OM No. E-SD1-120105-1

INSTALLATION, OPERATION and MAINTENANCE MANUAL

Thermodynamic Steam Trap

MODEL: SD 1

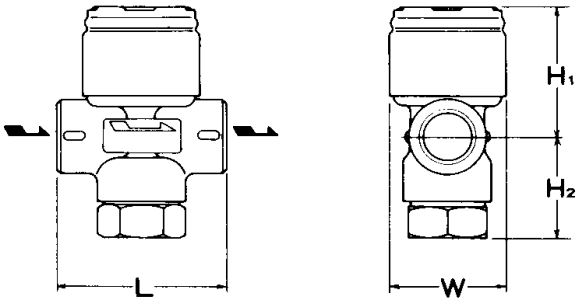
MIYAWAKI INC.

Osaka, Japan

SAFETY INSTRUCTION

Prior to using the SD 1 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	Connection	Size	Operating Pressure Range		Max. Operating Temperature		Dimension mm (inch)				Weight	
			MPa	psig	°C	°F	L	H_1	H_2	W	kg	lb
SD 1	screwed Rc, NPT	¼“	0,03 - 3,1	4.4 - 450	400	752	52 (2.0)	39 (1.5)	25 (1.0)	34 (1.3)	0,3	0.7
		3/8“										
		½“					60 (2.4)	41 (1.6)	23 (0.9)			

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.

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 discharge the condensate and close at certain cycles.

Problem	Reason
The trap is not discharging. The trap is cold.	1. The inlet valve is closed. 2. The strainer is plugged. 3. Remove the Body Plug (No.5) and clean the strainer. 4. The inlet orifice is plugged. 5. The disc sticks to the seat due to oil or other dirt in the steam. 6. 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. 7. 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.	1. The capacity of the trap is too low.
The trap is blowing through or leaking steam. The disc is moving very quickly („chattering").	1. Scale is lodged between the disc and the disc seat. 2. The disc and/or the disc seat are worn or damaged. 3. The differential pressure is too low. The traps are designed to operate at a minimum differential pressure of 0,03 Mpa (4,35 psi). 4. The trap may be oversized. 5. The back pressure is too high (higher than 50% of the inlet pressure). 6. 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.

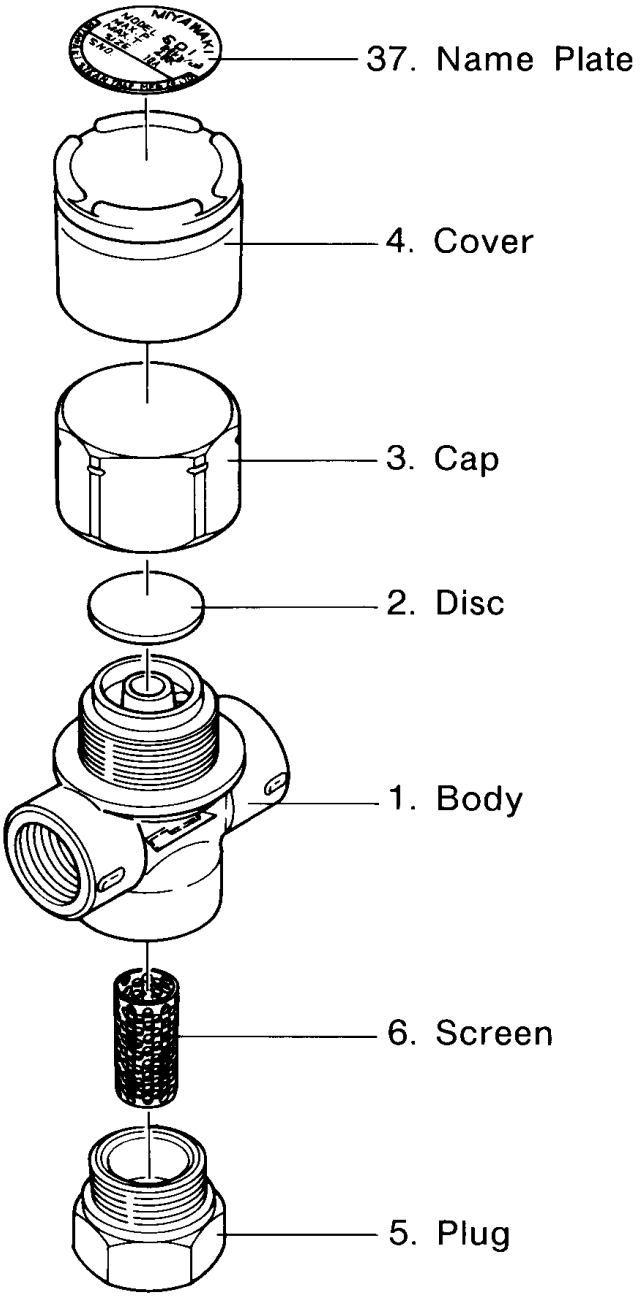
For cleaning purposes or for changing parts perform the following steps:

A. Remove the Body Screen Plug (5), take out the Screen (6), check and clean it.
B. Take off the Insulation Cover (4). Then unscrew the Cap (3) and remove it.
C. You can take out the Disc (2). The seat is fixed to the body (integral seat).
D. Clean and check the disc and the seat surfaces. If they are worn or damaged, replace the disc or change the whole steam trap.
E. Assemble in the opposite way as disassembling.

Wrench Sizes and Torques

Parts Number	Parts Name	Wrench Size	Torque
3	Cap	29 mm	600 kgf·cm
5	Screen Plug	23 mm	400 kgf·cm

5. Details and Spare Parts List



SPARE PARTS LIST

No.	Parts / Unit Name
2	Disc
6	Screen