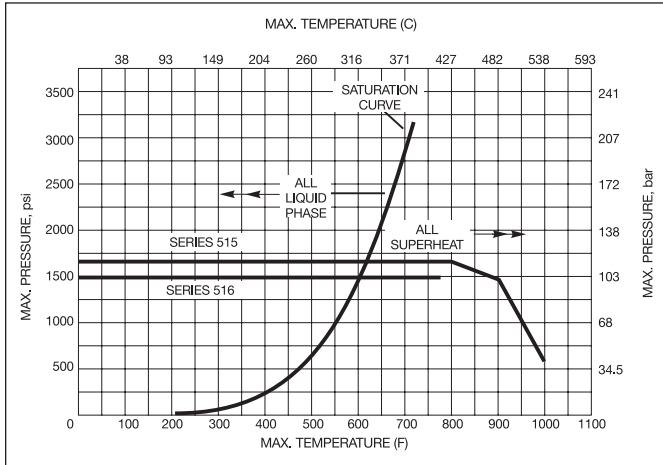


# installation, operation, and maintenance of series 515/516\* integral strainer steam traps to 1500 psig (100 bar)

## RATINGS

### Operating Pressure Ranges



### Shell Pressure/Temperature Ratings

### Back Pressure Limits

Piston valve traps rated to 1500 psig (100 bar)(incl.) are factory set to operate from 150 psig (10 bar) to maximum rated pressure. Maximum allowable back pressure at trap outlet equals 25% of pressure at trap inlet, based on absolute pressures.

## SERIES NUMBERS

To determine the size, series number, and pressure/temperature rating, refer to the nameplate on the trap body.

### Suffix Letter Identification

SW	Socketweld ends
A, B	Internal Part Size
R*	Commercial (flanges per ANSI Standard)
E*	Navy (flanges per MIL-T-960E)

End Conn.	Figure No.	Internal Parts Piston	End Conn.	Rating
1/2", 3/4", 1"	515	A or B	SW	1500 psig (100 bar) - 875F (468C)
	516*		SW	1500 psig (100 bar) - 775F (413C)

Note: Series 515 socketweld end traps are chrome moly steel construction.  
\*Series 516 socketweld end traps are constructed from carbon steel.

## INSTALLATION

**Piping** to and from the trap should be equal to trap size or one size larger. Discharge line for short runs equal to trap size; larger for long runs. Avoid configurations that would cause excessive back pressure.

**Blow the System Out** before installing the trap. Frequent strainer blowdown or cleaning is recommended on a new system. Conditions will dictate frequency of blowdown in normal operation.

**Valves**—Use globe type (Yarway Welbond®) for isolation strainer blowdown, or for test (see Figure No. 1). Bypasses not recommended except for critical installations. If discharge is to a multi-station or overhead return, put a swing check valve in discharge line to prevent backflooding on shutdown. Select a check valve suitable for the application.

**Locate Trap** below outlet from equipment (gravity flow). If trap must be above the drain provide a "U" or lift fitting at the bottom of the riser before the trap (water seal). The trap may be installed in a horizontal or vertical line or at any angle so long as the discharge is downward or horizontal.

**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 500F.

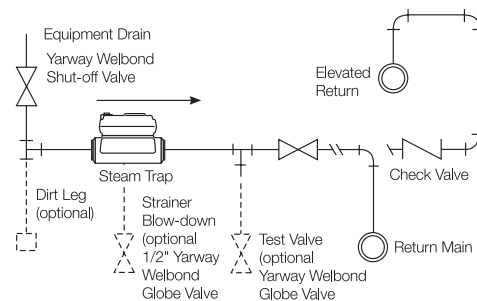


Figure 1

**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.

## MAINTENANCE

1. For the best trap operation and maximum service life, strainer screen should be cleaned frequently. This can best be done by using a blowdown valve connected to blow-off connection.
2. Periodically remove the bonnet and clean and inspect the screen. This should be done at least once a year and more frequently if the trap is not fitted with a strainer blowdown valve.
3. When cleaning the strainer it is recommended that the trap be inspected and working parts cleaned if necessary. In the event of condensate drainage problems, check before opening the trap whether the trouble is due to a clogged line, valve broken or in wrong position, or dirty strainer requiring blowdown.

## CHECKING

### Check bonnet and cap nut torque after 48 hours of operation.

More frequent checks for proper trap operation can be quickly made by one of the following methods:

- a. Observe the discharge from the trap through the test connection—first closing the downstream stop valve.
- b. Hold screwdriver or metal rod against base of cap. Listen for characteristic clicking sound of valve as it opens and closes.

If trap is remaining open continuously or not opening at all:

- strainer screen may be damaged or dirty.
- parts may be worn from service.
- dirt and scale may be lodged in internals.

Disassemble and inspect the trap.

## DISASSEMBLY

1. Remove bonnet and unscrew seat.
2. Inspect and clean all parts. If satisfactory, reassemble trap. It is recommended that new gaskets be used.

\* Consult factory for non-standard product, flanges and Series 516.

### If Internals Require Replacing

1. Remove cap nuts, cap and using wrench and screwdriver simultaneously, loosen control cylinder.
2. Pull lock pin, remove lock nut and unscrew control cylinder.
3. Install new internals, screen and gaskets. Reassemble trap.

Item	Description
1	Body
2	Bonnet
3	Cap
4	Valve
5	Control Cylinder
6	Seat
7	Lock nut
8	Lock pin
9	Seat gasket
10	Cap gasket
11	Bonnet gasket
12	Screen
13	Bonnet stud
14	Bonnet nut
15	Cap stud
16	Cap nut

▲ Renewal Kit

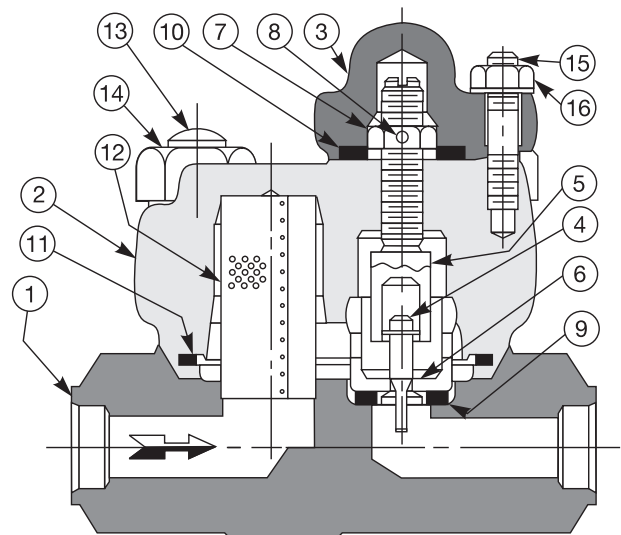


Figure 2—Piston Valve Type



**Figure 3—Trap disassembled exposing strainer and “cage” arrangement of all trap working parts mounted in the bonnet.**



**Figure 4—Seat removed to show valve and control cylinder.**

## SERVICING

After disassembly, clean internal parts with a cloth and non-corrosive solvent. Heavy deposits may be cleaned from orifice in top of piston valve with a piece of fine wire or toothpick.

*BE CAREFUL not to damage valve orifice, disc edge, or control cylinder bore. Under no circumstances should crocus cloth or tools be used to clean any surfaces of trap parts.*

Inspect control cylinder bore, valve and seat for wear. Worn parts cause inefficient or improper operation. They should be replaced with a factory-set renewal kit.

**CAUTION: 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.**

## 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) and sufficient gaskets for trap inspection.

Internal Part Size	Renewal Kit Part No.
A	963557-01
B	963557-02

## REASSEMBLY

### Installing Repair Kit

1. Clean sealing surfaces and all internal parts.
2. Clean studs, and lubricate studs and nut faces with high temperature lubricant, such as “Molykote”.
3. Remove lock pin and nut from control cylinder stem.
4. Lubricate threads. Screw control cylinder into bonnet.
5. Insert valve in seat, holding valve in position, lubricate threads screw seat into bonnet—be sure valve enters control cylinder and that seat contacts the bottom of the counterbore in the bonnet.
6. Replace lock nut (bevel up), and fully insert lock pin.
7. Screw cylinder down; tighten lock nut per Table 1.
8. Push screen into body recess and with new bonnet and seat gaskets in place lower bonnet over studs.
9. Run bonnet nuts on studs and tighten alternately to the torque indicated in Table 1.
10. Replace cap gasket, cap and nuts. Torque per Table 1.

**Table 1—Torque Values ft-lbs (N•m)**

Item	ft-lbs	(N•m)
Bonnet Nuts	110-130	(149-176)
Cap Nuts	14-18	(19-24)
Lock Nut	7.9-8.3	(10.7-11.3)



**[www.tycoflowcontrol.com](http://www.tycoflowcontrol.com)**