



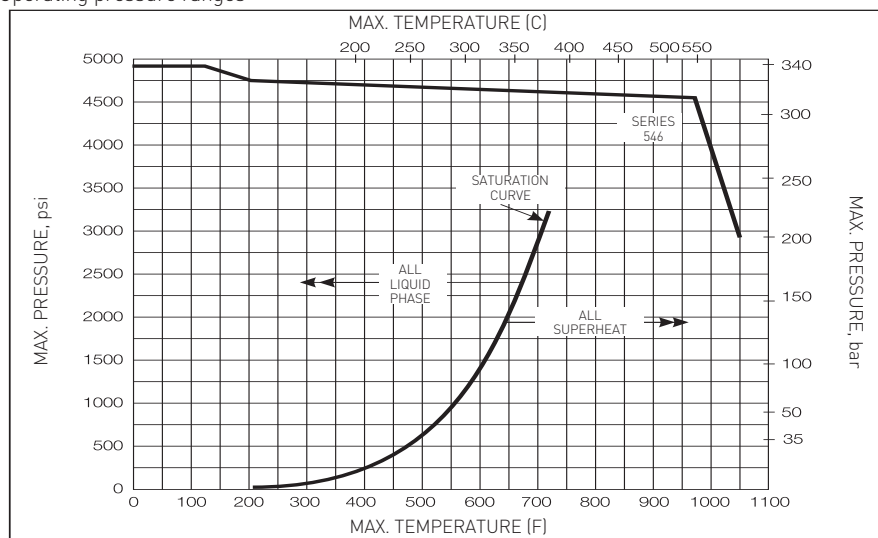
YARWAY SERIES 546 INTEGRAL STRAINER STEAM TRAPS

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Before installation these instructions must be fully read and understood

RATINGS

Operating pressure ranges



SHELL PRESSURE/TEMPERATURE RATINGS

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 vertical line to discharge 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. Do not insulate inlet or outlet piping to the trap for a distance of approximately 12" (305 mm).

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 Yarway 5645B Welbond valves for isolation, 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

Note: For correct operation the trap should be installed with the inlet connected as shown in Figure 1.

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.

RANGE AND BACK PRESSURE LIMITS

Max. pressure / temp. rating psig; °F (bar; °C)	Size Socket weld end connections in (mm)	Series	Size Trap internals
4500; 975 (310; 524)	1 (25)	546	A/B

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.

Frequent checks 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.

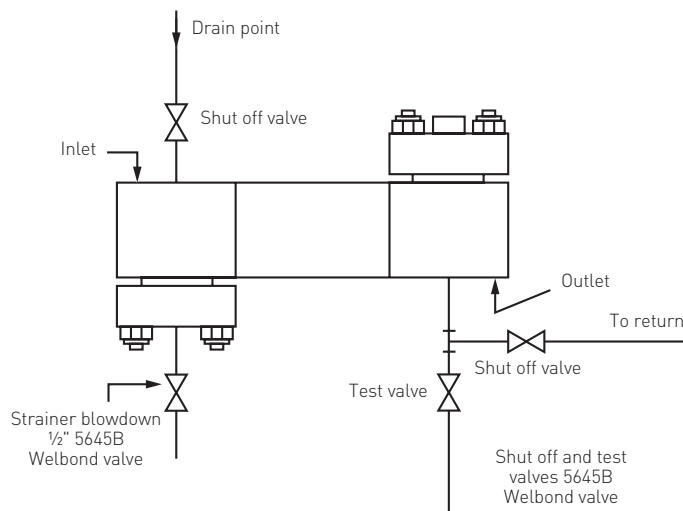
Note: At all times a minute discharge of condensate and flash steam is visible at the trap discharge.

2. Hold a screwdriver 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 down stream of the trap; measure on clean pipe surface about one foot from the inlet and outlet connections.
 - 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, this indicates excessive back pressure or a leak.
 - c. If measured upstream temperature is considerably lower than the saturation temperature corresponding to inlet steam pressure, this indicates condensate is backing-up.

FIGURE 1
Typical installation



DISASSEMBLY

Steam trap

1. Remove the hexagon nuts, the bonnet and the bonnet gasket. Carefully lift out the internals.
2. Unthread the seat from the adapter.
3. Tilt the valve out of the control cylinder.
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.
5. Inspect the control cylinder bore, valve piece and seat for wear. Worn parts cause improper operation and therefore should be replaced with a factory set renewal kit consisting of: control cylinder, locknut, control cylinder adapter, seat, valve piece, lock pin, screen and all gaskets.

Note: The valve, seat and control cylinder or the renewal kit are matched parts. They are not individually interchangeable with similar parts from other repair kits. Do not re-use any of the old parts when installing a new renewal kit.

Strainer

1. Remove the hexagon nuts, strainer bonnet, screen and bonnet gasket.
2. Clean the screen with compressed air or steam, or by washing in solvent. Replace the screen if damaged.

REASSEMBLY

Steam trap

Before reassembly, clean both the trap and the strainer stubs and 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.

Strainer

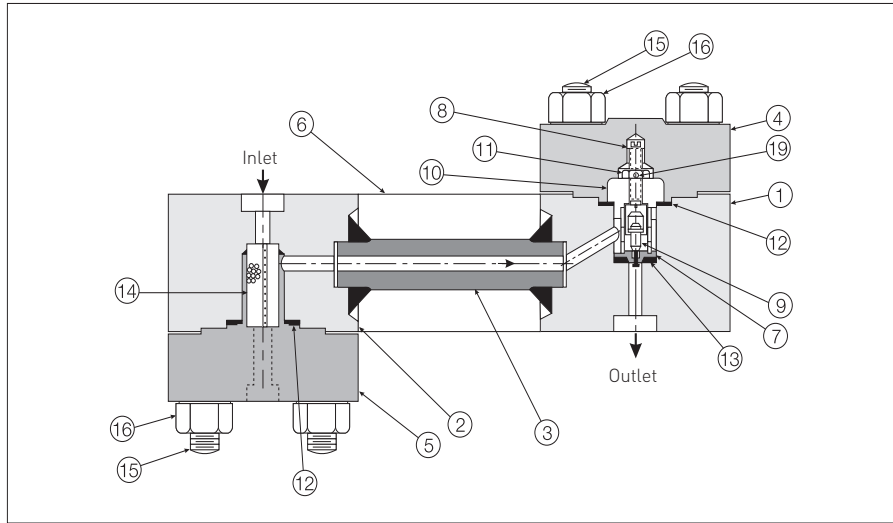
1. Press the screen into the recess on strainer bonnet.
2. Place new gasket on bonnet gasketing surface.
3. Carefully raise bonnet over studs. Be sure that screen properly enters body recess and gasket lines up concentric with body gasket recess.
4. Hand-tighten the hexagon nuts on studs and torque diagonally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

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FIGURE 2

Cross sectional view



PARTS LIST

Item	Description
1	Body (trap)
2	Bonnet (strainer)
3	Connecting pipe
4	Bonnet (trap)
5	Bonnet (strainer)
6	Guard [2]
7*•	Seat baffle assembly
8*•	Control cylinder
9*•	Valve piece
10*•	Cylinder adapter
11*•	Locknut
12*	Gasket (bonnet) [2]
13*	Gasket (seat)
14*	Screen [.020" perf.]
15	Stud
16	Hex nut
17	Nameplate
19*•	Lock pin

* Renewal kit
• Supplied as a matched assembly only.

REASSEMBLY

Steam trap

1. Place the seat gasket into the body
2. If a renewal kit is being installed, simply place the preassembled unit on the seat gasket.
3. If the internals were taken apart and cleaned:
 - a. Use new gaskets.
 - b. Carefully slide the valve piece into the control cylinder.
 - c. Thread the seat into the adapter, making sure that the valve piece drops through the seat orifice.
4. Make sure in both cases that the seat is positioned properly on the new gasket.
5. Place the new bonnet gasket on the body sealing surface. Mount the bonnet on the studs and hand-tighten the bonnet hexagon nuts.
6. Torque diagonally opposite bonnet nuts to the torque values shown below. Bonnets must touch the body, metal-to-metal.

SPARE PARTS

To cover a one-year service period, it is recommended that one renewal kit for every four integral strainer traps installed of same internals be stocked (minimum number of kits: 1) and sufficient gaskets for trap inspection.

Internal part size	Renewal kit part no.
A	963560-01
B	963560-02

TORQUE VALUES ft-lbs (Nm)

	Trap bonnet	Strainer bonnet
Series no.	ft-lbs (Nm)	ft-lbs (Nm)
546	290-320 [393-434]	240-270 [325-366]

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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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