



VACGEN

www.vacgen.com



PRODUCT OVERVIEW

Vacuum Chambers

PRODUCT OVERVIEW

Vacuum Chambers

Engineered Solutions for Vacuum Technology.

Build to print or design and prototyping, through to series production, we can support your requirements in vacuum technology. We specialise in design, engineering, CNC machining, welding and clean room assembly.

We are the ideal supply chain partner for OEM businesses requiring volume production chambers. Whilst supporting one-off chamber builds for Research & Academia.

With over 50 years industry experience, our core competence is in the expert design, engineering, manufacture and clean-room assembly of chambers and manipulation subsystems.

Index

[About Us](#)

[Vacuum Chambers](#)

[Semiconductor Vacuum Chambers](#)

[Research Vacuum Chambers](#)

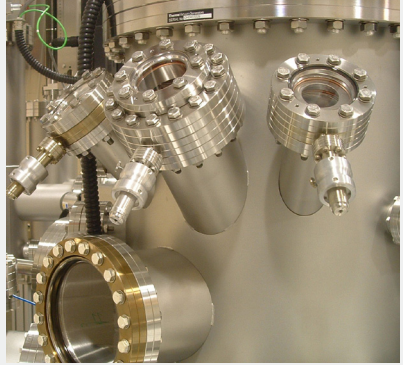
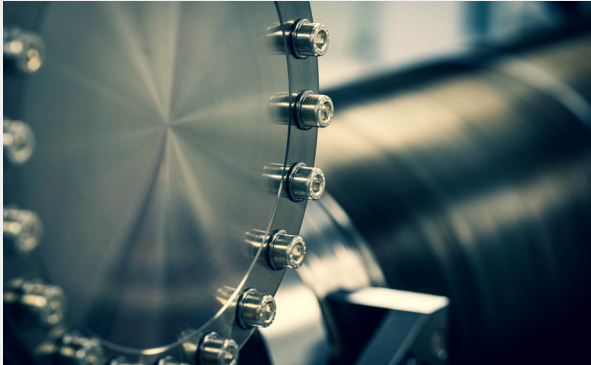
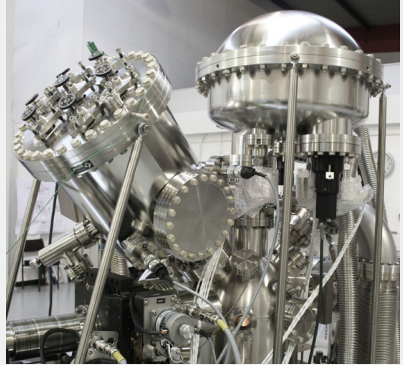
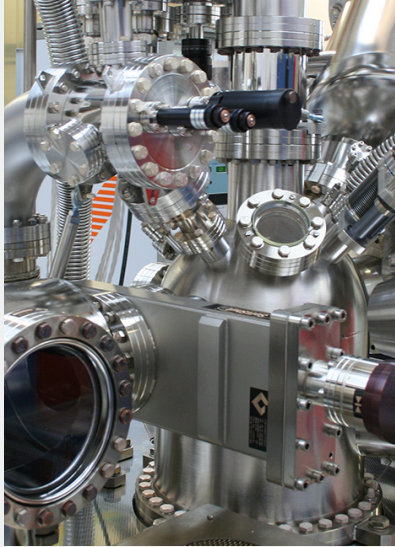
[Medical Vacuum Chambers](#)

[Defence & Aerospace Vacuum Chambers](#)

[Energy Research Vacuum Chambers](#)

[Why Choose Us?](#)







About Us

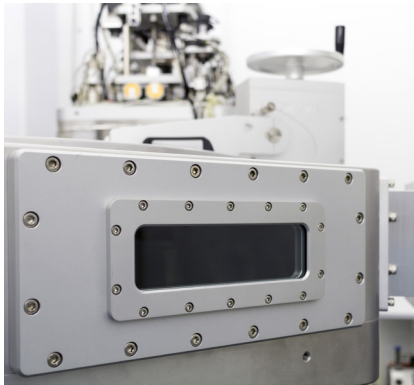
Since 1964, VACGEN (VG) has been the name synonymous with high quality ultra high vacuum products and services. From the manufacture of the first UHV valve to some of the most advanced vacuum research systems built, over 50 years in the research and scientific industry has given us an incredible grounding in the needs of our customers, how we can support new projects through the design phase, delivered product and ongoing support.

VACGEN remains the partner of choice for the next generation of researchers, innovators and builders. From our UK high tech manufacturing base, our focus is on delivering enabling technologies and supporting our customers across industry and academia.

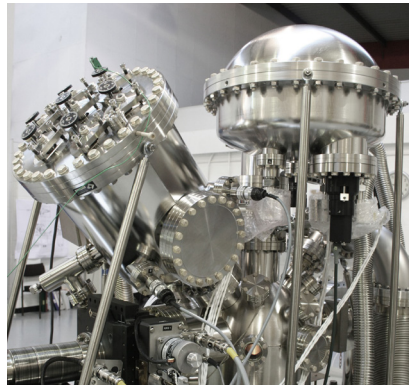
UKAS and BSI ISO 9001:2015 Accredited.

Chambers Overview

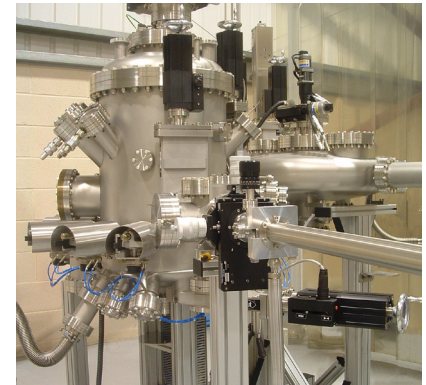
Our vast portfolio of bespoke chamber and system projects, gives us a wealth of knowledge and experience for one-off chamber builds. We can offer a dedicated team to assist you in the design and production of your custom chamber requirements, offering complex geometry chambers with tight focal points and tolerances.



Semiconductor Process Chamber



Material Analysis Chamber

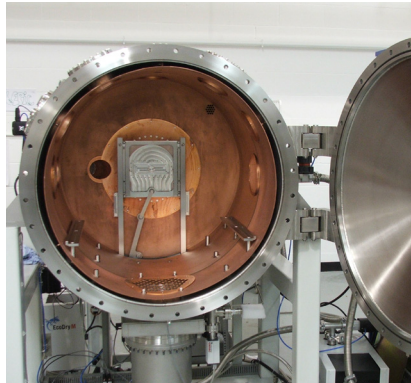


Material Deposition Chamber

Trust our dedicated team to assist in the design and production of even the most bespoke chamber requirements. We have the capability to supply ultra-high vacuum chambers of any complexity, in a range of materials - including stainless steel, mu-metal, aluminium, aluminium alloys and nickel-based superalloys. We also offer a design for manufacture (DfM) service to research & academia to support your system build.



Medical Autoclaves



Defence & Aerospace Testing



Energy Research Chambers

Semiconductor Chambers

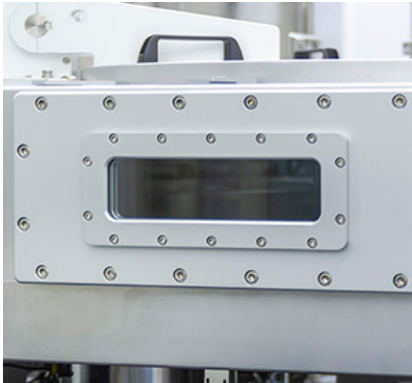
Our vacuum chambers are fabricated from high-quality materials and are built to stringent SEMI standards, ensuring that they will meet the requirements of even the most demanding and specific applications such as ALD, CVD and Etching processes.



Semiconductor Process Chamber

Deposition and process chambers are manufactured to SEMI S2/S8 guidelines to ensure compliance regulation of the chambers. Our employees are trained to meet Copy Exactly! manufacturing techniques to ensure deviations are irradiated from your supply chain. All chambers are cleaned to UHV specifications to ensure ultra-clean internal surface finishes.

VACGEN build chambers from machined aluminium billets or fabricated stainless steel chambers for applications such as mask inspection and atomic layer deposition.



ALD Process Chamber



Mask Inspection Chamber

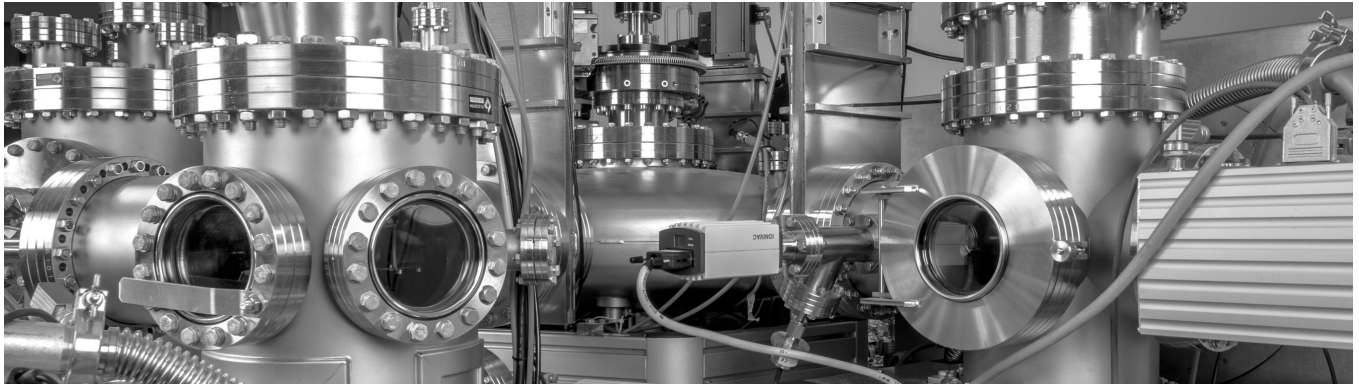


CVD Process Chamber

Research Chambers

We supply bespoke ultra-high vacuum chambers manufactured to your specific requirements. After being assigned a project engineer, who will oversee the build from design through to completion, we will discuss the chamber application.

Our tight focal tolerances accommodate complex multi port chambers with standard Phi & Theta angles to $\pm 0.5^\circ$, improving dependant on customer specification.

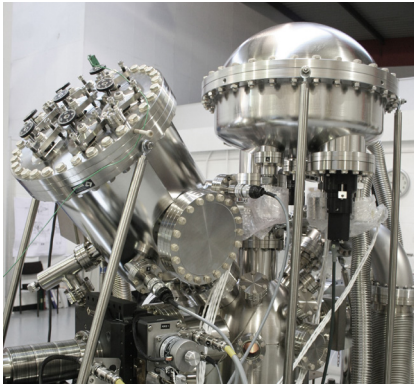


Material Research Chamber

Research chambers can include applications such as surface analysis techniques XPS and ARPES, preparation chambers, transfer chambers and fast-entry load locks.

Photoelectron spectroscopy (PES) chambers are typically manufactured from stainless steel with mu-metal liners and bell jar in shape or are fabricated from solid mu-metal and are spherical in shape.

All chambers are FARO Arm or CMM inspected to tight focal tolerances and include a helium leak certification.



Analysis Chambers



Fast Entry Load Lock



ARPES Chamber

Deposition Chambers

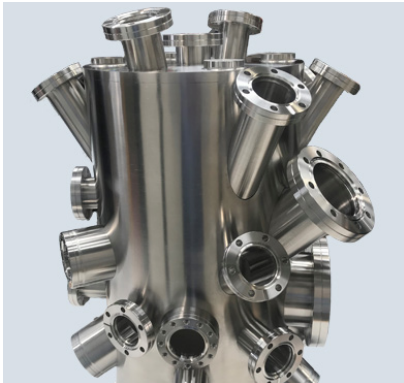
We supply bespoke ultra-high vacuum chambers manufactured to your specific requirements. After being assigned a project engineer, who will oversee the build from design through to completion, we will discuss the chamber application. Some deposition chambers may require specialised viewports to accommodate laser applications such as PLD.



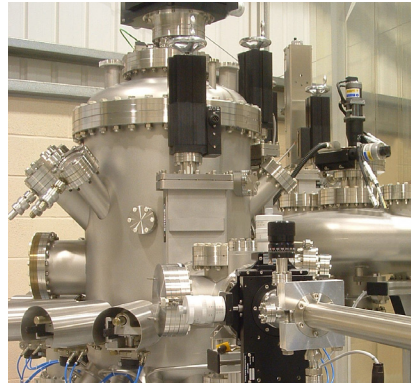
Material Deposition Chamber

Deposition chambers for techniques such as MBE require the very best vacuum performance levels, achieving consistent pressures of 1×10^{-10} mbar ls^{-1} . MBE chambers can be fitted with 316LN flanges to avoid material deformation after consistent bakeout cycles. Cryo-shields can also be designed to fit into the chamber to result in optimal pumping performances.

Large box chambers up to 1m^3 can be manufactured from stainless steel and can accommodate hinged door assemblies with internal viewports for easy access into the chamber.



MBE Chamber



Deposition Chamber



PLD Box Chamber

Medical Chambers

VACGEN provide vacuum chambers and valves used in the medical industry for technologies such as autoclaves, plasma surface treatment systems, X-ray development and radiation treatment.



Autoclaves



Plasma Surface Treatment

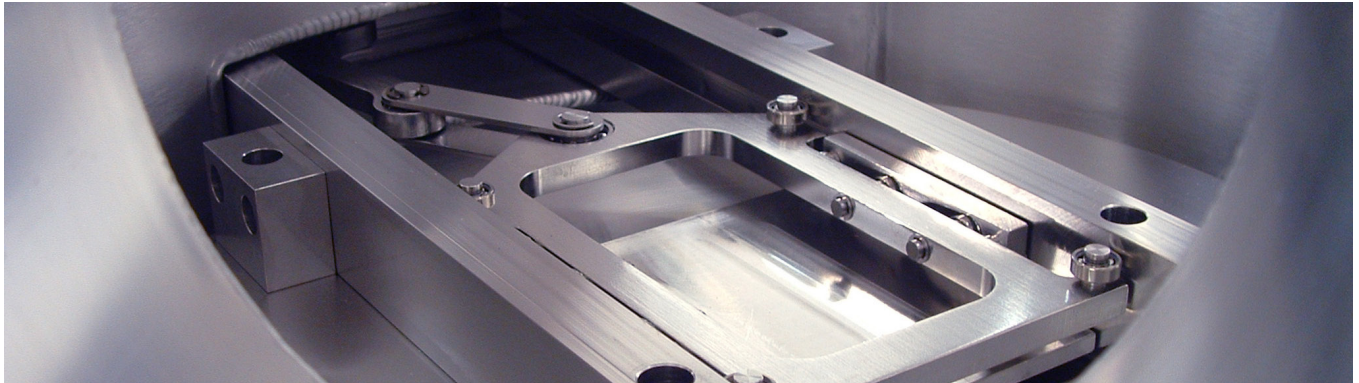


Radiation Treatment



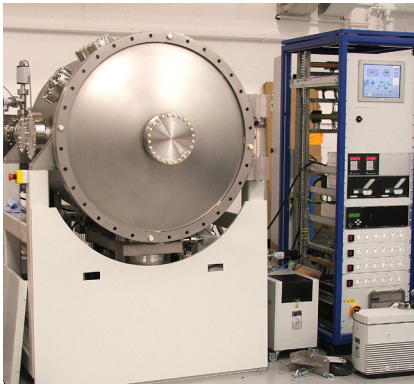
Defence & Aerospace

Vacuum furnace and deposition chambers produced for material development in the defence and aerospace industry. Vacuum furnaces for annealing or material passivation or high end molecular beam epitaxy are all applications used for defence and aerospace.



Defence & Aerospace Chamber

Space simulation chambers are vital tools in aerospace research and development. These chambers create vacuum environments that mimic the conditions of space, allowing engineers and scientists to test and validate spacecraft, components, and instruments under realistic conditions.



Space Simulator Chamber



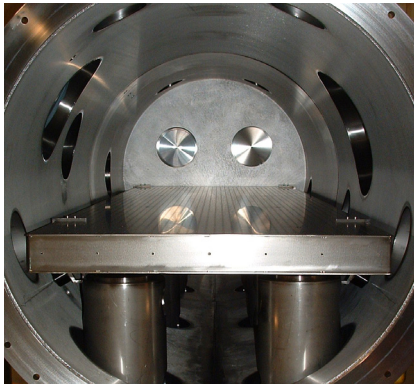
Vacuum Chamber



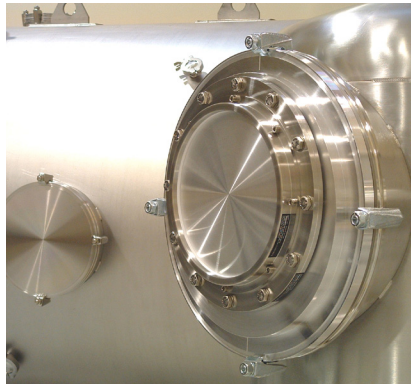
European Space Agency Chamber

Energy Research

Vacuum chambers can be used for energy research, nuclear fusion reactions or pipework for cascades in nuclear fission. These vacuum chambers and pipes need to be built to exacting standards and from fully traceable materials.



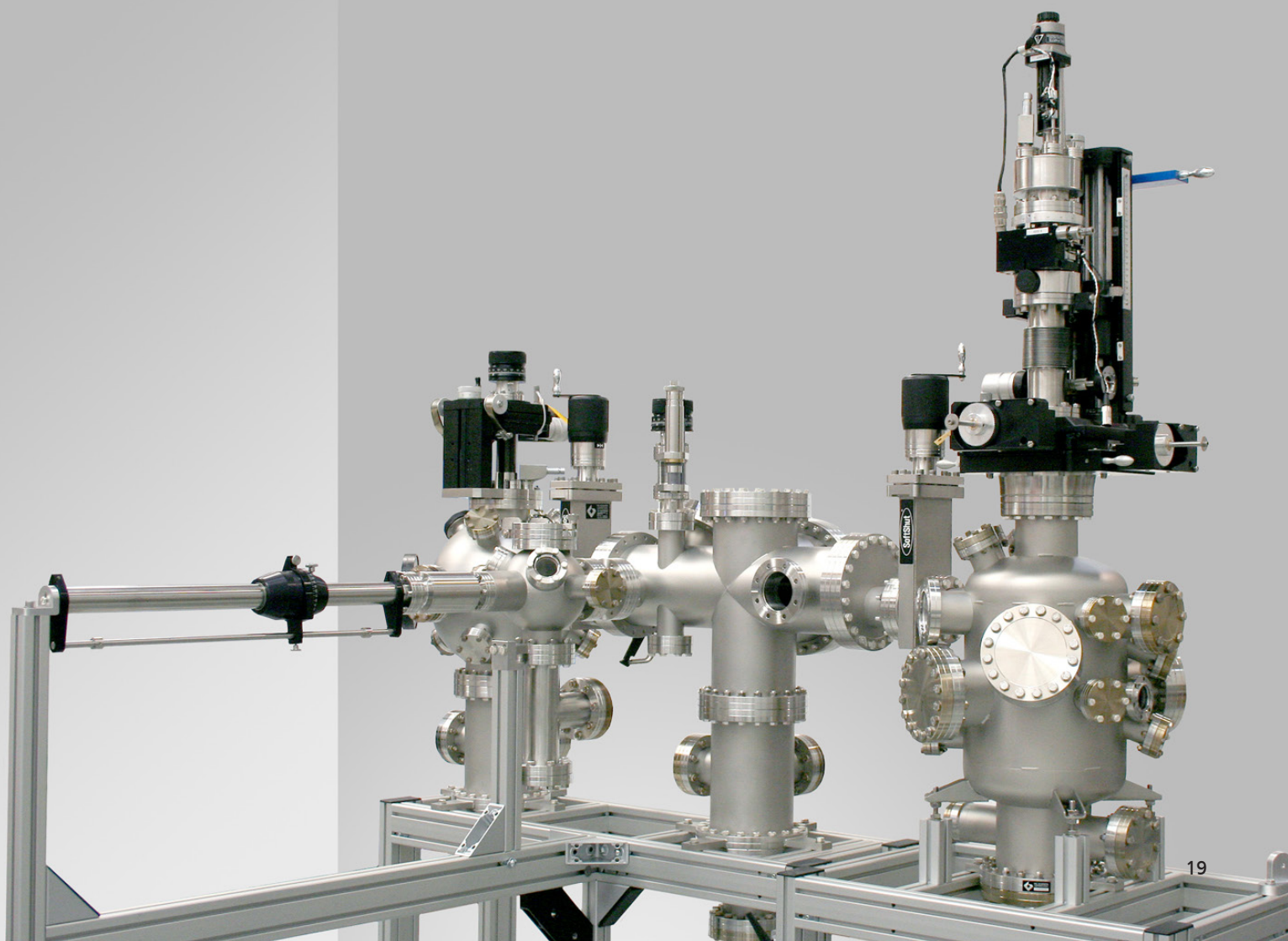
Research Vacuum Chamber



Nuclear Fusion Research



Synchrotron Energy Research





Quality Control

A certified ISO9001:2015 supplier. Our Quality Management System (QMS) covers design and manufacture of ultra-high vacuum components, manipulation, transport and transfer devices.

We undergo regular audits with British Standards Institute (BSI), internal audits with our quality team, and from external customers.



Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that:

Vacgen Limited
Swallow Enterprise Park
Diamond Drive
Lower Dicker
Hailsham
BN27 4EL
United Kingdom

Holds Certificate Number: FM 97504

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

Design and manufacture of ultra high vacuum components, manipulation, transport and transfer devices. Design and manufacture and test of assemblies, chambers and components, specialising in clean assembly. With full traceability to incoming material certification in accordance with contractual requirements.

Andrew Laurs
Andrew Laurs, EMEA Systems Certification Director

For and on behalf of BSI:



Quality Management Document Control VGS01-02P

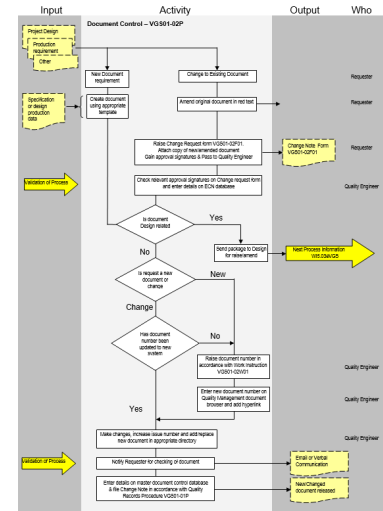
Objective
The purpose of this procedure is to ensure that new documents or changes to documents and the transmittal of internal or external documents, technical queries and correspondence are managed in the best possible manner.

Scope
The procedure does not cover the management of the Engineering Change Note (ECN) process. It looks exclusively at the change control method required when altering or adding documents which form part of the quality management systems at VACGEN Lower Dicker. Changes and requests for VACGEN drawings and related design data changes are dealt with in Procedure VGS04-04P Engineering Changes. For information on the management of design changes, see procedure VGS04-04P. This procedure also covers requests for correspondence, technical queries or documents and transmittals to be transmitted to or received from external parties (suppliers, customers, third parties etc).

Responsibility
The Quality Engineers are responsible for ensuring that this procedure is followed. The Project Manager (PM) and the Appointed Person (AP) are responsible for ensuring all document transmittals are managed and controlled effectively and in compliance with internal and external requirements.

Implementation

- Editing an existing document**
All proposed updates to documents forming part of the quality management systems are submitted, ideally as marked up version or text describing minor changes, to the Quality Engineer for appropriate action (see VGS04-04P Engineering Changes). These requests will then be entered on the ECN database. Quality Management document changes will be administered by the QA department and all design related documents will be forwarded to the design department for consideration. All employees have a duty to inform the Quality Engineers when documents need to be updated. Visitors regarding changes to documents may not be acted on if they fail to meet the requirements laid down by our quality system, design criteria or set by authorities or certification standards.
- Create a new document**
All requests for new documents to be added to the quality management systems are submitted to the Quality Engineer, either verbally or by email. New documents should be created either in draft or on the official template (see below). An ECN need not be submitted for new documents. An electronic copy of the proposed document must be made available. Documents are primarily created in MS Word. Other applications such as MS Excel may be used but only if the format is not suited to a word document. Work Instructions or Forms submitted should ideally comply with VACGEN's document template which is available in the Procedure list in the Quality Links. Procedures however must be created using the procedure template. If alternative templates are employed for work instructions or forms, the person creating or editing the document must ensure the VACGEN header is used.
- Identification**
The document is named on the basis of the rules set out in VGS01-02W01, Rules for File names. These rules apply to all new documents and all changes to existing documents. Many current documents will carry earlier identification numbers. These will remain as the identification until the document is updated, at which time a new number in line with VGS01-02W01 will apply. In these instances, reference to the old document number will be made in the header information. All current documents carrying old identification have been pre-assigned new numbers. These can be found in the quality links under the appropriate document listings. The identification of a document is based primarily on the department concerned, and secondly on the function within that department. All Quality documents will fall within one of three areas, Procedures (Departmental), Work Instructions (job or task) and Forms. Hyperlinks to these documents can be found on the front page of the quality link pages.

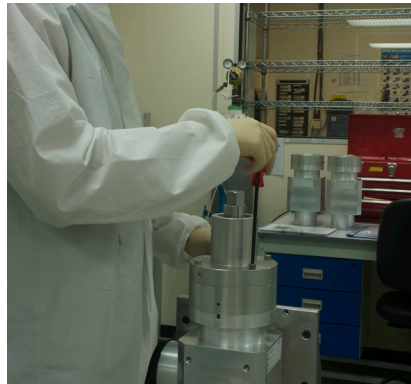


Example VACGEN Control Document

Quality Systems are in place throughout the factory. All aspects of production are controlled through the use of quality control plans which cover the procurement and traceability of raw materials through to the delivery of the final product.



Raw Materials



Cleanroom Environment Assembly



Controlled Materials



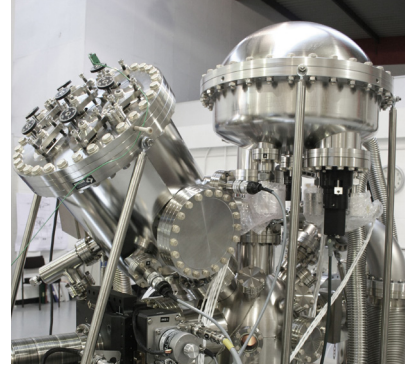
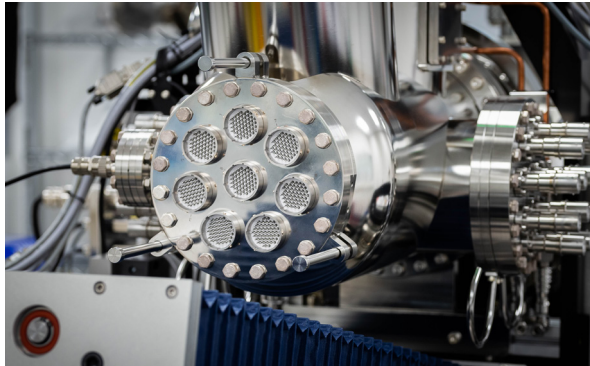
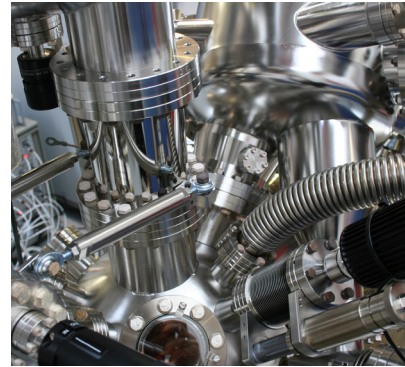
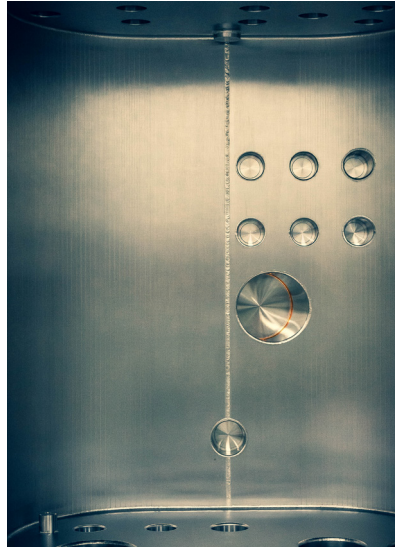
The Value of Partnership

In a high technology business, you have to be confident in the partners you choose to provide mission critical technology, equipment and services. You need to know that your partners can deliver and support what you need, when you need it. As your business grows and develops your need to work with partners that can support that growth. That's where we come in.

We're a fully-fledged UHV equipment manufacturer. At our factory in the UK we exploit extensive engineering resources to take raw materials right through the entire manufacturing workflow, producing finished UHV components, everything happens here.

Our in house design and development functions are world class, and production is supported by extensive CNC machining resources feeding a large clean room assembly area. We can react quickly with significant resources as needed. We take pride in being an agile responsive business.

Owning our product lifecycle ensures unparalleled control of quality, and gives us a deep understanding of each and every one of our products, from the simplest component through to the most complex assembly. We understand how they perform and interact across a host of applications and within numerous environments.



Contact Us

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