





SUBJECT: Troubleshooting Residential Steam Generators With a Volt Metre, from Serial # A-10400 to A-14899

Visual Inspection

Ensure the steam generator is a Relax-A-Mist, and that the unit is installed in the correct position with the copper steam line(s) coming out of the top (please refer to your installation instructions and diagrams). Check that unit has the correct power and water supplied to it, and that both are turned on. There should be no steam traps in the steam line(s) and the steam nozzles must be installed with the "tear drop" shaped reservoir on the top and the steam slot pointing down. If there are any manual drains attached to the steam generator, ensure that they are in the "closed" position.

 **The following tests are to be performed with the steam generator's power supply ON.** 
 **CAUTION: Bare metal parts may be energized and cause an electric shock.** 
Avoid touching metal wire connectors.

If the visual inspection has been completed and the unit is found to be installed correctly, proceed to step 1 after locating and removing the electrical box cover plate on the steam generator (4 screws). The following tests will require the use of a volt metre and should only be performed by a qualified technician. We recommend using a digital volt metre as the displayed reading is more accurate than the analog metres.

CAUTION: do not cross connect the meter probes while taking a reading.

1. Testing the Power Supply - Timer Switch *OFF*

Procedure: **JR3&4** - Test the power supply between **L1** and **L2** on the terminal blocks for 240VAC (test between phases).

Result → Yes 240VAC, go to next procedure.

No 240VAC → Check **power supply**.

2. Testing the 3AMP Fuses JR3&4 - Timer Switch *OFF*

Procedure: Test between the 3AMP fuses (black & red) for 240VAC at both ends (left and right) of each fuse (test between phases).

Result → Yes 240VAC, go to step 3.

No 240VAC → Check **fuse**.

3. Testing the Voltage to the Thermostat Switches - Timer switch *OFF*

Procedure: Remove the end cover of the steam generator sheet metal (at the water supply end) and test the power supply between **L2 (red wire)** and the **element** end with the **black** wire left and the **element** end with the **black** wire right for 240VAC (test between phases).

Result → Yes 240VAC, go to next procedure

No 240VAC → Check or replace **thermo switch**.

NOTE: If the steam unit has been running and has overheated, the thermostat switch may be in an open position until the steam unit cools sufficiently for the switch to stay closed. This can take approximately 20 minutes. The thermostat switch can be tested for continuity to check that the switch is closed. See procedure #4 below.

SUBJECT: Troubleshooting Residential Steam Generators With a Volt Metre, from Serial # A-10400 to A-14899



The following tests are to be performed with the steam generator's power supply OFF.



4. Testing the Thermostat Switch Ohms Reading - POWER SUPPLY OFF

Procedure: With the end cover of the steam generator sheet metal removed (at the water supply end), test for continuity between the top and bottom of the thermostat switch where the black wires connect to the stakeons for continuity.

Result → Yes continuity, go to step 5.

No continuity → Check or replace **thermostat switch**.

5. Testing the Water Valve - POWER SUPPLY OFF

NOTE: Meter set at 20K.

Procedure: With the end cover of the steam generator sheet metal removed (at the water supply end) test for ohms between the orange and red wire where they connect to the stakeons of the valve coil with your metre to confirm the following readings:

Test between the water valve, orange wire (position 3), and the red wire (position 4) to get a reading of 2.8 to 3.5k ohms.

Result → Yes 2.8 to 3.5k ohms, go to step 6.

No 2.8 to 3.5k ohms → Check **water valve**.

6. Testing the Heating Elements - POWER SUPPLY OFF

NOTE: Meter set at 200 ohms.

Procedure: With the end cover of the steam generator sheet metal removed (at the water supply end) test for ohms between the element black 12awg wire (left) and the red 12awg wire (immediately right) of the same element. Repeat the procedure with the two element ends to the right.

3000W 240V Element = 19.20 ohms
3000W 208V Element = 14.42 ohms

4500W 240V Element = 12.80 ohms
4500W 208V Element = 9.61 ohms

Result → Yes correct reading, go to step 7.

No, incorrect reading. → Check **element**.

Procedure: With the end cover of the steam generator sheet metal removed (at the water supply end) test for ohms to **ground** between the element black 12awg wire (left) and to ground between the red 12awg wire (immediately right) of the same element. Repeat the procedure with the element to the right.

Result → Yes zero ohms reading to ground, go to step 7.

No, ohms reading to ground. → Check or replace **element**.

7. Testing the Timer/Control Switch Circuit - POWER SUPPLY OFF

Procedure: In the unit's electrical box, locate the S1 and S2 switch terminals and remove the two wires from the terminal block. Turn **on** the timer switch and test for continuity between the 2 removed wires. Turn **off** the timer switch and test for continuity between the 2 removed wires.

Result → Yes continuity with switch **on**, go to next step

No continuity, with switch **on** → Check or replace timer switch.

Result → No continuity with switch **off**, go to next step

Yes continuity with switch **off** → Check or replace timer switch.

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Procedure: Locate and pull back the 4 pin connector approximately 1/8 of an inch to check the voltage from the silver strips on the side of the connector plug and test for:

i. 24VAC between the white wire (position 1) and green wire (position 2).

Result → Yes 24VAC, go to step 5. No 24VAC → Check **PCB fuses**.

ii. a) 12VDC between the black wire (position 3) and the ground lug.

Result → Yes 12VDC, go to next step. No 12VDC → Check **PCB**.

b) 12VDC between the red wire (position 4) and the ground lug with the timer/switch control turned **ON**.

Result → Yes 12VDC, go to next step. No 12VDC → Check **Timer Control**.



The following tests are to be performed with the steam generator's power supply OFF.



8. Testing the Timer/Control and PCB Circuit in the steam generator - POWER SUPPLY OFF

Procedure: Reconnect the 2 wires from the timer switch to the S1 and S2 terminals. Locate the blue wire from the PCB and cut it about 4 to 6 inches from the PCB (you may have to pull some of the blue wire from the steam unit tank area to the electrical box side to create some slack to make your cut. You will have to reconnect the blue wire later with a wire nut). Strip the end of the blue wire approx. 1/2' on both sides of the cut. With your ohm meter check between the end of the blue wire (going to the tank compartment not the PCB) for a reading.

Result → No ohms reading, go to step 9. Yes ohms reading → replace **water level sensor**.

9. Testing the Timer/Control and PCB Circuit in the steam generator - POWER SUPPLY ON

Procedure: Move the 2 ends of the cut blue wire to a position where they will not touch any other electrical part and cap with wire nuts. Turn on the power supply to the steam unit. Turn on the timer switch to the steam unit and water should start to enter the boiling tank. Remove the wire nut from the blue wire connected to the PCB and touch it to the sheet metal case or ground.

NOTE: Touching the blue wire from the PCB to the sheet metal or ground should stop the water filling the tank. Breaking the connection to ground should start the water flow.

Result → Yes water flow starts and stops, go to step 10. No water flow → Check or replace **PCB**.

Procedure: Connect the two ends of the blue wire from the PCB and from the tank area together with a wire nut. Turn on the timer switch.

Result → Yes the steam unit starts, fills with water, and makes steam. You have completed the tests.



WARRANTY POLICY

For a period of one year from the date of installation, or 18 months from the date of manufacture, whichever comes first, all parts and assemblies are warranted as to workmanship and materials used in their manufacture. There is no cosmetic warranty on installed parts or controls.

Any RELAX-A-MIST™ steam generator containing defective parts, if returned prepaid to an authorized service depot within the on year or 18 month time limit, will be repaired free of charge, F.O.B. the authorized service depot making such repairs.

The Company will not be responsible for any breakdown, damage, or losses, direct or indirect, arising in contract or in tort from any cause whatsoever, including corrosion and/or electrolysis, improper voltage supply, careless handling, or a build-up of minerals on the parts or assemblies for any reason or from any source; nor for transportation and/or other charges incurred in the replacement or repair of defective parts; and there are no warranties or conditions expressed or implied or otherwise applicable, to the company's products except as expressly stated herein.

WARRANTY IS VOID IF RESIDENTIAL STEAM GENERATORS ARE USED IN A COMMERCIAL INSTALLATION.

AUTHORIZED SERVICE DEPOTS

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LEISURE BATHS LTD.
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For assistance please call Relax-A-Mist at 1-800-Y-U-STEAM (1-800-987-8326) or send an email to steamman@relax-a-mist.com.