YARWAY CT100 SERIES THERMOSTATIC STEAM TRAPS

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

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

WARNING

Failure to follow these instuctions 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 CT100 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 CT100 Series Steam Trap.

INTRODUCTION

Scope of the manual

This manual provides instructions for operation, installation and parts ordering for the CT100 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 CT100 Series thermostatic steam trap is balanced pressure design with stainless steel welded bellows capable of releasing condensate within 10°F (5°C) of saturated pressure. Traps are self draining and normally open. It has SLR orifice where drainage at saturated temperatures is required. All components are 316 or 316L Stainless steel.

SPECIFICATIONS

The specifications section gives some general specifications for the CT100 Series Thermostatic Steam Traps. The nameplates give detailed information for a specific steam trap as built in the factory.

Available Configurations	
Type CT102:	Low capacity
Type CT103:	Medium capacity
Type CT104:	High capacity
Body Size:	NPS ½, ¾ and 1 (DN 15, 20 and 25)
End Connection Styles:	NPT SW
Maximum Operating Temperature[1]:	338°F (170°C)
Maximum Operating Pressure[1]:	100 psig (6.9 bar)
Construction Materials:	
Body:	Stainless steel
Welded Actuator:	316L Fittings and Plates
Valve and Seat:	316L Stainless steel
Option:	SLR Orifice[2]
Applications:	Platen presses, Plating tanks, Sterilizers, Tire presses, Cooking equipment, Laundry equipment, Other process equipment
Approximate Weights:	1.1 to 1.6 lbs (0.5 to 0.73 kg)

1. The pressure/temperature limits in this installation, operation and maintenance instruction manual and any applicable standard or code limitation should not be exceeded.
2. Specify when immediate elimination of condensate and improved sensitivity is desired. A 1/32 in. (0.79 mm) orifice at the apex of the valve allows for continuous discharge of condensate. Trap will nominally pass 50 lbs/hr (22.7 kg/hr) of condensate at 50 psi (3.45 bar) within 2°F (0.5°C) of saturated temperature.

PRINCIPLE OF OPERATION

Thermal actuator is filled at its free length with a liquid having a lower boiling point than water. As assembled, valve is normally open.

On start-up, air passes through vent. As air is eliminated, hot steam reaches vent and the thermal actuator fill vaporizes to a pressure higher than line pressure. This forces valve into seat orifice to prevent any further flow. As more air collects, it takes heat from the actuator, lowering internal pressure. Line pressure will then compress thermal actuator to open valve and discharge air. Valve lift automatically adjusts to variations.

WARNING

Personal injury or system damage may result if this steam trap is installed, without appropiate 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 area; 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

All models are sealed and 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.

PARTS LIST

Name	Materials
Body	Stainless steel
Inlet connection	316L Stainless steel
Seat	316L Stainless steel
Seat gasket	316L Stainless steel
Bellows	Stainless steel
Actuator plate	316L Stainless steel
Actuator nut	316L Stainless steel
Nameplate	316L Stainless steel
Outlet connection	316L Stainless steel