

PAYBACK CALCULATOR

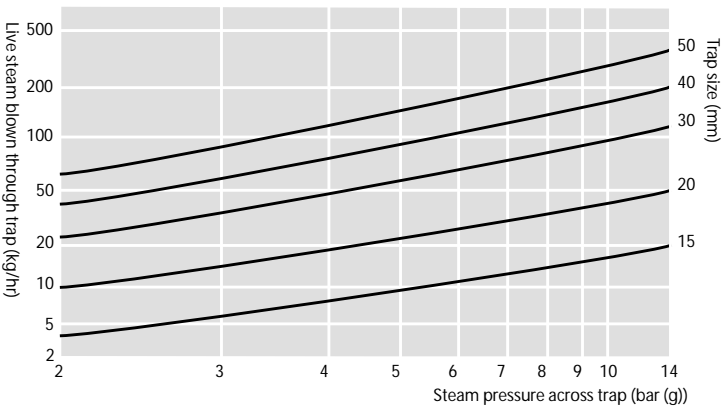


CALCULATING PAYBACK CONDENSATE RETURN

To calculate the simple payback for a GEM conversion, consider the following:

- Annual steam consumption (tonnes)
- Cost of steam per tonne (from fuel, water, and water treatment bills)
- Number of steam traps on site
- Average % failed steam traps (blowing live steam)
- Number of operating hours per year
- Average steam lost through steam traps (tonnes/hour)

STEAM LOSS THROUGH FAILED MECHANICAL TRAPS*



STEAM LOSS COSTS

Steam lost through steam traps x annual operating hours x cost of steam per tonne = Annual steam loss cost

Note:

Steam loss costs should include climate change levy/emission taxes if applicable.

FOR FREE ASSISTANCE IN CALCULATING DETAILED PAYBACKS, PLEASE CONTACT GEM LTD

*(From mechanical trap manufacturers data of losses through traps)

CK ON THE GEM N SYSTEM

TYPICAL STEAM LOSS COST:

System served by 250 steam traps, average size 20mm.

Steam generation cost = £9.50/tonne

Historically 10% fail/year (25 traps),

Steam pressure = 10 bar (g)

Operating hours = 14 hrs/day x 5½ days/wk x 49 wks/yr
= 3,773 hrs/yr

Steam lost hourly through failed 20mm mechanical trap
= 40Kg/hr
(from graph opposite)

Annual steam lost
= 25 traps x 40kg/hr x 3,773 hrs/yr
= 3,773 tonnes/yr

Cost = 3,773 x £9.50
= **£35,844/yr**

MAINTENANCE

- Average yearly cost of replacement steam traps and spare parts
- Average yearly cost of surveys on steam traps
- Average yearly cost of maintenance/labour time on steam traps

ALL THESE COSTS WILL BE ELIMINATED WITH THE GEM SYSTEM

RELIABILITY

- Production cost savings through increased production and cuts in downtime

PAYBACK

$$= \frac{\text{Cost of GEM Condensate Return System}}{\text{Annual steam loss costs} + \text{Annual maintenance savings} + \text{Production savings (if applicable)}}$$

Notes:

Productivity improvements are permanent and usually dwarf all other savings.

The GEM Condensate Return System is performance guaranteed for 10 years.



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