

UHV and Leak Detection Solutions

Empowering research and innovation in science and engineering



Vacuum Made Simple—For the Most Complex Research and Engineering Challenges

More than a part: A partnership

At Agilent, we understand vacuum, and your success is our priority. We recognize that to be successful you need more than just robust and reliable vacuum pumps and leak detection. You need simplicity, energy efficiency, and answers. You need a partner who will be there to help optimize performance, troubleshoot issues, and provide training and operation advice. You need fast delivery and, when necessary, fast service to get you “back up and running” quickly – in days, not weeks. Agilent is that partner.

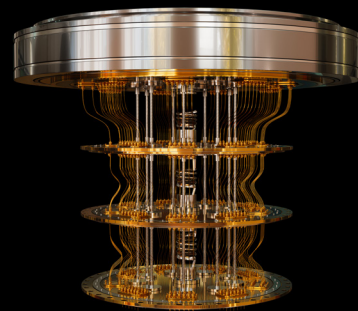
Experience superior performance and tailored solutions

Agilent offers a comprehensive portfolio of essential components and advanced solutions specifically designed for academic and high-tech environments.

Keep your work on track

Our streamlined logistics ensure that you receive your Agilent vacuum products quickly and efficiently, keeping your research and engineering moving forward.

Solutions for Quantum Engineering



Push the boundaries of quantum science with clean, stable, reliable vacuum

Research and development in superconducting qubits, quantum optics, and quantum sensors relies on ultra-precise experimental conditions. Reliable vacuum equipment establishes consistent experimental conditions that help ensure reproducibility. Advanced vacuum technology is also critical in the development and testing of novel quantum devices, facilitating innovation and driving scalable solutions to help transition from prototype development to future commercial production.

High-quality Agilent UHV systems produce the ultra-clean environments essential for pioneering breakthroughs, with reduced operational costs that make cutting-edge quantum research more accessible and sustainable.

- High fidelity – Reliable, scalable, stable, and contamination-free vacuum solutions ensure data quality
- Minimal downtime – Robust, low-maintenance equipment keeps your work moving
- Cost-effective performance – A range of cost effective and energy efficient options allows you to maintain quality and support without compromise

Get the right pump to meet your needs

Ion and turbomolecular pumps

Achieve pressures below 10^{-9} mbar with minimal fluctuations, eliminating vibrations and electromagnetic interference that affect qubit coherence

Scroll pumps

Ultra-clean, low-vibration pumps deliver stability, purity, and reliability, reducing downtime for delicate quantum experiments

Turbo pumping systems

Modular and scalable solutions to adapt to rapidly evolving quantum research and production needs

Leak detectors

Ensure vacuum integrity and rapid troubleshooting, the keys to preventing contamination

Explore and order Agilent solutions tailored for quantum engineering applications



Starter kit,
IDP-3 scroll
pump, 120 V



Starter kit, IDP-7
scroll pump



IDP-35
scroll pump



Starter kit, TwisTorr
74 FS turbo pump,
CFF 4.5



Starter kit,
TwisTorr 305 FS
turbo pump, CFF 6



Request a quote:
helium leak
detector

See spare parts [🔗](#)

Solutions for Particle Accelerator Engineering and Development



Ensure uncompromised vacuum performance in the complex and harsh environment of particle accelerators

Vacuum conditions are critical for particle accelerator engineering. To ensure long-term stability and efficient operation, vibrations and thermal disturbances must be minimized. The vacuum system must be amenable to tight space constraints and the harsh environment within the accelerator. This requires seamless integration of vacuum components to maintain optimal performance and reliability over extended periods.

Agilent UHV solutions for particle accelerators ensure optimal beam stability and efficiency, delivering a clean and stable environment to preserve particle energy and trajectory and produce reliable results.

- Stable, contamination-free environments, with system pressures between 10^{-9} and 10^{-12} mbar
- A partner that provides vacuum knowledge, expertise, and solutions that enable system engineers to design and integrate customized UHV systems
- Long lasting, low-maintenance, and reliable equipment that minimizes unexpected downtime and maximizes success
- Cost-effective solutions that are easy to own and maintain

Get the right pump to meet your needs

Ion and turbomolecular pumps

Achieve pressures down to 10^{-12} mbar with minimal particle emissions, ensuring proper particle beam operation

Scroll pumps

Ultra-clean, oil-free pumps that avoid contamination in academic experiments

Turbo pumping systems

Modular, flexible, and mobile pumping solutions that adapt to various vacuum needs in particle accelerator facilities

Leak detectors

Ensure vacuum integrity and prevent contamination that could slow research or damage expensive components

Explore and order Agilent solutions tailored for particle accelerator applications



IPCMini
universal
ion controller



IPCMini ion
controller (Fischer)



Vaclon Plus
75 L/s pump,
Diode, Fischer



Vaclon Plus
300 L/s pump,
Diode, Fischer



TPS-mobile,
TwisTorr 305
FS, IDP-7



Request a quote:
TPS-mobile,
Turbo-V 551,
IDP-15

See spare parts [↗](#)

Solutions for Cosmology, Astronomy, and Astrophysics



Stable UHV to help you pursue breakthrough discoveries in the study of the universe

Research into cosmic microwave background (CMB) and technologies used in astrophysics, such as transition-edge sensors (TES), requires pristine UHV environments. The vacuum systems must be able to withstand harsh operating conditions. These systems must operate with reduced vibration to maintain the alignment of sensitive equipment, while thermal disturbances must be minimized to prevent interference with data collection.

Tested and proven Agilent UHV solutions deliver robust reliability while reducing contamination and thermal noise, for optimal outcomes in the most challenging space-related applications.

- Pristine UHV to reduce thermal noise and prevent leaks in CMB experiments and TES detectors, minimizing molecular contamination and unwanted interactions
- Durable and stable UHV systems, even in harsh conditions as in remote observatories or space-based telescopes
- Seamlessly integrated UHV with space-constrained cryogenic and superconducting systems

Get the right pump to meet your needs

Turbomolecular pumps

Reduce vibration and eliminate stray magnetic fields for safe integration into interference devices

Ion pumps with non-evaporable getter (NEG)

Provide pressures down to 10^{-11} mbar with zero vibrations, eliminating risks of optical misalignment, signal interference, and thermal disturbances in cryogenic and precision measurement systems

Scroll pumps

Oil-free, low-vibration pumps prevent hydrocarbon contamination, ensuring stability and reliability for long-lasting experiments

Leak detectors

Ensure vacuum integrity and rapid troubleshooting, preventing contamination from gas molecules that can degrade detector sensitivity

Explore and order Agilent solutions tailored for cosmology, astronomy, and astrophysics applications



Starter kit,
IDP-7 scroll
pump, 120 V



TwisTorr
305-IC, CFF 6



Turbo-V 551,
CFF 8



IDP-15 scroll
pump, VPI



IDP-35
scroll pump



IDP-45
scroll pump

See spare parts [!\[\]\(c1b924320d9ec7587a1dd427119524d0_img.jpg\)](#)

Spare Parts, Consumables, and Hardware Components



Authentic parts for Agilent vacuum and leak detection products are crucial for maintaining reliability and optimal performance in ultrahigh vacuum (UHV) applications. Genuine Agilent spare parts, consumables, and hardware are specifically designed and tested to meet the stringent requirements of UHV environments, minimizing the risk of contamination and experiment failure.

Ensure uninterrupted performance with fast delivery of the hardware components, replacement parts, and consumables you need to stay operational.



**Ion pump
spare parts**



**Leak detector
spare parts**



**Scroll pump
spare parts**

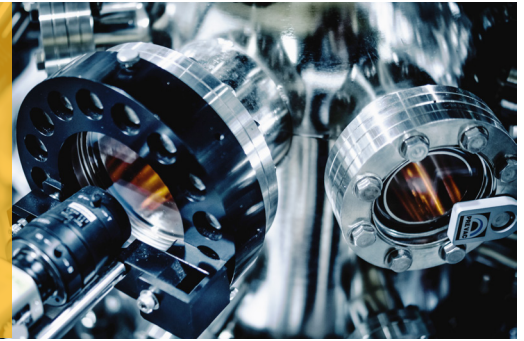


**Vacuum
components
and hardware**



**Vacuum
gauge cables**

Essential UHV Products



Turbomolecular pumps

Our TwisTorr turbomolecular pumps meet critical needs in physics and UHV-enabled research:

- Quick and consistent UHV
- Hassle-free operation in demanding environments
- No interaction with the experiment



TwisTorr 84 FS turbo pump, DN 63 CF-F (4.5 in CFF)



TwisTorr 305 FS turbo pump, DN 100 CF-F (6 in CFF), water cooling



TwisTorr 704 FS turbo pump, DN 160 CF-F (8 in CFF) inlet flange, KF25 foreline flange

[Discover the full turbomolecular pumps portfolio](#)

Ion pumps

Our ion pumps and controllers are ready for the most demanding academic and UHV-enabled applications:

- Best pumping speed for noble and reactive gases with CombiNEG and CombiTPS
- Cleanliness and vacuum integrity
- Reliable for long-term experiments



IPCMini ion pump controller, 100-240 V, SHV high voltage connector, positive polarity



Vaclon Plus 75 L/s pump, Diode, Fischer feedthrough, DN 100 CF-F (6 in CFF), without heaters



Vaclon Plus 300 L/s pump, Diode, Fischer feedthrough, DN 160 CF-F (8 in CFF), double-ended, with heaters 120 V

[Discover the full ion pumps and controllers portfolio](#)

Turbo pumping systems

Our turbo pumping systems offer modular solutions that deliver complete confidence across a broad range of UHV applications:

- Easy, one-switch operation
- Compact footprint for easy portability
- Low base pressure, down to 1×10^{-9} mbar
- Flexible operation and easy customization



TPS-mobile turbo pumping system, TwisTorr 305 FS turbo pump, DN 100 CF-F (6 in CFF), IDP-7 scroll primary pump, no pressure gauge, US power cord



TPS-flexy turbo pumping system, TwisTorr 74 FS turbo pump, DN 63 CF-F (4.5 in CFF), IDP-3 scroll primary pump, 120 V, remote controller



TPS-compact turbo pumping system, TwisTorr 305 FS turbo pump, DN 100 ISO-K, IDP-3 scroll primary pump, 115 V 60Hz

[Discover the full turbo pumping system portfolio](#)

Dry scroll pumps

Our range of scroll pumps ensures superior functionality, with hydrocarbon-free and sealed operation providing reliability in critical applications:

- Hydrocarbon-free operation
- Complete isolation of pumped gases from the external environment
- Optimize pump performance based on the vapor load
- Only 20 to 30 minutes DIY maintenance needed every 2 to 3 years
- Fast Delivery



IDP-3 dry scroll vacuum pump, 1 phase motor, 115 V, 60 Hz



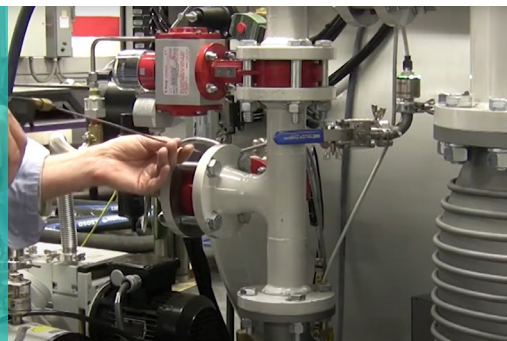
IDP-7 dry scroll vacuum pump, with inlet isolation valve



IDP-35 dry scroll pump with VPI

[Discover the full dry scroll pumps portfolio](#)

Vacuum Measurement and Leak Detection



Our full range of active and passive vacuum gauges and gauge controllers allow you to precisely and reliably control and measure vacuum:

- Accurate pressure readings from atmosphere to extreme-high vacuum (1×10^{-12} mbar), critical for experiments, detectors, and accelerators
- Continuous monitoring, remote control, and integration in long-term experiments and large-scale facilities



Full range gauge



571 Bayard-Alpert gauge tube



572 Bayard-Alpert gauge tube



XGS-600 vacuum gauge controller

Our range of leak detection solutions ensures the safety, security, and consistent performance of vacuum systems:

- Integrity of vacuum systems and prevention of contamination and pressure changes in high-precision experiments and instruments
- Quick identification and isolation of leaks minimize downtime and optimize system performance in complex setups like accelerators or space telescopes



Request a quote:
G8610B helium leak detector, PD03



Request a quote:
G8611B helium leak detector, MD30



Request a quote:
G8611A helium leak detector, MD15



Request a quote:
G8612C helium leak detector, BD15

Customer Support and Collaboration



Dedicated support options for maintaining UHV with confidence

Explore Agilent services, technical support, and collaborative design opportunities tailored to meet the unique challenges of UHV. Or, [visit our website](#) to discover our full range of plans to help keep your vacuum system or leak detector operating at peak performance



Advance exchange option

Get back up and running in days—not weeks. Agilent maintains stock of factory-refurbished replacement products that are readily available to help you minimize downtime.

- As-new specifications and performance
- Hassle-free experience
- One-year warranty
- Minimal downtime

The go-to option for turbo pumps and controllers, scroll pumps, and ion pump controllers.



Do-It-Yourself option

This service empowers you to maintain and repair your equipment with genuine Agilent parts and consumables.

- Maintenance on your schedule
- Ease of service
- Seamless equipment management
- Cost effective

The go-to option for scroll pumps, turbo pumping systems, and helium leak detectors.



Repair option

This service helps you maintain your product at the highest standards.

- Retain asset ownership and control
- Possibility of on-site service
- Cost-effective solution
- Warranty on service

The go-to option for turbo pumping systems, helium leak detectors, turbo pumps and controllers, scroll pumps, and ion pump controllers.



Technology refresh and upgrade option

With this service, you can extract the maximum value from your old equipment as you upgrade to the latest model.

- Latest technology
- Hassle-free
- Backwards compatibility
- Full warranty

The go-to option for turbo pumps and controllers, scroll pumps, ion pump controllers, and helium leak detectors.



Support services

Our experts can support you with service or applications assistance.

- Guaranteed performance
- Installed base control
- On-site service
- Contractual coverage

The go-to option for turbo pumps and controllers, helium leak detectors, scroll pumps, and turbo pumping systems.



Turbo
Pumps and
Controllers



Ion
Pumps



Ion
Pump
Controllers



Turbo
Pumping
Systems



Vacuum
Control



Helium
Leak
Detectors



Scroll
Pumps



Advance
exchange



Repair
option



Do-It-Yourself



Technology
refresh
and upgrade



Support
services



Did You Know?

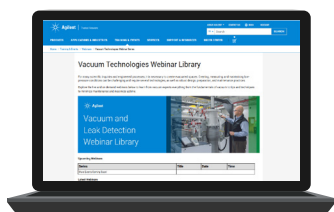
Agilent is empowering a sustainable future.

At Agilent, we embed environmentally conscious practices into our operations, products, and services. We are committed to helping you achieve your sustainability goals by providing solutions that enhance efficiency and reduce resource consumption.

Educational Resources

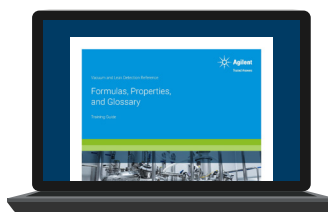
Explore, learn, and elevate your work

Agilent offers a suite of educational resources—webinars, training sessions, video tutorials, and collateral—tailored for university researchers, engineers, lab technicians, and professors. These tools simplify complex vacuum and leak detection concepts, empowering you to master the technology that drives your research.



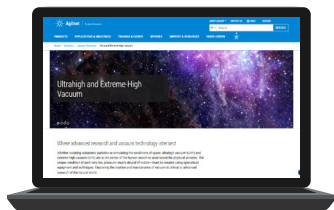
Vacuum webinar library

Explore our live and on-demand webinars to get vacuum fundamentals, expert maintenance tips, and strategies for maximizing uptime.



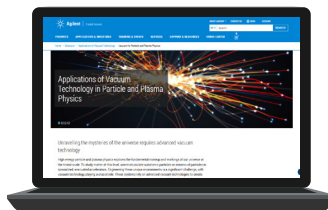
Reference guide: Formulas, properties, and glossary

Get quick insights with this easy-to-use reference guide that keeps essential properties, formulas, and key terms right at your fingertips.



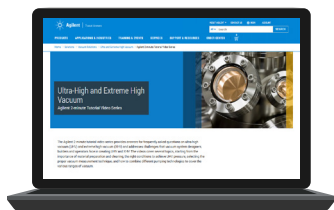
Vacuum made simple - UHV resource hub

Discover how UHV drives advanced research and learn the secrets to creating, measuring, and maintaining the optimal vacuum environment for your experiments.



Advanced vacuum technology in particle and plasma physics

Learn how Agilent UHV and XHV (extreme high vacuum) technology can fuel your next scientific discovery.



Agilent two-minute tutorial video series

Get answers to common UHV and XHV questions to help tackle key challenges for vacuum system designers, lab technicians, and researchers.



Get in Touch

Discover how Agilent can empower your research—contact our vacuum specialists today for a consultation or product demo.

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