



Experts in Vacuum, Cryogenic and Vibration Technologies

BlueVAC Solutions is your provider of innovative components, systems, and services for vacuum, cryogenic and vibration technologies, backed by over 30 years of industry experience. We serve high-tech sectors such as space, defense, transport, astrophysics, particle physics, Big Science, research, pharmaceuticals, semiconductors, and vacuum coatings.

Our commitment to technical excellence, innovation, and service positions us as a strategic partner for organizations requiring precise and reliable solutions in extreme environments. BlueVAC stands for expertise, dependability, and tailored solutions to meet the most demanding challenges.



Our Solutions and Services

Systems

- Space & Aeronautics
 - Thermal Vacuum Chambers
 - Electrodynamic Shakers & Accessories
 - Vibration Control Systems & Dynamic Signal Analyzers
- Chambers, Vacuum Systems and PVD
- Complete Vacuum Process Platforms
- Cryogenic Technologies and Helium Treatment
- Gas and Vaporization Control Systems
- Engineering. External Technical Office

Products

- Rough & Fine Vacuum Pumps
- Dry Vacuum Pumps
- Turbomolecular Pumps
- Cryopumps
- Cryocoolers
- Cryochillers
- Chillers

Products

- Vacuum Instruments
- Measurement in Extreme Environments
- Vacuum Valves
- Feedthroughs
- Optical Solutions for Vacuum, UHV and Thermal Imaging
- Customized Vacuum Chambers
- Extrem Environments Precision Mechanics
- Advanced materials for thin-film (sputtering & evaporation)
- Magnetrons and PVD Process Control
- Advanced Plasma Control and PVD Process Modeling

Services

- Brazing, Laser Welding, and Additive Manufacturing
- Vacuum Maintenance & Related Services
- Cost Optimization Services
- Tax Lease (monetization of tax deductions) for R&D

Space Simulation Systems



With more than 30 years of experience in space simulation technologies, **ALCA Space** designs and manufactures TVAC systems for validation and qualification of aerospace hardware, covering applications from **CubeSats** to large telecommunications, Earth observation, and deep-space exploration **satellites**.

ALCA Space also develops specialized vacuum systems for **testing and characterization of electric propulsion devices**, including ion thrusters, Hall Effect Thrusters (HET), and other advanced propulsion technologies.

In addition, we provide **dedicated TVAC** systems for the testing of **optical and electro-optical devices, batteries, solar panels, mechanisms, and onboard electronics**.

Our portfolio is complemented by **bake-out and contamination control systems**, incorporating quantitative analysis through **TQCM** and qualitative analysis through **RGA**, ensuring compliance with the most demanding requirements of today's space programs.



Electrodynamic Shakers & Accessories

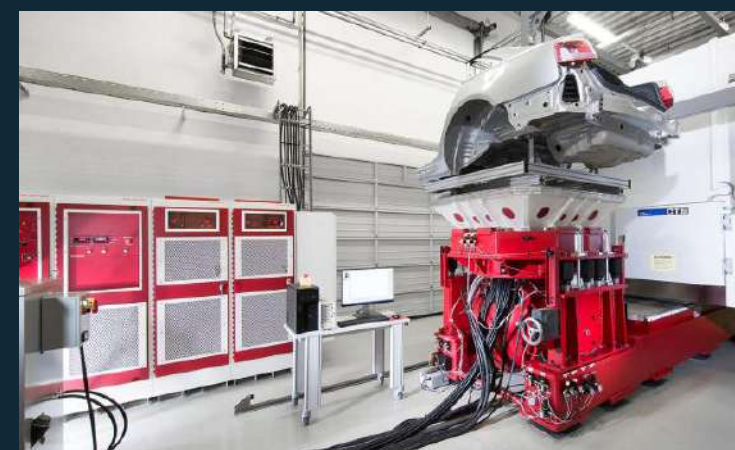
High-Performance Vibration Testing & Analysis for Space and Advanced Industries

Our partner **Data Physics** provides electrodynamic shakers ranging from small laboratory units to high-force systems suitable for full satellite and subsystem qualification. They support demanding vibration profiles, including random, sine, shock, SRS, and sine-on-random, ensuring precise replication of launch and operational conditions.

Key technical features include:

- ✓ High force capacity: 9N – 222 kN.
- ✓ 4 to 1000 measurement channels, modular.
- ✓ Full range of amplifiers and accessories: slip tables, head expanders, test fixtures, monobases...
- ✓ Advanced control features: notching, response limiting, multi-axis integration
- ✓ Optimized for complex structures and modal testing
- ✓ Intuitive software for fast setup and efficient data acquisition

This combination ensures protection of high-value hardware, reduced risk of overtesting, and faster validation



Space · Aerospace · Defense · Automotive · Electronics · Semiconductors · Rail · Marine · Machinery · Advanced Research

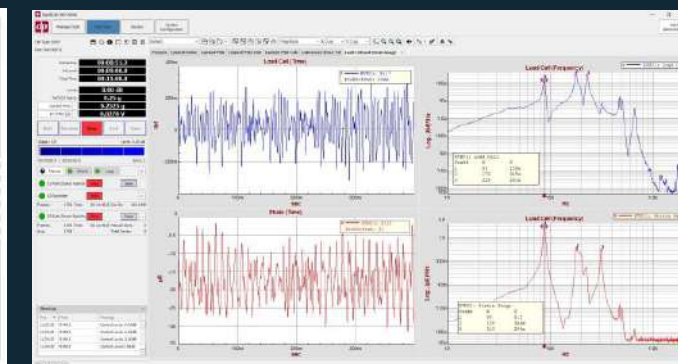
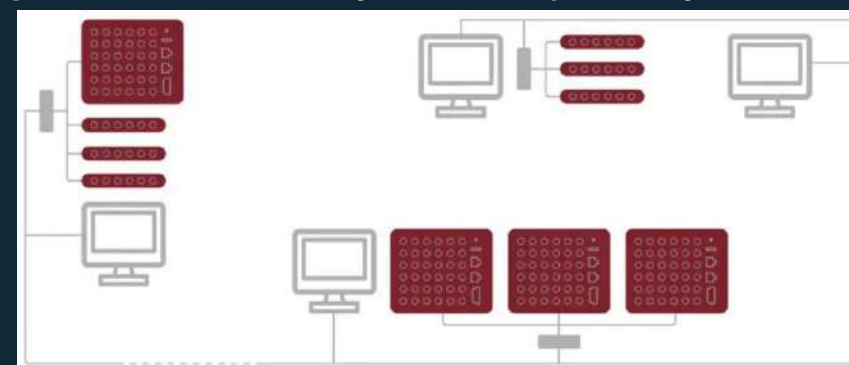
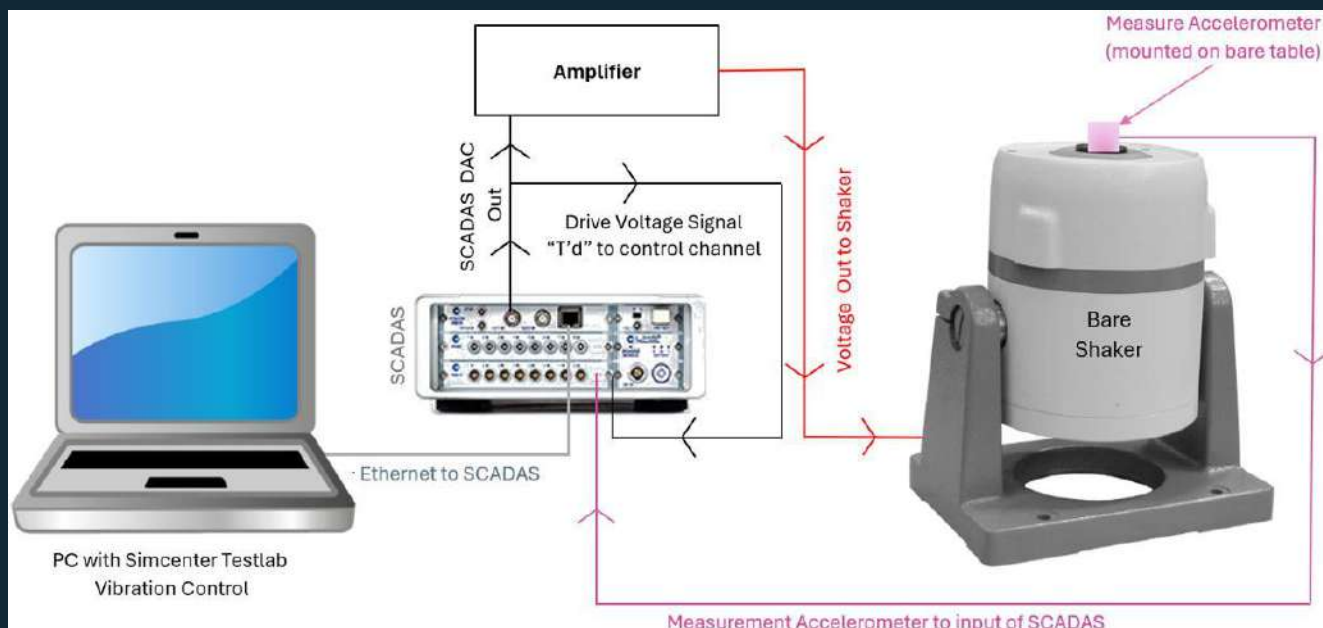
Vibration Control Systems & Dynamic Signal Analyzers

Integrated Vibration & Acoustic Testing Solutions

Data Physics offers a fully integrated solution for vibration testing, combining electrodynamic shakers, advanced vibration control systems, and high-performance dynamic signal analyzers within a single platform. This enables **full control of the test process** — from excitation to analysis — ensuring **consistency, efficiency, and reliability**.

The product range spans **laboratory-scale setups** to **high-force systems** for aerospace and space qualification. Its **high channel capacity** and **flexible architecture** allow seamless testing of complex structures, modal analysis, and large multi-point measurement setups.

By integrating advanced control capabilities — including precise notching and response limiting — with intuitive software, **Data Physics significantly reduces setup time and improves efficiency**, making it an ideal solution for sectors where **precision, reliability, and adaptability** are critical.



Space · Aerospace · Defense · Automotive · Electronics · Semiconductors · Rail · Marine · Machinery · Advanced Research

Chambers, Vacuum Systems and PVD

Custom Design

ALCA Technology specializes in the design and manufacture of **vacuum chambers and custom systems**, combining detailed engineering with in-house fabrication, which provides **full control over the process** in terms of lead times, quality, and costs.

Scientific Applications

Specialized in components for **synchrotrons, particle accelerators, and nuclear fusion**, where precision and reliability are essential.

Our **cryostats and ultra-high vacuum chambers** meet the most demanding standards of cutting-edge scientific research.



Thin Film Deposition Systems

Alca Technology leads in vacuum technology, designing and building custom **thin film deposition systems** for various industries. We provide tailored solutions in energy, precision optics, ophthalmics, and decorative coatings. Our expertise covers all PVD techniques, including **sputtering, electron beam, ion beam, thermal evaporation, arc, PLD, and HiPIMS**, along with advanced surface treatments and precision welding of materials like stainless steel, aluminum, copper, titanium, and nickel alloys.

Complete Vacuum Process Platforms

DM Vacuum Systems designs and manufactures **fully integrated HV and UHV systems** for complex vacuum processing applications.

Unlike manufacturers focused on vacuum chambers, **DM** develops process **platforms** where **deposition, plasma, thermal treatments, mechatronics, and industrial automation** are fully integrated. The design approach is driven by process requirements: **system architecture is defined from functional needs**, integrating mechanical engineering, control systems, and instrumentation into a single coherent platform.

This enables advanced solutions for **industrial, scientific, and production environments**.



Cryogenic Technologies and Helium Treatment

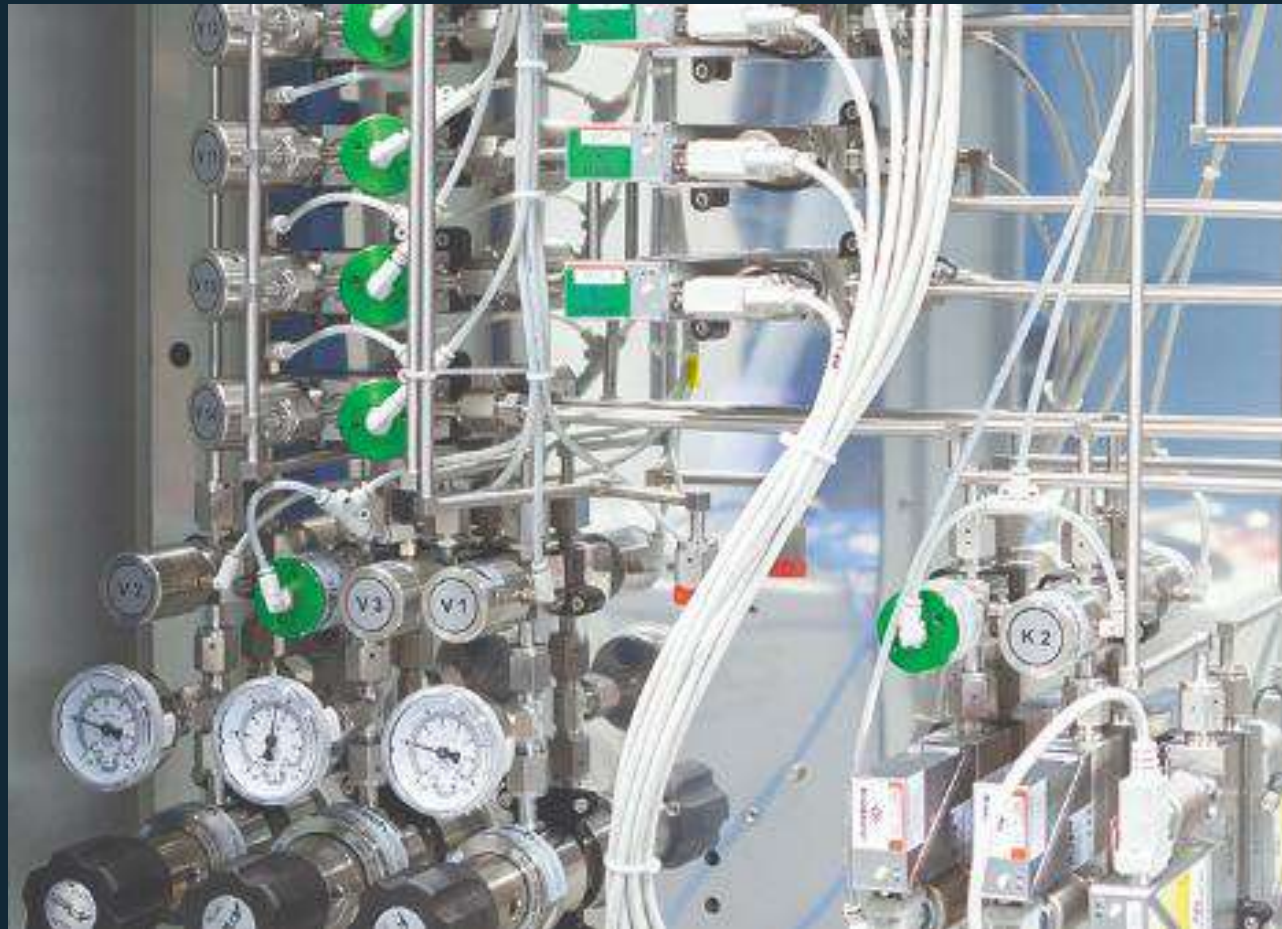
Since 2003, VACREE has been developing cryogenic technologies, holding **over a hundred patents**, with products and systems operating in **scientific and industrial facilities worldwide**. Its portfolio combines cryogenics, vacuum, and helium management in robust, proven technical solutions:



- ✓ Custom cryostats for stable operation at temperatures from 4 K to 77 K, with vacuum insulation and MLI.
- ✓ Helium recovery and purification systems, designed for helium recovery and reuse, achieving purity levels from industrial grades up to $\geq 99.999\%$ (5.0–6.0).
- ✓ Cryogenic piping with vacuum insulation, rigid or flexible.
- ✓ Cooling systems for superconducting cables, for lengths of up to 1,200 m.

Gas and Vaporization Control Systems

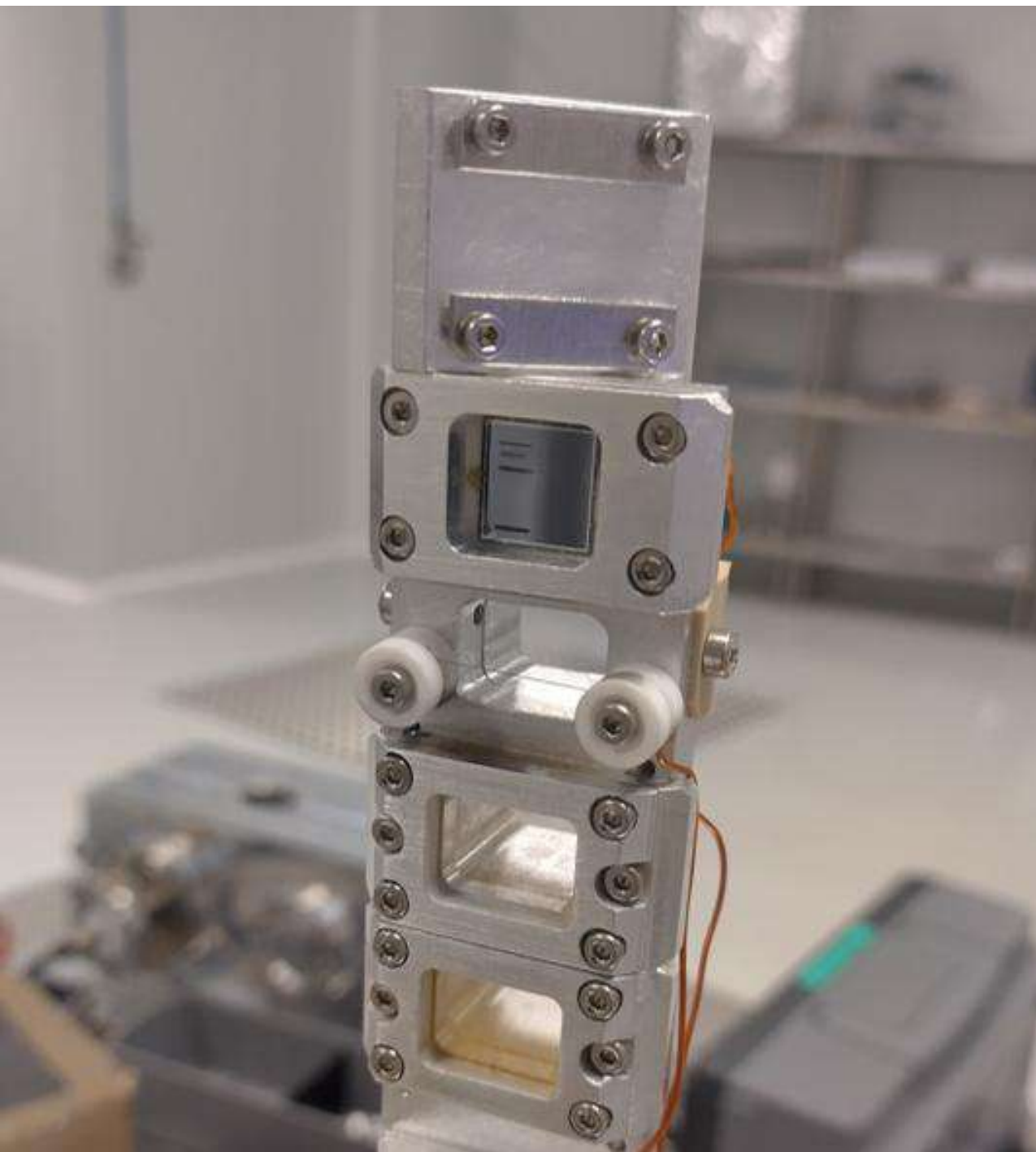
Design and manufacturing of complete systems for process gas flow, pressure control, and gas mixing



- Integrated panels and skids with regulators and **mass flow controllers (MFCs)**.
- Precise gas mixing for **plasma processes, deposition, and industrial applications**.
- **Controlled vaporization** systems for **liquids** and **precursor** injection.
- **Humidity and composition control** via process setpoints.
- Integration with **PC and PLC**.
- Industrial **communication** protocols (Profibus, Modbus, Ethernet, Ethercat...)
- **ATEX-compliant** options.

Fully customized solutions based on gas type, pressure, flow rate, and operating conditions.

- ✓ **Precise, repeatable control of critical process gases.**



Engineering External Technical Office

External Vacuum and Cryogenics Engineering Services

VACUUM AND UHV

Design of chambers, vacuum systems, subsystems, components & instrumentation.

CRYOGENICS

Design of cryogenic systems, cryostats and thermal control solutions

SIMULATION

FEM, CFD and thermal, mechanical, vacuum and electromagnetic simulations.

PROJECT MANAGEMENT

Project management, manufacturing, integration and commissioning.

Space · Science · Accelerators · Astrophysics · Fusion · Semiconductors

Rough & Fine Vacuum Pumps

Precision Vacuum Solutions for Science and Industry

Our German partner **Welch** offers high-performance vacuum solutions, including both individual pumps and complete systems tailored to the needs of laboratories, life sciences, and industrial applications. Our wide portfolio covers piston, diaphragm, rotary vane, scroll, and dry pumps designed for clean, quiet, and efficient operation. Whether for filtration, degassing, or distillation in analytical labs; freeze-drying, aspiration, or cell culture in biotechnology; or vacuum drying and leak detection in industrial processes, We deliver robust, low-maintenance equipment that ensures process stability and long-term reliability. With over a century of experience, **Welch** is a trusted choice for engineers, scientists, and technicians who demand reliability and performance.

Engineered to last. Built to perform.



Dry Vacuum Pumps

High Energy Efficiency in Harsh Applications

HANBELL – The Robust Efficiency

HANBELL is a pioneer in the manufacture of dry screw vacuum pumps for continuous industrial processes where **clean vacuum, high reliability, and low energy consumption** are required. Our pumps cover pumping speeds from **40 to 3,000 m³/h**, achieving ultimate pressures on the order of **0.01 mbar, or even 0.001 mbar** when combined with roots boosters.

In addition, the **PMF series (Green Series)** significantly reduces electrical power consumption through optimized screw geometries, reduced internal friction, and efficient thermal control.

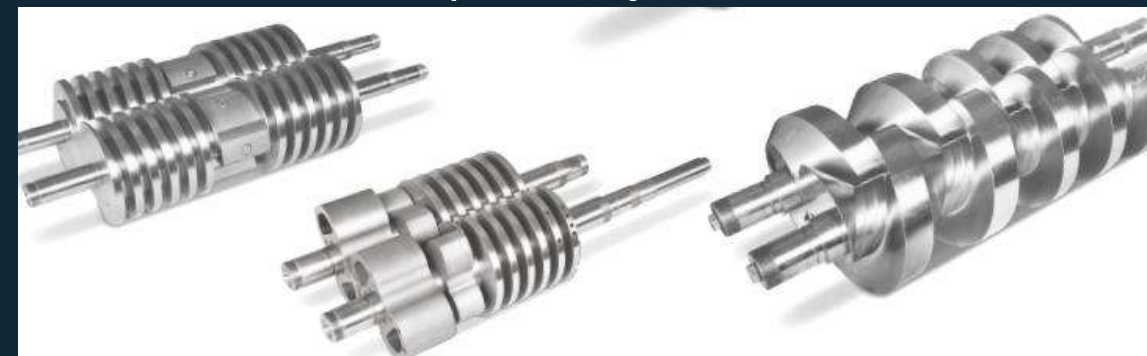
HANBELL pumps are designed for the robust handling of corrosive vapors and continuous processes, featuring a dry design and thermal protection systems that **minimize maintenance, contamination, and unplanned downtime**.



LOT Vacuum – The Harsh Processes

LOT Vacuum manufactures dry vacuum pumps designed for processes requiring **high pumping speeds, stability, and heavy gas loads**. Our portfolio covers capacities from **100 to 9,000 m³/h**, with typical ultimate pressures of **0.005 mbar**.

The design is optimized for **harsh processes**, with the capability to pump **by-products, condensables, and high gas flows** without compromising performance. This robustness makes **LOT Vacuum** a suitable solution for critical processes where **stability and repeatability** are essential.



Turbomolecular Pumps

Shimadzu – Robust Turbo Molecular Pumps

Shimadzu, a pioneer in vacuum technology, offers a comprehensive range of turbomolecular pumps (TMPs) designed for high-performance applications in **space, semiconductors, coating, and research**. Its product range includes:

- **High-throughput TMPs with integrated or separate electronics and installation in any orientation:** series with **exceptional throughput** and pumping speeds from **70 to 5,300 l/s**.
- **Compact TMPs:** the TMP-X series **reduces installation space requirements and power consumption by 15%**.
- **TMPs with hybrid bearings:** designed for **research and space applications**, they offer an **extremely compact design, low power consumption, and installation in any orientation**.

Shimadzu TMPs are designed for reliability, efficiency, and consistent performance.



SHI SUMITOMO – High-performance cryogenic pumping system

SHI Sumitomo cryogenic pumping systems are designed for HV and UHV applications where the priority is not only achieving ultimate vacuum, but also ensuring system stability during operation under **thermal cycling conditions (TVAC)** or **continuous industrial processes**. They provide:

- High effective pumping speeds for H₂O, H₂, and He, with sustained performance under progressive load conditions.
- Increased capacity before regeneration, extending operational cycles.
- Optimized regeneration times, reducing impact on system availability.
- Multi-pump architectures per compressor, minimizing footprint and auxiliary infrastructure requirements.
- Stable operation over long cycles, with repeatable performance.



SHI Sumitomo stands out for efficiency and operational availability

Cryocoolers

Advanced High-Efficiency Cryogenics

Science

Optimized solutions for **quantum research, astrophysics, and particle physics**, where thermal performance is critical.

Sumitomo (SHI): Power & Ultra-Low Temperature Cryocoolers

Pulse Tube and Gifford-McMahon cryocoolers in single and dual stages, with temperature ranges of **2K, 4K, 6.5K, 10K, 20K, 40K, and 77K**, as well as **air-or water-cooled compressors**. Over 60 years of manufacturing and innovation have made us a leader in **research, aerospace, astrophysics, semiconductor, and medical applications**, thanks to our high cooling capacity, reliability, and global support network.

Space

Compact, lightweight, and low-power systems specifically designed for high-reliability space missions.

Thales: Compact & High-Reliability Cryocoolers

Stirling, Pulse-Tube, and Rotary Monobloc cryocoolers for over 40 years. We stand out with products like LPT6510 for **space**, LPT9310 for **astrophysics**, and the RMs1 for **defense**—renowned for their high efficiency, compactness, low weight, and reliability in extreme environments. Ideal wherever **low SWaP, ultra-quiet operation, low vibration, long lifetime, and extremely high availability (24/7)** is required.



Cryochillers

High-Efficiency Cryochillers for Demanding Vacuum Applications

Our partner **Edwards Polycold**, provides a comprehensive range of cryochillers tailored for high and ultra-high vacuum applications in fields such as materials science, vacuum coating, space simulation, and optics. The product range covers **compact units** reaching temperatures down to -200 °C for laboratories, as well as **high-capacity systems** delivering up to 4 kW of cooling power for industrial chambers.

These systems are engineered to dramatically improve vacuum quality. By effectively removing water vapor, **Polycold cryochillers reduce pump-down times by up to 75%, and shorten overall process cycles by up to 50%.** This results in productivity gains of 20% to 100%, while **cutting operating costs** by eliminating liquid nitrogen and **reducing energy consumption by up to 40%.**

Reliable, efficient, and compact, **Polycold** cryochillers deliver measurable improvements in process stability, cycle time, and vacuum system performance.



Chillers

Precision Fluid Temperature Control for Critical Applications

SMC's chillers offer high-precision thermal management for a wide range of demanding environments — from **scientific research** (such as **astrophysics, particle physics, and space applications**) to **semiconductor manufacturing, pharmaceutical production, vacuum coating, and defense**.



The product line spans from **ultra-compact, low-noise** units, including **rack-mountable models** for research labs and instrumentation setups, to **high-capacity chillers using CO₂ refrigerant** for large-scale industrial processes. SMC also offers models based on **Peltier technology** for applications that require **silent, vibration-free cooling** with ultra-high stability.



What sets **SMC** apart is its **triple inverter technology** — independently controlling the compressor, fan, and pump — which delivers **up to 34% energy savings** compared to traditional systems.

Many models also feature **sealless magnetic pumps**, eliminating leakage risks and minimizing maintenance.

Precision control is assured with **temperature stability as tight as $\pm 0.01^\circ\text{C}$** .

Designed for integration, reliability, and efficiency, **SMC's chillers** are the smart choice when **thermal stability and footprint matter** — whether in a laboratory or a high-throughput production line.



Smart Vacuum Measurement for Demanding Applications

Thyracont Vacuum Instruments offers a full spectrum of vacuum measurement solutions covering pressures from atmospheric down to 10^{-12} mbar, using Pirani, piezo, cold/hot cathode, and capacitive technologies. Their devices are engineered for high reliability across sectors such as research, vacuum coating, semiconductors, particle physics, and space.

Our Smartline™ transducers stand out with digital interfaces (RS485, PROFINET, EtherCAT), predictive maintenance tools, and self-diagnostics—making them ideal for Industry 4.0. Thyracont offers versions specifically designed for corrosive gases and high temperatures, with extended lifespans and robust sensor protection.

Portable models with USB-C, Bluetooth, data logging, and intuitive touchscreens are ideal for both lab and field diagnostics. Combined with VacuGraph™ software for real-time monitoring, leak testing, and data export, Thyracont delivers precision, durability, and intelligence.



Thyracont products are designed and manufactured in Germany, ensuring outstanding reliability and long service life.

Robust Vacuum Measurement for Extreme Environments and UHV

TELEVAC offers specialized passive vacuum measurement solutions for critical applications, covering pressure ranges from 10^{-11} mbar up to atmospheric pressure. Its cold cathode sensors with field emitter (ignitor) and UHV Pirani gauges are designed for demanding scientific installations such as particle accelerators, large laboratories, cryogenics, and advanced research facilities.

Thanks to their passive architecture with remote electronics, the sensors can be installed in areas exposed to ionizing radiation, using radiation-resistant cables up to 300 m, allowing the control electronics to be safely located outside critical zones.

TELEVAC sensors are compatible with permanent UHV operation and bakeable up to 250 °C, incorporating ceramic insulators and carefully selected materials that provide thermal and chemical stability and long service life. Controllers supporting up to 10 sensors offer a highly flexible solution for complex scientific and industrial systems with multiple measurement points distributed across different zones.



Vacuum Valves

Our selection of vacuum valves is designed to meet the critical requirements of **space, defense, particle physics, astrophysics, Big Science, pharmaceuticals, semiconductors, and advanced vacuum coating**. Whether the need is for **compact, low-contamination** solutions in **cleanroom** environments or rugged components for **high-temperature, corrosive processes**, we offer high-performance options from leading manufacturers—each with proven reliability in the world's most demanding systems.

Science Probe

Vacuum precision from South Korea

Originating in the semiconductor industry, **Science Probe** develops robust and reliable **gate, butterfly, pendulum, and all-metal** vacuum valves for demanding scientific and industrial applications.

Our valves are designed for **harsh processes, high cycle counts before maintenance, and excellent tightness**. The all-metal versions, free of elastomers, are particularly suitable for **permanent UHV, high temperatures, and radiation environments**.

The design, focused on long operational life and easy maintenance, reduces downtime and costs, offering a **highly competitive performance-to-cost ratio**.



SMC

Cleanroom-Ready Japanese Precision

SMC provides an extensive line of high and ultra-high vacuum valves designed for **clean, stable, and long-life operation**.

Our **angle and in-line valves**—available in **aluminum and stainless steel**—are optimized for uniform thermal behavior, minimal particle generation, and **corrosion resistance**. From **compact, silent models for lab use** to **heavy-duty valves for industrial systems**, we offer a balance of Japanese engineering excellence and **cost-to-performance ratio**.

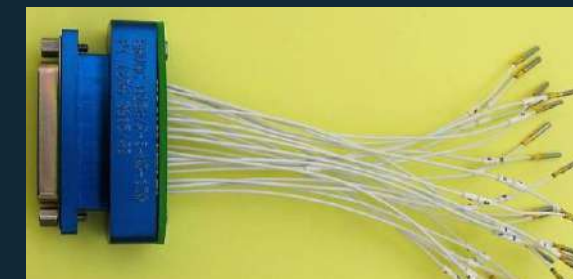
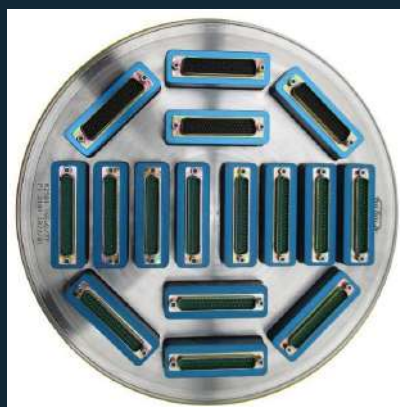
SMC valves are widely used in applications that demand consistent vacuum integrity and easy integration into clean, high-precision and industrial environments.

Advanced Feedthrough Solutions for Space and Science

Plug In is a French company specialized in the design and manufacture of high vacuum-compatible feedthroughs, connectors, and interface modules. Their product range spans standard and custom solutions for **power, signal, RF, fiber optics, and thermocouples**, all engineered for **long-term stability under extreme temperature, radiation, and pressure conditions**.

What sets **Plug In** apart is its **deep integration of electrical and vacuum expertise**, allowing them to offer compact, modular designs with **outstanding sealing performance and high-density configurations**. Unlike many competitors who adapt standard connectors for vacuum use, **Plug In develops each component with vacuum constraints in mind from the outset**—ensuring greater reliability, better thermal behavior, and easier integration into complex systems.

The company is a preferred supplier to space agencies (**ESA & NASA qualified**) and prime contractors, and their technology is also deployed in **astrophysics, high-energy physics, fusion research, and vacuum coating**.



Optical Solutions for Vacuum, UHV and Thermal Imaging

TORR Scientific provides advanced vacuum optics and UHV viewports, from standard configurations to fully customized optical solutions.



- ✓ Viewports in CF, KF and ISO configurations, with different diameters and geometries.
- ✓ Wide selection of optical materials: borosilicate, fused silica, sapphire, ZnSe, ZnS, CaF₂, BaF₂, MgF₂, z-cut quartz and CVD diamond.
- ✓ Solutions covering a broad spectral range: UV, VIS, NIR, IR/LWIR and THz.
- ✓ Customized **anti-reflective (AR) coatings** optimized for transmission according to the application.
- ✓ Specialized viewports for **laser, spectroscopy, thermal imaging and scientific applications**, including IR/LWIR and THz solutions.
- ✓ Custom and special solutions, including **non-standard geometries and materials**.



Space · Thermal Imaging · Laser · Spectroscopy · Research · UHV

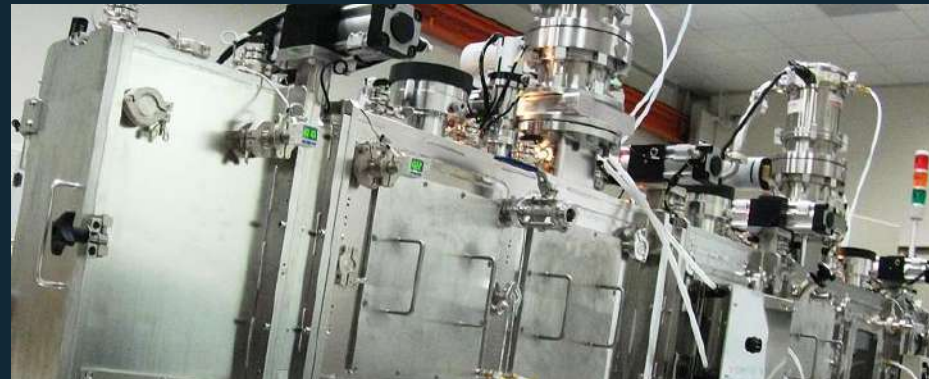
Customized Vacuum Chambers

High-Quality Chambers for Demanding Applications

We collaborate with leading international manufacturers and engineering firms with decades of experience in **high and ultra-high vacuum** technologies. These partners have earned their reputation by consistently meeting the stringent demands of sectors such as **Big Science, semiconductor manufacturing, space exploration, and advanced materials processing**—where **reliability, cleanliness, precision, and absolute leak-tightness** are essential.

Our product portfolio includes **both standard and fully customized HV and UHV vacuum chambers**, manufactured in **stainless steel or aluminum** and capable of reaching vacuum levels **below 10^{-11} mbar**. All chambers are produced using **state-of-the-art CNC machining and orbital welding** techniques, among others, and are subject to rigorous quality controls, including **helium leak detection, residual gas analysis (RGA), and 3D metrology**. This guarantees leak integrity, dimensional accuracy, and compliance with the highest cleanliness standards.

With a proven track record in applications ranging from **synchrotrons and particle accelerators** to **fusion research, quantum systems, vacuum coating, space and semiconductor tools**, our partners stand out for their **fast lead times, engineering adaptability, and unwavering commitment to quality**.



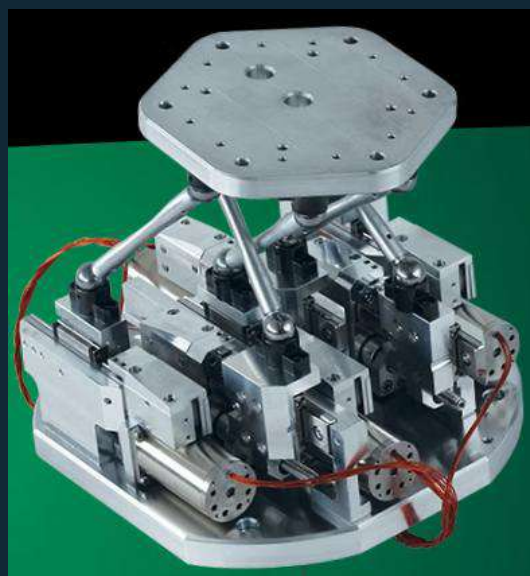
Extreme Environments Precision Mechanics

Precision Mechatronic Systems for Vacuum, Cryogenic, and Radiation Environments

Vacuum FAB is an Italian company specializing in precision mechatronic systems designed to operate reliably under extreme conditions—including high and ultra-high vacuum (HV/UHV), cryogenic temperatures, and radiation-heavy environments. Our portfolio includes compact and modular linear actuators, rotary stages, goniometers, micro-switches, and opto-mechanical mounts, all fully customizable.

Our solutions are widely used in fields such as space, particle physics, synchrotrons, fusion research, and cutting-edge scientific instrumentation. Built with ultra-clean materials and components, Vacuum FAB systems offer sub-micron resolution, high repeatability, and outstanding mechanical stability, even after thousands of cycles.

What sets us apart is our **complete in-house control** over design, manufacturing, and cleanroom assembly, ensuring maximum quality and compatibility with the most demanding vacuum and cryogenic requirements.



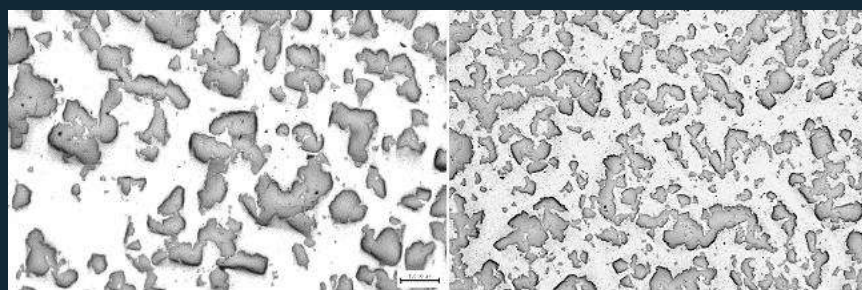
Vacuum FAB provides **robust and cost-effective** solutions with a focus on customization, integration flexibility, and long-term performance.

Advanced materials for thin-film (sputtering & evaporation)

Targets

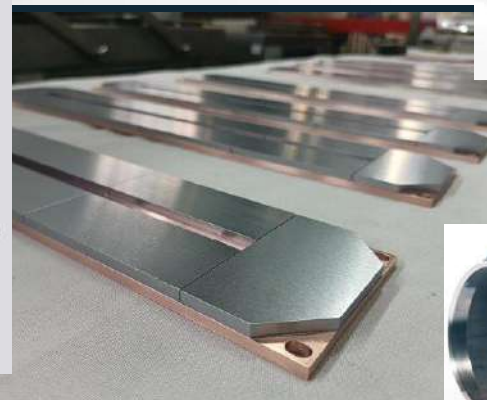
- ❖ **High-purity metals:** Al, Ag, Au, Cu, Cr, In, Mo, Nb, Pt, Ta, Ti, W...
- ❖ **Advanced alloys:** AlCr, SiAl, TiAl...
- ❖ **Functional ceramics:** Al_2O_3 , Cr₂AlC, ITO, TiO_x, WC, ZnO...
- ❖ **Other materials:** C, Ge, Graphite...
- ❖ Planar and rotary targets in **multiple geometries**.
- ❖ Optimized configurations with or without **backing plate**.

High uniformity, purity, and coating repeatability



Coarse grain-100um Grain structure

Fine grain-100um Grain structure



Materials and components for thermal evaporation

- ❖ **High-purity metals and alloys** for thermal evaporation and e-beam processes
- ❖ Materials supplied in **pellet, granule, or solid form**
- ❖ **Shuttles / boats / pans**
- ❖ Tungsten coils and filaments
- ❖ Molybdenum and tantalum components

Mechanical and thermal stability with reproducible evaporation rates under intensive cycling conditions.



Magnetrons and PVD Process Control

Genco has been providing specialized vacuum coating solutions for more than 25 years, continuously refining its **magnetrons and deposition components**, while also expanding its portfolio with **process control** products.

OPTIX 3.0

AI-powered optical residual gas analyzer.
Filament-free and without differential pumping.
Operating range: 0.5 mbar – 10^{-7} mbar.
ppm-level detection.
Analysis of up to 20 gases simultaneously.



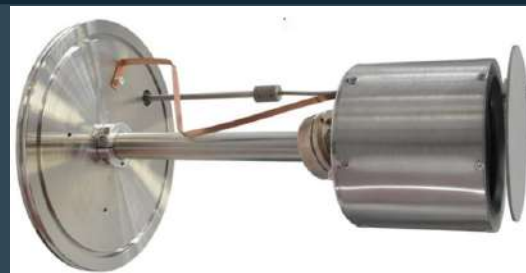
Circular FFE

High-speed sputtering.
Up to 70% target material utilization
thanks to motor-driven dynamic plasma scanning.



3G Circular

Compact circular magnetrons.
2" to 5", $\pm 45^\circ$ tilt and gas injection.
For DC, pulsed DC, RF and HiPIMS.



Rectangular

Rectangular planar magnetrons.
Compact designs and large-format solutions.
The electrical isolation of our cathodes makes them ideal for RF and HiPIMS.



Speedflo

Reactive gas controller
for sputtering and PECVD.
Improves deposition rate,
coating properties and process reliability.



VACGAS-G16

Detection of oxygen, sulfur, selenium
and other chalcogens
using ceramic sensor.



Advanced Plasma Control and PVD Process Modeling

RS100 Plasma Regulator

- ✓ Precise and stable plasma control.
- ✓ Improved reproducibility in PVD and PECVD processes.
- ✓ Reduced process fluctuations and long-term drift.
- ✓ Optimization of discharge conditions for advanced coatings.

→ *Greater process control and reduced experimental variability*



Process Simulation and Optimization Software

Virtual Coater

- ✓ Simulation of the complete deposition process.
- ✓ Modeling of plasma behavior and species transport.
- ✓ Prediction of coating thickness distribution and uniformity.
- ✓ “What-if” evaluation of process parameters before experimentation.
- ✓ Support for PVD and PECVD process design.

→ *Simulate the process before running it.*

ConstelCoat

- ✓ Process parameter optimization and analysis based on experimental data.
- ✓ Recipe tuning to improve coating properties.
- ✓ Comparison of **actual results versus target** performance.
- ✓ **Reduction** in the number of experimental iterations.
- ✓ Support for process **scale-up** and repeatability.

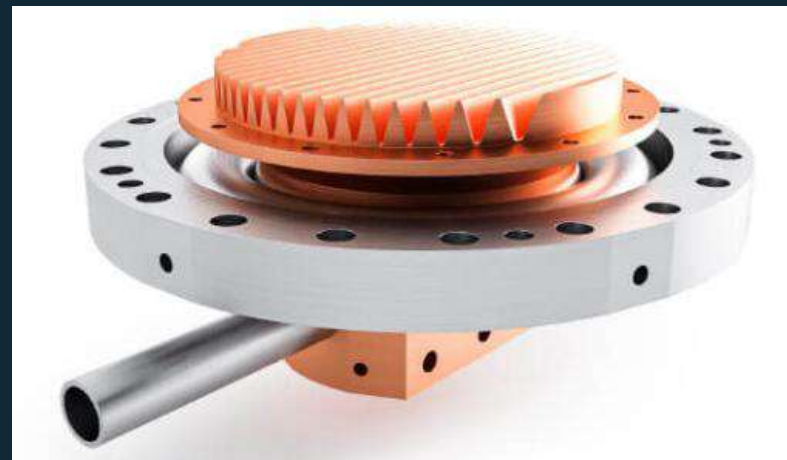
→ *Optimize the process based on real results.*

Brazing, Laser Welding, and Additive Manufacturing

Our German partner, **REUTER TECHNOLOGIE** has over 70 years of expertise in joining technologies, specializes in **bonding metals to each other and to ceramics and glass** with exceptional strength and reliability. They offer high-quality, stable solutions for **ultra-high vacuum, cryogenics, particle physics, fusion, and aerospace** applications.

In addition to advanced **brazing and laser welding**, we **design and manufacture** high-precision components and customized assemblies for extreme environments. Our **additive manufacturing** capabilities enable the production of complex geometries using **stainless steel and high-performance alloys**, offering **weight reduction, thermal efficiency, and structural optimization**.

This technological edge, combined with deep materials expertise and full in-house production control, position us as a key supplier for **research institutions, high-tech equipment manufacturers, and critical scientific infrastructure** projects.



Vacuum Maintenance & Related Services

Founded in 1986, our partner **40-30** is a European reference in **maintenance, engineering, and industrial services for vacuum, electronics, and cleanroom environments.**

Maintenance & Repairs

On-site and workshop services for vacuum pumps, instrumentation, RF, and more.



Parts & Equipment Sales:

Extensive catalog of components and certified refurbished pumps.



Engineering Services:

Equipment design, retrofits, and system optimization.



Training & Consulting:

Technical training and expert consultancy for process reliability.

Trusted by major players in **semiconductors, aerospace, research, and pharmaceuticals**, 40-30 combines deep technical knowledge with strong commitment to safety, quality, and innovation.

Cost Optimization Service

We collaborate with a leading cost optimization consultancy since 1992. With a network of over 1,000 experts, industry knowledge, and the ability to achieve **double-digit savings without compromising quality**, we drive business efficiency.

Our competitiveness lies in **no upfront costs and 100% committed on success**; we partner our clients implementing the solutions agreed and operating on a **success-based model**, where the service is **self-financed by the savings achieved during the monitoring period**.



Tax Lease for R&D: Monetization of tax deductions

The R&D Tax Lease is a financial mechanism that allows research centers and tech companies to **convert R&D tax deductions into upfront funding** by partnering with external investors. These investors benefit from tax savings, while the project promoter receives liquidity without debt, dilution, or administrative burden.

For example, a €1 million project could recover **up to 40%** of its cost through this scheme. Combined with our partner's pre-financing tools, it provides **early cash flow during project execution—ideal for science companies** needing both funding and financial agility.



Thank you!

BlueVAC Solutions, S.L.U.
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