

HPS Specialties LLC

## Steam Trap Surveys

The Why & How?

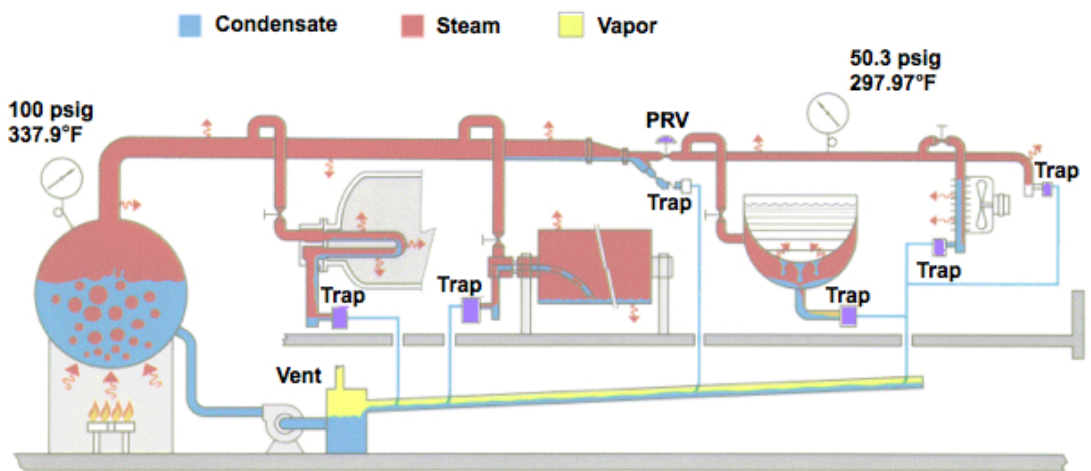
### Why?

Steam loss can cause higher energy consumption as well as damage the pumps or pump seals. Also, without the proper placement or operating conditions there can be harmful safety effects caused to an individual or the piping system.

### How to complete a survey?

Quickly touch the trap to see if it is hot or cold. If the trap is cold that could mean it is clogged or a valve is shut. If it is hot then it could either be working properly or have live steam blowing through it. Use an ultrasonic detector to hear the sound which should NOT be a loud constant freight train noise.

## Typical Steam System



## Steam Trap Typical Failures

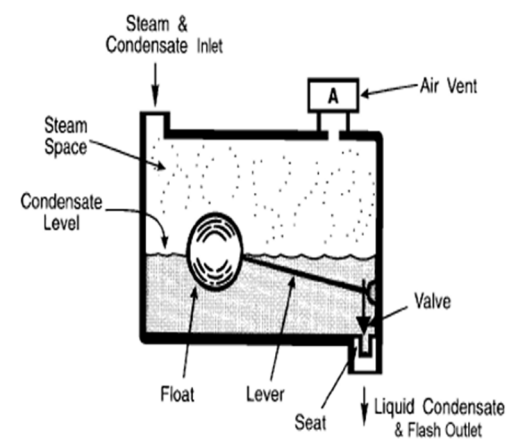
US Department of Energy (DOE)

“15-20% of old steam trap technology fails every year. Most fail open and result in leak dry steam and an energy cost loss of \$15/1,000 lbs or \$8,000 per year waste, even for smallest steam trap.” - DOE

Steam traps must be properly vented, avoid steam flowing into the condensate piping, and allow condensate into the correct piping system.

Common steam trap failures include the following:

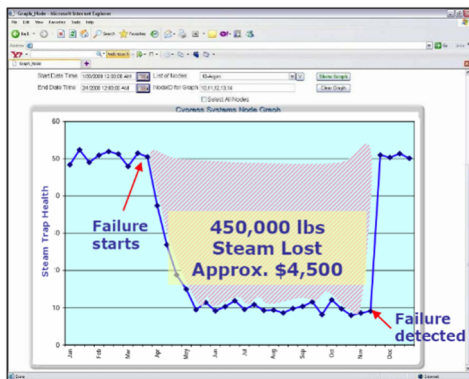
1. **Blow through** which is when the trap fails in the open position in which it should be repaired or replaced immediately.
2. **Leaking** due to the trap being in the partially open position in which it also needs repaired or replaced immediately.
3. Disc trap failing in the closed position which causes condensate to backup and this is called **rapid cycling plug**.
4. A trap can **flood** if it is undersized and cannot handle the condensate load.
5. Make sure the steam supply line is turned on for service.



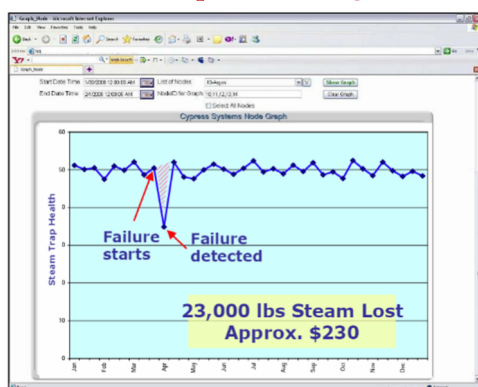
What could happen if a steam trap fails?

1. **Water hammering** can result from condensate collecting in the pipeline and flow reducing in the steam lines which causes destruction to the piping network or equipment and can be dangerous for individuals around it.
2. The heating cycle timing can change.
3. Major loss of energy can also be a factor.

### Without Steam Trap Monitoring:



### WITH Steam Trap Monitoring:



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