

## Systematic replacement of water-cooled pumps with air-cooled UV pumps



In June 2004 the first Pneumofore vacuum pumps were installed at Wiegand Glas GmbH in Steinbach and in Grossbreitenbach, Germany. Several air cooled UV pumps replaced successfully old, water-cooled units. The good results in Germany motivated the installation of UV pumps also at Nampak Wiegand Glass in South Africa.

Wiegand represents an important reference for Pneumofore UV pumps in the worldwide hollow glass industry. Vacuum is applied in the molding process on the IS machines and Wiegand counts to the most innovative glassworks, almost a test field for latest technologies, specially in collaboration with Emhart, the prominent IS machine manufacturer, famous for its strong Research & Development to improve quality and speed of glass container production. Different from several large companies, Wiegand is focused on innovation, a traditional approach of the Wiegand family, owning and managing the Company. Probably the only durable business philosophy for 'small players' in a huge market, same as Pneumofore: invest more now to save much more later.



Old Wittig pump, replaced by UV50 in 2004

Initially the UV pumps installed at Wiegand were sold by Gardner Denver Wittig, as in 2004 we used to collaborate and the Pneumofore pumps were delivered as 'private label' machines. The WPSO pumps of Wittig had been running for decades, Wiegand was seeking an up-to-date technology, which they found in the UV pumps. One generational innovation step between WPSO and UV resulted in following advantages: the UV pumps were delivered ready-to-use, within a sound proof canopy, equipped with main power switch, control panel, inlet filter and a large oil separator for the clean exhaust. Already the appearance was different from the previous units, which were mounted on a cement block, noisy due to the lack of a canopy, large and heavy in dimensions, most of all, cooled by water. During operation also performance values were registered: the efficiency of UV was higher, the performance range was enlarged with pressures up to 450 mbar(a) [16.62 in Hg V], the noise was sensibly lower and the exhaust fumes practically absent. On the long term, Wiegand Glas also realized that the Pneumofore rotary vane air end did not ever need to be opened, because the vanes are made of aluminium and are not consumable parts. By executing regularly ordinary maintenance, using original spares, Wiegand kept the UV pumps performance, some units count 50.000 hours of operation.



Nampak Wiegand Glass in South Africa runs five large UV pumps model UV30 and UV50. These air-cooled pumps avoid the cooling water circuit for liquid ring vacuum pumps. Furthermore, the performance of liquid ring pumps strongly depends on the cooling water temperature. Catalogue data refer to nominal capacity at 15° C [59° F], an improbable water temperature value, if not impossible, to achieve during hot summer

months. The consequence of water temperature at 32° C [89.6° F] is the capacity (m<sup>3</sup>/h or cfm) reduction by 60%, causing considerable trouble to production. The UV pumps have a closed lubrication circuit with an air-cooled heat exchanger and a multi-speed fan, to cool the oil down to a set temperature and to keep the performance constant all year through. However, pumps alone are not a solution. As important is also the vacuum system engineering, calculation of pipes and dimensioning of several, crucial accessories, which are integral part of the Pneumofore offer.

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