



Best Practices for Steam Trap Installation

A steam trap has two major functions: to remove condensate as quickly as it is formed, and to prevent steam discharge. There are certain installation faults which negatively impact the ability for traps to effectively perform these functions efficiently.

A high percentage of steam trap failures are simply due to incorrect installation.

Proper installation should provide six years of maintenance-free operation. 16 Best Practices for steam trap installations are outlined on these pages:

1. The most important rule to remember for steam trap installation is GRAVITY. Condensate must flow from the process to the steam trap by the forces of gravity. Pressure and velocity can't be relied on to remove the condensate from the process.

2. Determine the steam leak rate of the new steam traps that are being purchased per the following leak rate standards:

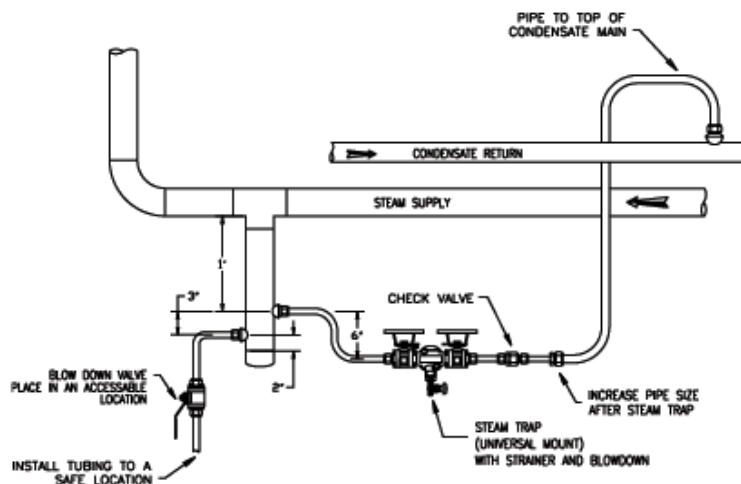
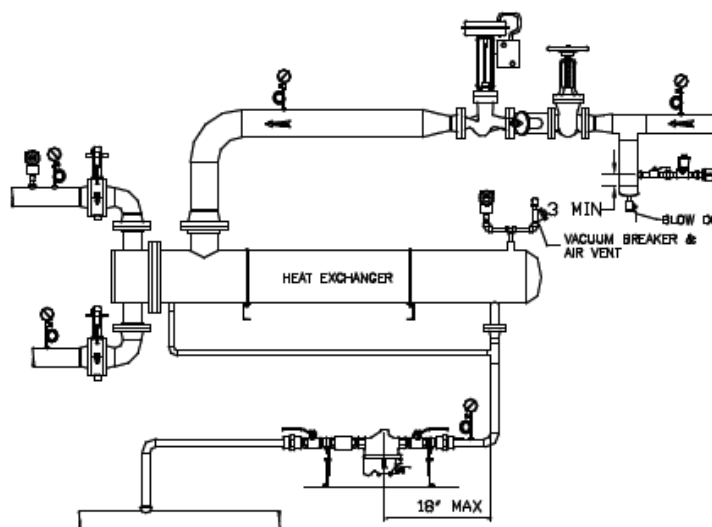
- a. PTC-39
- b. ISO 7841

All steam traps leak a quantifiable amount of steam and the consumer should be specifying steam traps with the least amount of steam loss to prevent unnecessary energy loss.

3. Steam traps with 1 in. or smaller connections should use tubing with tube connectors to eliminate leak points such as threaded connections.

4. There are steam component manufacturers that have tube connections available for steam trap installations. Ensure material pressure ratings are acceptable.

5. Never reduce diameter of the tubing/piping before the steam trap or reduce connection size of the steam trap. Piping from the process to the steam trap should always be equal to or larger than the process outlet connection. For example, a steam unit heater with a 1 in. condensate outlet would require a 1 in. or larger tubing/piping from the unit heater to a same connection size on the steam trap.



Best Practices for Steam Trap Installation

6. Expand the tube/pipe diameter after the discharge connection of the steam trap. For example, a 1 in. (connection) steam trap discharge tubing/piping should be increased to 1.25 in or 1.5 in.

7. Steam traps with a connection size of 1 in. or smaller should be connected to the tubing or piping with universal mounts. The universal mount provides the ability to connect the steam trap to the application with two bolts, thus dramatically reducing the time for installation of a steam trap.

8. Install a strainer as part of the installation of a steam trap. The strainer can be accomplished by the following:

- a. External strainer ahead of the steam trap
- b. Steam trap with integral strainer
- c. Universal mount with an integral strainer

The use of a strainer will eliminate or reduce premature failures of steam trap due to contamination.

9. When installing an external or internal strainer always install a blow-off valve on the strainer. This allows the strainer to be blown down during operation, and permits the steam trap cavity to be safely depressurized during servicing.

10. Always install the steam trap in a location that is accessible by plant personnel.

11. Install a visual indication of the steam trap performance on all process applications. The visual indication can be a sight glass or test valve.

12. Locate the steam trap below the lowest condensate discharge point of the equipment.

13. Never install a rise in the pipe ahead of a steam trap.

14. Check valves should be installed after the steam traps in most applications.

15. Develop and maintain installation standards for all applications.

16. Codes:

- a. Material test reports on all components (steam traps, connection devices, etc.)
- b. B31.1 Piping code



Contact us

Email: info@swstlouisswagelok.com

Phone: 314.880.8900

Follow us

