Agilent Technologies: Your Vacuum Resource

Agilent Technologies and Varian are now one company. Two of Silicon Valley’s champions have combined to create a one-stop, truly global vacuum supplier with a complete range of products and services for scientific research and industrial applications. Varian’s 60+ years of technology leadership and tradition of innovation in vacuum and leak detection technology becomes a part of Agilent, the world’s premier measurement company.

What this means for you:

• You reap the benefits of our shared values: customer satisfaction, commitment to quality, ethical standards, and technology leadership.
• You can continue to rely on the same people, products, and services to assist you in solving your vacuum challenges. Agilent’s vacuum customers will experience the same high level of customer care and technical support, with best-in-class processes, resources, technologies, infrastructure, and better coverage assured for end users worldwide.
• Our dedicated R&D and Application Engineering Teams can offer you enhanced capabilities and partnership in the design, testing and application of custom solutions to specific OEM vacuum requirements.
• As the leader in high- and ultra-high vacuum solutions for physics research, mass spectrometry and electron microscopy, and with new solutions for the growing thin film deposition industry, Agilent is your vacuum resource.
• You can count on us as a stable, responsive, resourceful and financially solid strategic supplier.

To learn more about Agilent’s Vacuum Products, please contact your local Agilent Office or Authorized Agilent Distributor, or visit www.agilent.com/chem/vacuum.
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Training
Agilent Technologies and Varian are now one company: two of the science industry’s best stories are writing a new story together

It’s a story that will strengthen our commitment to deliver unmatched quality, innovation and services to our customers, while maximizing the power of our portfolio and global support network.

There is something specific in each company’s attitude to research and technology: for Agilent this is represented here, in a constant and modular growth and in the search of efficiency. Each step is based on previous successful discoveries, building a solid structure that is designed to last.

- **Historical pioneer** of the vacuum market: many of our inventions, like the first ion pump created by Varian, now Agilent, in the late ’40s, became a standard in this industry. We continue to study and develop new solutions, partnering with our Customers and with the major Research Centres worldwide.

- **Global presence**: we are the only vacuum supplier to have factories both in the US and in Europe, with a network of sales and service offices than spans the globe. Please visit our website at [www.agilent.com/chem](http://www.agilent.com/chem), or check the introduction pages of the catalogue to find the Agilent Technologies Vacuum Products’ office nearest to you.

- **One stop supplier**: we have a broad range of vacuum products, including rough, high and ultra-high vacuum pumps, systems, instruments, valves, components, leak detectors and accessories.

- **Customer care**: technical support and customer service play an essential role in serving our customers, both OEMs and end users, with local language speaking service engineers, technical support toll-free lines 24/7, vacuum training courses and seminars offered in the US, Europe, and the Pacific Rim.
Introduction

- **Continuous investments** in infrastructure (new production capacity added to the European factory), technology (new TwisTorr turbomolecular pumping technology), organization and human resources.

- **Several convenient Service Programs** to help you maximize your productivity:
  - **Advance Exchange**: in case of downtime we ship immediately (24 hours) to you a replacement unit from our closest distribution center.
  - **Upgrade Program**: older models can be upgraded to an equivalent pump of most recent design and technology.
  - **Factory Repair**: equipment is returned to our factory for failure analysis and corrective actions (whenever applicable).
  - **Field Support Programs**: from preventive to corrective maintenance, to maximize equipment performance.

- **Communications**: Internet and e-commerce capability, with a new website based both on products and applications; exhaustive product documentation and technical notes on interactive CD and on paper; local language toll free lines in most countries.

- **Partnership**: we achieve our best results when collaborating with our customers to develop the solution that fits their vacuum requirements. Cooperating and working together means that we learn and grow together. This is our philosophy and the way we do business.

- **Ethics**: doing business globally, we must understand and respect the laws and the cultures of all the countries and people we work with, and continuous training programs assure that our employees achieve the highest ethical standards. We are proud to do business in a fair, correct and respectful way, and our customers recognize and appreciate this attitude.
Milestones

1930s
Varian brothers with physicist Bill Hansen, create a prototype of the klystron, a radio vacuum tube central to radar technology.

1948
On April 20 Sigurd and Russell Varian with Bill Hansen establish Varian Associates, Inc.

1948-94
The innovative MacroTorr concept allows much higher (x100) foreline pressures in Turbo pumps. ISO 9001 Certification is completed.

1957-59
Varian Associates invents the first Ion pump. The Vacuum Division becomes a separate business.

1961-65
The ConFlat Flanges set the industry standard. Significant innovation in Diffusion pump technology markedly increases performance.

1967-72
A new Vacuum factory opens in Torino, Italy. The Contra-Flow concept revolutionizes leak detection.

1967-65
The StarCell Ion Pump is developed, and the Ion Pump worldwide Center established in Torino.

1983
Varian introduces the Turbomolecular Pumps in collaboration with the Elettrorava company.

1986-90
The revolutionary new portable Helitest Leak Detector is introduced, with numerous applications in non-vacuum industries.

1986-90
Varian introduces the Turbomolecular Pumps in collaboration with the Elettrorava company.

1992
The TriScroll Dry Pumps are the only two stage scroll pumps on the market.
Introduction

**2001**
Varian expands Torino facility with a third building.

**2002-2004**
New Turbo-V Navigator series, with electronics on-board, followed by the Turbo-V K-G series with integrated electronics embedded in the pump body. First “smart” Rotary Vane Pumps employ an innovative frequency inverter.

**2005-2006**
ISO 14001 Certification achievement. New VS Series leak detectors, and PHD-4 Portable Helium Detector.

**2007-2008**
The IDP-3 is the first 60 l/m scroll pump in the market. A new Warehouse completed the renovation of Torino plant.

**2008**

**2009-2010**
Innovative line of TPS Turbo Pumping Systems. New High Capacity MS Rotary Vane Pumps and RPS Roots Pumping Systems, for demanding industrial vacuum applications.

**2010**
The New Molecular-Drag Technology: TwisTorr Turbo Pumps offer unmatched vacuum performance in terms of pumping speed, compression ratio, compact size.

**2010**
Varian becomes a part of Agilent Technologies, the world’s premier measurement company.
Create

In order to create "vacuum" in a system chamber, vacuum pumps or integrated pumping systems such as these are used. The gas mix is progressively pumped away, resulting in a very clean volume where pressure is extremely low.
Control Maintain Measure

Keeping or changing certain pressure conditions in a controlled way is essential to operating industrial processes or scientific research in vacuum. Valves, flanges, tubes and other components are specifically designed to contain and carry air and regulate its flow.

In addition to the variety of measuring components seen so far, of the greatest importance are Leak Detectors: instruments designed to locate infinitesimal leaks that could damage operational functionality. They are particularly helpful for vacuum maintenance and diagnostics at the first installation or during periodic inspections.

Precise pressure monitoring is of extreme importance in all vacuum processes. Built for this purpose, gauges, transducers, and controllers manage and measure pressures in a variety of ranges.

In short, they ask us for a comprehensive analysis of their specific needs and for a shared development of appropriate proposals, able to Create, Control, Maintain and Measure a vacuum.
Vacuum Applications

Agilent Technologies thrives on supporting its customers in a variety of applications in many technological scenarios. Such applications include:

**R & D**
- Particle Accelerators
- H.E.P.
- Universities
- Government Labs
- Scientific Research Laboratories
- Space Simulation

**Instrumentation Manufacturers**
- Mass Spectrometers
- Electron Microscopes
- Leak Detectors
- Surface Analysis
- Gas Analysis
- Metrology/Inspection/Defect Review

**Semiconductor Process Vacuum**
- Silicon Semiconductor
- Compound Semiconductor
- TFT-LCD Displays
- MEMS
- Process Equipment Manufacturers and End Users for PVD, CVD, Etching, Ion Implantation, MBE, Crystal Pulling, etc.
Introduction

Leak Detection

- Automotive Systems and Components
- Semiconductor Process Tools
- Refrigeration and Air Conditioning
- Industrial Components
- Aerospace Systems and Components
- Power Generation
- Food Packaging

Thin-Film Deposition

- Glass/Web/Optical Coating
- Data Storage (CD, DVD, ...)
- Thin Film Heads
- Surface Coating (wear protection, decorative, ...)
- Display Coatings (OLED, FED, PDP, ...)

Industrial Vacuum

- Vacuum Metallurgy
- Vacuum Heat Treatment
- Laser Technology
- Electron Tubes
- TV Tubes
- Lamps and Bulbs
Agilent Worldwide Sales and Service Network

A truly global network with Customer Support and Service Hubs located in six countries with multilingual Center personnel who can support all customer needs locally. We are fully committed to make your experience with Agilent pleasant and efficient: we encourage you to contact us for any need or suggestion that you might have.

**Americas**

- Agilent Technologies
  121 Hartwell Avenue, Lexington MA 02421, USA
  Tel: +1 781 861 7200
  Fax: +1 781 860 5437
  Toll free: +1 800 882 7426
  vpl-customerservice@agilent.com

- Mexico
  Agilent Technologies
  Conception Beistegui No 109
  Col Del Valle, C.P. 03100, Mexico, D.F.
  Tel: +52 5 523 9465
  Fax: +52 5 523 9472

- Brazil
  Agilent Technologies Brasil
  Avenida Marcos Pontes de Ulhoa Rodrigues, 939 – 6º andar
  Castelo Branco Office Park,
  Torre Jacaranda - Tambaú
  Barueri, Sao Paulo CEP: 06460-040
  Toll free: 0800-728-1405

**Europe, Middle East and South Asia**

- Agilent Technologies Italia SpA
  via F.lli Varian 54
  10040 Leini, (Torino), Italy
  Tel: +39 011 9979 111
  Fax: +39 011 9979 350
  Toll free: 00 800 234 234 00
  vpt-customerservice@agilent.com

- Benelux
  Agilent Technologies Netherlands B.V.
  Herculesweg 8, 4338 PL Middelburg
  The Netherlands
  Tel: +31 118 671570
  Fax: +31 118 671569

- France
  Agilent Technologies France
  7 avenue des Tropiques
  Z.A. de Courtalabou - B.P. 12
  91841 Les Ulis cedex, France
  Tel: +33 (0) 1 69 86 38 84
  Fax: +33 (0) 1 69 86 29 88

- Germany and Austria
  Agilent Technologies
  Alsfelder Strasse 6, Postfach 11 14 35
  64289 Darmstadt, Germany
  Tel: +49 (0) 6151 703 353
  Fax: +49 (0) 6151 703 302

- UK and Ireland
  Agilent Technologies UK Ltd.
  6 Mead Road, Oxford Industrial Park
  Yarnton, Oxford OX5 1QU, UK
  Tel: +44 (0) 1865 291570
  Fax: +44 (0) 1865 291571

- Finland and Estonia
  Mecaestep Oy
  Ullankaarentie 1
  15500 Nastola, Finland
  Mobile: +35 8 405044097
  Fax: +35 8 50 7600 4562

- Greece
  Sotiria Argyropoulos Representations
  International Technology Corporation
  22 Philellinon Street
  GR-546 45 Thessaloniki, Greece
  Tel: +30 2310 856585 / 2310 447009
  Fax: +30 2310 435868

- Hungary
  B&I Service Kft
  Régulatúri ut. 2
  1112 Budapest, Hungary
  Tel: +36 1 231 0993
  Fax: +36 1 231 0994

- Norway
  Hotger Teknologi AS
  Liankolben 1A
  NO-1258 Oslo, Norway
  Tel: +47 22 16 84 77
  Fax: +47 22 61 10 30

- Poland
  Uni-Export Instruments Polska
  ul. Czerniakowska 155/109
  00-453 Warszawa, Poland
  Tel: +48 (0) 22 626 87 86
  Fax: +48 (0) 22 626 87 85

- Romania
  HISTERESIS SRL
  Str. G. Enescu, Bl. 251,
  730208 Vaslui, Romania
  Tel: +40 335 407 797
  Fax: +40 318 171 731

- Slovakia
  Expert Vacuum Sro
  SK - 945 01 Komárno
  Eötvösova ul. 3195/21
  Slovakia
  Tel: +42 19 10 109650
  Fax: +42 19 10 109651

- Switzerland
  Swiss Vacuum Technologies SA
  Chemin de Buchaux 38
  CH-2022 Bevaix-Neuchâtel
  Switzerland
  Tel: +41 32 725 2020
  Fax: +41 32 725 2039

Web Site and e-Commerce:
Introduction

Manufacturing Locations
- China
  Agilent Technologies (China) Co. Ltd
  No.3, Wang Jing Bei Lu,
  Chao Yang District,
  Beijing, 100102, China
  Tel: +86 (10) 6439 7888
  Fax: +86 (10) 6439 1318
  Toll free: 800 820 8266
  pc-customerservice@agilent.com
- Agilent Technologies
  4th floor, East Wing of Building 16 No.140
  Tianlin Road, Kuaihua District,
  Shanghai, China
  Toll free: 800 820 8266
- Agilent Technologies
  Room 2508-11 West Tower
  YangCheng Commercial Building
  TiYuDong Road
  Guangzhou, 510620, China
  Tel: +86 (20) 3887 1469
  Fax: +86 (20) 3887 1470
  Toll free: 800 820 8266
- Japan
  Agilent Technologies Japan, Ltd.
  8th Floor Sumitomo Shibaura Building
  4-16-36 Shibaura Minato-ku
  Tokyo 108-0023, Japan
  Tel: +81 3 5232 1253
  Fax: +81 3 5232 1710
  Toll free: 0120 655 040
  vpj-customerservice@agilent.com
- Korea
  Agilent Technologies Korea Ltd.
  Shinsa 2nd Bldg. 2F
  966-5 Daechi-dong
  Kangnam-gu, Seoul, Korea 135-280
  Tel: +82 2 3452 2455
  Fax: +82 2 3452 2451
  Toll free: 0800 222 2452
  vpk-customerservice@agilent.com
- Singapore
  Agilent Technologies Singapore Pte Ltd.
  No.1 Yishun Avenue 7
  Singapore, 769023
  Tel: +65 6215 8045
  Fax: +65 6754 0574
  Toll free: 1 800 2762622
  vps-customerservice@agilent.com
- Southeast Asia
  Agilent Technologies Sales Sdn Bhd
  Unit 201, Level 2 uptown 2
  2 Jalan SS21/37, Damansara Uptown
  47600 Petaling Jaya,
  Selangor, Malaysia
  Tel: +60 3 7712 6106
  Fax: +60 3 6733 8121
  Toll free: 1 800 800 803
  vek-customerservice@agilent.com
- Taiwan
  Agilent Technologies Taiwan Limited
  20 Kao-Shuang Rd., Pin-Chen City, 324
  Taoyuan Hsien, Taiwan, R.O.C.
  Tel: +886 3 3489281
  Toll free: 0800 051 342
  vpw-customerservice@agilent.com

Agents
- Australia
  Dynapumps (East Coast)
  Unit 8, 1-3 East Spur Court
  Kileyth, Victoria 3127
  Tel: +61 3 86176511
  Fax: +61 3 86176533
- Dynapumps (West Coast)
  88 Belgrave Street
  Belmont Western Australia 6104
  Tel: +61 8 94242001
- Malaysia
  Semiconductor Services (Malaysia)
  Sdn. Bhd. No. 10 & 11, Block B, Lot 756
  Prime Subang Light Industrial Park
  Jalan Subang 3, Off Persiaran Subang
  47610 Subang Jaya
  Selangor Danu Ehsan, Malaysia
  Tel: +60 35 6349239/43
  Fax: +60 35 6347313
- Renorex Sdn. Bhd.
  No. 72 & 74, Jalan IKS Bukit Tengah
  14000 Bukit Mertajam
  Penang, Malaysia
  Tel: +60 45 085755
  Fax: +60 45 075755

Subsidiaries
- India
  Agilent Technologies India Pvt. Ltd.
  G01, Prime corporate Park, 230/231,
  Sahar Rd., Opp. Blue Dart Centre,
  Andheri (East), Mumbai, 400 099 India
  Tel: +91 22 30648287/8200
  Fax: +91 22 30648259
  Toll free: 1800 113037
- Pakistan, Saudi Arabia, U.A.E.
  Imbiah Chemineers
  13-J, Markaz: F-7
  44000 Islamabad, Pakistan
  Tel: +92 51 2650174
  Fax: +92 51 2650943
- Israel
  Israel Scientific Industries
  32, Shahaam st., Amargad Bldg.
  Kiryat Matalon
  49170 Petah-Tikva, Israel
  Tel: +97 23 923202
  Fax: +97 23 923950
- Russia
  CCS Services SA
  Marshal Timoshenko str. 19
  121359 Moscow, Russia
  Tel: +7 095 926 59 43
  Fax: +7 095 564 80 52
- Turkey
  INTERELEKTRO Ltd.
  Cyberpark, 5.Cd. 4/202
  Bilkent 06570 Ankara, Turkey
  Tel: +90 312 285 2500
  Gsm: +90 544 285 2500
  Fax: +90 312 286 4245
- Ukraine
  Novations LLC
  Office 813, Build. 23,
  Marini Raskovy Str., 02002 Kiev, Ukraine
  Tel: +38 (044) 223 93 00
  Fax: +38 (044) 223 93 11

Service Hubs
- www.agilent.com/chem

The Measure of Confidence
Agilent Customer Support Programs

As a world-class company, we are committed to excellence in customer support as a means to enhance the value of our products for our customers and to lower total cost of ownership. Our support strategy is based on the following fundamentals:

Qualified Staff
We back our global commitment with continuous attention to professional development and personal motivation for our staff. You expect proficiency in customer care, and we deliver it.

Telephone Hotlines
Our toll free hotlines provide you with the easiest live front-end support. Our native language customer service and technical support representatives will assist you with order information, backlog management, return authorization, pricing and delivery, and with product technical data, literature fulfillment and troubleshooting.

Vacuum Training Programs
Agilent’s highly regarded training program is staffed by dedicated professionals with expertise and experience in a broad range of vacuum and leak detection technologies. Courses are offered at Agilent manufacturing facilities in North America and Europe, at convenient regional locations and at customer locations worldwide.

Worldwide Parts Sourcing Plan
Three Progressive Levels of Support
Agilent offers three convenient Service Programs to help you maximize your productivity:

ADVANCE EXCHANGE
To maximize uptime, and for those occasions where you cannot afford stopping your process, Agilent offers exchange units for advanced shipment, with pumps which are rebuilt to as-new specs and latest revision level. As soon as requested, your order can be processed within 24 hours.
**Logistics Infrastructure**
Agilent has a network of manufacturing plants in North America and Europe plus four service hubs in the Pacific Rim. An advanced ERP system allows all these locations to operate and interact in real time.

**World-Class Quality**
Conformance to procedures designed for global customer support allows us to satisfy the most demanding requirements. This is complemented by our continuous improvement and escalation processes. When time is of the essence, our real-time data network helps us to work closely with you, to share online data and to videoconference on a 24 hour basis.

**Applications Support**
Agilent staff is organized by applications and markets. This allows us to focus on total solutions rather than on a single product line. To meet the most demanding technical needs, our applications engineering team brings our knowledge into your factory. In this way you get the most from your investment in our current products and can expect maximum benefit from new technologies as we develop them.

**e-commerce / e-diagnostics**
Agilent leverages the Worldwide Web to provide you immediate access to comprehensive support, right from your desktop. Our e-commerce site not only lets you access critical product data, but also helpful applications information and order status. e-diagnostics can substantially reduce downtime as products age. Powered by our exclusive MoniTorr technology, the Agilent Technical Support Center has access to the real-time operating conditions of a turbopump in the field and uses our expertise to maximize your system uptime.

**REPAIR**
Agilent products offer unmatched reliability, performance and cleanliness. Production requirements, however, inevitably create, over time, the need for maintenance and repair. Timely repair at Agilent will keep your products performing at an outstanding level all the time.

**UPGRADE**
Designed for customers who want replace an Agilent unit with a newest technology product. We rebuild these products to as-new specifications, with a full 12-month warranty.