

Imperial College
Healthcare NHS Trust



Case Study

Background:

Health Technical Memorandum (HTM) 02-01 provides guidance to designers, installers and maintainers of medical gas pipeline systems. Medical vacuum pumps installed in accordance with the HTM have historically been of an oil-lubricated, fixed-speed, rotary vane type. The guidance determines that pumps be designed to meet the maximum theoretical demand of the hospital. Accordingly, they are over-sized in relation to the peaks and troughs of normal daily demand.

Pressure for Change:

As part of a wider Imperial College Healthcare NHS Trust energy-saving initiative, SHJ encouraged the Trust to consider the adoption of variable-speed technology. The result was a prototype arrangement in which an Elmo Rietschle VSI Twister VSI 300 variable-speed vacuum pump was selected and installed by SHJ alongside an existing triplex rotary vane pump set.

The Outcome:

The 7.5Kw Twister became the duty pump, operating under independent control and running continuously, taking the lead in meeting the constantly fluctuating hospital demand. The 11Kw fixed-speed pumps remained in a state of operational readiness should the demand have exceeded the output of the variable-speed machine.

The Twister proved itself as smaller, lighter, quieter, cheaper to maintain and significantly more energy-efficient than its big brothers.

The success of this project gave an added boost to the suggestion that this new arrangement could be extended to serve the total demands for vacuum across the entire hospital campus.

