OM No. E-SCSF-170111-1

INSTALLATION, OPERATION and MAINTENANCE MANUAL

Thermodynamic Steam Trap

MODEL: SC/SF

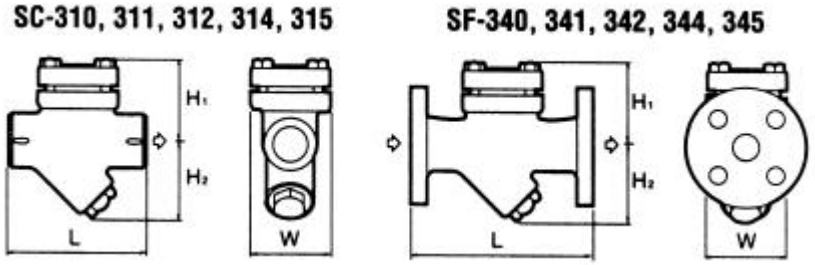
MIYAWAKI INC.

Osaka, Japan

SAFETY INSTRUCTION

Prior to using the SC/SF steam trap, read this manual thoroughly to understand the correct handling and operating procedure.
The manual should be used by experienced personnel as a guide to the installation and maintenance of the Steam Traps.
We ask you to contact MIYAWAKI or its local representative if further information is required.

1. Dimensions and Technical Specification



Model	Connec-tion	Size mm (inch)	Max. Oper. Pressure barg (psig)	Max. Oper. Temp. °C (°F)	Dimensions mm (inch)				Body Mater.	Weight kg (lb)
					L	H1	H2	W		
SC-310	Screwed Rc, NPT	20 (3/4")	16 (230)	220 (428)	180 (7.1)	87 (3.5)	81 (3.2)	96 (3.8)	Cast Iron FC 250	6,0 (13.2)
SC-311		25 (1")								
SC-312		32 (1 ¼")				104 (4.1)	100 (3.9)	106 (4.2)		8,0 (17.6)
SC-314		40 (1 ½")								8,7 (19.1)
SC-315		50 (2")				111 (4.4)				9,3 (20.5)
SF-310	Flanged ANSI, JIS,DIN	20 (3/4")			240 (9.5)	95 (2.0)	75 (3.0)	96 (3.8)		10,0 (22.0)
SF-311		25 (1")								
SF-312		32 (1 ¼")				104 (4.1)	100 (3.9)	106 (4.2)		12,0 (26.4)
SF-314		40 (1 ½")								13,5 (29.7)
SF-315		50 (2")								14,5 (31.9)

2. Installation

CAUTION	Before installing the trap, always blow down the piping that leads to the trap's inlet.

A. Install the trap according to the direction of the arrow on the body.

B. Install the trap at the lowest point of the steam using equipment to be drained.

C. Install the trap so that the condensate will flow naturally into the trap.

D. Thermodynamic steam traps can be installed either horizontally or vertically.

E. The trap should be installed for easy maintenance. Due to the length of the strainer there should be space from the center of the inlet and outlet for maintenance purposes.

3. Trouble-shooting

The steam trap should be checked for proper operation at least once a year.
The thermodynamic steam trap is operating intermittently, i.e. it will open (discharge the condensate) and close at certain cycles.

Problem	Reason
The trap is not discharging. The trap is cold.	A. The inlet valve is closed. B. The strainer is plugged. Remove the Body Plug (No.8) and clean the strainer. C. The inlet orifice is plugged. D. The disc sticks to the seat due to oil or other dirt in the steam. E. The control chamber is filled with condensate, the disc is in closed position. It happens usually if the condensate is flowing back to the steam trap due to an incorrect installation of the condensate recovery line. F. Air locking - There is a lot of air inside the steam pipe. The air filles the control chamber and the disc sticks to the seat.
The Trap is discharging continuously condensate. The trap doesn't close.	A. The capacity of the trap is too low.
The trap is blowing through or leaking steam. The disc is moving very quickly („chattering").	A. Scale is lodged between the disc and the Disc seat. B. The disc and/or the disc seat are worn or damaged. C. The differential pressure is too low. The traps are designed to operate at a minimum differential pressure of 0,03 Mpa (4,35 psi). D. The trap may be oversized. E. The back pressure is too high (higher than 50% of the inlet pressure). F. The inlet pressure is higher than the maximum allowable operating pressure of the trap.

4. Maintenance, Disassembling and Assembling

WARNING	Before disassembling a steam trap be sure to close the valves in both supply and discharge lines, reduce the pressure inside the trap to atmospheric pressure, and allow the trap to cool before opening it.

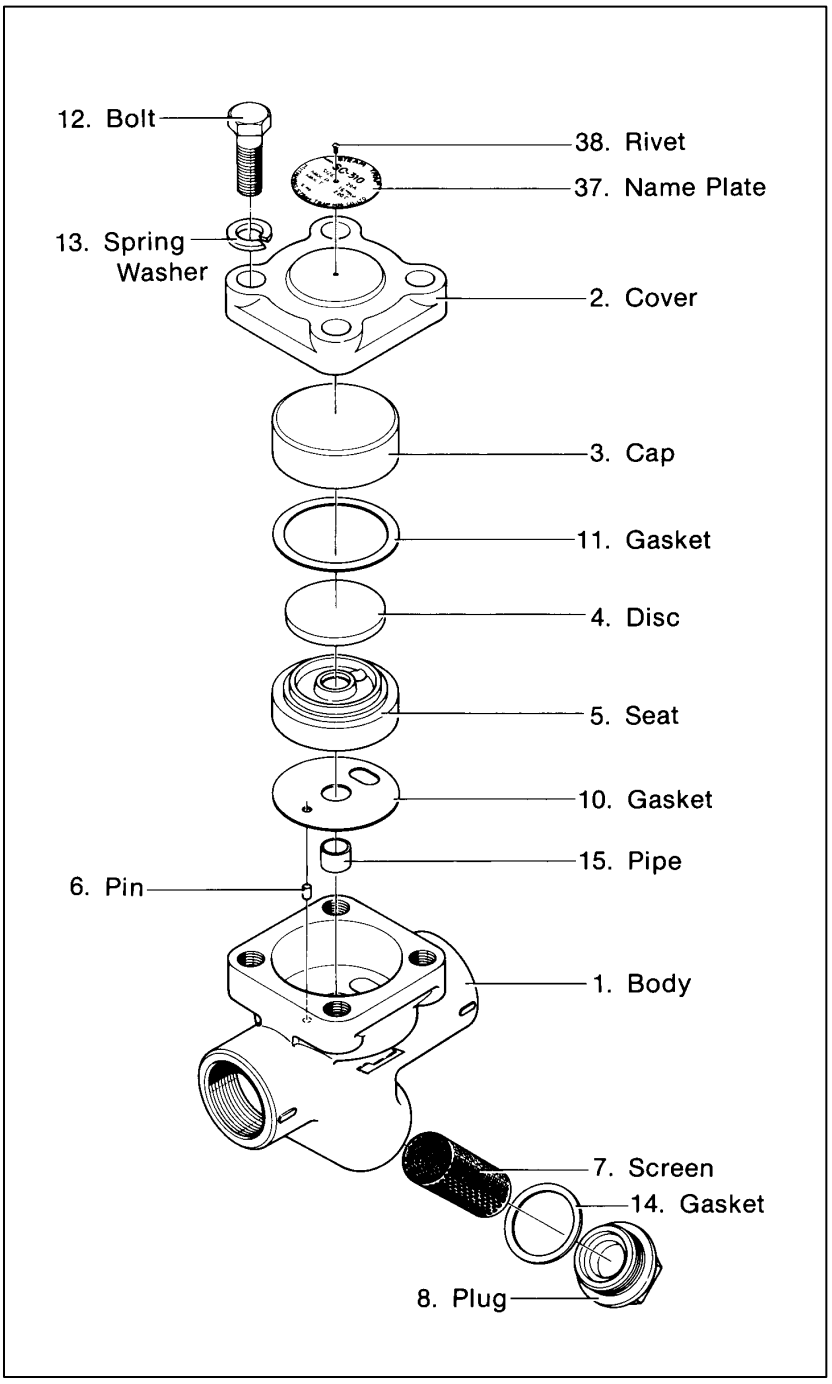
For cleaning purposes or for changing parts perform the following steps:

A. Remove the Body Plug (8), take out the Screen (7), check and clean it.
B. Remove the Cover (2). Then remove the Cap (3).
C. You can take out the Disc (4). Firthermore the parts No. 5 (seat), No. 10 & 11 (gaskets), No. 6 (pin) and No. 15 (small pipe) can be taken out.
D. Clean and check the parts. Replace any parts that are worn or damaged. If the seat or disc are worn, please, replace the complete inner unit.
E. Assemble in the opposite way as disassembling. Don't forget to set the pin in the right place. Replace the gaskets by new ones.
F. Tighten the cover bolts (No. 12) evenly.

Wrench Sizes and Torques

Type	Parts Number	Parts Name	Wrench Size	Torque
SC-310,311 SF-340,341	12	Cover Bolts	Hexagon 22 mm	700 kgf·cm
SC-312,314,315 SF-342,344,345	12	Cover Bolts	Hexagon 24 mm	900 kgf·cm
SC-310,311 SF-340,341	8	Strainer Plug	Hexagon 35 mm	700 kgf·cm
SC-312,314,315 SF-342,344,345	8	Strainer Plug	Hexagon 40 mm	900 kgf·cm

5. Details and Spare Parts List



LIST – MAIN SPARE PARTS

No.	Parts / Unit Name
4	Disc
11, 12	Gaskets
5	Seat

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