

Compressor–Vacuum Pump



Air Squared's new 0.5-hp compressor–vacuum pump uses scroll technology to provide medical-product designers with a quiet, clean, and reliable source of vacuum or compressed air. The double-duty, oil-free unit can provide less than 1 Torr of vacuum or 20 psig of compressed air for use on ventilators, aspirators, oxygen concentrators, and blood-pressure monitors. Its scroll design enables smooth, pulse-free operation at only 45 dB by eliminating the noisy valves and vibrations of reciprocating units. A four-pole ac motor powers the unit, which has a pumping speed of 3.5 cfm as a vacuum source and provides a maximum open flow of 3.5 cfm as a compressor. Because the Air Squared pump contains only one moving part, it offers reliable and durable service.

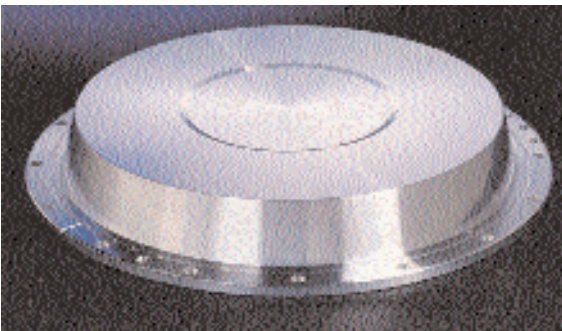
Air Squared, Inc.

7014 Rock Springs Drive
Hamilton, OH 45011

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Sputtering Target

Tosoh SMD's new SOLO Xtreme aluminum sputtering target is intended for physical vapor deposition applications in



the semiconductor industry. The company says that its new product has double the lifetime of other targets and provides superior uniformity throughout service. The target's long life significantly reduces its overall cost to users. The SOLO Xtreme has an on-board end-point detection system and a proprietary low-temperature bonding technique that maintains fine grain size and reduces particulates.

Tosoh SMD, Inc.

3600 Gantz Road
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Pressure Transducer

Setra Systems has brought a new, lightweight, space-saving pressure transducer to market. The Model 227 is designed for installation on modular gas-delivery systems or panels for monitoring specialty-gas processes in high-purity-gas delivery systems and semiconductor process tools. It has a 1.125-in. downmount C seal interfacing base, and it is meant for liquids and gases compatible with VAR 316L stainless steel. The device weighs 6.5 oz, stands 3.6 in. high, and provides excellent stability and long-term reliability. The Model 227 is available with 5-V or 10-V dc, or 4- to 20-mA output, and has a 0.25% of full-scale or 1.0% of reading accuracy. It measures gauge, compound, or absolute pressure at pressure ranges from 0 to 25 psi to 0 to 3,000 psi.

Setra Systems, Inc.

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Portable Gas Detector

ENMET's Target portable gas detector can be supplied with sensors for as many as six gases, including carbon



monoxide, hydrogen sulfide, sulfur dioxide, hydrogen chloride, and a broad range of hydrocarbons. The detector recently won intrinsic safety approval from the Canadian Standards Association, which certified it for use in hazardous work environments. The battery-operated detector provides simultaneous display of all sensor readings on a liquid-crystal display with a backlight, and it is user-programmable for location, person, date, and time. Target uses diffusion sampling with an internal motorized pump available as an option. The device weighs 32 oz, measures 6 × 4.5 × 1.7 in., and operates at 5 to 122 °F.

ENMET Corp.

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Exhaust Trap

MV Products' new Multi-Trap Model IC vacuum inlet–exhaust trap protects vacuum-system pumps against corrosive chemicals and abrasive particles. The high-capacity trap's water-cooled coils have

a surface area of more than 200 in.² and enable the collection of both condensables and particulates. The Model IC is available with copper or stainless steel gauze, molecular-sieve, activated-charcoal, activated-alumina, Sodasorb, and pleated-polypropylene filters, and it is easily customized for applications in industries such as chemicals, optoelectronics, semiconductors, and metal fabricating. It is possible to configure the Model IC with two banks of 10 replaceable 4.5-in. filter elements or one bank of five 9.5-in. filter elements.



MV Products, Division of Mass-Vac, Inc.
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Helium Leak Detector

MKS Instruments' new PICO series of portable helium leak detectors uses an ion-trap mass spectrometer to detect leak rates as low as 1×10^{-7} atm cm³/s from pressurized lines and enclosures and from vacuum chambers. The detector's touch screen displays the current and historical helium leak rate at the leak source, and the device compensates for background levels of helium often present in production



areas. An adjustable audio signal allows workers to hear the device in noisy environments. The sniffing-type detectors come with a 3-m probe and have applications in a broad range of industries that include air conditioning, refrigeration, automotive, chemicals, petrochemicals, semiconductors, pharmaceuticals, and underground utilities. PICO detectors weigh 16 lb and measure $4 \times 15 \times 10$ in.

MKS Instruments, Inc.
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Scanning Probe Microscope

Veeco has released its new MultiMode

PicoForce Scanning Probe Microscope control system for use in biological and materials research. The PicoForce system, coupled with new software developed specifically for it, enables accurate force measurements and manipulation of biological or material samples at the piconewton level. Uses include inter- and intramolecular force measurements for applications ranging from drug discovery to basic molecular-scale research. The PicoForce system incorporates several innovations in nanotechnology that allow precise, accurate control of tip-sample separation and low noise detection of cantilever deflection, making it particularly useful in studies of protein unfolding, antibody-antigen interactions, molecular motors, and nanoscale mechanical properties.

Veeco Metrology Group
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Metal Components

Key High Vacuum Products has introduced a new line of brass, stainless steel, and aluminum components for use in high-temperature or corrosive applications. The Key Speedy 316L ISO series includes flanges, adapters, fittings, flexible hoses, tees, crosses, elbows, and flanged valves, traps, and feedthroughs. The integrated system enables assembly of entire downstream



manifolds to be constructed from durable 316L stainless steel. Key Speedy components can be fully rotated and provide quick assembly without welding, soldering, or brazing, and they are ideal for systems that require frequent cleaning.

Key High Vacuum Products, Inc.
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Dry-Vacuum Pump

ULVAC's new DVS-630 dry mechanical



pump serves as a backing pump for electron microscopes, dry-vacuum systems, helium leak detectors, and other general vacuum equipment. The dual-faced, horizontal scroll pump is oil-free and delivers clean, dry vacuum to an ultimate pressure of 7.5×10^{-2} Torr at a pump speed of 630 L/min at 60 Hz. Precision bearings inside the pump minimize vibration and permit operation at 60 dB. The long-lasting material used for its bearing mechanism and seals allows many hours of continuous operation. The energy-efficient DVS-630 draws 600 W and is available in single-phase or three-phase operation.

ULVAC Technologies, Inc.
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The New Products section is based on information supplied by the manufacturers. *The Industrial Physicist* can assume no responsibility for its accuracy. To facilitate inquiries, a Reader Service Card is attached between pages 30 and 31.