

17th January 2007

## **Spirax Sarco heat recovery system helps Bandvulc Tyres save 8% of its energy costs in a flash**

Bandvulc Tyres has knocked 8%, or around £10,000, off its energy bill by fitting a Spirax Sarco system, which uses flash steam from the returning condensate to preheat the feed to the boiler.

Before the new system was fitted, Bandvulc was already using some energy from the returning condensate to maintain the water in the boiler feed tank at 95°C. However, heating the feed water any further would have caused cavitation problems at the inlet to the feed pump. There was also a considerable amount of flash steam, which was generating an unsightly plume from the boiler feed tank. In order to eliminate the emission, the company was forced to cool the condensate before it reached the tank, even though the cooling system wasted some of the available heat energy and also used electricity. Spirax Sarco helped Bandvulc to engineer an effective solution to the problem.

First, a skid-mounted heat recovery system was introduced between the boiler feed pump and the boiler itself. The heart of this system is a plate heat exchanger that heats the boiler feed water using the flash steam that is returning with the condensate. Positioning the heat exchanger after the boiler feed pump is crucial to the success of the entire scheme, because the feedwater is under pressure at that point. This effectively prevents the water from turning into steam, even though its temperature is now raised from 95°C to 125°C before it enters the boiler.

This approach required several other modifications to be made to the existing steam system. For example, the feed pump used to have simple on/off controls. Now the pump must run constantly to ensure continuous heat recovery, so modulating controls were introduced. This in turn requires the control system to keep a close check on the level of water in the boiler, so new level probes were also supplied.

“The system is working pretty much exactly as Spirax Sarco said it would,” says Bandvulc director Richard O’Connell. “It’s saving us around 8%, just as predicted.”

Based in Ivybridge, Devon, Bandvulc Tyres use steam to cure commercial vehicle tyres. The Spirax Sarco project is just one of several energy-saving initiatives that led to Bandvulc being judged the overall winner in the latest Devon Environmental Business Initiative (DEBI) Environmental Awards in 2007.

