



Leisure Baths Ltd.

RELAX-A-MIST COMMERCIAL STEAM GENERATORS PREVENTIVE MAINTENANCE SCHEDULE

When installed according to good workmanlike standards and according to the supplied installation instructions, the Relax-A-Mist should give years of trouble free service with little or no maintenance; however, it is good practice to periodically check the unit so that any small problems that may occur can be identified and corrected before they become large ones.

During preventive maintenance, it is assumed that the steam generator is operating normally, and that this check is to ensure that the equipment continues to operate to original standards. To implement this, it is not necessary to dismantle any internal parts from the steam generator. To check the steam generator's operation only the time clock cover, the electric box covers and the cover on the lower front (directly below the electric box) should be removed.

Preventive maintenance should start with a physical cleanup of the generator housing, using a mild detergent, and a complete visual inspection of the generator and its controls. A suggested step by step inspection should include:

1. Place a sign on the steam room door:

TEMPORARILY OUT OF SERVICE
FOR
REGULAR MAINTENANCE

2. Remove the clock cover, the electric box covers and the lower front panel of the steam generator.

**CAUTION: ELECTRICAL SHOCK
HAZZARD CAN OCCURE FROM
TOUCHING ENERGIZED PARTS.**

3. Check for any sign of moisture in the electrical box and in the boiler housing

below. If any is found, the source should be investigated and a proper correcting procedure determined.

4. Determine whether the steam operation is being controlled by the time clock or the remote switch. If the remote switch is being used, move the switch located on the lower front of the printed circuit board from "remote" to "clock" for the duration of this preventive maintenance operation. Also make sure the time clock is set at the correct time of day and the "trippers" on the outside ring of the clock face are in the "on" (out) position.

If the time clock is being used, check to ensure the clock shows the correct time of day.

5. Turn the time clock switch off manually by moving the switch button located on the clock face to the lowest or "off" position (indicated by "0"). This will shut down the boiler operation and turn on the drain flush system.
6. The drain flush system is designed to remove any residue that may have accumulated in the boiling tank during the day's operation.

When the boiler operation switch (either the time clock or the remote switch) is turned "off" either manually or at the end of a normal day's operation, the motorized drain valve opens and stays open for 20 minutes. During this 20 minutes, a spray head in the top of the boiler interior flushes the inside of the boiler with 7 separate 14 second flushes of water (approximately 2 gallons); the motorized drain valve closes and the boiler stays empty until the time clock switch is turned on again.

As mentioned above, the drain flush system removes any loose particles, whether as solids or dissolved solids, brought into the boiler with the water. Should the boiler water supply contain minerals (i.e. calcium) and be untreated to neutralize the effect of such minerals (calcium adhering to the boiler interior), the drain flush will not remove any substances that have already adhered to the boiler. Treated water will usually hold such minerals in suspension and allow them to be carried away with the drain flush.

Should the steam generator require decalcifying, see section 13, "Minerals In The Water".

To check the operation of the drain valve, check the difference in temperature of the 1" drain piping on either side of the motorized drain valve. The pipe on the boiler side should be hot because of the water temperature in the boiler and the other side (discharge side) should be cooler. When the motorized drain valve opens, the pipe on the drain side of the valve should heat rather rapidly because of the hot water (either boiling or recently boiled) that is leaving the boiler.

The flush valve will open 7 times, each for 14 seconds, during the flush operation. There is a 2 minute interval between flushes to allow the boiler to drain. It is usually necessary to observe 2 flushes, not all 7.

7. While the generator is turned off, visually inspect:
 - a. The main relay contactors to see if there is any carbon build-up around the points, which may indicate that the points should either be cleaned or replaced.
 - b. All the wire terminals and wire joints to ensure that there has been no excessive heat build-up through resistance w may cause future problems.
8. Turn the time clock switch on by moving the switch button to the CENTER position, to

observe the steam operations. This will start a chain of operations controlled by the main circuit board.

- a. The boiler water fill valve will open, filling the water boiling tank.
 - b. When the water in the boiling tank rises to the level of the electronic water sensing probe:
 - i. The water valve will close.
 - ii. The main contactor(s) will close, energizing the heater elements.
 - iii. On larger commercial generators, there can be up to four contactors that will close in stages, with a 5 to 7 second delay between each stage.
9. In 3 to 4 minutes the equipment should start producing steam. The operation of the water fill valve can be monitored by the way it opens and closes as the water boils out of the tank; the level drops and contact with the water sensing probe is broken. This opens the valve and the water boiling tank fills until contact is again made between the water and the probe closing the valve. The valve opening and closing operation should take 1 second or less. The water level in the boiler is kept to within 1/16" to 1/8" of its normal operating level at all times. Observing the fill valve operation 3 to 4 times should be adequate.
10. When the water contact breaks from the water sensing probe, the water has 6 seconds to again make contact with the probe. If the water valve does not open or the tank does not fill within 6 seconds the contactors will open, turning off the heater elements. The contactors will remain open and the heater elements will remain turned off until the water makes contact with the water sensing probe again. Should the contactors open and close as the unit fills with water during the steam cycle, call the factory for service 1-800-987-8326.

11. Replace the clock, electric box and housing covers.

12. If no problems are found:

- a. If the boiler control switch located on the lower front of the printed circuit board was set to the "remote" position, and for the purpose of this preventive maintenance operation it was changed to the "clock", at this point change it back to the "remote" position.
- b. Remove the "OUT OF SERVICE" sign from the steam room door. Replace the sheet metal covers on the steam generator.

13. Should the water supply not be treated properly, the most common mineral to create problems is calcium. If the water is not treated to neutralize this mineral, it will adhere to the boiler interior and not be flushed out by the daily drain flush cycle. This must be dissolved on a regular basis or the heater elements will burn out and the warranty will be null and void.

To Decalcify SG Series Steam Generators:

- a. Turn off the electrical power supply to the steam generator so there will be no chance of the generator producing steam during the cleaning operation.
- b. Determine that the clock is being used to control the steam generator operation, as is outlined in item 4 of the preventive maintenance schedule.
- c. Manually drain the steam generator with the ball valve that is installed to bypass the motorized drain valve. When the boiler is empty, close the ball valve (ensure that the motorized drain valve is in the closed position).
- d. Disconnect the brass 90 fitting at the pressure relief loop. Position it upwards so a chemical to dissolve the scale build-up can be poured into the boiler through the brass 90.

e. The cleaner necessary to clean the boiler interior will be determined by the water conditions in your area. Check with your water specialist and remember that descaling chemicals, such as acids, should be collected and disposed of in an environmentally friendly manner. We suggest an "Ice Machine Cleaner" type of product that can be purchased from refrigeration supply outlets. Follow the manufacturer's instructions for the descaling product that you are using. Check with your local municipal inspectors to determine what chemicals can be disposed of through the drainage system.

f. After the mineral build-up has been dissolved, manually drain the steam generator with the ball valve (capturing the dissolved solids in a container if necessary) that is installed to bypass the motorized drain valve. When the boiler is empty, close the ball valve and ensure that the motorized drain valve is in the closed position also.

Remove the clear plastic cover from the clock face and adjust the slide switch to the "off" position indicated by a "0" (lowest position).

g. Turn on the main power supply to the steam generator.

****Note:** When the power supply is turned on, the steam generator will automatically start the flushing cycle by opening the motorized drain valve and rinsing the interior of the copper water boiling tank 7 times from the sprayer head.

This should adequately wash the dissolved solids out of the steam generator.

At your discretion, the flush cycle may be repeated. Move the time clock slide switch to the "on" position (the top position) for approximately 10 to 15 seconds and then move it to the "off" position again. This will start the drain flushing cycle again. This operation may be repeated until you are satisfied that your steam generator has flushed away any chemical residue or scale.

- h. After the drain flush operation has been completed:
 - i. Re-connect the pressure relief loop to the brass 90 compression fitting.
 - ii. If the steam generator operation was set to use the remote switch, move the slide switch on the lower part of the steam generator's main circuit board to the remote position.
- iii. If the steam generator operation was set to use the time clock, set the time clock to the correct time and ensure the clock slide switch is in the clock position (the centre position).
- iv. Turn the steam generator on to observe the unit's operation and see steps 3 to 12 of the preventive maintenance schedule.

FOR INFORMATION REGARDING WARRANTY OR INSTALLATION QUESTIONS PLEASE CALL 1-800-Y-U-STEAM

AUTHORIZED SERVICE DEPOTS

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