

USE ONLY Relax-A-Mist® FACTORY SUPPLIED PARTS



1. STEAM GENERATOR LOCATION

The Relax-A-Mist® steam generator and its controls must be located in a dry environment preferably 3 feet above the floor. The steam generator is approximately a 3 foot cube and there should be a minimum clearance of 18 inches on each side, the back and the top and 30 inches at the front for servicing. There should be no more than 25 feet of steam pipe per steam line between the generator and the steam nozzles. The steam generator must be accessible for service and maintenance. There must be a drain close by into which the steam generator can be drained on a daily basis. Preferably, the steam generator and its thermostat control will be in a mechanical room adjacent to the steam room. Install the steam unit on the Relax-A-Mist® metal stand (purchased separately) Ask dealer for details. The steam unit must be level. There are four 1/2" bolts holding the shipping boards to the bottom of the steam generator. The bolts are to be used for leveling purposes once the shipping boards have been removed.

Note: Do not install the steam generator on the shipping boards.

2. GENERAL

The commercial Relax-A-Mist® steam generator is designed specifically to heat and steam areas for steam bath purposes. The controls are all supplied (built-in where feasible), including a digital 7 day, 24 hour time clock to start the steam operation in the morning and stop it at night. An automation option is built-in to allow the operation of remote switching to replace the time clock operation. The generator is designed to operate continuously, or intermittently, as heat and steam are required by the steam room thermostat. The steam room thermostat's single temperature sensor is connected by a factory supplied 25 foot wire. These thermostats control 2 steam room temperatures. One thermostat is LOW or standby temperature and the other is for HIGH or operating temperature. The low temperature cycle is activated by the time clock switching the steam unit on for its daily operation. The high temperature cycle is activated by an air switch button mounted on the factory supplied plate light assembly. Locate this button plate assembly inside or outside the steam room and close to the door. When a person wishes to steam bath, they push the button activating the steam cycle for 30 minutes and the light illuminating indicates the cycle has started.

The button also turns the cycle and light off should a person end their steam bathing before the 30 minute cycle is completed.

There is a built-in drain/flush system which operates when either the time clock or the remote switch turns the steam operation off. At the start of the drain/flush operation, the flush valve introduces a burst of water to the interior of the steam generator to cool the boiling water. Then the automatic motorized drain valve opens followed by six separate 14 second flushes over a 20 minute period.

This is necessary as the only substance that leaves the generator during a steam operation is pure steam and all of the dissolved solids carried in with the water remain in the steam generator. During a 10 hour operational day, the dissolved solids from approximately 30 to 90 gallons of water (depending on the boiling tank size) are left in the approximate 2-1/2 gallons of water in the steam generator. If this residue is not drained on a daily basis, the resulting mineral buildup may hamper the steam unit operation and void the warranty. **Note:** See **WATER SUPPLY** on page 2 and **CAUTION 6** on page 6.

3. CONTROLS

All of the steam unit controls are a maximum 24 volts and are protected by 2amp. fuses located on the electronic circuit board. The circuit board and the terminals for connecting the external controls are located in the left (low voltage) side of the main electrical connection box. The circuit board controls:

- a) Steam boiling tank water level.
- b) One of the boiling tank low water cutoffs.
- c) The main heating element relay contactors.
- d) The drain flush system.
- e) A timer for the HI TEMP operating temperature air switch button.
- f) Use of either the time clock or remote switch.

The wiring connections will be described later.

4. WATER SUPPLY

The water supply connection to the steam generator must be according to local codes. The water supply line must be flushed to eliminate any construction debris prior to connecting to the steam generator. See **CAUTION 9** on page 6.

Commercial Relax-A-Mist® steam generators are equipped with two fresh water systems; one for the normal steam operation and one for the drain flush system. There are two 1/2" solenoid valves located on the back of the main electrical connection box on the steam generator (one for each system). These two valves each have a 1/2" copper pipe with a flared union stubbed out. They can be connected together so a single shutoff can be installed or each can have its own shutoff.

The "steam operation" water supply valve is connected to a 3/8" copper pipe which goes into the top of the boiling

tank (left of center). The "drain flush" water supply valve is connected to a 1/2" copper pipe with a trap, which goes into the top center of the boiling tank, between the steam pipes.

If not already in the water system, a "water bumper" should be supplied and installed.

The water supply should be analyzed to determine the presence of any minerals and/or other impurities that could coat, corrode, or impede the operation of the Relax-A-Mist® water boiling tank interior. If necessary, the water must be treated to offset any adverse condition which may arise, or the warranty may be null and void. See **GENERAL** on page 1 and **CAUTION 6** on page 6.

5. DRAIN VALVES, PIPING & FLUSH SYSTEM

There is a drain piping kit (with a union) that connects to the steam generator pipe marked "DRAIN". The two drain valves supplied with the commercial Relax-A-Mist® are installed to/or on this piping kit.

- a) A 1" electric automatic drain valve that opens at the end of each day.
- b) A 3/4" manual drain valve (installed to loop the electric valve - see illustration of drain valve piping kit) for use when manual draining is desired.

The boiler is drained by gravity alone, so the drain system through the electric drain valve must not be less than 1". The drain piping kit discharge union should be piped directly to a floor drain, (leave an air gap between drain pipe and floor drain). The drain piping kit provides for the pressure relief loop connection. See the illustration on the Component Description page.

DRAIN VALVE ELECTRICAL CONNECTION

The drain valve is 24 Volts A.C., and is connected to the terminal strips in the left side of the electrical box on the steam unit:

- a) Connect terminal #1 on the valve to terminal #1 in the control box.
- b) Connect terminal #2 on the valve to terminal #2 in the control box.
- c) Connect terminal #4 on the valve to terminal #4 in the control box.

Note: See wiring diagram on the inside cover of the low voltage connection box.

6. STEAM PIPING & STEAM NOZZLES

See **CAUTION 1-2, & 5** on page 6. The steam nozzle piping should be roughed in 18" above the unfinished floor of the steam room so when the mortar base and tile are installed, there will be a 14" clearance between the tile and the bottom of the steam nozzles. **Steam nozzles must be located away from user pathways where the steam will not burn anyone sitting on a bench or where they would come in contact with the steam.** Care must be taken to AVOID A STEAM TRAP.

Use each of the steam nozzles supplied, one per steam pipe. For maximum efficiency, all steam pipes must be:

- a) Secured or suspended.
- b) Of rigid copper.
- c) Insulated.
- d) Sloped so that no condensate will collect.
- e) Installed by the most direct or shortest route using the fewest number of elbows (in most cases this will maintain a lower pressure, less than 1 lb., in the boiling tank than a longer route with many elbows).

There is to be no restriction in the steam pipes between the steam generator and the steam nozzles that would in any way cause pressure to build in the boiling tank. See **CAUTION 1-3** on page 6. ALL condensate MUST be able to drain from ALL sections of the steam pipes at ALL times. **Do not pressurize steam generator or use steam generator to pressure test steam line piping.**

WARNING: STEAM NOZZLES ARE HOT AND CAN CAUSE SEVERE BURNS. LIVE STEAM IS 212 °F (100 °C).

There are two copper steam lines with unions stubbed out of the top of the steam generator. On each of the two steam lines, supply and install hard copper steam pipes (maximum 25 ft. per pipe) to a steam nozzle on each pipe. Each of the two steam pipes is to be terminated with a single steam nozzle sized to the steam pipe. See **CAUTION 2-3** on page 6. See **Fig.1** below for model, steam pipe and steam nozzle count and sizes. For other steam nozzle configuration consult with Relax-A-Mist® 1-800-987-8326 or the warranty will be void.

STEAM GENERATOR MODEL NUMBER	STEAM PIPES STEAM NOZZLES	SIZE IN INCHES
SG-9	2	3/4"
SG-14	2	3/4"
SG-18	2	1"
SG-23	2	1-1/4"
SG-27	2	1-1/4"
SG-36	2	1-1/2"

Fig. 1

7. THERMOSTATS

The electronic thermostat supplied with the Relax-a-Mist® is a dual relay output Johnson Controls model C450CCN. Relay 1 operates the HI TEMP (operating temperature) and Relay 2 operates the LO TEMP (standby temperature). The C450CCN thermostat has indicator LED's for each Relay output and an LCD readout with backlight. The readout displays the room temperature in real time.

During the room construction, there should be a 3/4 inch conduit (i.e. plastic) installed in the wall to facilitate the installation of the room temperature sensor. The conduit should enter the room so the sensor will be positioned 5 feet from the finished floor or at the shoulder height of a person sitting at the highest seating level.

The acrylic temperature sensor guard, supplied with the generator, must be installed in a vertical position to encourage the passage of air around the sensor. This makes it much easier to accurately monitor the room temperature. Mount the thermostat din rail and controls on a wall next to the steam generator where they cannot be tampered with.

THERMOSTAT HOOKUP

The thermostat are to be electrically connected to the sensor and to the steam generator. Use only #18 Awg. LVT copper wire when connecting the thermostat to the steam generator.

TEMPERATURE SENSOR TO CONTROL

Identify the "SN1" and adjacent "C" Terminal in the upper left side of the C450 thermostat control.

- i. Connect one wire from the room temperature sensor to the "SN1" terminal.
- ii. Connect the remaining wire from the room temperature sensor to the "C" terminal.

STEAM UNIT THERMOSTAT TERMINALS

Identify the HI TEMP and the LO TEMP terminals in the low voltage control side of the steam unit main electrical connection box.

- i. Connect the two "HI TEMP" terminals in the low voltage control box of the steam generator to the "LNO1" and "LC1" near the bottom of the C450CCN Johnson control.
- ii. Connect the two "LO TEMP" terminals in the low voltage control box of the steam generator to the "LNO2" and "LC2" near the bottom of the C450CCN Johnson control.

POWER SUPPLY TO 450CCN THERMOSTAT

- i. Identify the "T'STAT" 24 volt terminals in the low voltage control box of the steam generator".
- ii. Identify the "24V" and "COM" in the upper left side of the C450CCN Thermostat."
- iii. Connect the "+" (plus) terminal in the control box to the "24V" thermostat terminal".
- iv. Connect the "-" (minus) terminal in the control box to the "COM" thermostat terminal.

The thermostat temperatures have been preset at the factory. The HI TEMP at 115°F, and the LO TEMP at 90°F. The differential is preset at 1 degree.

To facilitate the final installation of the air switch actuator button, indicator light, and mounting plate assembly, cut a diamond shaped hole (4 inches across the flats) in the wall at standard switch height, just outside or inside the steam room door. Install a conduit to give access to this 4 inch diamond shaped hole for installation of a 5/16 inch plastic air line hose and a #18 AWG 2 LVT wire for the indicator light.

When mounting the button and plate assembly to anchors in the wall, care must be taken to protect the wires attached to the back of the LED indicator light, as they can be damaged by careless handling. Care must also be taken not to kink the air line hose.

- i. Using the plastic tubing provided, connect the sender button (on the back), to the air switch receiver nipple located on the outer upper side of the steam unit low voltage control box.
- ii. At the "Indicator Lamp" terminals in the steam unit low voltage control box, connect the orange wire to the + (plus) terminal and the white wire to the - (minus) terminal. The polarity must be correct for the LED indicator to operate.

Note: Silicone may be used to seal around the Air Switch assembly plate when mounting it to the wall.

9. ELECTRICAL SUPPLY

Must be wired to comply with local electrical codes. See **CAUTION 7** on page 5. According to most electrical codes, a disconnect must be placed within easy reach or sight of the steam generator.

Note: Use Copper Wire Only. Connect to Ground.

The heater elements installed in the SG series Relax-A-Mist® steam generators will be one of the combinations listed in Figure 2, depending on the combination that was ordered. Check to ensure that the supply voltage is compatible with the voltage listed on the steam generator identification label. Pull the rough-in copper power supply cable into the right side of the steam generator electrical connection box using the knock outs provided. Connect

the copper power supply ground wire to the Relax-A-Mist® grounding lug. Connect the power supply wires to terminals L1, L2 and L3, (if provided) (see the wiring diagram in these instructions and on the inside of the electrical connection box cover.)

Note: The dash "----" lines denote field hookup.

10. PRESSURE RELIEF

The boiling tank pressure relief is a 23 inch water column that must be piped to an open drain (through the drain piping kit). Fill the pressure relief loop with water when installing (before startup), and insert it into the drain kit column. Install the pressure relief loop, so there is an air gap at the drain column to avoid siphoning it dry. See "Component Description" diagram page.

11. OPTIONAL EQUIPMENT

All Relax-A-Mist® model SG steam generators are equipped to accept the installation of a metal stand, remote switching, a scent pump and a "no steam" switch, (all purchased separately).

REMOTE SWITCH

A remote device, such as a building computer, may control the daily operation. This switch must be capable of switching 3 Amps at 24 Volts AC. See **CAUTION 8** on page 6.

SCENT PUMP

The scent pump will automatically add a fragrance to the steam room during the high temperature bather cycle. The pump requires a separate 120 Volt 5 Amp electrical supply and comes complete with all hardware for installation. It is important that only pure essential oils be used with the Relax-A-Mist® scent pump. Call 1-800-987-8326 for details.

Note: The pump Warranty may be void if corrosive or alternate products are used.

NO STEAM SWITCH

For temporary shut down purposes, a "no steam" switch can interrupt steam from being produced. Some examples of when this may be required are: if the facility decides to have the steam room cleaned during the daily operation, should a steam patron require assistance in the steam room, or should the facility not have patrons present that day. Call 1-800-987-8326 for details.

Electrical Specifications for Relax-A-Mist® SG Series Steam Generators

MODEL	MAX.CU.FT*	KW	VOLTAGE & PHASE OPTIONS				
			208V 1Ph	208V 3Ph	240V 1Ph	480V 3Ph	575V 3Ph
SG-9	390	9.0	Yes	Yes	Yes	Yes	Yes
SG-14	570	13.5	Yes	Yes	Yes	Yes	Yes
SG-18	750	18.0	Yes	Yes	Yes	Yes	Yes
SG-23	930	22.5	Yes	Yes	Yes	Yes	Yes
SG-27	1,125	27.0	N/A	Yes	N/A	Yes	Yes
SG-36	1,685	36.0	N/A	Yes	N/A	Yes	Yes

Fig. 2

CAUTION

CAUTION

CAUTION

1. Do not interconnect or manifold steam pipes, reduce in size, or cause a restriction. **Do not pressurize steam generator or use steam generator to pressure test steam line piping.**
2. Use only the steam nozzles supplied, one steam nozzle per steam pipe.
3. The steam pipe(s) must not be restricted to less than the equivalent of the inside diameter of the steam nozzle(s). See Figure 1 for steam pipe and steam nozzle diameter.
4. Steam Nozzles must be located in an area where the steam will not discharge onto the users' pathways and the steam will not burn anyone. **Note:** A steam guard may be required.
5. AVOID A STEAM TRAP. All condensate MUST be able to drain from all sections of the steam pipe at all times.
6. Impure, mineralized, or other types of hard water that may hamper the operation of the steam generator may VOID THE WARRANTY if not treated properly.
7. Check the electrical service voltage and phase requirements of your Relax-A-Mist® steam generator to ensure your electrical supply is compatible. Use copper wire only. Always connect a ground wire to the steam generator grounding lug.
8. A remote switch that is connected to the terminals in the low voltage side of the electrical control box must be capable of handling 3 Amps at 24 volts AC.
9. Flush 5 gallons of water through the water supply line to remove construction debris before completing the water connection to the steam generator.
10. Steam is hot and can cause severe burns. Be aware of the steam nozzle(s) and the hot steam exiting them.
11. Do not pressurize steam generator or use steam generator to pressure test steam line piping.

DISCLAIMER:

The information given represents suggestions only. Each steam room is unique. Relax-A-Mist® manufactures steam generators only and therefore cannot warrant information given regarding steam room materials or construction techniques. Final selection of the steam room temperature settings and the duration of stay, is at the discretion of the operators or owners.

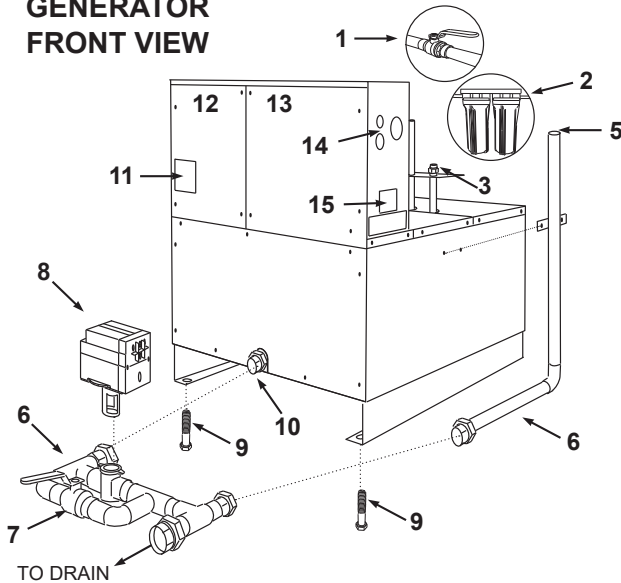


Commercial Steam Generator Component Description

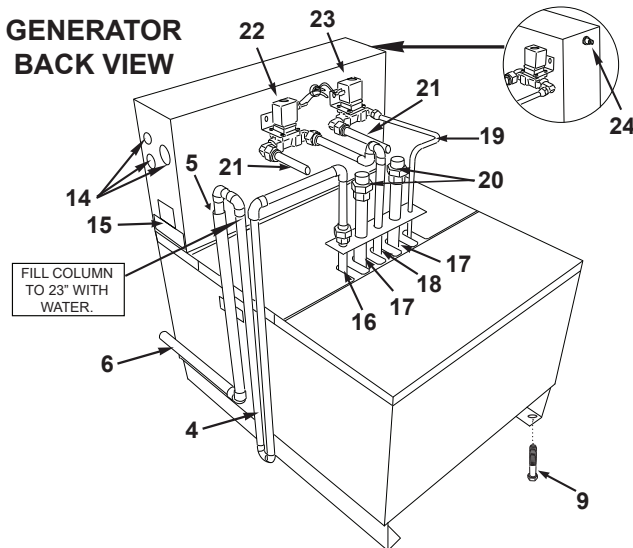


FOR MODELS SG-9, SG-14, SG-18, SG-23, SG-27 & SG-36

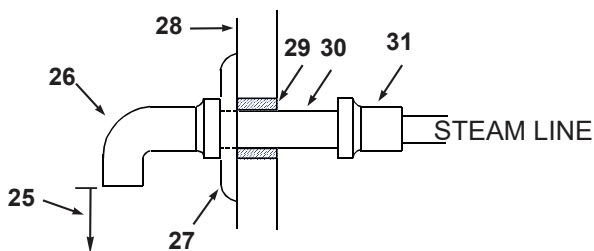
GENERATOR FRONT VIEW



GENERATOR BACK VIEW



TYPICAL STEAM NOZZLE INSTALLATION



COMPONENT DESCRIPTIONS:

PART #	NOTE #
1.	(c) Water shutoff.
2.	(c) Adequate water supply treatment (if required).
3.	(a) 1/2" union for pressure relief column.
4.	(b) Pressure relief column, 23".
5.	(b) Air gap.
6.	(b) Drain piping kit.
7.	(b) Manual boiler drain valve.
8.	(b) Motorized boiler drain valve.
9.	(b) Bolt and nut for leveling.
10.	(a) Drain line union, 1".
11.	(a) Digital time clock and plastic cover.
12.	(a) Low voltage control connection box.
13.	(a) Main electrical supply connection box.
14.	(a) Electrical knockouts.
15.	(a) Steam unit serial # and electrical information label.
16.	(b) Pressure relief column supply pipe c/w 1/2" union.
17.	(a) Two steam pipes.
18.	(a) Boiler flush pipe.
19.	(a) Boiler fill pipe.
20.	(a) Steam pipe union.
21.	(b) Water supply pipe stub, 1/2".
22.	(a) Solenoid valve boiler flush.
23.	(a) Solenoid valve boiler fill.
24.	(b) Air switch button receiver connection.
25.	(c) Opening of steam head to be 14" above the finished floor.
26.	(b) Steam nozzle, two per. unit, sized to steam line.
27.	(b) Escutcheon, two per. unit, sized to steam line.
28.	(c) Finished steam room wall.
29.	(c) Silicone sealer.
30.	(c) Brass nipple.
31.	(c) Copper X female pipe thread adaptor.
32.	(b) Air switch button, plate, & indicator light.
33.	(b) Temperature sensor guard.
34.	(b) Temperature sensor wire, 25 feet.
35.	(b) High temperature control, "A-350".
36.	(b) Standby temperature control, "S-350".
37.	(b) Digital temperature display, "D-350".
38.	(b) Mounting rail for temperature controls.

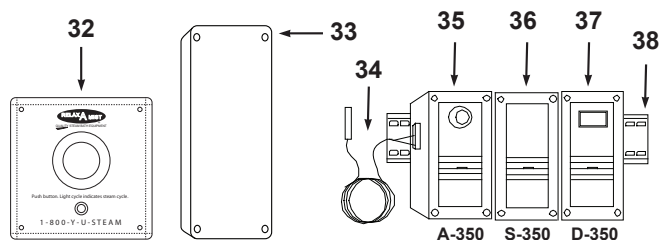
NOTES: (a) Supplied and installed at the factory.
(b) Supplied for installation in the field.
(c) Not supplied. To be supplied by installer.

DIMENSIONS: Width = 23 inches, Depth = 27 inches, Height = 27 inches

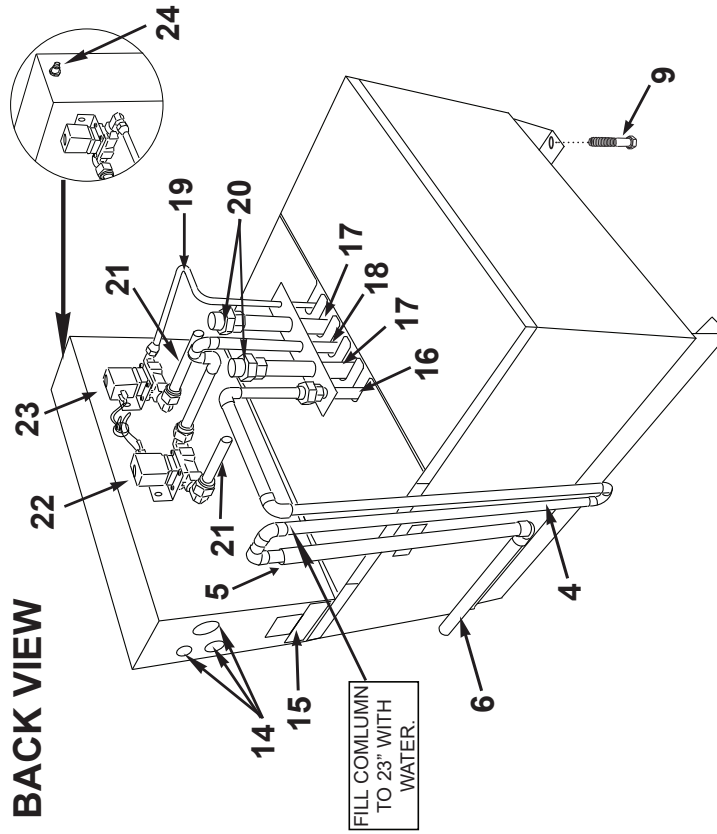
IMPORTANT: An ADDITIONAL 18 inches clearance on sides and back must be maintained. An ADDITIONAL 30 inches clearance to front of steam generator should be maintained for servicing.

NOTICE: Items depicted are not to scale.

FIELD INSTALLED COMPONENTS

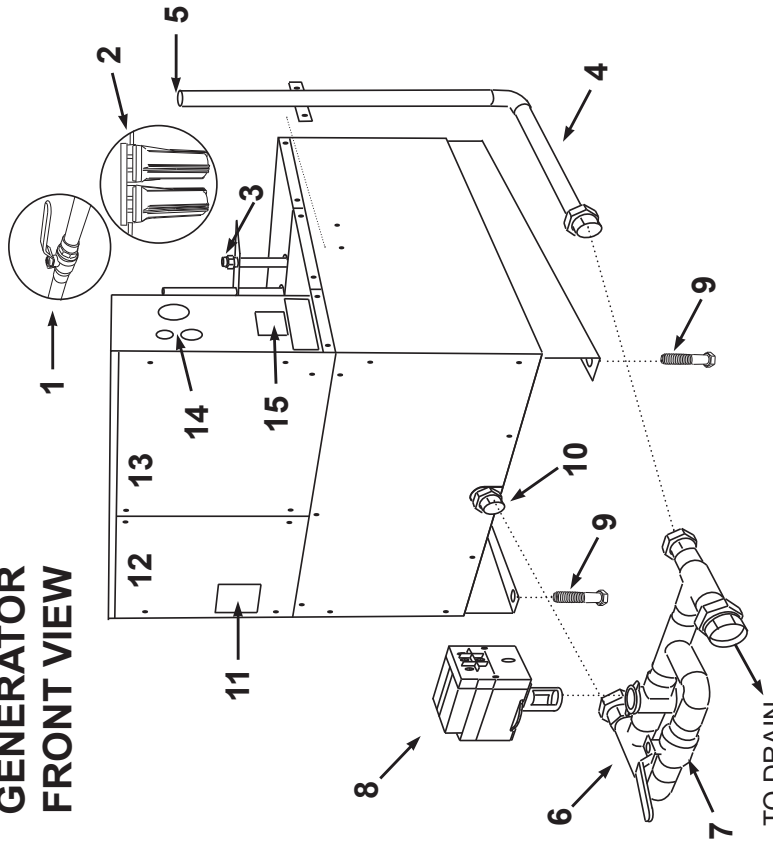


**GENERATOR
BACK VIEW**



- 4. (b) Pressure relief column, 23".
- 5. (b) Air gap.
- 6. (b) Drain piping kit.
- 7. (b) Bolt and nut for leveling.
- 8. (a) Electrical knockouts
- 9. (a) Steam unit serial # and electrical information label.
- 10. (b) Pressure relief column supply pipe c/w 1/2" union.
- 11. (a) Two steam pipes.
- 12. (a) Boiler flush pipe.
- 13. (a) Boiler fill pipe.
- 14. (a) Steam pipe union.
- 15. (b) Water supply pipe stub, 1/2".
- 16. (a) Solenoid valve boiler flush.
- 17. (a) Solenoid valve boiler fill.
- 18. (b) Air switch button receiver connection.
- 19. (a) Boiler flush pipe.
- 20. (a) Boiler fill pipe.
- 21. (a) Steam pipe union.
- 22. (a) Solenoid valve boiler flush.
- 23. (a) Solenoid valve boiler fill.
- 24. (b) Air switch button receiver connection.

**GENERATOR
FRONT VIEW**



- 1. (c) Water shutoff.
- 2. (c) Adequate water supply (treatment if required).
- 3. (a) 1/2" union for pressure relief column.
- 4. (b) Pressure relief column, 23".
- 5. (b) Air gap.
- 6. (b) Drain piping kit.
- 7. (b) Manual boiler drain valve.
- 8. (b) Motorized boiler drain valve.
- 9. (b) Bolt and nut for leveling.
- 10. (a) Drain line union, 1".
- 11. (a) Digital time clock and plastic cover.
- 12. (a) Low voltage control connection box.
- 13. (a) Main electrical supply connection box.
- 14. (a) Electrical knockouts
- 15. (a) Steam unit serial # and electrical information label



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® products containing defective parts, if returned prepaid to an authorized Service Depot within the one 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 failure to follow the Relax-A-Mist® installation instructions specifically, careless handling, improper voltage supply, corrosion and/or electrolysis or a buildup of minerals on the parts or assemblies for any reason or from any source; nor for transportation and/or other charges incurred in the removal, replacement or repair of defective products or 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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For assistance, phone Relax-A-Mist® at 1-800-Y-U-STEAM (1-800-987-8326) or e-mail: technicalsupport@relax-a-mist.com

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