



GEM NEWS

Number 2
Summer 2000

featuring the revolutionary venturi steam trap from Gardner Energy Management

It doesn't matter what your industry is, GEM venturi steam traps do the business. Here are some examples hot off the press:

Pharmaceutical services

It does what it says...

West Pharmaceutical Services at St Austell moulds silicone rubber for syringe pistons. Engineering manager Richard Parris organised a trial using a GEM venturi trap on a moulding press. "I'm finicky when it comes to trying new things," says Parris, "and I had to make sure we got it right. We did, and the trap does 'just what it says on the package.'"

Now some 15 GEM traps are in use at West on presses, washing machines, sterilisers and drip legs. In many cases they are alongside mechanical traps doing the same duty. How do they differ? "Little or no steam carry over," comments Parris. "And better temperature control due to the constant condensate flow of the venturi-style trap." Another 60 will be fitted over the summer shut-down.

Underlay manufacture

Paying for themselves

More efficient heating and pay-back in less than eight months is the news at Airstep in Comber, Co Down, Northern Ireland, after GEM venturi steam traps were installed. Airstep is part of "Duralay" and produces carpet underlay.

General manager George Heaney tested the performance of 12 GEM venturi steam traps fitted on ovens and to steam mains. He compared them in each case with the performance of mechanical traps by measuring the temperature of heating surfaces and inlet/outlet temperatures of the traps themselves.

In all cases he found surface and/or upstream temperatures 3°C to 4°C higher using the GEM traps. More significantly, he studied boiler fuel usage. With the old mechanical traps in place, the boiler used 1860 litres of fuel a day. Using GEM traps consumption dropped to 1742 litres a day, a saving of £9.44 a day equivalent to £3,039 a year. The pay-back period was under eight months.

George Heaney's reaction? "I was sceptical at first, but there was no problem during trials. And the performance of the traps has been very good. Now we are looking for the capital expenditure to change all the remaining mechanical traps to GEM traps."

Hospital services

Replacing 'em one by one

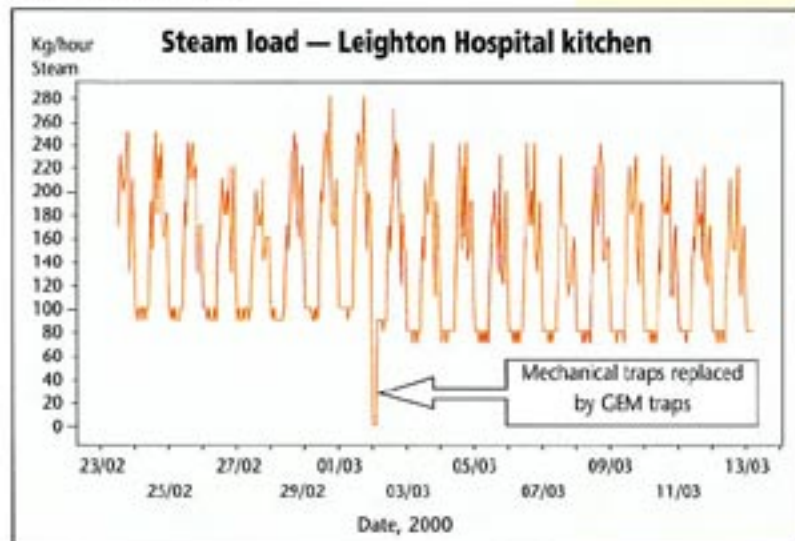
GEM's engineer Terry Redgers surveyed the steam traps at St Martin's Hospital, Bath, in early 1999. GEM venturi steam traps were first supplied in April 1999 on calorifiers, and since then have been fitted to drip legs, tumble-driers, you name it. "Absolutely no trouble at all," comments St Martin's maintenance officer Phil Mason. "And no noise. The old-style mechanical traps hammered badly at times and they function in rushes, now discharging condensate, now stopping. In contrast, GEM traps release condensate continuously and there's no hammer. The results are very, very good."

Data at Leighton

The steam meter readings shown here give more solid evidence of how GEM venturi steam traps are performing in action. Energy conservation manager Ken Hardy at Leighton Hospital, Crewe, printed these readings for the kitchen steam main for February to March this year. On 1st March he switched four mechanical traps on drip legs for four new GEM traps. The traps were hard to get at for servicing, and he found that mechanical traps were inconvenient because they needed a lot of attention. GEM traps don't.



GEM's H-type trap comes complete with these stainless steel unions and strainer



As you can see, base load dropped from 100 to 80 kg steam/hr, a saving of 20kg/hr or 175.2 tonnes/year. Leighton charges steam at £7.26 a tonne (they include all maintenance costs in the price) so they save £1271.95 a year with just four small GEM traps.

Turn over
for more ...



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GEM's new man Rob Williams is GEM's new man in the Midlands and North of England. He's a mechanical engineer and Cranfield MSc specialising in energy, and has good practical and financial experience with Reiss Engineering and consultants McKinnon & Clarke. Email him on rob@gemtrap.co.uk

**TIM'S
TECHNICAL
TITBIT**
*Surface
temperatures
are a good
indicator of trap
performance.
Compare
temperatures
on either side
of mechanical
traps with
those around
GEM traps:
what does it
tell you?*

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Food processing**Condensate surprise**

Tim Wainwright, mechanical engineer at PAS in Grantham — part of the McCains food group — set out to compare the performance of two steam traps on one dryer. He fitted a 25mm GEM venturi steam trap and a 1.5" mechanical trap in parallel. Then he could switch from one to the other at will. And he fitted a steam flow meter to the system.

He set the steam control valve full open, aiming for a flow of 3,000 lbs per hour and a temperature of 120°C. In fact, inefficient heat exchangers (now improved) reduced the steam flow quite a lot, but while the meter read 50% for the mechanical trap, the GEM trap gave 58%. As a consequence, the dryer temperature of 117°C with the GEM trap fitted was 3°C higher than with the mechanical trap.

But the biggest surprise for Tim lay in the condensate return line. He found an unusual back pressure of 40psi because mechanical traps on two heating coils had failed open. He closed them, reducing the back pressure to 22psi. But then he set about calculating how much energy he had been losing with just one of the mechanical traps jammed open. It was a staggering £350 a week. Among his recommendations to the company he suggests that whenever a mechanical trap fails in future it be replaced by a GEM venturi steam trap.

More glittering prizes?

Following the Engineering Council award at the end of 1998, the GEM trap has been selected as one of 12 UK entries in the European Environment Awards 2000. The entry went in on 15 May. This competition is run by the European Commission and the United Nations Environment Programme, and just who gets the awards will be announced in December at a gathering in Brussels.

Q&A

Q: *Can a GEM trap be insulated?*

A: Yes, but only with a Velcro/removable bag. Make sure that you label accordingly, otherwise you may forget where your GEM traps are!

Q: *My ultrasonic tester alarms and tells me GEM traps have failed open. Is this true?*

A: No. Ultrasonic testers are designed to check mechanical traps, where flow should be intermittent. When mechanical traps jam open, they pass continuously and the tester alarms. After all, the manufacturers say that just one 15mm TD trap failed open at 10 bar wastes 30kg/hr of steam costing £2,000 a year, and that's pretty alarming. GEM traps are designed for continuous flow, separating condensate from steam, and this flow gives a false alarm.

Q: *Are GEM traps maintenance-free?*

A: No trap can be completely maintenance-free. But GEM traps are as maintenance-free as possible, as they have no moving parts. The strainers have a high mesh area, so you only need to clean them every 6 or 12 months. When you do, check the trap orifice at the same time: that's why we fit unions.

Italian exposure

In Milan, Italy, at the beginning of June, the Italian Ministry of the Environment organised a two-day meeting called "Doing better with less". The subject was energy saving and GEM venturi steam traps featured strongly. A bottle of champagne awaits the best two lines to finish the ditty (to the tune of *O sole mio*): "That GEM venturi, give it to me. Efficient steam traps for Italy..." Send to Christine Westgate at GEM by 27 October.

FAX BACK▶ **0117-907 7378**

I would like a free visit to assess applications for the GEM trap;
 temperature check across traps.

Name: Job title:

Company:

Address:

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e-mail: