

## YARWAY SERIES C250, C260 AND C500 INTEGRAL STRAINER STEAM TRAPS

### INSTRUCTION, OPERATION AND MAINTENANCE MANUAL

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

#### INSTALLATION

**Position** - locate the steam trap below the outlet from the equipment (gravity flow). If the trap must be above the drain, provide a 'U' or lift fitting at the bottom of the raiser before the trap (water seal). The trap should be installed in a horizontal or vertical line so long as the trap is positioned to discharge horizontal or downward.

**Piping** - blow the system out before installing the trap. Pipe size to and from trap should be at least equal to trap size or one size larger. The discharge line for short runs can be equal to trap size and should be larger for long runs. Avoid excessive back pressure.

**Welding** - socket or seal welding of this trap body to the piping should be completed according to applicable codes, standards and procedures.

DO NOT make electrical welding connections to the trap body or any other part of the trap to prevent internal arcing. Electrical ground should be made to the pipe and not the trap.

**Note:** it is not necessary to disassemble the trap prior to welding, but avoid subjecting the internals to temperatures higher than 500°F.

**Valves** - use gate type for isolating, globe type for strainer blowdown, and for test (see Figure 1). Bypasses are not recommended, except for critical installations. If discharge is to overhead return, install a swing check valve in the discharge line.

#### 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.*



SERIES C250

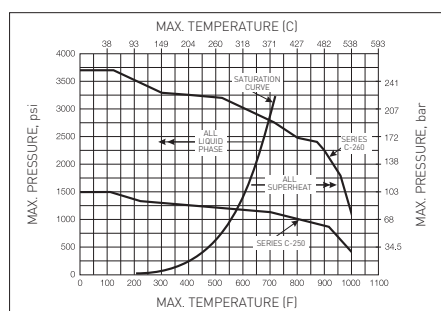


SERIES C260

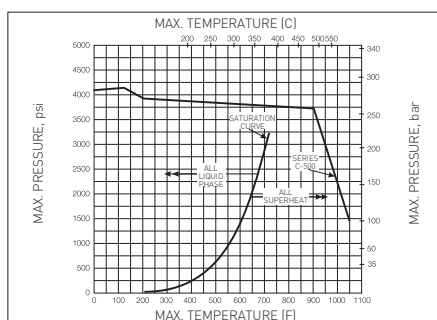


SERIES C500

#### SHELL PRESSURE/TEMPERATURE RATINGS



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#### RANGE AND BACK PRESSURE LIMITS

Pressure / temperature rating psig; °F (bar; °C)	Size		Series	Size Trap internals
	Socketweld end connections in (mm)			

Maximum allowable back pressure is 25% of inlet pressure.

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### MAINTENANCE

Check the trap and blowdown strainer frequently during the first month of operation. Thereafter, system conditions will dictate frequency of blowdown (or cleaning of the screen if there is no blowdown valve) during normal operation.

Checking for proper trap operation can be quickly made by one of the following methods:

1. Observe the discharge from the trap through the test valve. Close the downstream stop valve after opening the test valve. If the trap is functioning properly, periodic discharge of condensate should be visible from the test valve.

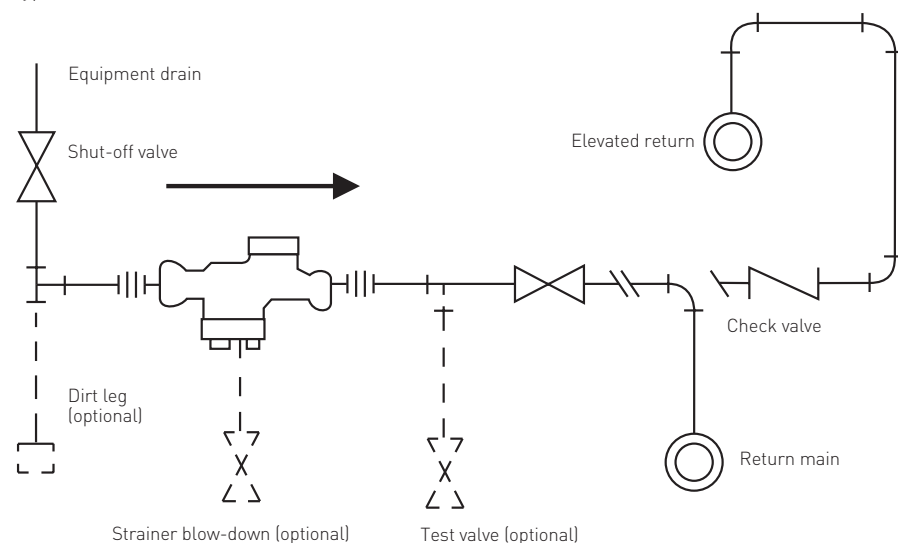
**Note:** at all times a minute discharge of condensate and flash steam is visible at the trap discharge.

2. Hold a screw driver or metal rod against the base of the trap bonnet. Listen for the characteristic slow clicking sound of the valve piece as it opens and closes.

**Note:** low condensate loads are handled through the control orifice in the valve piece without opening and closing of the main valve piece.

3. Using a surface pyrometer, check temperatures up and downstream of the trap; measure on cleaned surface of pipe.
  - a. The trap is operating normally if the inlet and outlet measured temperatures are within 5 to 10% below saturation temperature corresponding to the actual pressures up and downstream.
  - b. If measured inlet and discharge temperatures are high and near one another, then live steam is blowing through the trap.
  - c. If measured upstream temperature is considerably lower than the saturation temperature corresponding to inlet steam pressure, then trap is continuously closed.
4. If the trap remains open, not shutting off (blowing through), the cause may be scale, dirt or oxide deposits in the trap. Disassemble and clean the trap.
5. If the trap remains closed and/or provides inadequate drainage, the cause may be worn or damaged trap internals or a clogged strainer.

FIGURE 1  
Typical installation



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INSTRUCTION, OPERATION AND MAINTENANCE MANUAL

DISASSEMBLY

Steam trap

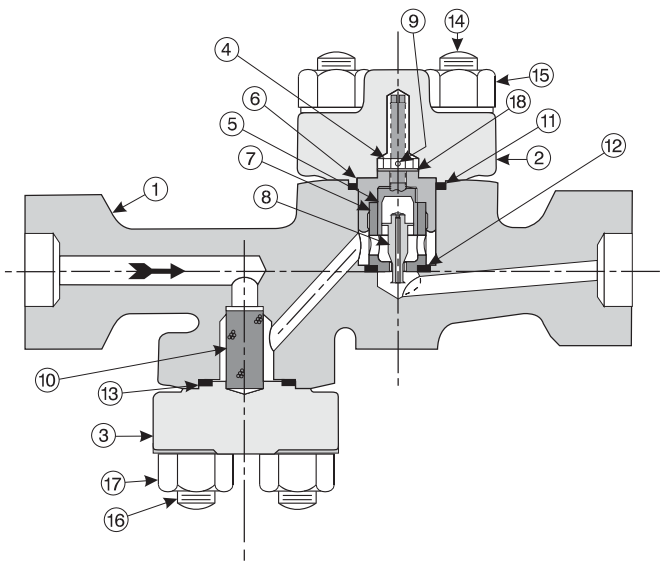
- 1. Remove the hexagon nuts (15) take off bonnet (2) and the bonnet gasket (11). Carefully lift out the internal sand seat gasket (12) shown in Figure 2.
  - 2. Unthread the seat (7) from the adapter (6).
  - 3. Tilt the valve (8) out of the control cylinder (5).
  - 4. Inspect and clean all parts with a cloth and a noncorrosive solvent. Heavy deposits may be cleaned from the valve piece orifice with a piece of fine wire.
- Be careful not to damage valve piece orifice, disc edge or control cylinder bore. Under no circumstances should crocus cloth or tools be used to clean.

- 5. Inspect the control cylinder bore, valve piece and seat for wear. Worn parts cause inefficient and improper operation and therefore should be replaced with a factory set renewal kit.
- a. Renewal Kit consists of the following parts: control cylinder (5), lock nut (4), control cylinder adapter (6), seat (7), valve piece (8), lock pin (9), seat gasket (12), bonnet gaskets (11 and 13) and screen (10). Renewal kits are furnished as an assembled unit with matched parts not individually interchangeable.

Strainer

- 1. Remove the hexagon nuts (17), strainer bonnet (3), screen (10) and bonnet gasket (13).
- 2. Clean the screen with compressed air or steam, or by washing in solvent. Replace the screen if damaged.

FIGURE 2



PARTS LIST

Item	Description
1	Body
2	Bonnet, trap
3	Bonnet, strainer
4	Lock nut
5*	Control cylinder
6*	Control cylinder adapter
7*	Seat
8*	Valve piece
9*	Pin, lock
10*	Screen
11*	Gasket, spiral wound
12*	Gasket, spiral wound
13*	Gasket, spiral wound
14	Stud, trap
15	Nut, hex, trap bonnet
16	Stud, strainer bonnet
17	Nut, hex, strainer bonnet
18	Washer, split (C250, C260 only)

\* Renewal kit

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### REASSEMBLY

Before reassembly, clean both the trap and the strainer studs (14) and (16). Lubricate studs and nut faces with a high temperature lubricant such as 'Molykote'.

Clean the body recess and all gasketing surfaces for seat and bonnet gaskets.

#### Steam trap

1. Place gasket (12) into body.
2. If a renewal kit is being installed, simply place pre-assembled unit on seat gasket.
3. If internals were taken apart and cleaned:
  - a. Carefully slide valve piece into control cylinder.
  - b. Thread seat into adapter, making sure that valve piece drops through seat orifice.
4. Make sure in both cases that seat is positioned properly on seat gasket.
5. Place bonnet gasket (11) on body sealing surface. Mount bonnet on studs and hand tighten bonnet hexagon nuts.
6. Torque diagonally opposite bonnet nuts (see torque values table).

#### Strainer

1. Press the screen into the recess on strainer bonnet.
2. Place new gasket (13) on bonnet gasketing surface.
3. Carefully raise bonnet over studs. Be sure that screen properly enters body recess and gasket lines up concentric with body gasket recess.
4. Hand tighten the hexagon nuts on studs and torque diagonally opposite nuts to values shown.

### SPARE PARTS

To cover a one year service period, it is recommended that one (1) renewal kit for every four (4) integral strainer traps installed of same internals be stocked. (Minimum number of kits 1)

### TORQUE VALUES ft-lb (Nm)

Series No.	Trap bonnet	Strainer bonnet
C250	80-85 (108-115)	80-85 (108-115)
C260	130-150 (176-203)	90-110 (122-149)
C500	210-230 (285-312)	130-150 (176-203)

### SPARE PARTS

Series No.	Renewal kit part No.
C-250E	963558-01
C-250G	963558-02
C-260E	963558-03
C-500A	963558-04
C-500B	963558-05

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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.*

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