

Trap Survey

Analyses the complete trap station



ARMSTRONG KNOW-HOW

More than a trap test

There are several facets to our trap diagnostics:

- Trap stations are analyzed by Armstrong specialists who have expert knowledge of the applications and installations, as well as the equipment use on the condensate and steam systems.
- Calculation of actual financial and steam losses and the corresponding CO₂ emissions.

- Comments on any mistakes in the system, as well as advice on how to simplify, optimize and increase the reliability of your trap stations.
- Estimation of the Return On Investment (ROI) based on the average costs of equipment and labor.

Based on our experience with numerous diagnostics and maintenance contracts in the industry, we can state that Return On Investment (ROI) for most traps is **less than 6 months** (including both materials and labor).

Information collected during standard diagnostic test:

- Tagging or tag number (if already established).
- Trap features: manufacturer, model, connection size and maximum differential pressure.
- Differential pressure (upstream and downstream pressures).
- Application.
- Operating status of the trap.
- On-site location: unit, interior/exterior mount and equipment being trapped.
- Types of connections, flanged face-to-face dimensions and orientation of pipe lines.
- Inlet steam pressure: constant or modulating.
- Discharge to atmosphere or to condensate return.
- Comments and recommendations.

Additional Information (optional):

- Detailed description of all valves: brand, technology, size and type of connection, flanged face-to-face dimensions, operational status, leak rate estimation.
- Pipe size at trap inlet and outlet.
- Steam line number.
- Height of the water column at trap outlet.
- Insulation type (if any).
- Check valve (if any).
- Strainer (if any).
- Use of superheated steam.
- Shut-down required in order to service the trap station.
- Trap station pictures.

Trap Surveys

ANALYSIS OF THE COMPLETE TRAP STATION

Test method

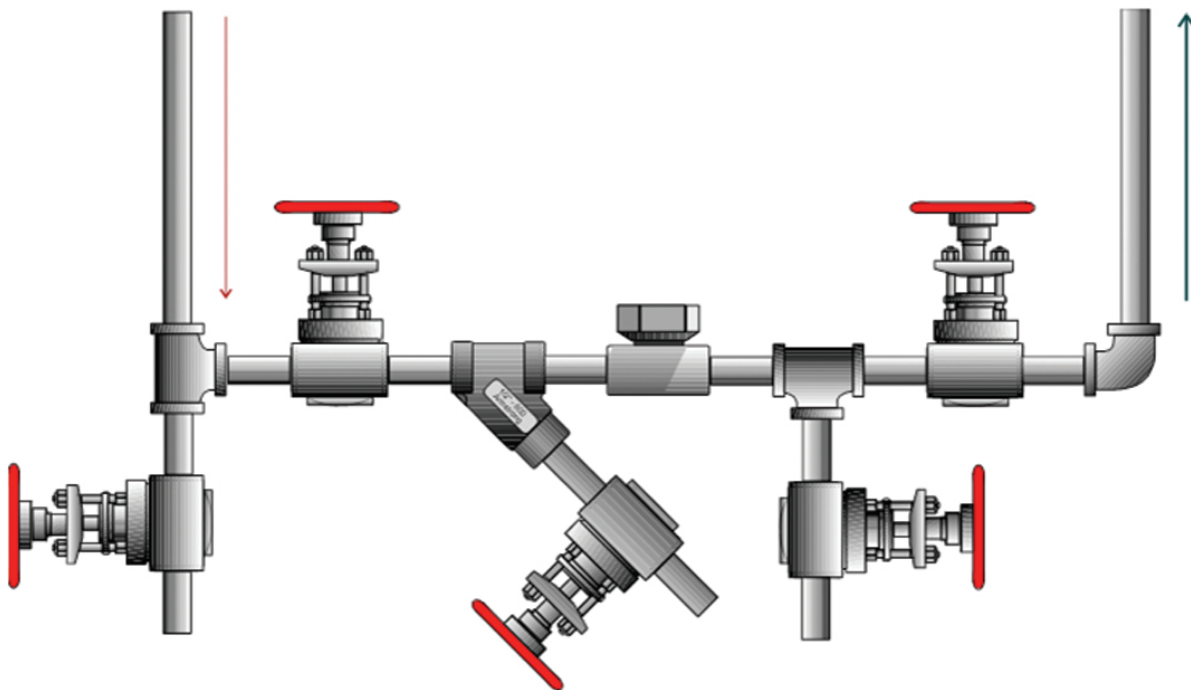
Trap surveys are performed using a stethoscope and an infrared thermometer. The thermometer is used to check the temperatures upstream and downstream of the trap (analyze subcooling, analyze back-pressure). The stethoscope is used to analyze how the trap is operating and to determine the leak level. If possible, the Armstrong technician will also observe the trap's discharge to the atmosphere.

If the trap is operating properly, only a visual inspection of the trap station will be made. If the trap is failed, there will also be an inspection to check whether the surrounding valves are working properly (seized, internal leak, etc.) and an overall recommendation will be made regarding the trap station. In both cases, there will be a visual examination for installation mistakes.

The leakage rate for each trap, as well as the associated CO₂ emissions, are calculated using a method approved by the United Nations Technical Committee. The formula for computing leaks takes into account the differential pressure, the application, the leak level and the trap's Cv factor.

In fact, Armstrong International has a complete data base with the Cv's for all types and brands of traps currently on the market. This database is the culmination of many years of work and research. Using this methodology enables us to make precise estimates not only of the amount of steam that a leaking trap is losing, but also of the CO₂ emissions and financial losses related to it.

Complete trap station



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