

# *mVAC Medical Vacuum Systems*





## mVAC Medical Vacuum Systems

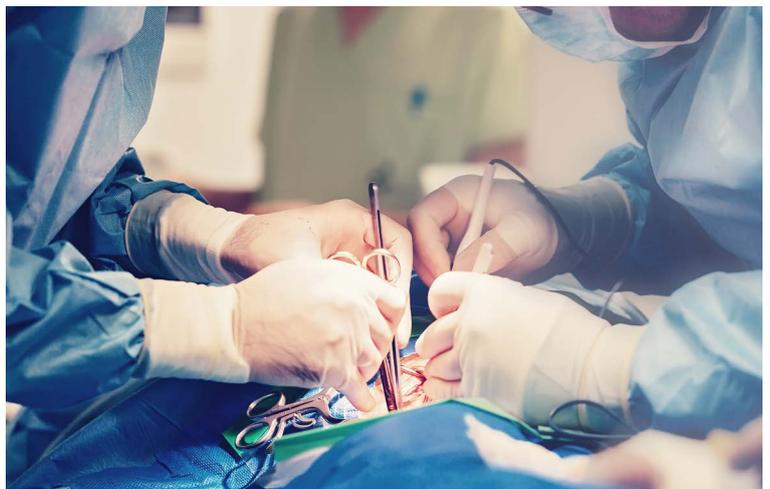
The BeaconMedæx mVAC Medical Vacuum Systems consist of between two and six air-cooled, oil-lubricated rotary vane type vacuum pumps and a central controller with an intelligent graphical user interface. The pumps can work independently to satisfy the required vacuum flow.

mVAC systems are suitable for both continuous and frequent start/stop operation. They keep the vacuum level at the point of connection as low as or lower than -600 mbar(e) (-450 mm Hg) at all times. The mVAC system offers (multiple) backup supply in case of failure of individual functional components.

It is installed, piped and wired as modular stacked components or as a tank-mounted unit.

mVAC systems provide a highly reliable medical vacuum (suction) for a variety of applications, mainly in operating theaters and intensive care, emergency and respiratory units. Specific applications include:

- *Wound drainage*
- *Assisted wound closure*
- *Chest and lung drainage*
- *Collection of other bodily fluids*
- *Gastric emptying*
- *Cleaning endotracheal tubes*
- *Liposuction (lipoplasty)*
- *Removal of excess blood during surgery*



## A configuration to fit your requirements

### *Tank Mounted*

The tank mounted mVAC provides an all-in-one vacuum package for smaller hospitals. By mounting the pumps and filters directly to the vessel, the smallest possible footprint is achieved. With a maximum of 3 pumps, this platform can deliver up to 1000 l/min. The bacterial filters are directly integrated into the interconnecting pipes. Tank mounted vacuum plants are easy to install as they come as plug & play units. This platform represents a robust quality at the lowest investment cost.



### *Frame Mounted*

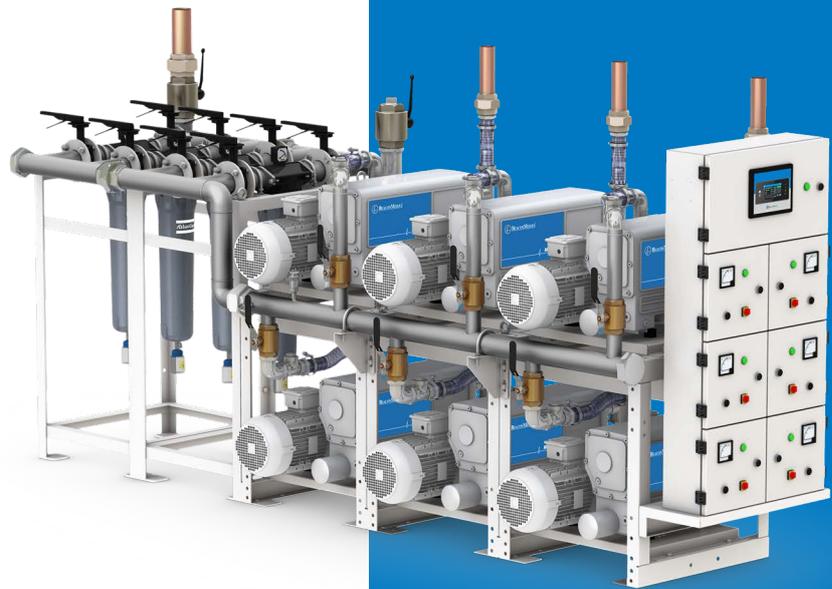
By stacking the pumps, the frame mounted mVAC combines a higher flow capability with a remarkably compact design. The fully duplexed bacterial filters are mounted on a separate frame, that can be bolted onto the pump frame, leading to a very space efficient layout. The controller panel is fitted next to the pump frame at user-friendly eye-level. All the serviceable components are easily accessible, ensuring a fast and straightforward maintenance.



### *Floor Mounted*

Experience complete freedom in your configurations with our floor mounted mVAC. The pumps, filter frame and vessels are all delivered as individual components, allowing them to be positioned in any required layout to fit the plant room. This way you can make optimal use of the available space at hand. The controller cabinet can be mounted to the wall and incorporates both the central controller and individual pump controllers. Your local installer can connect everything together for full flexibility.





## Medically fit vacuum pumps

### *Innovative Vacuum Pumps*

Designed especially for medical applications, our in-house developed oil-lubricated rotary vane vacuum pumps offer high flow capacities. They are simple and economical to install and operate, and are quiet and inherently vibration-free.

### *Longer Machine Life*

The vacuum pumps provide smooth, pulse-free vacuum and have low starting and running torque. The vanes are constructed from composite material providing a long lifetime of your vacuum systems (up to ten years under normal operating conditions). The service interval of the MVS pumps is guaranteed up to 5000 hours or 2 years (whichever comes first), increasing the pump up time as well as lowering the total cost of ownership.

### *Reduced Noise and Heat*

With higher working pressure and frequent start stop, our multi oil injection within the core element helps us to maintain ideal and homogenous temperature to emit less noise and heat into the equipment room, creating a better working environment for your staff.



## Frequent Start Stop

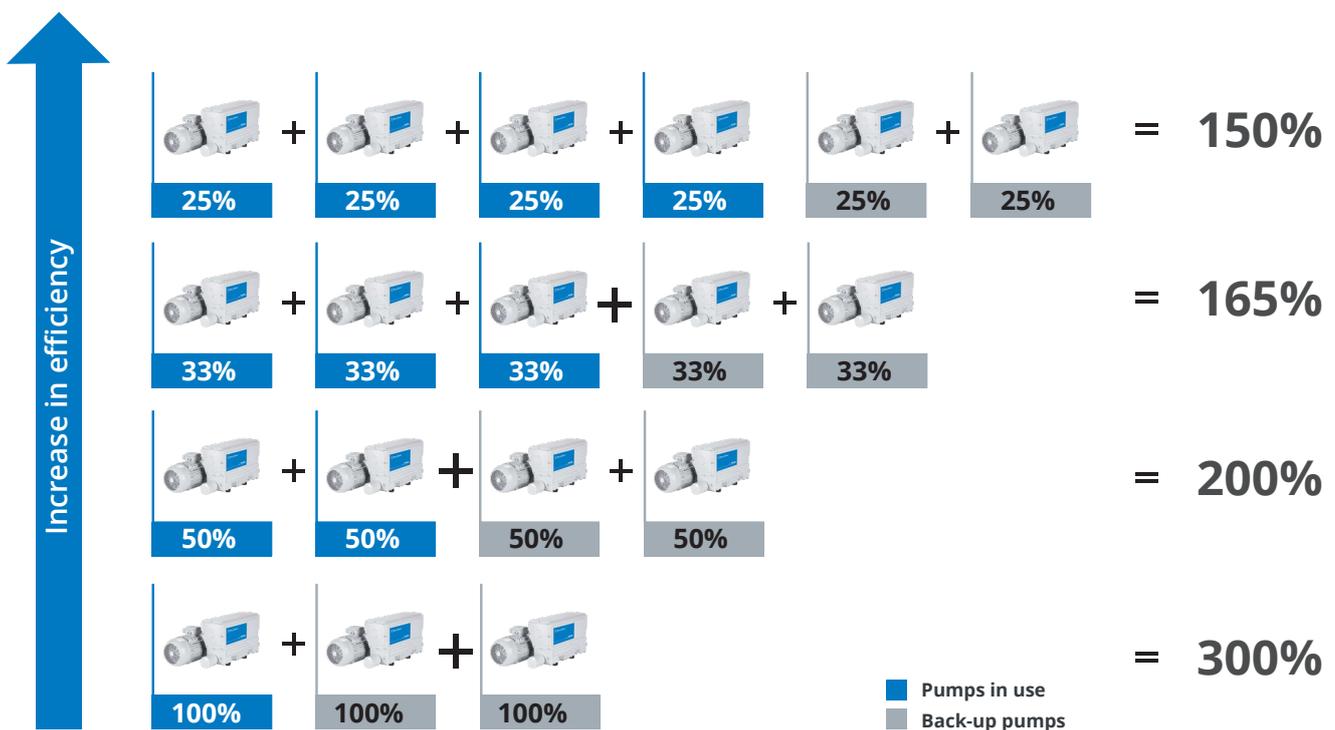
Optimally sized to suit the demands of frequent starts found in medical applications, each motor is air-cooled by an integral fan and protected by an overload fitted within its pump control panel. Operating with low starting currents and slower pump rates decreases your machine and component wear, resulting in lower maintenance costs.

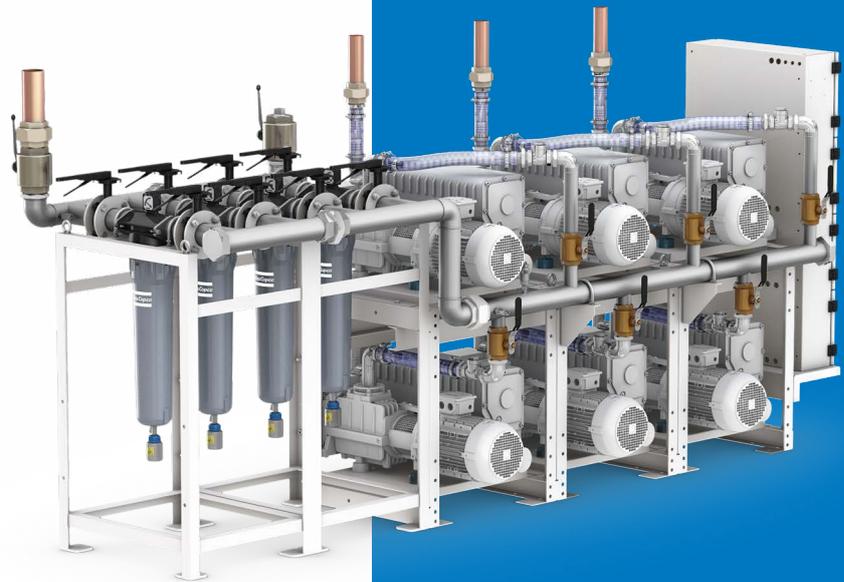
## Pump Redundancy Scheme

mVAC Medical Vacuum Systems complying with HTM 02-01 and ISO 7396-1 are provided with at least two standby pumps (i.e. the design flow of a system with three pumps is provided by a single pump.) mVAC systems complying with HTM 2022 are provided with at least one standby pump (i.e. the design flow of a system with two pumps is provided by a single pump).

It can be shown that as more pumps are provided, the consumed energy decreases. By using a larger number of small pumps an energy saving can be achieved.

We have pre-determined our plant package using the optimum arrangement of pumps, between 3 and 6, so you don't need to worry about anything other than the flow capacity and footprint.





## Optimal protection

Each mVAC Vacuum System comes with medical vacuum filters fitted at the inlet. These filters remove any remaining liquid, solid or bacterial contamination which could damage the vacuum pump and biologically infect the downstream components. In such way, personnel and equipment are always optimally protected.

### *Easy maintenance*

As the filters are duplexed, maintenance can be performed without shutting down the total installation. Thanks to push-on elements and external ribs on the threaded housings, service becomes an easy task.

### *Peace of mind*

Each mVAC is fitted with a fully redundant duplex set of filters. Pressure drop over the filters is monitored on the central controller, which will trigger a warning when service is required.

### *Compliance*

The medical vacuum filters have been specifically developed to meet HTM requirements. Performance of the filter has been verified with a sodium flame test acc. to BS3928:1969, while the dry pressure drop is lower than 33 mbar.

### *Maximum contaminant removal*

Removal of dry and wet dust, particulates, oil aerosol and water droplets using high-efficiency glass fiber and fleece media.

## Advanced Control and Monitoring

Get the most out of your Medical Vacuum System with our Mk5 Touch control and monitoring system, an intelligent microprocessor-based control system dedicated to controlling up to six vacuum pumps in your system.

- *Equipped with a color touch screen display*
- *Easy overview of system vacuum level, pump status and medical alarms*
- *Most critical alarms are available as voltage-free contacts for connection to the Building Management System (BMS)*
- *Automatic restart after voltage failure*
- *Service warning indications for pumps & bacterial filters*
- *Manually or automatically switch between two setpoints to achieve increased energy efficiency when facing fluctuating levels of demands*

## Real-time monitoring with SMARTLINK

Collecting data and knowing the status of all the pumps in your Vacuum System has never been easier. Through a website integrated within the Mk5 module, all data is visualized in real-time using a simple ethernet connection, offering you immediate clarification of the system status.

You can even take remote monitoring to the next level using **SMARTLINK**, a cloud-based remote monitoring system that can be tailored to your needs. With three solutions to choose from, you can optionally extend your remote monitoring with email and text warnings, or even analyze the energy efficiency of your plant room by a simple click. The results can be used for energy monitoring according to ISO50001.



