



## YARWAY CT150 SERIES THERMOSTATIC STEAM TRAPS

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



### INTRODUCTION

A steam trap is an automatic valve which discharges condensate, undesirable air and non-condensibles 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 of 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  $\mu$  in. Ra or better. Trap is self draining when installed vertically in piping systems. It has a tube or universal ferruled connections. Ferruled connections is Tri-clamps compatible and designed to fit both 1/2 and 3/4 in. (12.7 and 19.1 mm) service.

### FEATURES

- Self Centering Valve** - Leak tight shut off. Assembly of actuator and valve to impingement plate allows valve to self-align with center of valve seat orifice. Provides long lasting valve and seat.
- Temperature Sensitive Actuator** - 316L Stainless welded actuator for maximum corrosion, thermal and hydraulic shock resistance. One moving part.
- Thermal and Hydraulic Shock Resistant** - Impingement plate plus welded construction prevents damage to actuator.
- Long Life Valve and Seat** - Stainless steel valve and seat matched together for water tight seal.
- Maintenance** - All models are sealed and maintenance-free.
- Directional Discharge** - Erosion prevented by directing discharge into the center of pipe or tubing.

### 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 1/2, 3/4 and 1 (DN 15, 20 and 25)
End Connection Styles:	Tube Ferrule
Maximum Operating Temperature <sup>(1)</sup> :	366°F (186°C)
Maximum Operating Pressure <sup>(1)</sup> :	150 psig (10.3 bar)
Maximum Allowable Temperature <sup>(1)</sup> :	500°F (260°C)
Maximum Allowable Pressure <sup>(1)</sup> :	300 psig (20.7 barg)
Capacity Information:	See Capacity Table
Construction Materials:	316L Stainless steel
Body Surface Finish:	<20 $\mu$ in. RA internal Machine Polished external
Option:	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)

1. The pressure/temperature limits in this Datasheet and any applicable standard or code limitation should not be exceeded.

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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.

## 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.

## ORDERING INFORMATION

When ordering, complete the ordering guide on this page. Refer to the Specifications section. Review the description to the right of each specification and the information in each referenced table or figure. Specify your choice whenever a selection is offered.

### ORDERING GUIDE

#### Available Configurations (Select One)

- Type CT150
- Type CT150TE
- Type CT150L

#### Body Sizes (Select One)

- NPS 1/2 (DN15)
- NPS 3/4 (DN 20)
- NPS 1 (DN 25)

#### End Connection (Select One)

- Tube
- Ferrule

#### Options

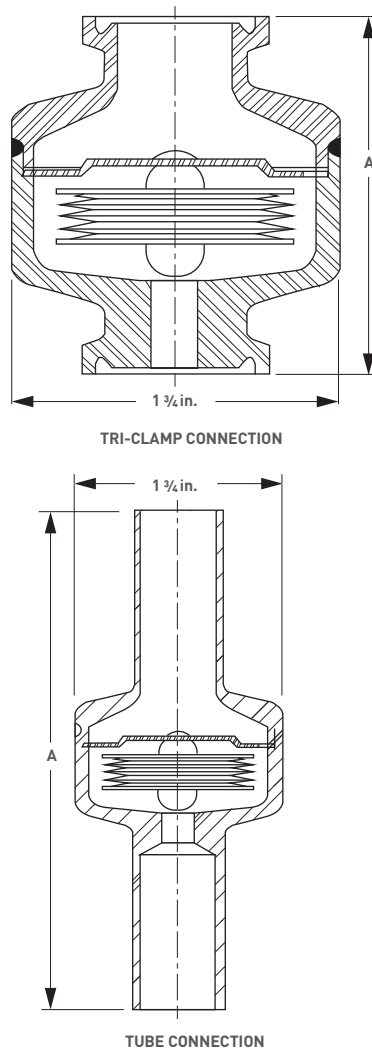
- Check valve (for Type CT150 only)

## MAXIMUM CAPACITY—LBS/HR AT 10°F BELOW SATURATION (KG/HR AT 5°C BELOW SATURATION)

TRAP	ORIFICE, In. (mm)	DIFFERENTIAL PRESSURE, psig (barg)												
		5 (0.34)	10 (0.7)	20 (1.4)	30 (2.1)	40 (2.8)	50 (3.4)	60 (4.2)	70 (4.9)	80 (5.6)	90 (6.2)	100 (6.9)	125 (8.62)	150 (10.3)
		lbs/hr (kg/hr)												
CT150	1/4 (6.35)	550 (249)	825 (374)	1210 (549)	1495 (678)	1750 (794)	1975 (896)	2175 (987)	2350 (1066)	2525 (1145)	2650 (1202)	2825 (1281)	3140 (1424)	3425 (1554)

# YARWAY CT150 SERIES THERMOSTATIC STEAM TRAPS

Figure 1  
**CT150 Series Thermostatic Steam Trap Dimension**



## CT150 SERIES DIMENSION

TYPE	END CONNECTIONS	SIZE		A	
		NPS	DN	In.	mm
CT150	Tube	1/2, 3/4 and 1	15, 20 and 25	4 1/8	105
CT150	Ferrule	1/2 and 3/4	15 and 20	1 7/8	47.6
CT150L	Ferrule	1/2 and 3/4	15 and 20	2 5/8	66.7

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