Higher Productivity for Swiss EPS Manufacturer

New Vacuum System Improves the Styropor Production Process

In Switzerland, near Lucern, an EPS manufacturer is producing both blocks and small moulds under severe environmental restrictions, since decades. The Swiss legislation does not allow emission of the gas pentane in the atmosphere, therefore it is collected and burned. Such environmental approach with considerable impact on the cost of production equipment, creates exceptional sensibility for any other ambient aspect.

The most popular technology for vacuum generation is the water ring vacuum pump system. Unfortunately this solution, although durable and reliable, suffers from seasonable changes of cooling water temperature with major impact on the maximum vacuum level and requires considerable power supply due to the constant friction of the water ring in the pumps body.

The installation of one UV vacuum pump in 2003 allowed higher vacuum levels with evident improvement in the products quality, like higher cohesion of single EPS balls (from welding level of 56,3 % to 71,2 %), thus also stronger resistance to bending. The cycle times for the moulding of shapes up to 0,5 m^3 could be reduced by 6 %. The power consumption with liquid vacuum pumps was measured 21,2 kW, the UV system requires only 7 kW. The Pneumofore solution consists of the 1000 m^3/h rotary vane vacuum pump UV16 with dedicated accessories to avoid the entering of water and pentane into the UV pump. The system was monitored over years, under various climate circumstances and accordingly improved to the present technological level. The after-sale service is managed directly from Pneumofore and the preventive maintenance contract gives access to extended warranty of the entire system up to 5 years. This important EPS reference has been a relevant teaching for Pneumofore engineers so that we are now confident to have exclusive know-how to improve most EPS production systems based on liquid ring technologies in terms of power reduction, increased vacuum level, constant capacity all year through, silent operation and last but not least improved EPS product quality.

For additional information regarding the case study, Pneumofore can refer to detailed analysis executed by the Swiss company Enco Engineering in Chur. The report dated February 2003 describes the situation in all energetically, performance and product quality terms as comparison before and after the UV solution. This report is available upon request, similar documentation can be handed out also for a prominent EPS machines OEM in Germany, who runs a UV8 in the AERO production facility next door.

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