

BACKING PUMPS FOR VACUUM COATING

Vacuum systems are essential parts (along with coating and substrate feed modules) in the set up of a large area coater. A typical vacuum system consists of a selection of primary and secondary pumps to achieve fast pump-down time and to maintain high vacuum levels during the coating process. Mechanical booster pumps with roots design are used to boost the speed of the backing pump and to achieve higher ultimate vacuum levels. Mechanical boosters are a cost efficient way to optimize the vacuum pumping system in terms of achieving short pump-down times and matching the backing requirements of the diffusion vacuum pumps. Backing, or primary pumps are required to exhaust to atmosphere. Typical backing pumps sizes range from 200 to 1,000 m³/h and the available technology is divided into lubricated and dry.

Pneumofore rotary vane technology, says the Italian company, represents a new opportunity in vacuum systems by reducing maintenance costs and by introducing larger single unit capacity up to 3,000 m³/h.

The use of special aluminium vanes, overrated bearings and the particular mechanical design to provide active sealing guarantee a stable performance also after years of operation, avoiding efficiency loss and minimizing maintenance operations. Higher capacities allow to reassess vacuum systems in terms of evacuation time and booster sizing.

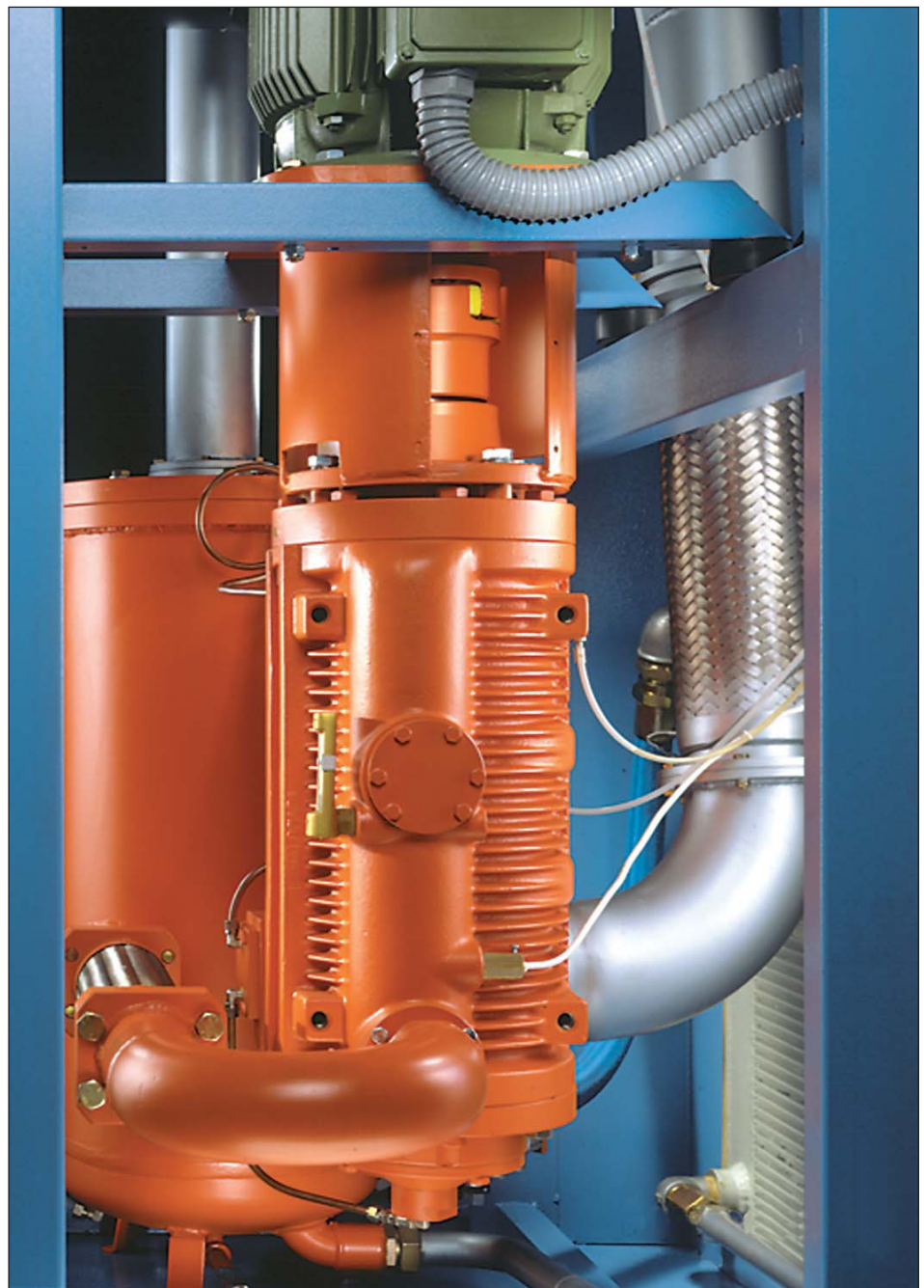
Pneumofore is presently working on a new project in collaboration with an Italian OEM roots pump. The aim of this work is to put on the market an ultra-compact double-stage machine with a double "variable speed" option in order to obtain

shorter evacuation time and lower ultimate working pressure. *VTE*, Milan, 3-6 October 2007, will be the launching ramp for this highly efficiency machine duly thought for high vacuum applications.

Choosing the right vacuum system for a large area coater is a challenging task, as both technical and commercial aspects need to be taken into consideration. Too often the price of the vacuum equipment alone is the key factor in the selection process.

Focusing on investment costs alone may result in sub-optimal equipment selection, as this ignores the maintenance requirements of the vacuum system and its significant contribution to the life cycle cost of the equipment. Selecting advanced vacuum technologies results in cost savings. In fact, the initial price is generously recovered during the life of the equipment.

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UV16 Rotary Vane Vacuum Pump