Steam Trap Survey Results

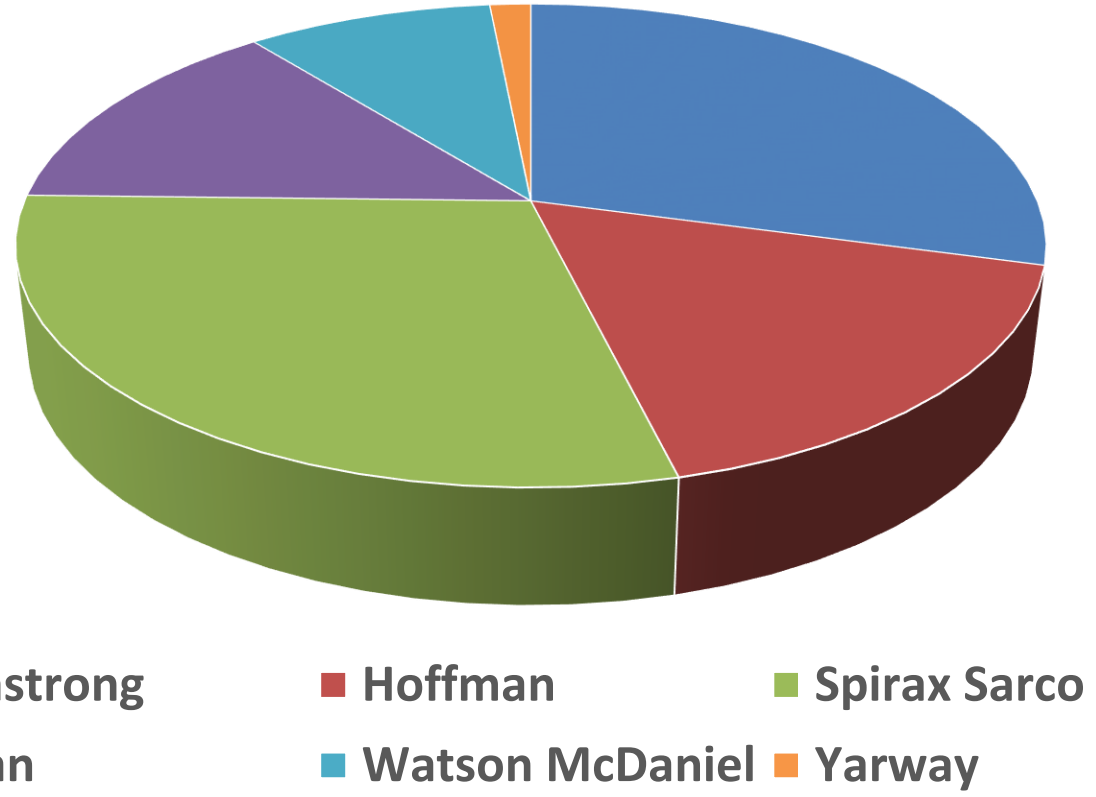
Survey Conducted on 12/03/2021

APEX INDUSTRIAL SOLUTIONS

Watson McDaniel

Trap Population Breakdown (Manufacturer)

Armstrong	19
Hoffman	11
Spirax Sarco	19
Velan	9
Watson McDaniel	6
Yarway	1
TOTAL	65



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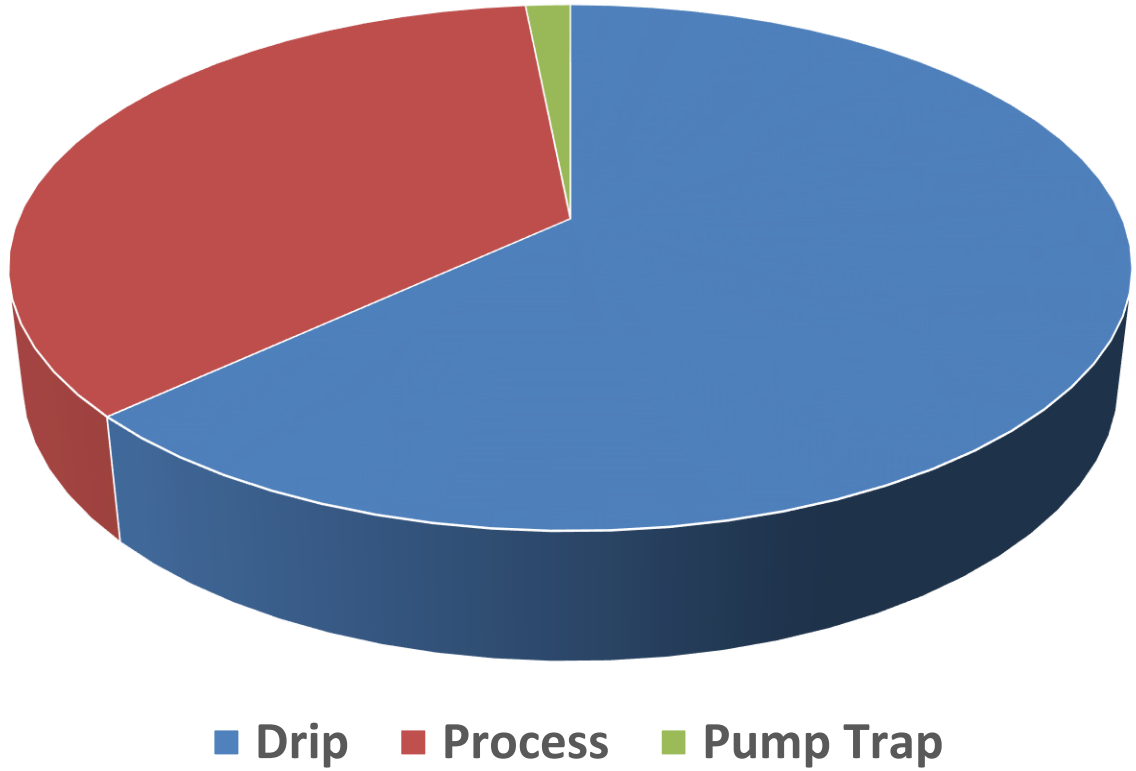
Trap Population Breakdown (Application)

Drip	41
Process	23
Pump Trap	1
TOTAL	65



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Overview

Total Steam Traps Surveyed = 65

Total Steam Traps In Service = 42

Total Steam Traps Not In Service = 23

Total Steam Traps Failed = 5

Steam Trap Failure Rate = 11.90%

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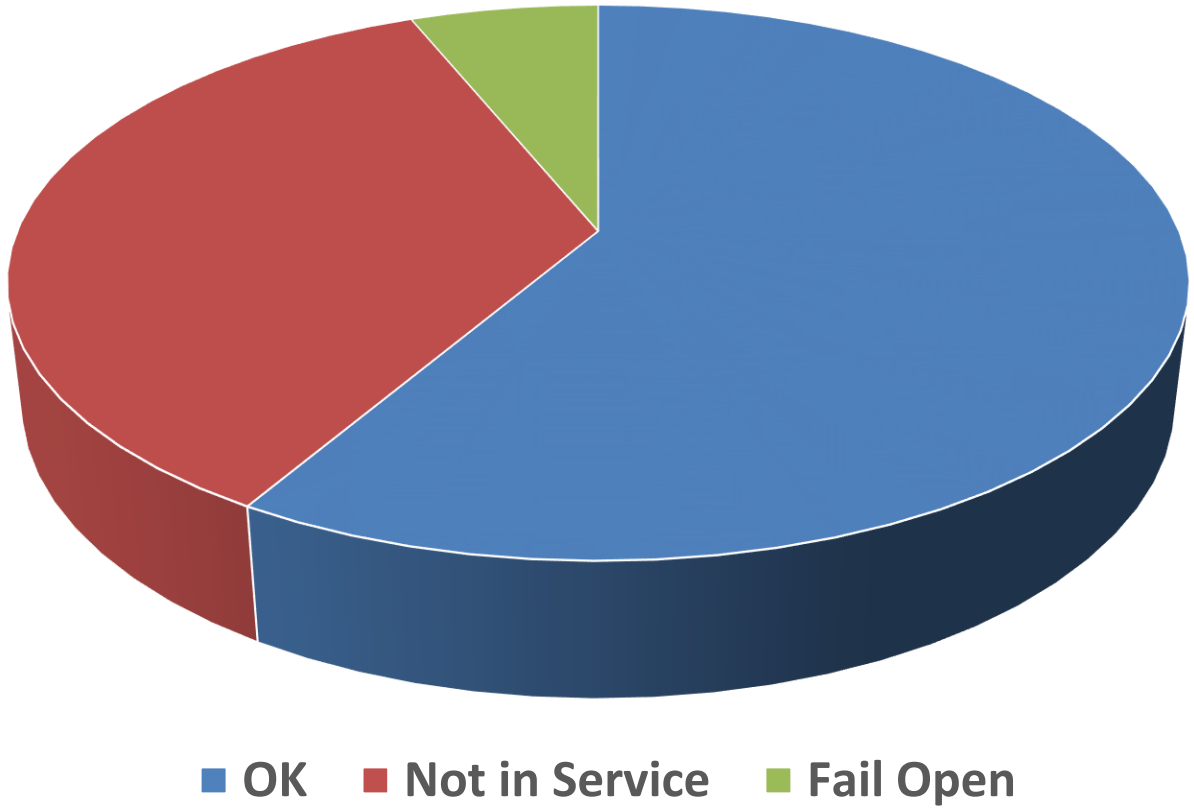
Trap Population Breakdown (Status)

OK	38
Not in Service	23
Fail Open	4
TOTAL	65



Associated Cost of Failed Steam Traps

Total # of Failed Steam Traps	Lbs. of Steam Lost – Annual (Based on 24 hr. operation, 365 days)	Steam Loss (USD) – Annual (Based on $6.00 per 1,000 lbs. of steam)
4	378,432	$ 2,270.59

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Notes Taken During Survey

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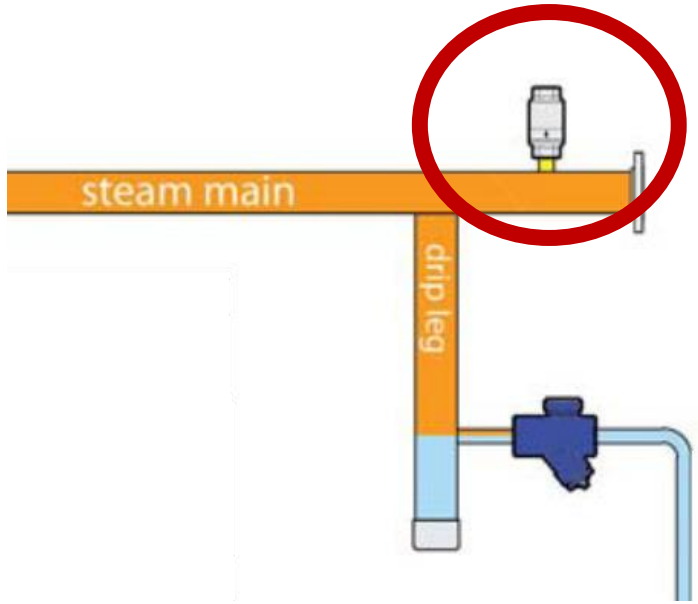
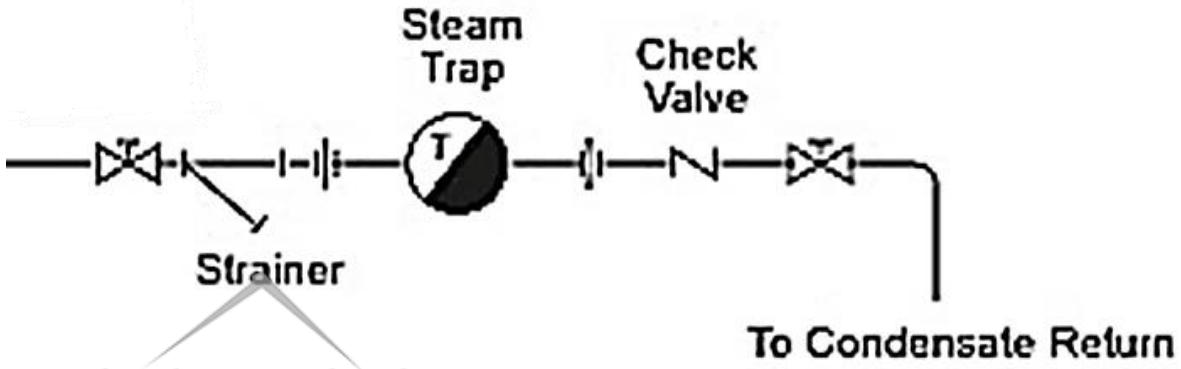
Other Observations / Suggestions:



Installation of Thermosatic Air Vents:

Installation of Thermostatic Air Vents at the end of steam distribution headers helps to prevent air and other non-condensable gases from remaining suspended in the pipes.



Typical Configuration for Steam Traps that Discharge into a Return Header:

1) Upstream Isolation Valve
2) Strainer
3) Steam Trap
4) Check Valve
5) Downstream Isolation Valve

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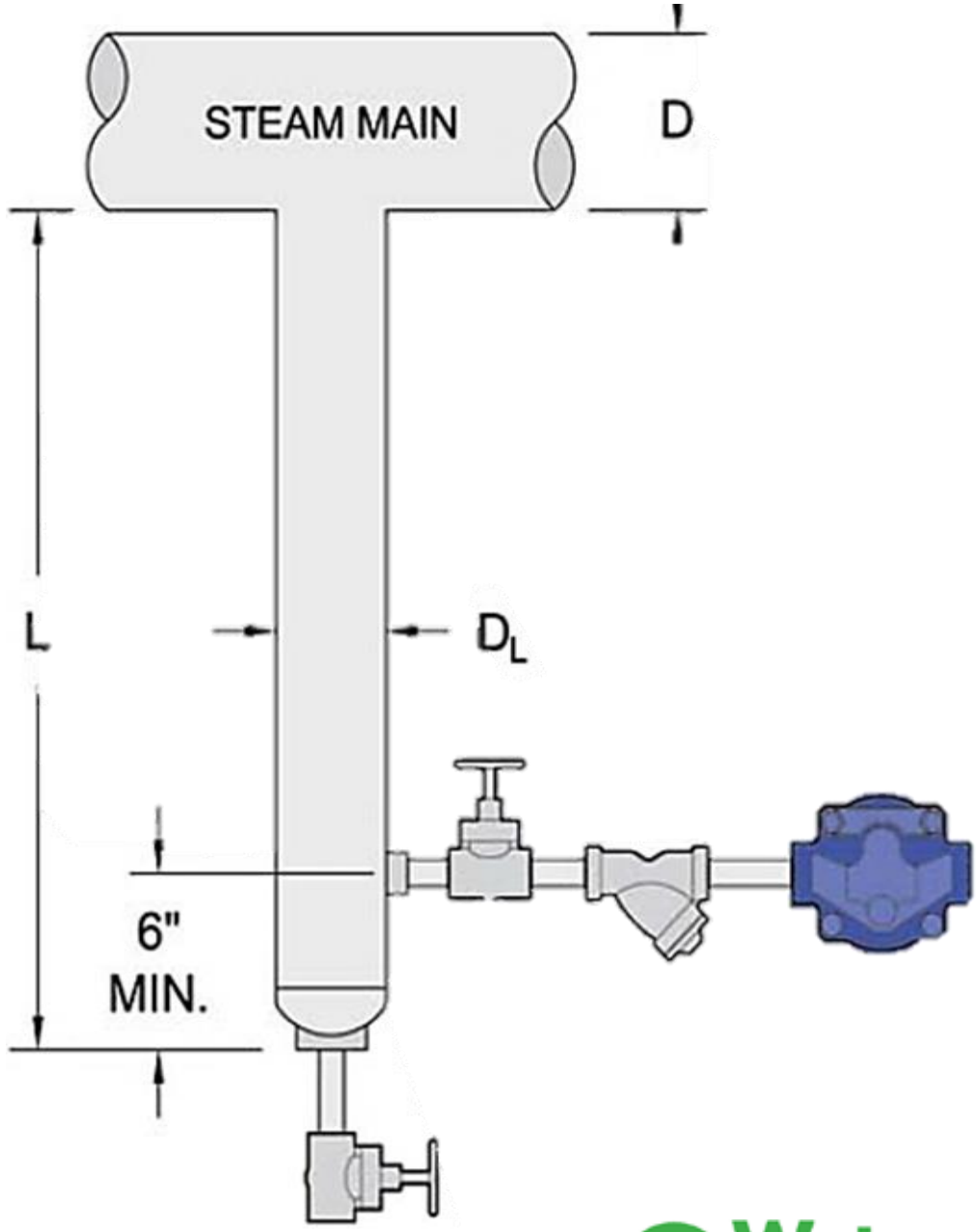
Drip Leg Placement & Design:

Drip legs should be installed at **100-200' Intervals** along a Steam Line, **At the End of Each Steam Line**, **In Front of Pressure Reducing Valves and Control Valves**, **In Front of Manual Valves Closed for a Long Time** and **At the Bottom of Vertical Lifts or Drops**.

Best Practices states that drip leg diameter (DL) should be equal to steam main diameter (D) for steam main sizes up to 4". Drip leg diameter may be half the steam main diameter for steam mains over 4", but not less than 4". The length (L) of the drip leg for systems with automatic start-up should be no less than 28" and for systems with supervised start-up the length should be 1.5 times the diameter but no less than 8".

Undersized Drip legs leads to excessive condensate carryover. Drip legs should include a mud leg section below the steam trap take-off with a drain at the bottom to dispose of any solids that may be suspended in the condensate that collects in the drip leg. The illustration to the right details this information.



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