RELAX A MIST™
QUALITY STEAM BATH EQUIPMENT

SERVICE BULLETIN

MODEL NO'S. SG-9, SG-14, SG-18, SG23, SG-27, SG-36 BULLETIN NO. 95-2

SUBJECT: **SERVICING THE COMMERCIAL STEAM GENERATOR DRAIN/ FLUSH**

The purpose of the Drain/Flush system is to drain the boiler of any dissolved solids and other material that enter the boiler during a day's operation.

When the time clock "turns off" the boiler at the end of a day's operation, the drain/flush system is automatically activated. The drain valve opens for a 20 minute period, during which the flush valve opens for seven - 14 second flushes.

PROBLEM:

Time clock switch opens at the end of a day's operation, the boiler shuts down, and the drain/flush system does not operate:

1. DRAIN VALVE NOT OPENING TO DRAIN BOILER.

2. FLUSH VALVE NOT OPERATING WHEN BOILER SHUTS DOWN.

POSSIBLE CAUSES:

1. DRAIN VALVE:
   - a) Drain valve not receiving the proper electrical signal.
   - b) Drain valve stem loose from the operating plate.
   - c) Drain valve motor not operable.

2. FLUSH VALVE
   - a) Flush valve not receiving the proper electrical signal.
   - b) Flush valve water inlet pipe plugged.
   - c) Flush valve water outlet pipe plugged.
   - d) Water supply turned off.
   - e) Flush valve not operable.

TROUBLE SHOOTING AND REPAIRS:

1. DRAIN VALVE.

a) Using a volt meter capable of testing 24VAC, the following tests should be made with the different conditions and the applicable voltages as noted. All voltage measurements are made to ground. All drain valve voltage tests must be made at the end of the wires (removed from the drain valve) as well as in the low voltage control side of the main electrical connection box.

6909 Antrim Avenue, Burnaby BC V5J 4M5 604-437-4717 or 1-800-Y-U-STEAM (1-800-987-8326)
email: steamman@relax-a-mist.com website: www.relax-a-mist.com

TEST AS FOLLOWS:

i) no load (drain valve disconnected) with the time clock switch open (boiler turned off):

Control connection	"1"	terminal	24 VAC
Control connection	"2"	terminal	0 VAC
Control connection	"4"	terminal	0 VAC

Drain valve	"1"	terminal	24 VAC
Drain valve	"2"	terminal	0 VAC
Drain valve	"4"	terminal	0 VAC

ii) With a load (drain valve connected) with the time clock switch open (boiler turned off)

Control connection	"1"	terminal	24 VAC to ground
Control connection	"2"	terminal	0 VAC to ground
Control connection	"4"	terminal	0 VAC to ground

Drain valve	"1"	terminal	24 VAC to ground
Drain valve	"2"	terminal	0 VAC to ground
Drain valve	"4"	terminal	0 VAC to ground

iii) With a load (drain valve connected) with the time clock switch closed (boiler turned on)

Control connection	"1"	terminal	24 VAC to ground
Control connection	"2"	terminal	0 VAC to ground
Control connection	"4"	terminal	24 VAC to ground

Drain valve	"1"	terminal	24 VAC to ground
Drain valve	"2"	terminal	0 VAC to ground
Drain valve	"4"	terminal	24 VAC to ground

Should any of these voltages not be the same as/or very close to the above, turn off the power supply to the steam generator, remove the 3 wires from the drain valve terminals, and check for continuity between the circuit board plug in JB-5 (white-2, violet-4, yellow-1)and the ends of the 3 wires at the drain valve.

If no continuity is found, carefully try to insert the wire deeper into the plug socket. This may be done (after removing the black plastic wire retainer) with a very small ended screw driver (CAUTION DO NOT PUSH AGAINST THE P.C. BOARD). If continuity is found to be OK and there is still not the correct voltage present on all wires the P.C. Board drain valve circuit must be defective and the P.C. Board removed for repair.

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Should any of these voltages not be the same as or very close to the above, the circuit board could be faulty and the input voltage should be checked. There are 5 wires connected to a white plug JB-4 on the top right of the circuit board. Starting from the top, the wires are: blue, yellow, blue, brown, brown. The voltages should be approximately as follows:

i) Across the 2 brown wires 24 VAC
ii) Across the 2 blue wires 24 VAC
iii) Across the yellow and either blue wires 11 VAC/16 VAC

2. FLUSH VALVE

A) Determine that the water supply to the flush valve is turned on.

B) Loosen the flare nut on the "inlet" side of the flush valve to determine there is in fact water pressure there. No water pressure or volume, check and repair water supply.

C) Remove the 2 wire nuts from the flush valve (the flush valve has 1/2"copper pipe on the inlet and 1/2"copper pipe on the outlet) and check the voltage between the 2 grey wires at the valve. It should be 24 VAC. If no voltage is found on the grey wires turn off the power supply to the steam generator and remove the plug at JB-2. Test for continuity between the plug and the end of each grey wire. If no continuty is found carefully try to insert the wire deeper into the plug socket. This may be done (after removing the black plastic wire retainer) with a very small ended screw driver (CAUTION DO NOT PUSH AGAINST THE P.C. BOARD). If continuity is OK and there is still not the correct voltage at the flush valve, the flush circuit is defective and the P.C. Board must be removed for repair. If the correct voltage is found and the valve does not open, remove the 2 grey wires from the valve and test as follows:

From 1 grey wire to ground there should be 24 VAC.

From 2 grey wires to ground there should be 0 VAC.

Loosen the flare nut on the outlet side of the valve (for visual inspection of water flow). Reconnect the 1 grey wire that has the 24 VAC to the valve. Touch the other wire from the valve to ground (not the grey wire). This should activate the valve (open it to allow water through). If this does not open the valve then it is defective and should be replaced. If the above tests OK and water still does not enter the boiler, there must be a blockage between the valve and the boiler flush spray head. The spray head may be blocked by mineral deposits and the boiler may need to be descaled.

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