

Your partner for vacuum technology
and space simulation



Space simulation systems

for testing space and aerospace
components



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JUST VACUUM space simulation systems or thermal vacuum chambers are mainly used in research and development departments of the aerospace industry for the simulation of environmental conditions of outer space.

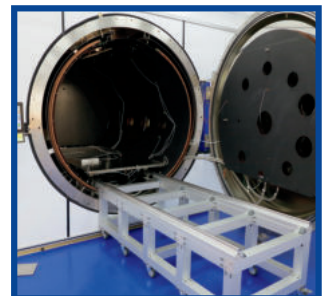
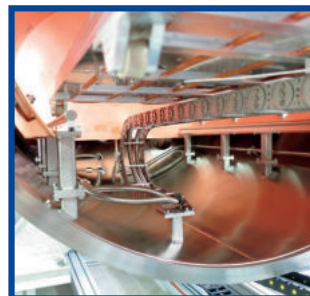
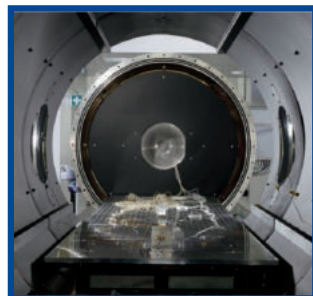
In these tests in accordance with the ESA standard, the extreme conditions prevailing in space are reproduced as realistically as possible in a completely closed system. For this purpose, a defined vacuum is generated and the light and shadow phases in the Earth's orbit are simulated by temperature control.

JUST VACUUM develops vacuum chambers up to complete space simulation systems based on the customer's target specifications. With the following key features:

- Stainless steel vacuum chamber, diameters of 4500 mm and lengths up to 8000 mm are possible
- Tempered shroud and lids made of copper with black, light-absorbing paint according to ESA specifications
- Extendable thermal table for mounting the test objects
- Dynamic temperature control systems using LN2 and electrical heat conductors or thermal fluid or a combination of both systems
- Temperature range -180 °C up to +220 °C
- Independent tempering of the different elements
- Oil-free pumping system up to a final pressure of 5×10^{-8} mbar
- Measurement technology with pressure and temperature sensors
- Customized equipment: Mass spectrometers, manipulators, mirrors, etc.
- The control and automation equipment with visualization and software

JUST VACUUM offers a complete solution from a single source, from development and design, through construction and control with visualization, to installation and commissioning at the customer's site. Specialized staff and state-of-the-art technology are used for this purpose:

- Creation of a detailed CAD model with all components
- FEM analyses and strength calculation
- Preliminary computer simulations of temperature and pressure distribution
- A precise temperature control system with optimized temperature distribution
- Calculation of the consumption of liquid nitrogen during the operating phases



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