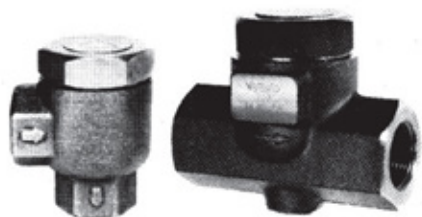




## YARWAY PROCESS THERMOSTATIC STEAM TRAPS

### SERIES 151

How to install repair capsules in Series 151 steam traps



Series 151-A (Angle) Series 151-I (In-Line)

#### SPECIFICATION

##### ANSI Class 300

Maximum Operating Pressure: 300 psig (21 bar)  
Maximum Operating Temperature: 500F (260C)  
Minimum differential: 1 psi (.07 bar)  
Maximum test pressure: 740 psig (51 bar)

##### Nominal Capacity

100 psi (7 bar) near saturation temperature.  
Series 151: 4500 lb/hr (2040 kg/hr).  
Series 151H: 8500 lb/hr (3850 kg/hr).

##### End Connections

$\frac{3}{4}$ ", 1" NPT-ANSI B1.20.1  
 $\frac{3}{4}$ ", 1" Socketwelding-ANSI B16.11

#### OPERATION

Series 151 steam traps are designed for use in process heat exchange applications. A filled thermal element actuates the pilot valve. The main valve/cage assembly is actuated by fluid dynamics. Discharge is basically cyclic in nature and occurs near steam temperature. The pilot valve can discharge condensate continuously, but will close when dry steam reaches the trap.

#### INSTALLATION

Before installing the trap, blow out the piping thoroughly to remove loose scale and dirt. Use pipe dope or tape sparingly when attaching the trap to the pipe. Observe the pressure limitations and flow direction shown on the trap label. Install the trap in an accessible location for inspection and maintenance, below the equipment being drained (see Fig. 1).

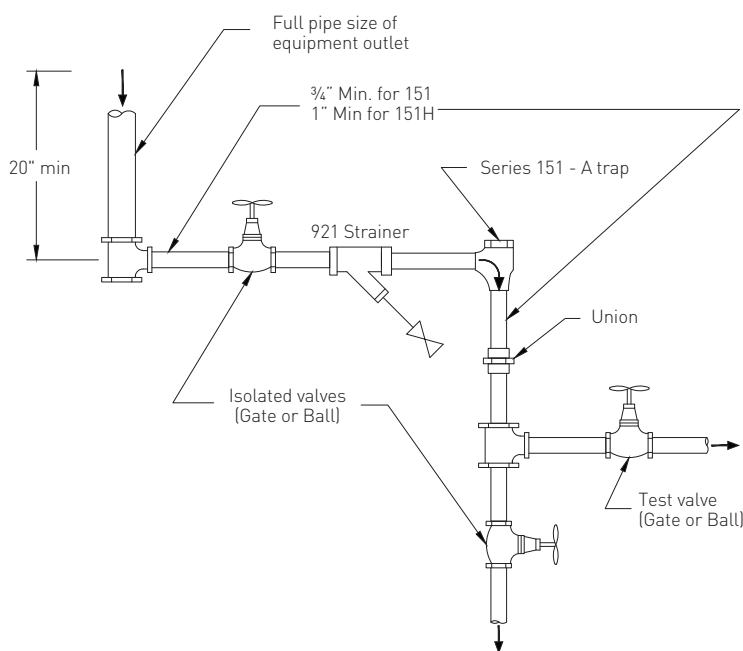


FIGURE 1  
Recommended installation

##### Position

The trap may be installed as shown in Fig. 1 with discharge downward or with bonnet on the side. For freezeproof installation, it should be positioned vertically or on its side. Make certain that the arrow on the body agrees with the direction of flow.

##### Discharge piping

To avoid excessive back pressures, discharge piping should be amply sized. For short discharge lines, (up to equivalent length of 10 ft.) use pipe equal to trap size. If several traps discharge to a common return line or manifold, size the line to prevent buildup of excessive back pressure during the simultaneous discharge of all traps. All piping and fittings downstream of 151H traps must be 1" or larger.

#### STRAINER

Series 151 traps have built-in screen. Install a separate Yarway series 921 Wye strainer with blowdown valve.

#### WARNING

*Hot discharge from this product may cause severe burns. Discharge must be piped away or directed so that persons in the vicinity are not endangered. This product must be isolated, vented and cool to the touch before repairing or inspecting.*

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### MAINTENANCE

Inspect the trap and clean the strainer screen during the first month of operation. Inspect and clean the trap every 6 to 12 months.

#### Inspect the trap and clean the screen

Close the valve ahead of the trap and close the downstream valve. Allow the trap to cool and slowly open the test valve. Sudden opening of the test or strainer valve can cause damage to the filled thermal element. Open the strainer blowdown slowly. Loosen the bonnet. The strainer screen fits tightly on the bonnet screen guide. Remove the bonnet and screen to expose the working parts of the trap.

#### Caution

*Be certain the pressure in the trap is relieved before removing the bonnet.*

#### Clean the trap

Inspect the following parts for wear or oxide deposit: the seat (4), the outside surface of the cage (3) and the inside bore of the bonnet (2). Do not remove the seat unless it is damaged. Clean dirt or oxides from inspected parts using a commercial solvent. Do not scrape surfaces and do not use emery paper or other abrasive material.

If internals are damaged or worn, renewal kits are available from your local distributor. A renewal kit consists of a seat (4), seat gasket (5), preassembled cage assembly (3), bonnet gasket (8) and strainer screens (6). Bonnets (2) are available separately.

#### Reassembly

Lubricate the bonnet (2) threads and both sides of the bonnet gasket (8) with Loctite Stainless Steel PST sealant or equivalent. Place the screen on the bonnet screen guide. Place the cage assembly (3) in the body. Thread the bonnet into the body making sure that the cage enters the bonnet and the screen fits properly. Recommended bonnet torque: 150-160 ft-lb (203-217 Nm).

#### Installation of renewal kit

Remove the old seat. Clean gasketing surfaces in the body to remove dirt. Use a new seat gasket (5). Lubricate the seat (4) threads with suitable high temperature lubricant such as Loctite Stainless Steel PST sealant or equivalent. Thread the seat (4) into the body. Recommended seat torque: 60-65 ft-lb (81-88 Nm). Install cage assembly (3), screen (6) and gaskets (5)(8) in accordance with reassembly instructions.

#### Start-up

Slowly open the isolating valve ahead of the trap. This allows the filled thermal element to warm up and minimize water hammer and shock. Slowly open the downstream line valve. Close the test valve.

### TROUBLESHOOTING

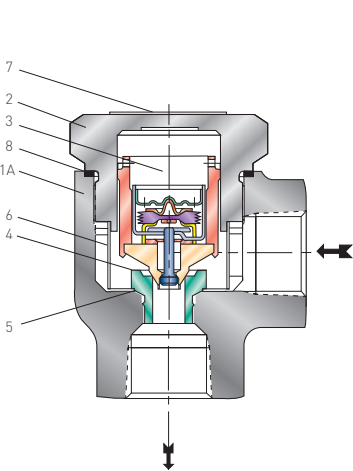
Problem	Potential Remedy
Trap remains closed or provides inadequate drainage.*	<p>a. Check the upstream and downstream isolation and check valves to assure they are open.</p> <p>b. Check the strainer for clogging. Blow down the separate strainer and clean the screen within the trap.</p> <p>c. Dirt or oxide deposits. Clean the trap internal cage plugged with dirt. Replace cage.</p> <p>d. Poor Installation-the trap is too hot. Be certain the trap is installed bellow equipment being drained, using uninsulated piping to condense untrapped steam and provide sufficient subcooling to open the main valve.</p> <p>e. Trap may be undersized. Check requirements against trap rating.</p> <p>CAUTION: Follow the maintenance instructions when attempting to disassemble and service the trap.</p>
Trap remains open and is blowing steam; is not shutting off.*	<p>a. Dirt on the seat of the cage and/or pilot valve, or oxide deposits between the cage and the bonnet. Clean the trap.</p> <p>b. Damaged or worn pilot. Replace the cage with a new repair kit.</p> <p>c. Condensate load is too low. Pilot capacity is adequate to remove condensate. Trap is not full open, just operating on pilot flow only. The trap is not faulty.</p> <p>CAUTION: Follow the maintenance instructions when attempting to disassemble and service the trap.</p>

\*Dirt can lodge between the bonnet and cage. This unlikely event could result in the cage remaining open or closed. Disassemble and remove dirt. Check to be sure screen is in place and undamaged.

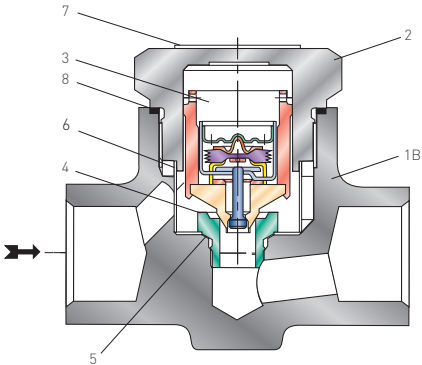
# YARWAY PROCESS THERMOSTATIC STEAM TRAPS

## SERIES 151

SERIES 151 ANGLE



SERIES 151 IN-LINE



### PARTS AND MATERIALS

Item	Part	Material
1A	Body 151 angle	ASME SA-105, Carbon steel
	Body 151S/SN angle	ASME SA182 316L Stainless steel
1B	Body 151 In-line	ASME SA 182 F11, Cr. Mo. 0.15% Maximum Carbon
1B	Body 151S/SN In-line	ASME SA182 316L Stainless steel
2	Bonnet	ASTM A-582 416 Stainless steel
3 <sup>1</sup>	Cage assembly	Stainless steel
4 <sup>1</sup>	Seat	Stainless steel
5 <sup>1</sup>	Gasket, seat	Monel®
6 <sup>1</sup>	Screen	18-8 Stainless steel
7	Nameplate	302 Stainless steel
8 <sup>1</sup>	Gasket, bonnet	Monel® Teflon® coated

### NOTES:

1. Denotes available repair kit.

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### NOTE

Any malfunction of this product must be reported to the service department.  
Repair made to the product by unauthorized personnel will void the warranty.

### Right to know laws and OSHA standard 29CFR (1910.1200)

Material Safety Data Sheets on the following Yarway products:  
Valves, Steam traps and Strainers

The OSHA Hazard Communication Standard 29CFR 1910.1200, states that the standard does not apply to "articles." The standard defines an article as:

"A manufactured item formed to a specific shape or design for a particular use which does not release or otherwise expose an employee to a hazardous chemical under normal conditions of use."

The above named products fall within the definition of an "article", no Material Safety Data Sheets are available or are required. Our product is manufactured as an "end product."

If the product is a weld end the following applies.

### WARNING

*Materials used in manufacture of Yarway products are considered in a stable condition when shipped. However, under certain conditions purchasers could create potential hazardous conditions by their future operations.*

### CAUTION

*Welding, cutting, burning, machining or grinding of this product can generate toxic dust and fumes of potentially hazardous ingredients. The dust or fumes can cause irritation of the respiratory tract, nose, throat, skin and eyes. It may cause temporary or permanent respiratory disease in a small percentage of exposed individuals. Use moderate ventilation when grinding or welding. Avoid breathing dust, fumes or mist. Avoid prolonged skin contact with dust or mist. Maintain dust levels below OSHA and ACGIH levels. Use protective devices. Wash hands thoroughly after contact with dust before eating or smoking.*

Neither Emerson, Emerson Automation Solutions, nor any of their affiliated entities assumes responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use, and maintenance of any product remains solely with the purchaser and end user.

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