

Life
is in the
details.

mVAC™
Medical
Vacuum
Systems



mVAC - Absolute

mVAC Systems

A hospital's medical vacuum supply is critical to patient safety and therefore demands absolute reliability.

BeaconMedæ's mVAC systems are carefully designed for maximum durability, surpassing the requirements of the most comprehensive standards and regulations, including:

- MDD 93/42/EEC
- EN ISO 7396-1
- HTM 02-01
- HTM 2022

mVAC systems are designed and manufactured under an ISO 13485:2003 quality management system.

Leading Reliability

Most medical vacuum pumps use fibreglass rotor blades over-laminated with a thin coating of phenolic resin. When the surface coating inevitably breaks down, the underlying layers are exposed to oil, moisture and friction. This leads to rapid wear, swelling, oil penetration and eventual system failure.

BeaconMedæ's mVAC pumps utilise a unique design using **solid aluminium alloy blades**. They won't break down and wear like laminated blades. By adding specially designed channels to the rotor blade surface, oil circulation is significantly improved too.

Intelligent Control

The intelligent microprocessor based control system, developed specifically for medical vacuum applications, ensures your mVAC system delivers sufficient flow at the desired vacuum level with complete dependability.

Healthcare facilities are continually adapting to benefit from new medical and technological advancements - delivering an increasing portfolio of services to the expanding population. Your mVAC is a modular system with plug and play controls so it can grow too - easily expanding system capacity as your hospital grows.



lute Reliability

Simple to Maintain

1. Vacuum Pumps

Compact, smooth-running, and ruggedly designed oil-flooded rotary vane pumps. The unique aluminium alloy blades provide a longer life than conventional composite blades and are supplied with a 5-year warranty.

2. Motors

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 the motor control panel.

3. Oil Separation Filters

An efficient oil separation system automatically recirculates entrained oil droplets to prevent oil loss, the separator elements being easily maintained via special access ports.

4. Bacteria Filters

The high efficiency bacterial filter elements have a penetration of less than 0.0001% when measured to BS 3928 to minimise the likelihood of microbial contamination of the oil.

5. Vacuum Vessel(s)

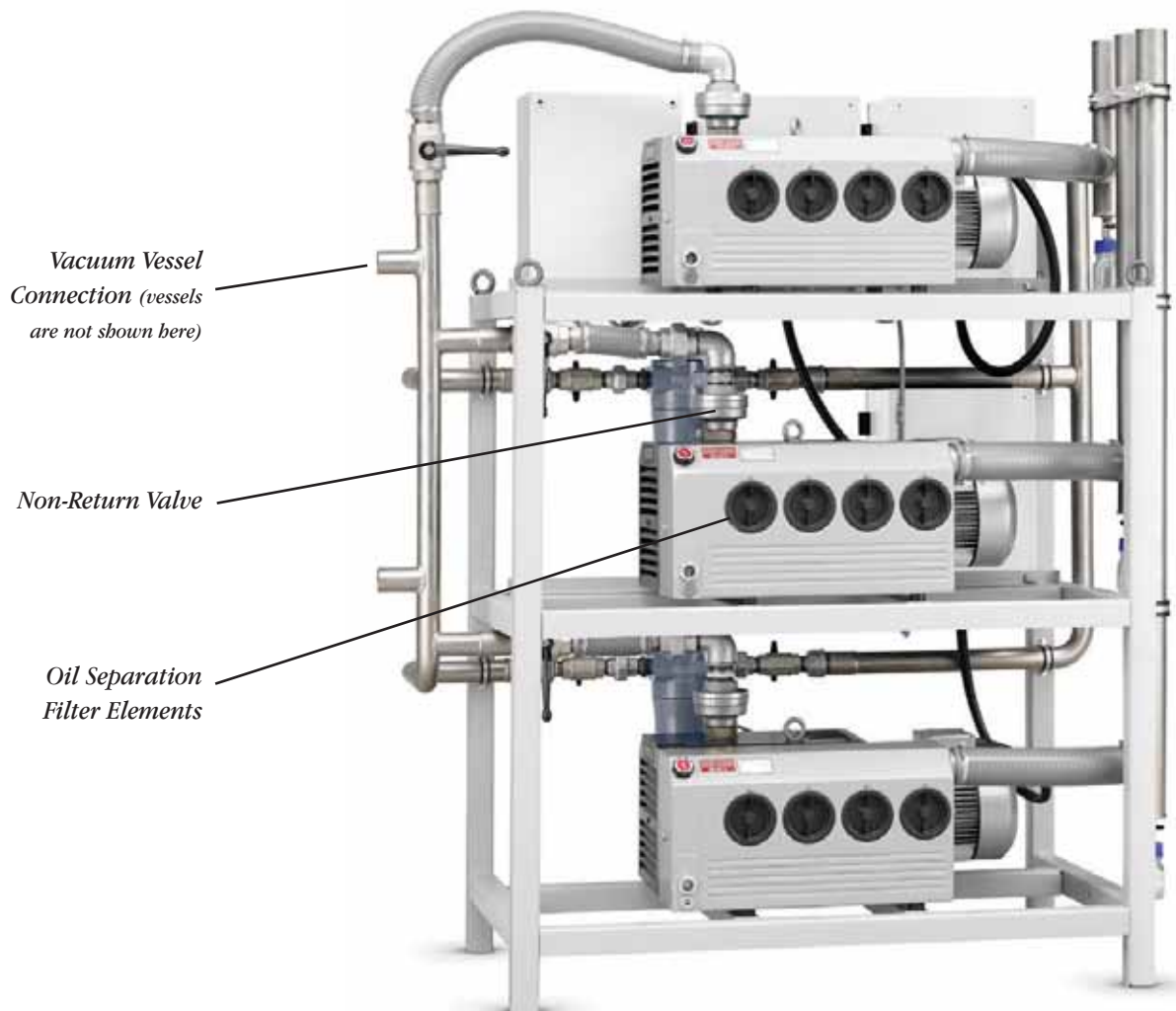
The hot-dipped galvanised finish extends vacuum vessel life by 300% over conventional untreated steel pressure vessels.

6. Motor Control Units

Larger pumps are provided with soft starters, increasing motor and pump life and enhancing system reliability.

7. Central Controller

An intelligent human machine interface, dedicated to controlling centralised vacuum systems in healthcare facilities - see overleaf.



CCU3 Interface

The BeaconMedaes CCU3 is an advanced control system and intelligent Human-Machine Interface (HMI), which is the heart of every mVAC system. Based around a powerful microprocessor, the CCU3 communicates with a wide range of equipment including PSTN and short-haul modems, PC's and printers through an onboard RS 232 serial port.

The CCU3 can control up to 8 vacuum pumps, cycling the lead pump each time a motor is started start to ensure even wear.

The CCU3 includes an event log browser facility that stores events in an onboard flash memory, against a time stamp provided by the onboard real-time clock. As standard, the CCU3 stores the maximum and minimum values of ambient temperature during each 24 hour period of operation, and can be programmed to store other measured data.

Communications

The CCU3 communicates directly with a BeaconMedaes MediPoint 125 central alarm system, such that any fault conditions are immediately relayed to the facilities management office. A set of volt-free contacts can also be used to transmit operating alarms through an existing Building Management System (BMS) or other central alarm network.

By connecting the CCU3 to a PC via the RS 232 port, remote monitoring of plant parameters, and easy to understand notifications of any alarm conditions are available from a desktop computer in the engineering or facilities management office.

Added Safety

In the unlikely event of a microprocessor malfunction, the CCU3 incorporates an automatically actuated mechanical backup vacuum switch, ensuring continuity of the medical vacuum supply.

Additional safety features include continuous monitoring of transducers, ensuring any fault is immediately detected and relayed to the central alarm network. The event browser can then be used to identify the root cause, assisting the proactive corrective maintenance process.

