



**WELCH**

# WELCH VACUUM Product Overview

Vacuum Pumps and Systems, Vacuum Measurement and Vacuum Hardware.  
Comprehensive product range for Laboratory, Industry and OEMs.



[www.welchvacuum.com](http://www.welchvacuum.com)

# About us

## Applied Vacuum Technology for Research & Development, Laboratory and Industry.

WELCH Vacuum develops, manufactures and distributes vacuum pumps and systems, vacuum measurement technology & vacuum components for scientific and industrial applications in laboratories, pilot plants and production.

WELCH offers a comprehensive product portfolio including rotary vane pumps, diaphragm pumps and systems, WOB-L piston pumps, Roots pumping stations and UHV pumping stations, as well as a wide range of accessories. With us, you get everything from a single source for a wide variety of lab applications, from rough to fine to UHV vacuum.

Our products are mainly sold through laboratory dealers and a network of distributors, representatives, direct sales channels and service partners throughout Europe. Experienced application specialists are available to assist you with pump selection, training and best practice operation.

WELCH has had a clear focus on vacuum technology for more than 100 years and our products can be found in universities, research laboratories and analytical equipment around the world - primarily in Pharmacy, Biology and Chemistry sectors. We add value to our customers' businesses through unique end-use solutions and innovative OEM products. Find out more on our website [www.welchvacuum.com](http://www.welchvacuum.com)

The company's headquarters are in Fürstentfeldbruck / Germany. The availability of our products is ensured by three ultra-modern production locations in Ilmenau / Germany, Monroe / USA and Wuxi / China. These sites are certified according to the latest DIN ISO 9001: 2015.

WELCH is a brand of Ingersoll Rand.

**WELCH VACUUM: Quality - Service - Knowhow**  
Your reliable and trusted partner in laboratory vacuum.

## MARKET SEGMENTS



**R&D AND EDUCATION**



**PHARMA, BIOPHARMA AND LIFE SCIENCE**



**CHEMICALS, COSMETICS AND PLASTICS**



**INDUSTRIAL MANUFACTURING**



**FOOD, BEVERAGE AND ENVIRONMENT**



## PUMP TECHNOLOGIES



### ROTARY VANE

CRVpro two-stage rotary vane pumps  
Chemvac chemistry hybrid combination pumps  
DUOSEAL & CHEMSTAR belt driven



### DIAPHRAGM

Chemistry diaphragm pumps  
Ecoflex diaphragm pumps with control  
Standard duty diaphragm pumps



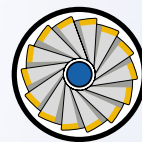
### WOB-L PISTON

Single head WOB-L  
Twin head WOB-L



### ROOTS PUMP SYSTEMS

ChemStar Dry  
RUD roots pump systems

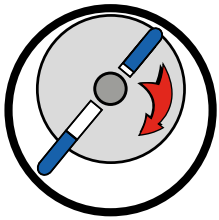


### UHV SYSTEMS

Turbomolecular pump systems  
Oil diffusion pump systems



**MANY PRODUCTS ARE AVAILABLE FROM QUICK STOCK OR ON SHORT LEAD TIMES**



# Rotary Vane Vacuum Pumps

Two-stage oil-sealed rotary vane pumps are used in many areas of science, research and industrial production. They are used whenever a process vacuum up to  $10^{-3}$  mbar is required.

WELCH Vacuum offers 3 different pump series; CRVpro, Chemvac and especially for industrial vacuum DUOSEAL® and CHEMSTAR®. The CRVpro series can be used as a single pump or as a pump combination with RUD Roots or UHV pumps (complete pumping stations available). These well-proven pumps are characterized by their very smooth running and are therefore ideally suited to use in the laboratory and with analytical instruments. We offer a comprehensive range of accessories for all rotary vane vacuum pumps.

## CRVpro SERIES

Your robust vacuum pump

- 9 models with flow rates from 2 to 65 m<sup>3</sup>/h
- Complete pump packages with accessories for selected applications or available as mobile trolley
- Selected models can be prepared for operation with PFPE oil
- CRVpro2 to CRVpro30 available with 1Ph or 3Ph motor, CRVpro48 & 65 available with 3Ph motor



**CRVpro2** **CRVpro4** **CRVpro6** **CRVpro8** **CRVpro16** **CRVpro24** **CRVpro30** **CRVpro48** **CRVpro65**



P 6 Z - 101



## CHEMVAC SERIES

Hybrid combination pumping stations - corrosion-optimized combination of 2-stage rotary vane pump and chemical resistant diaphragm pump.

- 3 models with flow rates 6, 11, 21 m<sup>3</sup>/h
- For pumping aggressive and condensable vapours with extended oil change intervals
- Available with exhaust emissions condenser option for pumping large amounts of condensable vapours

CHEMSTAR  
1402N



## DUOSEAL® AND CHEMSTAR® SERIES

Rugged belt driven rotary vane pumps.

- 6 models with flow rates from 1.5 to 39 m<sup>3</sup>/h
- DUOSEAL for fine vacuum applications with increased water vapour capacity - ideal for cyclical pumping processes
- CHEMSTAR for corrosive solvent vapours with increased resistance
- Special refrigeration servicing (HVAC) models available

## ACCESSORIES

Full range of accessories; filters, traps, KF flange components and vacuum pump oil plus complete application connection kits.

Oil mist filters



Foreline Traps & Filters / Cold Traps



KF flange components



Vacuum pump oil



## PS SERIES

One-stage oil-sealed rotary vane pumps for rough vacuum to 0.5 mbar in industrial applications. 7 models with flow rates from 20 to 300 m<sup>3</sup>/h.



# Dry Diaphragm Vacuum Pumps

Use diaphragm pumps for dry, oil-free applications in the rough vacuum range in science, research & technology as well as in chemistry, pharmacy and food industry. Ideal for continuous running and pumping of gases and vapors. The pumps are absolutely oil-free and abrasion-free. There are two types of pumps: chemical (MPC) & standard version (MP).

WELCH Vacuum offers a comprehensive portfolio of diaphragm pumps with a pumping speed of 5 l/min to 325 l/min (0.3 - 19.5 m<sup>3</sup>/h) and a final pressure of 100 mbar to 1 mbar for a wide range of applications in the laboratory, industry and Instrument manufacturers (OEM). They are available in 1, 2, 3, 4-stage designs. Diaphragm vacuum pumps are compact, very quiet and are characterized by their robust construction. Diaphragms and valves are designed for a long service life. Maintenance and service work can be carried out quickly and easily. All pumps are tested and delivered according to DIN 28432.

## MPC SERIES

Chemical resistant diaphragm pumps for pumping out chemically aggressive solvents and acid vapors. Typical applications are vacuum distillation and drying, filtration or degassing.

- PTFE and fluoropolymer wetted parts
- Ecoflex speed control models for energy saving operation and extended diaphragm life - reducing operating costs by up to 80%
- Many models have ATEX category 3 (Internal) certification

WELCH MPC diaphragm pumps with ATEX conformity (device category 2) for generating vacuum in areas with potentially explosive atmosphere.



MPC 090 E



MPC 105 T



MPC 302 Z



MPC 602 T



MPC 1201 T ef



MPCpro 602 T



## MPCpro SERIES

Assembled pump systems for vacuum applications in the laboratory.

- Small footprint, easy to use and fully assembled ready for use
- Consisting of MPC diaphragm pump with optimally matched accessories: inlet separator, exhaust emission condenser, vacuum regulating valve and vacuum gauge
- Parallel operation of two processes possible

MP 601 E



## MP SERIES

Standard duty diaphragm models for pumping non-corrosive gases.

- For use in a wide variety of physical applications in the laboratory or industry: Gas sampling, analysis, as a backing pump for turbomolecular pumps, pick & place applications, vacuum holding / chucking

## ACCESSORIES

- Vacuum Regulator + Gauges
- Application connection kits
- Hose, silencers and much more



## OEM PUMP RANGE

WELCH vacuum pumps can be adapted for OEM equipment integration, including BLDC motor models. We have long standing business partnership with many instrument and equipment manufacturers globally.





# Diaphragm Vacuum Systems

Combining MPC chemically resistant diaphragm pumps with accessories to protect the pump and the lab environment.



LVS 105 T -10 ef\*

## LVS SERIES

Automated chemistry diaphragm vacuum system – fully accessorised. Speed controlled or solenoid valve controlled.

- Flow rates from 18 l/min to 325 l/min (1,1 – 19,5 m<sup>3</sup>/h)
- Ultimate vacuum options of 75 mbar to 1 mbar
- Systems with solenoid 2-point control or ecoflex speed control (single point) for precise vacuum control

Save energy with ecoflex speed control models – GREEN by design

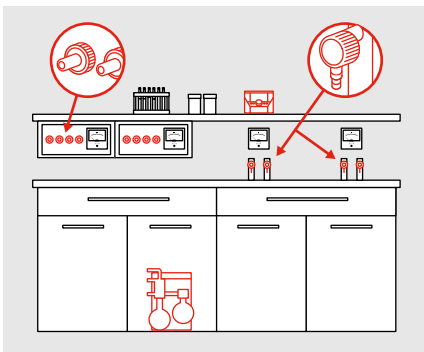


MPKC 5402 Z

## UNIVAC – MPKC SERIES

Powerful mobile pumping stations with built-in controller to ensure on demand vacuum.

- Equipped with 4 or 6 MPC diaphragm pumps in a mobile frame with digital vacuum controller
- Models with 75, 8 and 2 mbar final pressure and a max. flow rate of up to 50 m<sup>3</sup>/h. Parallel operation of several Univacs possible
- Central house vacuum supply of multi-user vacuum networks and lab reactors



## WELCHNET – MODULAR VACUUM NETWORK FOR NEW LABS AND LAB RENOVATIONS

Complete system of chemically resistant diaphragm pump, vacuum ports, regulators, pipework and fittings.

- Space saving design with on-demand vacuum supply
- No benchtop pumps required – pumps and controllers are integrated into laboratory furniture
- Economical vacuum generation

Contact our vacuum experts for selection guidance specific to your lab



BIOVAC 106 4L

## BIOVAC FLUID ASPIRATION SYSTEMS

Biovac 106 for safe and precise aspiration of non-flammable chemical, biological, and medical liquids.

- Closed suction system for use in biosafety level 1, 2 or 3 – complete solution with all necessary accessories
- Chemical resistant diaphragm pump (MPC series), with either 2 liter glass bottle (safety-coated) or 4 liter polypropylene bottle
- Handvac pipettor and multiple tip options included to enable suction from a wide variety of laboratory equipment (including 96-well plates, centrifuge tubes, cell culture bottles)





# WOB-L<sup>®</sup> Piston Pumps



WOB-L pumps are fully accessorised, robust, oil-free piston pumps for standard duty applications, e.g. filtration, gas sampling, vacuum drying and automation technology.

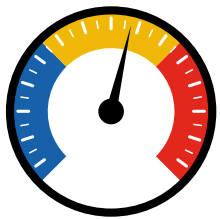
- Flow rates from 9 l/min to 168 l/min (0,5 - 10 m<sup>3</sup>/h)
- Ultimate vacuum 292 mbar down to 7 mbar
- Vacuum regulator, gauge and inlet separator, plus pressure regulator and gauge for single head models
- Also available as built-in OEM models



WOB-L 2534/2546



WOB-L 2561/2567



# Vacuum Measurement Gauges and Controllers

**NEW**



VCpro 601

## VCpro VACUUM CONTROLLER

Table top vacuum controller for most common vacuum pumps.

- Measuring and control range in rough vacuum from 1100 to 1 mbar, 2-point vacuum control
- With integrated chemical-resistant ceramic coated sensor
- All-in-one controller for vacuum, water valve, inert gas ventilation
- Latest high contrast 5" colour display, tactile buttons and intuitive operation



VM 2



## VMpro VACUUM GAUGE

Robust Vacuum gauge for rough and fine vacuum range.

- Rugged combination sensor combines most advanced Pirani and capacitance membrane technology
- High accuracy and excellent resolution in the range atmosphere to 10<sup>-3</sup> mbar
- Standard or chemical resistant coated sensor version with LCD Display  
Optional: external pressure readout
- Available as a package with all accessories for fine vacuum measurement



## MULTI-RANGE VACUUM GAUGE / CONTROLLER MRV

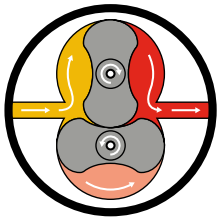
- Versatile vacuum gauge and controller with a wide measuring range from atmospheric pressure to 10<sup>-8</sup> mbar, depending on sensor
- Different sensor types available depending on the application
- Robust design with diverse functions (setpoint relays, digital interface)
- Also available as part of complete vacuum control packages



MRV 100  
WITH PENNING SENSOR

## VMF DIAL GAUGES

Bourdon gauges for measurement in rough vacuum range to 1 mbar. Aluminium or Stainless Steel DN 16 KF flange.



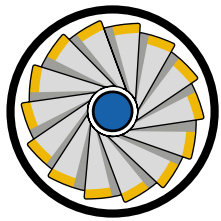
# ChemStar Dry Vacuum Blower System

Oil free, chemically resistant vacuum pump system.

- Combination of corrosion resistant roots blower and chemical resistant diaphragm pump; low final pressure  $<1 \times 10^{-1}$  mbar
- High pumping speed up to  $9 \text{ m}^3/\text{h}$ , maximum flow between 0.1 and 100 mbar
- Simple plug & play operation for vacuum drying and sublimation applications



CHEMSTAR DRY 2070



# UHV Systems

CDK240



## TURBOMOLECULAR PUMP SYSTEMS

- Ultimate vacuum to  $5 \times 10^{-8}$  mbar
- CDK systems in a compact housing with oil-free diaphragm backing pump
- STP series on a mobile trolley with oil-free diaphragm or oil-sealed rotary vane backing pump



DP 63/4DP

## OIL DIFFUSION PUMP SYSTEMS

- Ultimate vacuum to  $10^{-6}$  mbar
- Fully assembled mobile pumping stations with two-stage rotary vane pump, vacuum gauge and accessories
- Manual or pneumatic valve options

## Vacuum hardware, components and valves



Vacuum Components manufactured and stocked.

- KF, ISO-K and CF flange components
- Stainless Steel, Aluminium and Plastic components
- KF flanges in sizes DN 10 to DN 50
- KF glass flanges and special clamps for glass
- ISO-K flanges in sizes DN 63 to DN 250
- CF flanges in sizes DN 16 to DN 250
- Manual, electromagnetic and electropneumatic valves; angle, straight, ventilation, variable leak valves
- Vacuum chambers
- Custom designs and special assemblies on request



## GENERAL CONTACT

### GLOBAL HEADQUARTERS

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