



YARWAY CT150 SERIES THERMOSTATIC STEAM TRAPS

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Before installation, these instructions must be fully read and understood.



FIGURE 1
CT150 Series Thermostatic Steam Trap

WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion, fire and/or chemical contamination causing property damage and personal injury or death.

The CT150 Series Steam Trap must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson Process Management Regulator Technologies, Inc (Emerson) instructions. If leaked to the unit may be required. Failure to correct trouble could result in a hazardous condition.

Installation, operation and maintenance procedures performed by unqualified personnel may result in improper adjustment and unsafe operation. Either condition may result in equipment damage or personal injury. Only a qualified person shall install or service the CT150 Series Steam Trap.

INTRODUCTION

Scope of the manual

This manual provides instructions for operation, installation and parts ordering for the CT150 Series.

Product Description

A steam trap is an automatic valve which discharges condensate, undesirable air and non condensible from a system while trapping, or holding in, steam.

Thermostatic steam traps operate in direct response to the temperature within the trap.

The CT150 Series are thermostatically actuated and maintenance free. Actuator is single piece, fail open design consisting in 1.2 in. (12.7 mm) diameter, welded 316L stainless steel plates. Trap is constructed entirely of 316L stainless steel components with wetted body surfaces finished to 20 μ in. Ra or better. Trap is self draining when installed vertically in piping systems. It has a tube or universal ferruled connections. Ferruled connections are Tri-clamps compatible and designed to fit both ½ and ¾ in. (12.7 and 19.1 mm) service.

SPECIFICATIONS

The specifications section gives some general specifications for the CT150 Series Thermostatic Steam Traps. The nameplates give detailed information for a specific steam trap as built in the factory.

Available Configurations

| | |
|---------------|---|
| Type CT150: | Ferrule clamp end 1 7/8 in. (47.6 mm) OAL |
| Type CT150TE: | Tube end |
| Type CT150L: | Ferrule end 2 5/8 in. (66.7 mm) OAL |
| Body Size: | NPS ½ (DN 15) NPS ¾ (DN 20) NPS 1 (DN 25) |

End Connection Styles: Tube
Ferrule

Maximum Operating Temperature⁽¹⁾: 366°F (186°C)

Maximum Operating Pressure⁽¹⁾: 150 psig (10.3 bar)

Construction Materials: 316L Stainless steel
Body Surface Finish: <20 μ in. Ra internal, Machine Polished external

Options: Check valve for Type CT150

Applications: CIP/SIP System, Condensate Drainage, Sterilization of Process, Vessels, Culinary Steam, Humidifiers, WFI System Sterilization, Main Drips

Approximate Weights: 1.1 to 1.6 lbs (0.5 to 0.73 kg)

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PRINCIPLE OF OPERATION

Thermal actuator is filled at its free length with a liquid having a lower boiling point than water.

On start-up, valve is normally open to discharge air, non-condensibles and condensate.

When steam enters trap, thermal actuator fill vaporizes to a pressure higher than line pressure. This forces valve into seat orifice to prevent any further flow.

As condensate collects, it takes heat from thermal actuator, lowering internal pressure. Line pressure will then compress thermal actuator to open valve and discharge condensate. Valve opening automatically adjusts to load conditions from minimum on very light loads to full lift at maximum load.

- Best Air Handling Capacity — Fast start up and operation.
- Fast Response — Quickly adjusts to condensate load or temperature changes.
- One Size Suits Most Services — Universal ferruled end connection fits both 1/2 and 3/4 in. (12.7 and 19.1 mm) piping.

WARNING

Personal injury or system damage may result if this steam trap is installed, without appropriate overpressure protection, where service conditions could exceed the limits given in the Specifications section and/or steam trap nameplate.

Additionally, physical damage to the steam trap may result in personal injury or property damage due to escaping of accumulated gas. To avoid such injury and damage, install the steam trap in a safe location.

All pressure equipment should be installed in a non-seismic areal should not be exposed to fire; and should be protected from thunderbolt (lightning) strikes.

INSTALLATION

1. Before installing trap, blow all dirt and scale from apparatus and piping.
2. Install trap with arrow on body in flow line as close as possible to apparatus with strainer and valve upstream of trap.
3. Pitch all drain lines toward trap.

NOTE

Approved practice is to install separate traps on each piece of apparatus to be drained. Steam supplied to inlets of several units may be of uniform pressure, but invariably there is a differential at the outlets. Although this differential may be small, unit discharging highest pressure will control the action of trap, while other units become air-bound and water logged. Piping upstream and downstream of trap should be at least equal to or one size larger than trap connection.

4. Record the location of the trap for maintenance accessibility.

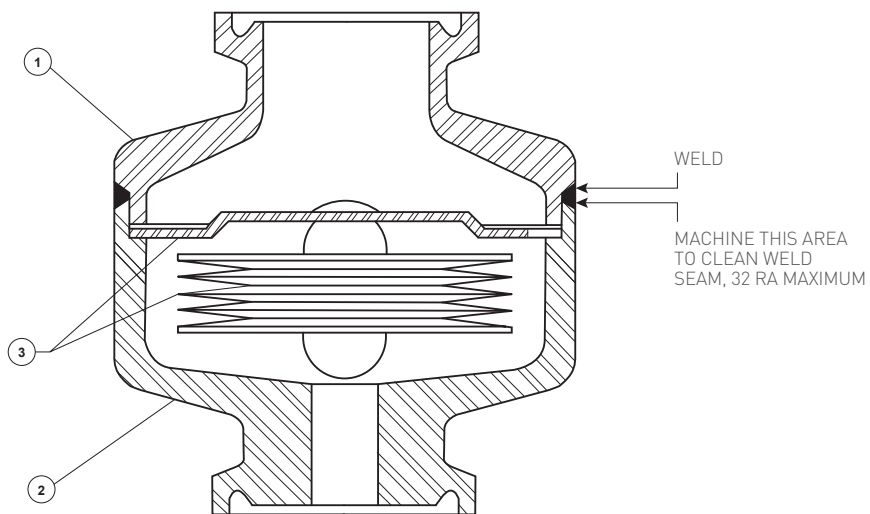
MAINTENANCE

The CT150 Series Thermostatic Steam Traps are sealed units making it maintenance free. It is composed of corrosion resistant stainless steel components with welded construction to prevent damage to actuator. No bolts, gaskets or adjustments are necessary.

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FIGURE 2
CT150 Series Assembly Drawing



PARTS LIST

| Item | Description | Materials |
|------|-------------------------|----------------------|
| 1 | Inlet connection | 316L Stainless steel |
| 2 | Outlet connection | 316L Stainless steel |
| 3 | Bellows assembly | 316L Stainless steel |
| 4 | Check valve (not shown) | 316L Stainless steel |

NOTE

Contact factory for part numbers.

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