/D series is also equipped with humidification and dehumidification equipment with a humidity sensor. The humidity sensor is located behind the specimens in the air stream.

## Standard version

- Combined temperature and vacuum test  $\geq 400$  mbar
- Low/high temperature safety cutout as per EN 60519-2 (1993) with separate sensor, thermal safety class 2
- Touch panel
- Parallel printer interface for HP Deskjet Color and EPSON printer
- Serial interface RS 232 C
- 4 potential-free switching inputs and outputs
- Contactless switching of heating elements
- 50 mm entry port in the right side panel
- Water-cooled condensers

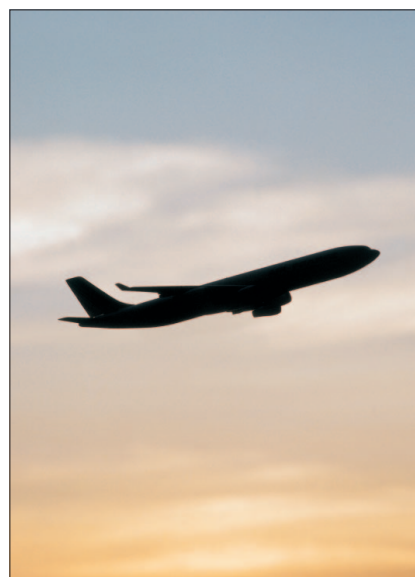
## Additional features for WK/D series

- **SIMCON/32\*-NET** is also equipped with a humidity calculator and an integrated threshold value monitoring system for humidity
- Low water indicator
- Special temperature conditioning system in the climate working range for high temperature and humidity constancy
- Capacitive humidity measurement

## Options

- Ethernet-/LAN-interface (10/100 MBit) in connection with **SIMPATI\*** for integration into network
- Software package **SIMPATI\*** for Windows 98/ME, Windows NT 4.0/2000/XP Prof
- HP Deskjet Color printer or EPSON black/white
- Additional potential-free switching inputs and outputs
- Measured data recording system for Pt 100 and voltage signals  $\pm 10$  V
- Configuration modules for interface standards e.g. RS 422, RS 485, IEEE 488.2 and fibre optics
- Temperature extension
- Analogue outputs for set point and actual values
- Additional Pt 100 sensor/thermal elements
- Door with window
- Shelf, height-adjustable
- Flange port
- Voltage port
- Temperature conditioning panels for extreme combination tests
- Ports 50 mm  $\varnothing$
- Other mains supplies and frequencies
- Air-cooled condenser
- Protection against condensation with dehumidifier for prevention of condensate on the specimens
- Sound insulation

Further options and special accessories on request.



The front page illustrates a specially designed vacuum test chamber with optional flange port, shelf, temperature conditioning panels and window.

## Vacuum-temperature and vacuum-climate test chambers

Type	WT/D WK/D	150/ 40	150/ 70	300/ 40	300/ 70	500/ 40	500/ 70	1000/ 40	1000/ 70	1350/ 40	1350/ 70
Test space contents	litres	162	162	315	315	512	512	1060	1060	1387	1387
Test space dimensions	Height	mm	550	550	700	700	800	800	925	925	925
	Width	mm	500	500	600	600	800	800	1000	1000	1000
	Depth	mm	590	590	750	750	800	800	1150	1150	1500
Outside dimensions	Height	mm	1900	1900	2100	2100	2100	2100	2100	2100	2100
	incl. switch cabinet	Width	mm	1200	1200	1500	1500	1550	1550	1750	1750
	Depth	mm	1650	1650	1650	1650	2465	2465	2815	2815	3165
Performance for temperature tests											
Temperature range	°C	-40 to +100	-70 to +100	-40 to +100	-70 to +100	-40 to +100	-70 to +100	-40 to +100	-70 to +100	-40 to +100	-70 to +100
Change rate	Cooling	K/min									
	as per IEC (1) Heating	K/min	0,5								
Temperature fluctuation	K	±1									
Performance for climatic tests											
Temperature range	°C	only WK/D +10 ... 95									
Dew point range	°C	+4 ... 90									
Humidity range	% r. h.	15 ... 95									
Humidity fluctuation	% r. h.	±3 – 5									
Temperature fluctuation	K	±0,5									
Performance for pressure											
Pressure range	mbar	atmospheric pressure ... 10 mbar									
Pumping-out time to 10 mbar	min	11	11	19	19	20	20	37	37	46	46
Pressure fluctuation	mbar	±3 % of set point, but max. ±10 mbar, min. ±2 mbar									
Nominal suction capacity of vacuum pump	m³/h	10	10	10	10	15	15	15	15	15	15
Electrical connection											
3/N/PE AC, 400 V ±10 %, 50 Hz											
Max. connected load	kW	5,5	6,5	6	7,5	7	9	8	10	10	13
Max. current consumption	A	12	15	13	17	14	21	19	26	22	31
Sound pressure level – 1 m from the front (2)	dB (A)	66	69	66	69	72	73	72	74	73	75
Cooling water consumption (3) max.	m³/h	0.9	0.9	0.9	1.4	1.4	2.2	1.7	2.2	2.2	2.7
Weight	kg	1150	1250	1400	1500	1800	1900	2200	2300	2500	2650

Performance data refer to +25 °C ambient temperature

(1) Change rate as per IEC 60068-3-5, measured in the supply air stream

(2) Free field measurement as per DIN 45635, Part 1, accuracy class 2

(3) At a cooling water temperature of +28 °C and temperature difference of 5 K, water temperature +12 °C to +28 °C.

We reserve the right to make any technical alterations.

## Fields of application

The vacuum-temperature and vacuum-climate test chambers WT/D and WK/D enable reproducible tests of highly stressed components in the aviation industry.

Our chambers allow the simulation of extreme flight programs in accordance with the relevant standards. For many years they have been applied in the fields of research, development, production and quality control.

Benefit from half a century of Weiss' experience with environmental simulation.



# Operation and Documentation ...

## ... convenient and stress-free operation

The touch panel for defining the program can be adjusted to the height of the operating personnel and is removable.

The operating surface with a resolution of 320 x 240 Pixel is menu-guided for the input of constant and program operation with representation of the set and actual values as graphs, the operating time and remaining number of cycles etc. including help functions.

The created programs are imported into the measurement and control system **SIMCON/32\*-NET**.

## ... SIMPATI\* software – the optimum choice

# SIMPATI\*

SIMPATI\*, the computer-aided simulation management software provides complete documentation and evaluation represented in the form of a graph.

Max. 32 systems can be networked.

