

STEAM TRAPS

Welcome to Steam Lines, in this issue we will be dealing with Steam Traps. Steam users need to be aware that their lack of attention regarding steam trap maintenance can have detrimental effects on their equipment and piping. With a proper steam trap management system in place potential losses can be averted. In order to avoid losses and create savings, good trapping practices need to be implemented, such as pipe layout, slope angles and sizing of traps, which can all contribute to the effective use of steam.

WHAT IS A STEAM TRAP

Steam Traps are automatic valves that release condensate from a steam space while preventing the loss of live steam. They also remove air and non-condensable gases.

TRAP CHARACTERISTICS

Mechanical Traps consists of float and thermostatic style or bucket. As condensate enters the trap, the float or bucket either rises or falls, opening the valve according to the flow. Delta P versus the orifice size is critical in sizing.

Thermostatic Traps have a bellows that is filled with an alcohol mixture that has a boiling point that is lower than that of water. The bellows will contract when in contact with condensate and expand when steam is present.

Thermodynamic Traps use the energy within the hot condensate to open and close a valve unlike mechanical traps that use linkages or thermostatic traps that require temperature changes.

TRAP FAILURES

Doing nothing is not an option. Steam Traps will fail. Failure mode will depend upon the style of trap and thus each having their own particular problems. Failing closed may cause freeze ups, damaging pipelines, heating coils, tracing lines etc. Failing open causes energy losses. Water traveling at a high rate of speed increases the potential of

water hammer occurring causing pipeline and equipment damage. A properly sized steam trap will remove condensate quickly, increasing production capacity, and eliminate the potential problems associated with water hammer. Inefficiency in plant maintenance (ie: steam traps) can severely curtail the operations and may cause the eventual plant closure.

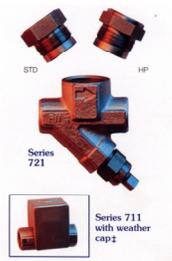
TESTING OF STEAM TRAPS

There are three methods used for trap inspections: visual, sound and temperature. Traps that discharge to atmosphere can quickly be visually assessed. Acoustic techniques require the inspector to listen to and detect steam trap operations and malfunctions. Thermal inspection relies on upstream/downstream temperature variations in the trap.

SURVEYS

Steam traps, should be surveyed on an annual basis. With maintenance departments being scaled back, the time, resources and expertise may not be available to perform proper trap surveys. Plant operations will benefit from a professional organization performing the survey. Trap maps and tags must be implemented to ensure accuracy and completeness. Taking a sample survey will allow for an indication of overall trap failure rate.

FACTS ABOUT YARWAY TRAPS



- 721 - Inline renewable
- 721 - 3 Year warranty up to 300 PSI
- 721 - Integral Strainer and Blow Down Valve.

Quote For The Month

Thomas Edison:

“Opportunity is missed by most people because it is dressed in overalls and looks like work.”