



PROCESS  
INDUSTRY  
PRACTICES

COMPLETE REVISION  
*December 2023*

***Piping***

**PIP PNE00004**  
**Steam Trap Guideline**

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## PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

This Practice has been prepared by harmonizing technical requirements from existing standards of major industrial operators, contractors, and standards development organizations. While this Practice is intended to incorporate the majority of requirements, individual applications may have requirements which take precedence over this Practice. Determinations concerning fitness for purpose or application of this Practice to specific project or engineering situations should not be made solely on information contained in this Practice. All Practices are intended to be consistent with applicable laws and regulations. Should this Practice conflict with applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by this Practice.

Use of trade names should not be viewed as an expression of preference. Other brands having the same specifications are equally correct and may be substituted for those named.

This Practice is subject to revision at any time. For more information refer to PIP ADG001, *Specification for Developing Practices*.

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## PIP PNE00004 Steam Trap Guideline

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## 1. Scope

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This Practice provides guidelines for selection, design, layout and installation of steam traps.

## 2. References

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Applicable parts of the following Practices and industry codes and standards shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles will be used herein where appropriate.

### 2.1 Process Industry Practices (PIP)

- PIP CTSE1000 - *Application of External Coatings*
- PIP PNSC0035 - *Steam Tracing Specification*
- PIP PN01CS1S02 - *Piping Material Specification 01CS1S02, Class 150, Carbon Steel, Socket Weld, 0.063" C.A., Steam/Condensate*
- PIP PN03CS1S02 - *Piping Material Specification 031CS1S02, Class 300, Carbon Steel, Socket Weld, 0.063" C.A., Steam/Condensate*
- PIP PN06CS1S01 - *Piping Material Specification 06CS1S01, Class 600, Carbon Steel, Socket Weld, 0.063" C.A., Steam/Condensate*

### 2.2 Industry Codes and Standards

- American Society of Mechanical Engineers (ASME)
  - ASME B31.3 - *Process Piping (Code)*
  - ASME Boiler and Pressure Vessel Code, Section IX – *Welding and Brazing Qualifications*

## 3. Definitions

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*backpressure*: Gauge pressure measured at the steam trap or condensate removal device outlet. Typically, backpressure is the sum of:

- a. Pressure in the condensate receiver or header
- b. Static head from lift after the trap (2.3 ft of head = 1 psig)
- c. Friction losses

*inlet pressure*: Gauge pressure measured at the steam trap or condensate removal device inlet

*non-pumped condensate header*: Piping system that conveys condensate directly from a steam trap or multiple steam traps to a collection vessel. This type of header typically transports condensate under two-phase conditions (condensate and flash steam).

*pressure powered pump*: Positive displacement device for discharging liquids by using steam, air, or other inert gases as a motive force if the differential pressure is too low, or negative, causing a line or vessel to retain condensate