

# Steam Trap Losses - What it costs you.

## How to reduce costs by replacing failed traps

Have you had times when you can see the white cloud of your breath in the winter and the interior of the plant is white with thick clouds of vapor?

This is a time when the outside temperature is low and more vapor than usual is generated - a cause for concern for the persons doing trap maintenance. It is recommended that a failed trap be replaced as soon as it is found.

Even one failed trap can have steam leakage resulting in losses of hundreds of dollars/pounds/euros per year. Though it depends somewhat on the other conditions, traps on applications of 150 psi or less will typically have a service life of many years, making it possible to recover investment costs in approximately 1 year in most regions.

## Calculating the cost of losses from one trap:

Steam Leakage	Hours in Operation	Unit Cost of Steam
Small leak - 9 lb/h	Day shift only - 2000 h/yr	\$10 / 1000 lb
Leak - 15 lb/h	Multiple shifts - 4000 h/yr	
Blowing - 33 lb/h	Operating continuously - 8000 h/yr	

The following formula is used:

$$\text{Cost of losses (\$/yr)} = \frac{A \times B \times C}{1000}$$

A = Steam leakage (lb/h)

B = Operation hrs (h/yr)

C = Unit cost of steam (\$/1000 lb)

The following formula is used:

$$\text{Amount of steam leakage (lb/h)} = A^2 \times B \times C$$

A = Size of hole (inch)

B = 40 (Constant)

C = Absolute steam pressure (psi) [Gauge pressure + 14.7 psi]