VA-TEC

Precision down to the smallest detail
Vacuum technology, vacuum chambers, vacuum systems

Planning, design, manufacture, installation

We can supply a complete package... or just one aspect of it

Exactly as you wish

Whether you are already in possession of very precise design data or come to us simply with an idea… we will listen to you carefully first of all. This will enable us to give you the best possible advice and to develop a customised solution for your project.

Our extensive experience and practical approach provide us with the knowledge of how to intelligently and efficiently implement your project.

VA-Tec has been in operation for more than 15 years providing planning, design and construction of tailor-made components, equipment, containers and specialist plant of the highest quality.

Our customers operate in many different fields: vacuum technology, surface analysis, nanotechnology, coatings, the solar industry, space simulation, etc…

Analysis chamber for nanotechnology

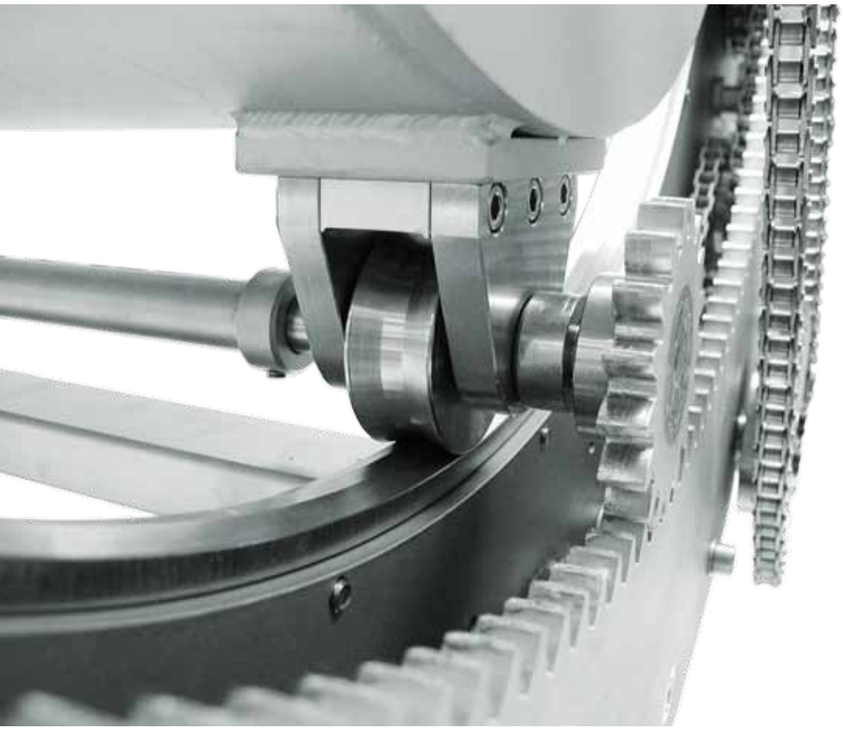
The thick-walled chamber is built as a single unit. Ultimate pressure: $< 1 \times 10^{-10}$ mbar

Adjustable ion source

The ion source has a pivoting range of 10° and can be pivoted in all directions. Repetition accuracy: < 0,1 °

Etching chamber with cover

All weld seams are welded on the chamber inside. The cover case has a height less than 70 mm.



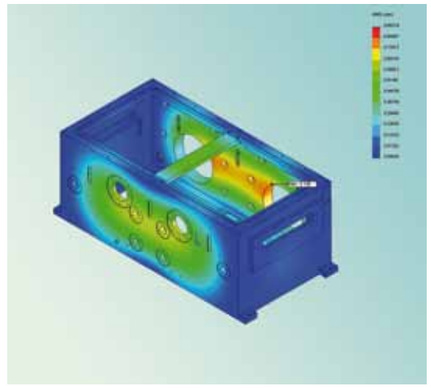
VA-Tec is a lean, flexible and highly committed company. We consider ourselves to be a service provider and you can be assured that we will give full consideration to all your requirements. Whether you require a strategy for manufacturing your product or you ask us to plan, design, manufacture and, if necessary, install an individual solution specific for your needs… we will execute your project in an individual, innovative and cost-effective manner.

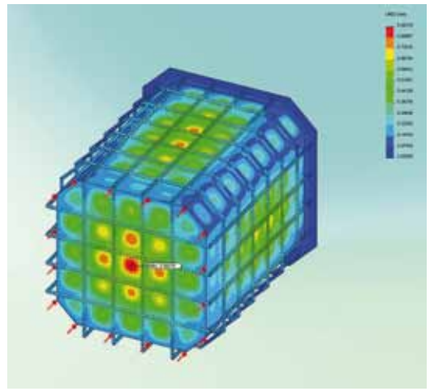
VA-Tec's management team: Wolfgang Kempf and Holger Gramling

It is our ambition...

...to provide you not the most obvious but the best solution

Our Planning and Design Department works consistently with the most up-to-date methods such as **CAD-3D design, calculation of mechanical strength or mechanical strength analysis.** For example, we will carry out a simulation of your component by means of **FEM calculations.** This will enable us to detect and eliminate weak points at a very early stage.





Innovative products require **modern manufacturing techniques.** To allow us to manufacture with such high precision and quality, we update the range of our equipment and machinery constantly to correspond to the latest state of the art:

- Mechanical cutting
  3 lathes/ engine lathes, turning diameters: up to 800 mm, turning lengths: up to 2 m. 3 CNC milling machines (3, 5 and 6 shafts)
  with a central programming site for all CNC machines
  Travel range: X up to 3,500 mm, Y up to 1,200 mm, Z up to 1,600 mm
- Welding technology
  3 welding work stations (TIG, MIG and spot welding)
- Surface technology
  Glass bead blasting booth (800 x 1,100 x 500 mm). electropolishing, vacuum annealing and low hydrogen annealing in cooperation
- Cleaning technology
  Ultrasonic cleaning facilities with drying oven
  Dry steam plant
- Leak testing
  Alcatel helium leak detector ASM 180 T, high vacuum pump stand and MKS mass spectrometer

We shy away neither from effort nor cost in order to satisfy our **high quality standard.** And no product leaves out premises without satisfying our strict quality criteria.

Optimum grade steel, for example, is the material used exclusively on our shop floor. This precludes contamination of your containers (cross-contamination) with other alloys which might lead to defects.

We are certified to **DIN EN ISO 9001/2008** and **DIN EN ISO 3834-2 / HPO AD2000.** Our welders are in possession of **Welding Certification EN 287-1** and work under **welding supervision to DIN 14731.** On request, all weld seams can be identified so that they can be followed up even years later. In addition, we have passed various performance tests to **DIN EN ISO 15614-1.**

Our strength is prompt implementation of solutions,...

... whether you have already existing plans or just a rough idea

Vacuum chamber for PVD coatings

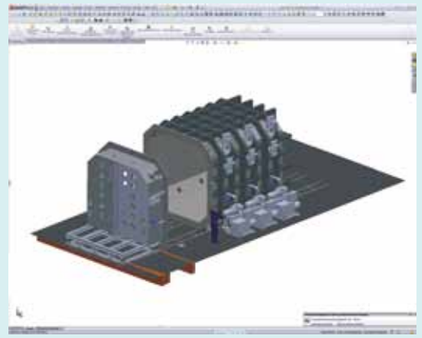
The container is double walled and water cooled.

2 part vacuum chamber for plasma application for motor caravan roofs

Volume: 7,5 m^3

The customer was a leading manufacturer of broadcasting equipment and subsystems for satellite communication.

The task consisted of planning, designing, manufacturing and installing a 5 x 5 x 7 m vacuum chamber for tests of space components under actual conditions (< 5 · 10^{-8} mbar and -238 °F).



Planning and design

The great weight of the chamber of 35 tonnes presented a challenge. So as not to damage the statics of the factory floor at site, the chamber had to be placed on air cushions. Air cushioning had the positive effect of achieving optimal levelling of the chamber.

Manufacture

In spite of the large dimensions of the chamber, all welding work had to be carried out with maximum care and accuracy. Virtual leaks had to be eliminated at all costs and warpage had to be reduced to an absolute minimum.

Manufacture and transportation

Fully assembled, the chamber would not fit under any motorway bridge during transportation. Consequently, it was initially made in 3 parts – again a challenge during fabrication, as the 3 parts had to fit together 100 % later on.

Assembly at site

The 3 parts of the chamber were welded together. Then the air cushions were installed. The chassis was adapted to suit the floor and the chamber was accurately levelled. The result: 2 members of the workforce are now able to move the unattached chamber weighing 23 tonnes manually. The chamber interior received its surface finish. And finally an extensive operating test was carried out and the facility was handed over to the client.

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An excerpt from our list of clients:

- Alcatel Hochvakuum Technik GmbH, Wertheim
- Fraunhofer-Institute
- GSI, Darmstadt
- IOM Institut für Oberflächenmodifizierung e. V., Leipzig
- Max-Planck-Institute
- Netzsch Gerätebau GmbH, Selb
- Omicron NanoTechnology GmbH, Taunusstein
- Pfeiffer Vakuumtechnik GmbH, Asslar
- Philips Deutschland GmbH, Aachen
- Robert Bosch GmbH, Gerlingen
- Roth & Rau AG, Chemnitz
- Tesat-Spacecom GmbH & Co. KG, Backnang
- University of Erlangen
- University of Hamburg
- University of Würzburg
- Von Ardenne Anlagentechnik GmbH, Dresden

Are you interested in finding out more about VA-Tec? Please visit our website **„www.va-tec.de"**. Or visit us in Wertheim. We would of course also be happy to come to you. We could then discuss all your questions in detail. We look forward to your visit and to learning about your projects.

VA-TEC

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