



At Brakes India, the drying process, previously performed by "compressed air blowing", was improved by installing a UV4 H vacuum pump. The "hydraulic unit" process shop set the target to reduce the noise level and evaluated several new technologies for their drying system. The Pneumofore solution did achieve the goal and allows considerable cost savings.

It started with serious noise pollution of 125 db(A) creating an impact on employees hearing ability, communication, concentration in work and sleep disturbance. According to the nature of Brakes India, the problem was faced with a positive attitude towards innovation, continuous improvement and work culture. This noise situation was limited to the process shop called "hydraulic unit".

Following ideas resulted from the Company internal brainstorm done to reduce the noise level:

1. drying of components by compressed air in acoustic enclosure
2. drying of components through heating process
3. drying of components through vacuum

The competence of the Pneumofore distributor Toshniwal Brothers, with offices all over India, met the needs of Brakes India, the leading manufacturer and exporter of brakes with 2.800 employees and ISO14001 certification. The suggestion was to install a vacuum drying system to evaporate the water drops on the brake pads in the zinc phosphating process line. The task was to find a suitable vacuum pump able to handle water vapor and to synchronize the proposed vacuum system to their existing automated production line speed.

The system is composed by a vacuum chamber with volume of 1.3 m<sup>3</sup> and power assisted lid opening / closing, the UV4 H pump able to evacuate up to 17 kg of water/hour and a control panel consisting of timer, alarm, pneumatic valves and more to automate the evacuation cycle, see picture at the right. The results were registered in various terms:

1. the noise level was reduced from 125 to 80 db(A)
2. the number of loads per shift was increased by 20%
3. 100% dry parts, top process quality
4. process cost savings of 6.500 Euro/year
5. a safe and reliable process (key values of Brakes India)



The features of the new vacuum drying system satisfied Brakes India Ltd. in Sholingur and the manufacturing manager sent a testimonial letter, personally signed, for their working satisfaction since installation with additional important benefits of energy savings and productivity improvement, which allow to run their production continuously. A special compliment to Toshniwal Brothers for their good engineering and service, as this system won the National Award for Energy Saving in 12th Kaizen Conference held in New Delhi on 14 December 2008.

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