



Wirtschaftsdienste Hellersen GmbH

WIDI LAUNDRY GERMANY SEES ENERGY AND WATER COSTS TUMBLE AND CO2 EMISSIONS FALL AFTER FITTING DELTA STEAM TRAPS

Dedicated to taking an active role in reducing its carbon emissions as well as saving costs, WIDI Laundry in Lüdenscheid, Germany has seen a dramatic improvement in its efficiency after installing Delta venturi orifice steam traps throughout the plants. Supplied through a local Delta agent, the venturi orifice steam traps have reduced the laundry's CO₂ emissions and its water usage by a remarkable 20%.

Established 40 years ago, a member of the Health Märkische Holding GmbH & Co. KG, WIDI Laundry handles over 30 tons of laundry a day from 60 hospitals and 58 nursing homes. Steam is used as a primary source of energy throughout the laundry in the operation of a wide range of equipment including washers, ironers, collators and dryers.

Conscious that the laundry's mechanical steam traps were causing water vapour losses through evaporation from the hot well as well as poor condensate return, three years ago Christian Hackler, Production Director at WIDI Laundry asked our local Delta agent to undertake a complete steam audit of the plant.

"We commissioned a complete site survey and were amazed to see that steam losses were estimated at a five figure sum", said Christian Hackler. "We were also impressed to read that we would receive a payback on the Delta venturi orifice steam traps in as little as 14 months".

The first installation took place in the boiler house, where Sasha Kohla who is responsible for site services for WIDI Energy GmbH converted all the steam traps to Delta.

“Replacing all the steam traps was easy as they are fully compliant with all DIN standards”, says Sascha Kohla. “After the installation we saw that the operation of one of the shell and tube heat exchangers was not optimised. We were supplied a replacement insert for the Delta steam trap, which quickly resolved the problem. The overall result was very satisfactory as we no longer had live steam leaks and were even able to reduce the number of traps on some of our equipment as the previous installations had not been efficient”.

The remainder of the laundry was retrofitted with Delta venturi steam traps during 2012 and results were immediate:

“Straight after installation we noticed that the steam plume from the condensate receiver almost disappeared. The temperature of the condensate also reduced by 2-3°C, which could only be attributed to the leakage of live steam through the conventional mechanical traps.”

WIDI laundry is so satisfied with the performance of Delta steam traps that it has presented the technology to the Leivenst Laundry Group with the suggestion to other group laundries that they also improve their energy efficiency.

The Delta venturi orifice steam traps work by combining venturi technology with the orifice. The capacity of the venturi orifice traps is related to the size of the orifice and also to the backpressure generated inside the venturi. It is a combination of these factors that gives the venturi orifice trap its overall capacity.

As the condensate passes through the orifice there is a pressure loss. On the upstream side of the orifice (the heat exchanger or steam line side), the condensate has the same pressure and temperature as the steam and therefore contains a lot of energy. (It is hot). As it drops pressure across the orifice, the temperature and pressure of the condensate reduces, resulting in it containing less energy. However, energy cannot disappear. So the difference in energy between the high pressure/temperature upstream side and the low pressure/temperature downstream side (i.e. the condensate return system) is converted steam. The higher the pressure difference across a trap (and it is the same for all traps) the more condensate has to be converted into ‘flash’ steam. Venturi orifice technology uses this flash steam to create a backpressure inside the venturi. **Ends**