

## CTRL Systems, Inc. Best Practice

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### Industry

HVAC & Industrial

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### Application

NDT Steam Trap Testing

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### System

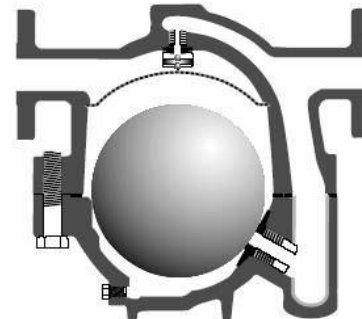
Steam Piping

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### Component

Free Float and Float & Thermostatic (F&T) Steam Traps

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### Current Procedures

Because free float and F&T steam traps discharge condensate at saturation temperature, it can be misleading to use the temperature coming out of the trap to check for proper operation. Also, because the condensate will be at saturation temperature, a percentage of the condensate discharging from the trap will flash back into steam. So the best method for checking good traps is visual inspection of the discharge coming from the trap. But don't be fooled by the flash steam that may discharge from the trap. A good trap will discharge water with a small percentage of flash steam. A bad trap will have virtually no water when it passes steam with a noticeable hissing noise and plumes of white clouds.

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### CTRL's Sound Solution.

1. After a short training lesson of familiarization and application of the UL101. The maintenance technician selects the UL101 Receiver, Headset, and solid probe from their case.
  2. Attach solid probe and plug in headset to UL101 Receiver.
  3. Verify operation of UL101 in accordance with the operator's manual.
  4. Turn gain switch to ½ scale (half-moon); adjust potentiometer knob between 1 and 2.
  5. Ensure steam system is aligned and operating properly. Verify if steam trap is hot or cold. If cold, steam trap has no flow, verify alignment or clear blockage to trap.
  6. If hot, contact solid probe to steam trap housing and listen for operation. A properly operating free float or F&T steam trap will have a continues rise and fall of ultrasound in the head set and on the meter because these traps always allow discharge of condensate and air at varying levels.
  7. A continuous high level of ultrasound and meter deflection will indicate a faulty free float or F&T steam trap
  8. Indicate the location of the defective steam trap and issue a work order for repair. Verify repairs with UL101.
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### Benefit

Although there are several types of steam traps on the market today, all basically have the same function of discharging condensate and non-condensable gases with negligible consumption or loss of live steam.

The UL101 ultra sonic leak detector is the most accurate and up-to-date device available for monitoring steam trap today. The UL101 can be used to listen to the inner workings of the trap and "hear" its operation. Inspecting steam traps for proper operation saves energy by minimizing the loss of working steam.

The UL101 can help determine early indications of steam trap wear with normal use in steam trap monitoring applications. This allows seasoned and junior stationary engineers the ability to predict steam trap maintenance or repair at convenient times. The UL101's ultrasound indication during steam trap monitoring is not impeded by other operating equipment ambient noise. Once repairs have been made a noticeable reduction in fuel bills will be noticed due to less generation of steam. Monitoring with the UL101 provides instantaneous real-time information.