Varian, Inc. Vacuum Technologies



Product Catalog 2010

NOTICE: This document contains references to Varian. Please note that Varian, Inc. is now part of Agilent Technologies. For more information, go to www.agilent.com/chem.



Dear Customer,

With our new catalogue we make available to you a broad range of state of the art products designed to help you in your work. Whether you are involved in research or industry our aim is to be **Your Vacuum Technology Resource** and for this reason we complement our products with many different services such as:



- Direct support at your site with our team of highly competent **Field Sales Engineers** able to provide a bounty of information on our broad range of products and on Vacuum Technology Theory and Practice.
- A **Marketing Team** specialized in your application that can help in selecting the best solution to your requirements balancing cost and performance.
- Our **Application Engineers** that will assist you in successfully implementing our solutions in your equipment.
- Direct access to our *in plant R&D Team* willing to work with you to develop specific proprietary solutions to your requirements.
- Training Classes and Materials to help your technicians and engineers in making optimum use of Vacuum Technology.
- Global Service Support with our industry leading Advance Exchange, Upgrade, and repair Programs aimed at maximizing your uptime and taking the onus of maintaining our products fully on our shoulders.
- Our E-commerce Site that makes ordering and follow-up extremely simple and fast while providing critical information on our products and services.
- Fast Reliable Delivery with agreed lead times based on your requirements.
- Effective escalation process for fast solution of any issue that may arise.
- **High-Quality Products** certified to the ISO 9001:2000 and ISO 14001:2004 and compliant with all International standards and norms for global utilization.

Last but not least our pledge to you is to always stand ready to support you, no matter what challenge or issue you might be facing, as we have proven in more than 50 years dedicated to the evolution of Vacuum Technology.

Senior Vice President, Varian, Inc. Managing Director, Vacuum Technologies

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Varian: Your Vacuum Resource

There is something specific in each company's attitude to research and technology: for Varian 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. This is what we are today, more than 50 years later:

• **Historical pioneer** of the vacuum market: many of our inventions, like the first ion pump created by Varian 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.varianinc.com/vacuum, or check the introduction pages of the catalogue to find the Varian, Inc. 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.



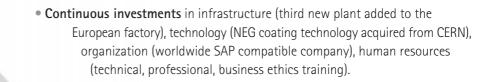
• Field service: industry leading Service & Support, to get the most from your investment..

Most extensive network of support engineers available locally to meet your needs.

24-hour response time.

72-hour turnaround of down instruments at your facility.

Customized support plans meet your most demanding needs.



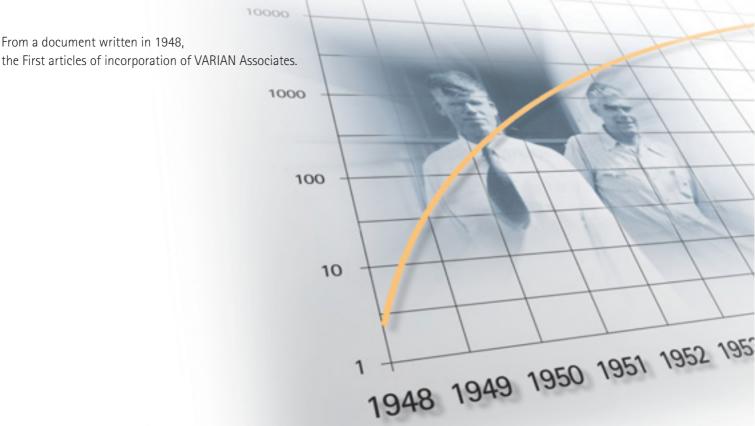
 Communications: Internet and e-commerce capability, with a new website based on Customers applications; exhaustive product documentation and technical notes on interactive CD and on paper; local language toll free lines in most countries.

- 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.

To conduct general research in the fields of physical science of every kind or nature, including ... heat, sound, light, optics, x-rays, charged particles, ionizing radiations, electricity, magnetism, properties of solids, liquids and gases, vacuum technology and applications thereof ...

The name Varian comes from two brothers, Sigurd and Russell Varian who in the **1930s**, working with theoretical physicist Bill Hansen, had created a working prototype of the klystron, a powerful radio vacuum tube central to radar technology.

- April 20, 1948 The trio established Varian Associates, Inc.
- **1950s** Varian Associates focused on building high-quality vacuum tubes and invented the Vaclon electronic vacuum pump.
- 1952 Varian produced the first commercial NMR System.



- July, 1959 The Vacuum Division was launched as a separate business.
- **1960s** Varian grew adding X-ray companies and semiconductor equipment makers.
- **1961** Varian introduced the ConFlat® Flanges that have set the industry standard for vacuum flange performance.

- **1965** Varian made a significant contribution to diffusion pump design that markedly increased pumping speeds.
- August, 1967 A new Vacuum factory opened in Torino, Italy.
- 1972 Varian introduced the Contra-Flow™ concept, which revolutionized leak detection allowing higher test port pressures by using a simplified vacuum system design.
- **1983** The StarCell® lon Pump was developed, and the lon Pump worldwide Center established in Torino.
- **1986** By this year Varian introduced the Turbomolecular Pump in cooperation with the Elettrorava company.
- 1990 Varian developed the Turbo V-60.
- 1992 The revolutionary new portable Helitest Leak
 Detector was introduced, with numerous applications in
 non-vacuum Industries. Varian introduced the MacroTorr
 concept in Turbo pump technology, which allowed
 operation at much higher (x100) foreline pressures."

• 1994 - ISO 9001 Certification was completed.

3 1954 1955 1956 1957 1958 1959 1961

- 1998 The TriScroll™ Dry Pumps employed a unique patented TriScroll pumping capability, the only two stage scroll vacuum pumps on the market.
- 1999 A spin-off of the Varian Associates, Inc. company generated three separate companies, Varian Medical Systems, Varian Semiconductor Equipment and Varian, Inc. (vacuum technologies, scientific instruments, and contract electronics manufacturing).

- 2001 Varian, Inc. expanded the Torino facility with the addition of a third building, to meet product demand.
 In more recent years new and significant products have been released including the Turbo-V 301 Navigator and the Turbo-V 2K-G.
- 2004 Varian developed the first Rotary Vane pump with truly "smart" capabilities, employing an innovative frequency inverter technology that delivers optimal performance and worldwide compatibility.
- 2005 Varian launched the new Turbo-V 3K-T, the PHD-4 Portable Helium Detector and the SH-110 Dry Scroll Pump.
- 2006 ISO 14001 Certification achievement. VS Series leak detectors was introduced, followed by the new DS-42 RVP and Turbo-V 81 pump.
- 2007 Two major improvements in Scroll Pump technology: the IDP-3, the first 60 I/m scroll pump in the market, and the new Triscroll with Inverter.
- 2008 A new Warehouse completed the renovation of Torino plant. A lot of new products was released: the Turbo-V 3K-G System, the MS40 + Single Stage RVP, the XGS-600 Gauge Controller, and the VSC15 Component Leak Detector.
- 2009 A complete line of TPS Turbo Pumping Systems is launched. Varian also introduces the new IDP-2 and IDP-3 Dry Scroll Pumps, and the new FRG 700 Full Range Gauge. The PD03 Dry Leak Detector is the new member of the VS product line.
- 2010 Varian introduces the High Capacity MS-Series Mono Stage Rotary Vane Pumps and RPS-Series Roots Pumping Systems. Ideal for use in demanding industrial vacuum applications

Vacuum Technologies

Varian offers more than 7,000 items, including vacuum pumps and leak detection products, components and accessories. The availability of a complete range of products represents an important strength, allowing us to offer

complete solutions and be a one-stop supplier for the study, design, manufacture and servicing of all system components. Our customers are looking for "complete" solutions to their requirements: a "Product & Service System" that includes top

Create



quality pumps, detectors, components and accessories, and a service program that assures high performance, reliability over time, good pre- and post-sale customer service and technical support available worldwide.

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.

Control

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.



Maintain

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.



Measure

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.



Applications

Varian thrives on supporting its customers in a variety of applications in many technological scenarios.

Such applications include:

Industrial Vacuum

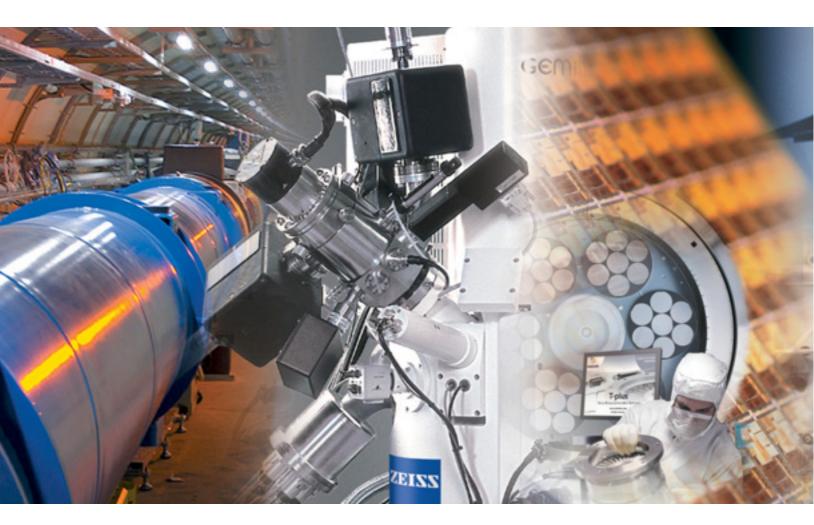
- Vacuum Metallurgy
- Vacuum Heat Treatment
- Laser Technology
- Electron Tubes
- TV Tubes
- Lamps and Bulbs

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.

Thin-Film Deposition

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



Instrumentation Manufacturers

- Mass Spectrometers
- Electron Microscopes
- Leak Detectors
- Surface Analysis
- Gas Analysis
- Metrology/Inspection/Defect Review Systems for Semiconductor
- Focused Ion Beam
- Electron Beam Systems

R & D

- Particle Accelerators
- H.E.P.
- Universities
- Government Labs
- Scientific Research Laboratories
- Space Simulation

Leak Detection

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



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 Varian pleasant and efficient: we encourage you to contact us for any need or suggestion that you might have.

Americas

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Mexico

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Argentina VEQ S.A Vacuum Equipment Av. Belgrano 1720 - 2º Piso C1093AAS - C. A. B. A. **Buenos Aires** Argentina

Tel/Fax: (54) 11 4382 5558

Brazil

Radchrom Analitica Ltda. Rua Divino Salvador, 276 Paulinia - SP 13140-000

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Europe, Middle East and South Asia

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Poland

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Fax: (41) 32 725 2030

Israel

Israel Scientific Industries Ltd. 32, Shaham st., Amargad Bldg. Kiriyat Matalon 49170 Petah-Tikva, Israel Tel: (972) 3 9232202 Fax: (972) 3 9229750

Manufacturing Locations

Subsidiaries

△ Agents

Service Hubs



Russia CCS Services, SA

Marshal Timoshenko str. 19 121359 Moscow, Russia Tel: (7) 095 9265943 Fax: (7) 095 5648052

Turkey INTERELEKTRO Ltd. Oguzlar Mah. 34.Sk. 18/B Balgat 06520 Ankara, Turkey Tel: (90) 312 285 2500 Fax: (90) 312 266 2565

Ukraine

ALT Ukraine Ltd. 4 Lunacharskogo str Kyiv, 02002, Ukraine Tel: (38) (044) 49 27 270 Fax: (38) (044) 49 27 271 **Egypt** PharmaRad Dar El Ezz Building El Mokattam St. from 9 St. District 854H, El Mokattam, Cairo, Egypt Tel: (20) 2 2505 7727 (20) 2 2667 9775 Fax: (20) 2 2667 9846

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Pakistan, Saudi Arabia, U.A.E. Imtiaz Chemineers 13-J, Markaz: F-7 44000 Islamabad, Pakistan Tel: (92) 51 2650174 Fax: (92) 51 2650943

Web Site and e-Commerce: www.varianinc.com/vacuum

Pacific Rim

China 🗐

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- Varian Technologies China Ltd. Room 2508-11 West-Tower YangCheng Yanguneng Commercial Building TiYuDong Road Guangzhou, 510620, P. R. China Tel: (86) 20 38871 469 Fax: (86) 20 38871 470 Toll free: 800 820 8266

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Australia

Dynapumps (East Coast) Unit 9, 1-3 East Spur Court Kilsyth, Victoria 3137 Tel: (613) 8761 6511 Fax: (613) 8761 6533

- Dynapumps (West Coast) 88 Belgravia Street Belmont Western Australia 6104 Tel: (618) 9424 2000 Fax: (618) 9424 2001
- ▲ China (Guangdong & Hainan) Leyfond Ltd. Unit B, 9/F. Winner Commercial Bldg. 401-403 Lockhard Road, Hong Kong Tel: (852) 2575 6688 Fax: (852) 2575 6993
- Shenzhen Branch Office, Leyfond Ltd. Unit 3, Block 24, Kejiyuan Keyuan Road, Nanshan District Shenzhen 518052, P. R. China Tel: (86) 755 26066939 Fax: (86) 755 26454315

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ForVacuum Products: 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, Malaysia Tel: (603) 5634 9239 /43 Fax: (603) 5634 7313

For Vacuum Systems and Leak Detection: Renorex Sdn. Bhd. No. 72 & 74, Jalan IKS Bukit Tengah Taman IKS Bukit Tengah 14000 Bukit Mertajam Penang, Malaysia Tel: (604) 5085 755 Fax: (604) 5075 755

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Singapore Technologies Electronics Ltd. Marketing Division 24 Ang Mo Kio Street 65 Singapore 569061 Tel: (65) 6413 1573 Fax: (65) 6484 5357

Thailand

Pneumax Co., Ltd. 104/21 Moo 8, Chaloem Phrakiat R. 9 Rd. Pravet, Bangkok 10250, Thailand Tel: (662) 726 8000 ext 501 Fax: (662) 726 8260

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

will assist you with order information, backlog management, return authorization, pricing and delivery, and with product technical data, literature fulfillment and troubleshooting.



Training Programs

Varian'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 Varian manufacturing facilities in North America and Europe, at convenient regional locations and at customer locations worldwide.





Logistics Infrastructure

Varian 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

Varian 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

Varian 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 Varian 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.

@ varianinc.com/vacuum

Visit <u>www.varianinc.com</u> and follow the Vacuum Technologies thread to order online and for all the latest information about new products, pricing and sales engineer contact information.

We are continually updating our web pages and adding new tools for vacuum users. Here are some examples of the services offered.



Applications

Find what you need by application. Even if you are not a vacuum expert, you can choose your application, and browse our catalogue to find the products that best fit your needs.



Downloadable Drawings

This tool lets you download dimensional drawings to help you shorten your design cycle.

All types of graphic format are supported.



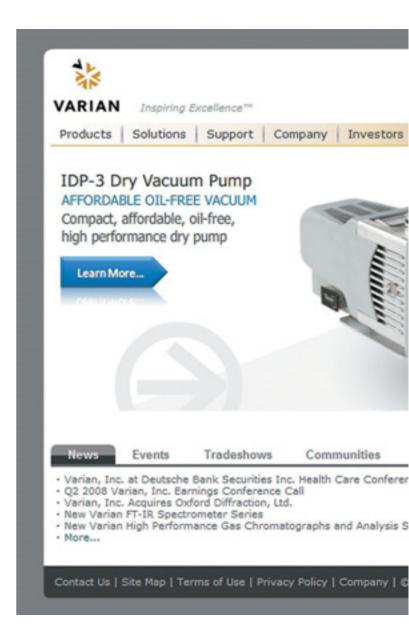
Customer Surveys

Your inquiries, comments and suggestions help us to serve you better. Surveys are conducted online and by e-mail to collect input and make www.varianinc.com more useful and friendly to you.



Online Catalogue

Find all information about Varian vacuum products: features & benefits, applications, technical specifications, outline drawings, ordering information.





Varian Locations

All the information you need to contact us at any of our locations all over the world: Manufacturing Plants, Varian Sales Offices, and Agents.



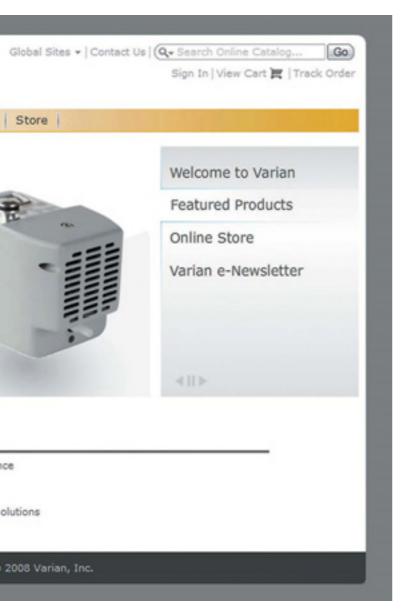
e-commerce

Buy any of our vacuum products online at the Varian Store, right from your desktop.



Online Order Tracking

Check the status of your order using your online account or your organization's name and customer number.





Instruction Manuals

Operation manuals (pdf) of our products are available online for immediate access or download.



VacuumXpress

Every standard vacuum component is guaranteed to ship within 24 hours of your online order.



Varian News

Download the latest issue of our electronic Newsletter, and other articles about Varian vacuum products, visit our Varian booth at industry exhibitions worldwide.



Sales Eng Quick Finder

Find your local Varian Sales Engineer data simply entering your country or ZIP code.



Extranet

When many vacuum users in one location need constant communication with our organization, a dedicated link can be created to meet your requirements.