



Vacuum in the laboratory

PRODUCTS AND SOLUTIONS

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Technology for Vacuum Systems

Vacuum filtration is frequently used for sample preparation in microbiology, waste water control and analysis. With a final vacuum of 100 mbar, 90% of atmospheric pressure is doing the work of forcing the media through the filter. For aqueous filtration, the ME 1 is the optimal choice; however, for more aggressive solvents, the ME 1C with its superior chemical resistance properties is the right solution.



PERFORMANCE FEATURES ME 1 AND ME 1C

- 0.7 m³/h max. pumping speed, 100 mbar ultimate vacuum (abs.)
- small, robust, reliable
- easy to use
- contamination-free pumping and evacuation
- outstanding chemical resistance (ME 1C)
- exceptionally long diaphragm life

FURTHER INFORMATION AT
WWW.VACUUBRAND.COM



Tired of waiting for filtration? Let us help you speed it up.

VACUUM PUMPS ME 1 AND ME 1C



Filtration is probably the most common application for vacuum in the laboratory. The new diaphragm pumps ME 1 and ME 1C offer a compact and high performance solution. With their easy-to-use functionality, they are perfect for both single and multiple filtrations. The ME 1C also offers outstanding chemical resistance.

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Technology for Vacuum Systems

Vacuum requirements for rotary evaporators can vary greatly depending upon the solvent mixtures and evaporating temperature. This is the reason why modern vacuum systems include a built-in vacuum controller to help you to achieve the optimum evaporation rates. This significantly shortens the process time, is energy efficient, and minimizes the environmental impact. The new „pro“ version with improved pumping speed extends the application spectrum for programmed vacuum processes (via CVC 3000 operating and programming mode or RS232C).



PERFORMANCE FEATURES PC 3001 VARIO^{PRO}

- intuitive CVC 3000 vacuum controller with clear text menus, with integrated venting valve
- automatic adaptation of the vacuum level throughout the process for high process reproducibility, safe unattended operation. Faster process times due to automatically adapting (hysteresis-free) vacuum control, even for large amounts of vapour
- very powerful and extremely compact, superior ultimate vacuum even with gas ballast
- improved max. pumping speed 2.0 m³/h
- whisper quiet and ultra low vibration
- excellent environmental friendliness due to efficient solvent recovery

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No more boiling over.



PC 3001 VARIO^{PRO}

The PC 3001 VARIO^{PRO} is the ultimate laboratory vacuum solution for working with many high-boiling solvents (e.g., rotary evaporation). Without the need for programming or constant monitoring, the automatic, single-point vacuum control prevents boiling retardation and foaming whilst reducing process times and increasing process safety.

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Technology for Vacuum Systems

Vacuum drying chambers are often used for handling very sensitive substances when it is necessary to guarantee excellent residual drying. They typically need a very good ultimate vacuum depending upon the degree of drying needed, the maximum acceptable temperature and solvents used. In certain process conditions, large quantities of vapours may also require pump systems that offer a sufficiently high flow rate.



PERFORMANCE FEATURES PC 3003 VARIO

- max. pumping speed 2.8 m³/h, ultimate vacuum 0.6 mbar
- CVC 3000 vacuum controller with intuitive clear text menus (14 languages), ceramic vacuum sensor and integrated venting valve
- automatic adaptation of the vacuum level throughout the entire process with high reliability and safe, unattended operation
- short process times due to automatically adapting (hysteresis-free) vacuum control
- ideal for high-boiling solvents and evaporation at low temperatures
- excellent environmental friendliness due to efficient solvent recovery

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There's no gentler drying system.



PC 3003 VARIO

The VARIO® diaphragm pumps and pumping units (e.g., PC 3003 VARIO) provide the optimal conditions for drying applications. The integrated, intuitive CVC 3000 vacuum controller adapts VARIO® system vacuum automatically, with hysteresis-free, single point accuracy.

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Technology for Vacuum Systems

The freeze drying process requires vacuum systems with a final vacuum of up to 10^{-3} mbar. The ideal solution is a two-stage rotary vane pump (different pumping speeds are available) or the special RC 6 chemistry-HYBRID™ pump. The latter pumping unit is a combination of a rotary vane pump and a chemistry diaphragm pump. The constant vacuum on the oil-chamber provided by the diaphragm pump prevents vapour condensation in the pump oil, reducing oil changes by up to 90% while the diaphragm pump remains unaffected by the chemical vapours.



PERFORMANCE FEATURES RC 6

- max. pumping speed 5.9 m³/h, ultimate vacuum 2×10^{-3} mbar
- reduced internal corrosion, even when working with corrosive vapours
- significantly reduced waste oil due to extended service intervals
- excellent environmental credentials due to efficient solvent recovery when equipped with optional emissions control accessories
- most economic solution: In practical operation, often no cold trap is needed

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The perfect team for cold conditions.

CHEMISTRY-HYBRID™ PUMP RC 6



The perfect partner for your Freeze dryer. The RC 6 is a corrosion-reducing combination of a two-stage rotary vane pump and a chemistry diaphragm pump. It offers outstanding suction power, vastly reduced service needs, and much less waste oil accumulation.

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Technology for Vacuum Systems

Vacuum concentration makes many demands on the supporting vacuum system, both in terms of the ultimate vacuum and in the selection of accessories. Apart from a good chemical resistance, a high vapour tolerance is also desirable. Solvent vapour can be recovered via an emission condenser at the outlet of the pump.



PERFORMANCE FEATURES MD 1C

- max. pumping speed 1.3 m³/h, ultimate vacuum 2 mbar
- outstanding chemical resistance and superior vapour tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even with gas ballast
- whisper-quiet and ultra-low-vibration operation
- proven long diaphragm life, maintenance-free drive system



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Carefree spinning with your vacuum concentrator.

CHEMISTRY DIAPHRAGM PUMP MD 1 C



Samples are concentrated without foaming and clumping by the simultaneous action of vacuum and centrifugal energy. The MD 1C pump is the compact, powerful heart of a complete family of reliable chemistry pumping units. It is the perfect partner for vacuum supply for vacuum concentration.

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Technology for Vacuum Systems

In molecular-biology, biochemical and cell cultural laboratories, media aspiration is a routine task. The sample preparation is frequently complex or in very small quantities. Therefore, it is important for the media to be removed as completely as possible without the risk of damaging the sample. The professional BioChem-VacuuCenter are designed precisely to facilitate this work with increased process safety.



PERFORMANCE FEATURES BVC PROFESSIONAL

- powerful chemical-resistant diaphragm vacuum pump with a very long service life even when working with aggressive disinfectants
- sensitive suction power adjustment via touch panel - for sample protection and reproducible results
- ready to accept a second hand controller - dual user operation for lower cost per user
- 4l PP or 2l borosilicate glass flask for high chemical resistance, with shatter-proof coating for safety and leakage protection
- 0.2 micron sterile filter - high protection against contamination of the environment
- liquid-level sensor to prevent aspiration of liquids into pump. Self-closing couplings (4l PP bottle version) for safe removal of bottle for change and transport

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Precise and Sensitive.

NEW FLUID ASPIRATION SYSTEMS BVC BASIC,
BVC CONTROL AND BVC PROFESSIONAL



Precise aspiration of even the smallest microlitre volumes with optimal control and comfort (by touch panel) for professional work and a perfect solution for required safety protocols. Simple connection facility for a second hand control offering dual user operation. The powerful chemical-resistant diaphragm vacuum pump with a very long service life even when working with aggressive disinfectants.

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Technology for Vacuum Systems

The DCP 3000 is a convenient vacuum gauge for rough and fine vacuum with a large illuminated display. The brand new VSP 3000 vacuum sensor is based on the thermal conductivity principle (Pirani) and offers a wide measuring range from atmospheric pressure down to 10^{-3} mbar. The gas contacting parts are made of chemically resistant plastics and ceramics, offering a vastly superior chemical resistance and robustness compared to conventional Pirani sensors that have fragile, spiral-wound metallic filaments.

PERFORMANCE FEATURES

- up to four gauge heads VSK 3000 (Atm. - 0.1 mbar) and four VSP 3000 (Atm. - 10^{-3} mbar) can be simultaneously connected
- brand new robust VSP 3000 vacuum sensor constructed from highly chemically resistant plastics and ceramics (used plastics PBT, PUR)
- wide measurement range from atmospheric pressure to fine vacuum (10^{-3} mbar)
- when used with our CVC 3000 vacuum controller and vacuum solenoid valve, the VSP 3000 gauge head can be used for vacuum control down to 10^{-3} mbar

FURTHER INFORMATION AT
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An amazing combination of sensitivity and toughness.

PIRANI VACUUM SENSOR VSP 3000
AND VACUUM GAUGE DCP 3000



The VSP 3000 Pirani vacuum sensor for measuring gauges and controllers (3000 series) features a much better chemical tolerance and resistance to mechanical and pressure shock in the range from atmosphere to 10^{-3} mbar. It is also splash-proof and tough enough for industrial installation applications.

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Technology for Vacuum Systems

Today, our VACUU·LAN® vacuum networks are the standard solution for the state-of-the-art laboratory. With a VACUU·LAN® vacuum network, several users at different workstations within a single laboratory jointly use one high performance chemistry diaphragm pump. This avoids the numerous drawbacks of central (building) vacuum systems, while providing an excellent applications solution at low cost. You can integrate the various connecting modules into old or new laboratories, meeting all of the needs of everyday laboratory work. These networks reach an ultimate vacuum of as much as 2 mbar, and have built-in check valves on every vacuum connection to help avoid interference between applications on the network.

VACUU·LAN® at a glance

- space-saving solution: pumps situated in convenient under bench locations thus freeing up work surface space
- demand-driven vacuum generation by automatically switching on and off the pump - low energy and maintenance cost
- integration in all installation situations such as service spines and fume hoods due to versatile and compact built-in version controllers and wall-mounted vacuum ports
- various valve configurations available to match the requirements of the job, e.g., for electronically controlled vacuum
- flexible solution via easily changeable modular parts

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The VACUU · LAN®-principle.

ONE VACUUM PUMP - MANY USER



VACUU · LAN® vacuum networks make it possible to supply several different applications with one vacuum pump; this is a money- and space-saving solution when a lot of users are working with vacuum in one laboratory. All of the components are available for new laboratory furniture or for installation in existing or renovated laboratories.

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Technology for Vacuum Systems

When intended for use in areas with potentially explosive atmospheres, European Community Directive 94/9/EC (ATEX) requires equipment which conforms with ATEX standards. VACUUBRAND offers Category 2 chemistry diaphragm pumps and vacuum systems conforming with ATEX (for use in zones where an explosive atmosphere is likely to occur). These chemistry diaphragm pumps are appropriate for such locations because they are highly resistant to chemicals, oil-free, have no sliding surfaces, and the expansion chamber is hermetically sealed against the drive zone. ATEX chemistry vacuum systems with solvent recovery provide safe, convenient vacuum while protecting the environment.

PERFORMANCE FEATURES MV 10C EX

■ **Powerful**

Ultimate vacuum 12 to 2 mbar
Pumping speed 1.9 to 8.1 m³/h

■ **Chemically resistant materials**

Wetted materials: Fluoroplastics (PTFE, ETFE, FFKM)
and stainless steel

■ **Explosion proof**

ATEX conformity:
pumping chamber (pumped gas):
II 2G IIC T3 X
environment (around the pump):
II 2G IIB T4 X (with inert gas purge)
II 3G IIB T4 X (without inert gas purge)

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Explosion proof vacuum.

ATEX CHEMISTRY DIAPHRAGM PUMPS AND
-PUMPING SYSTEMS



- outstanding chemical resistance and superior vapour tolerance
- flame proof motor with integrated, self-locking overload and over temperature protection for direct 230V / 50Hz single phase power supply
- no technically demanding over current protection provision necessary by the customer
- safety diaphragm technology with option for inert gas purge and detection of diaphragm breakage

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