

AW250M

Atmospheric
Water
Generator



Operator's Manual

Another Great Product of
Air Water Corporation, USA

July 2008

air~water

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SYMBOL IDENTIFICATION
SYMBOLS (used on product and labels)
**CAUTION**

This symbol, when used in this manual and on product labels, represents a caution warning and will explain possible safety infractions that could have the potential to cause personal injury or damage to the equipment. Be sure to read and comply with all precautions and warnings.

**IMPORTANT**

Be sure to read all cautions, warnings and operating instructions prior to use to prevent injury to both operator and client.

**DANGER**

This symbol, when used in this manual and on product labels, warns against an electrical shock hazard. Be sure to observe and comply with all warnings. Improper use of this device can cause injury.



This symbol when used in this manual or on product labels, warns that during transport there should be no stacking of containers.



This symbol, when used in this manual or on product labels, indicates that the product should be protected from moisture.



This symbol, when used in this manual or on product labels, indicates that information is given regarding the recommended temperature limits during transport and storing.



This symbol, when used in this manual or on product labels, indicates the date of manufacture of the device.



This symbol, when used in this manual or on product labels, indicates that instructional information is included. It should be read carefully and completely .

CAUTIONS**IMPORTANT****CAUTIONS****CAUTION**

Do not place the unit too close to the wall. Best performance is obtained when the unit is placed at least 36 inches (90 cm) from the wall or other obstructions.

This AW250M unit is primarily designed for outdoor use.

Keep the units wheels well greased and the air pressure sufficient and correct in the tires. At all times ensure the unit is operating in an upright standing position.

**DANGER**

Operating voltage must not drop below 10% of standard power supply. When the unit operates below this level it can become noisy and have the possibility of overheating. If this occurs, immediately switch the unit off until the voltage returns to normal.

**CAUTION**

Avoid ANY prolonged direct eye exposure to the (UV) ultra-violet lamp device as it may cause damage the eyes.

This unit is not suitable for use at places with spray water. Do not spray water at or to clean the unit.

To prevent the machine from damage caused by freezing weather conditions, please drain the remaining water and stop operating the machine if the environment temperature during its working is close or below 32°F (0°C).

**DANGER**

If there is any damage to the power cables, the cables must immediately be repaired or replaced by an authorized dealer or person to avoid any potential danger or hazard.

**CAUTION**

In the event that the unit has to work on uneven ground, please ensure the leveling of the machine before use. If the machine is tilted or not level, it will affect the quantity of water it is designed to make in a 24 hour period.

INTRODUCTION

Thank you for purchasing the *AW250M Atmospheric Water Generator*.

The AW250M is a new, state-of-the-art water-generating machine, which utilizes some of the latest and most sophisticated technology available in the industry today. We have designed your AW-500M with one objective in mind: to produce the largest amount of high quality drinking water while utilizing the minimum amount of electricity. (POWER)

In addition to undergoing a total redevelopment and redesign, your AW250M also comes fully loaded with high tech features to reflect the modern era and satisfy the technologically savvy consumers of the 21st century.

The Air to Water Technology

The technology behind the Air to Water machines comes from the humidity in the air we breathe. Our machines make water by drawing air in and creating condensation, which is then collected and stored in stainless steel water tanks. The water is then filtered and purified to produce the cleanest, clearest and purest water available today. It is important to note that none of our water is chemically treated, so the water you will drink is in fact from the same air that you breathe.

Our machines come in a wide range of sizes and some are specifically designed for specific applications. From the home to the office, to the factory floor, to farmers, doctors, hospitals, building and construction sites, oil fields, oil rigs and platforms, the military, international aid and rescue organizations, stationary and or mobile units, and so on. In fact, our company can design and create the air to water machine bespoke for your special individual needs. We trust and hope that this AW500M is suitable for your needs, and will perform for many years providing the water you need.

**PRODUCT
DESCRIPTION**

AW250M
Atmospheric
Water
Generator



OPERATIONAL THEORY**▶ How does the AW250M Atmospheric Water Generator work?**

It is important to be aware that your AW250M is a humidity and temperature driven machine. This means that the operation of the machine depends on both the level of humidity in the air and its locale temperature to produce perfect water supplies.

IMPORTANT

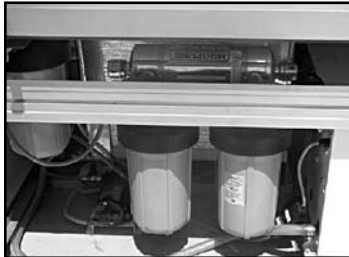
Ideally, the humidity levels should be at least 50% — preferably around 70%, or even above, to achieve optimum performance. But in places with lower humidity levels the machine will still produce water but at a lower performance level as in other high humidity locations.

If it is intended to operate the machines indoors, like in the home, then high levels of humidity tends to be around the kitchen, near an open window, in more spacious rooms, or in a basement. For the AW250 (non-mobile unit) although this unit does perform in an air-conditioned room, it is recommended to keep a window open to ventilate the room and allow air circulation to increase the humidity levels.

Because the AW250M works by converting the humidity in the air to water, this unit also acts as an efficient dehumidifier to reduce moisture and maintain air/health standards.

To ensure a level of high quality drinking water, the AW250M utilizes multiple filtration technologies. These include: In-tank UV Light to kill any microbes and bacteria, Carbon and Sediment Filters, Mineralizer Filters, as well as additional inline UV Light treatment. All care has been taken to ensure a constant supply of clean clear and pure water for drinking purposes.

Water Filtration Unit

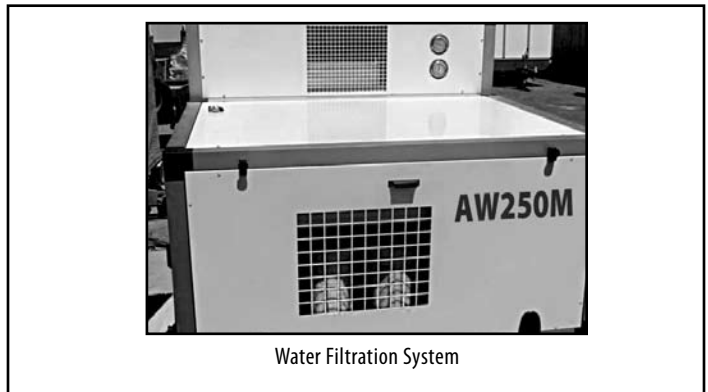


OPERATIONAL THEORY

► **What kind of water do I get from the AW250M Atmospheric Water Generator?**

Through our numerous tested and proven filtration processes, the AW250M produces a constant supply of pure, drinking (potable) water that is free of any water or air contaminants. Air to Water supplies made by the AW-500M provides the following overall benefits to the consumers:

- Clean and pure water that is processed through the use of multi-filtration, Carbon, Mineralization and UV systems to ultimately eliminate any hazards caused by viruses, bacteria, pesticides and heavy metal contaminants and will dispense clear clean pure and filtered water.



- Oxygen enriched water improves metabolism of your body.
- Clean and purified water tastes sweeter and better.
- Rich tiny water molecular group can easily penetrate body cells, thus improve overall human body metabolism.
- Once connected to the power supply, and functioning, it can supply two (2) kinds of water — filtered and non-filtered, depending on your needs and desires.

FEATURES



Fig 1

Micro-Computer (Fig 1)

The unit is fitted with a microcomputer and a sophisticated electronic system which ensures, regulates, supervises and controls the functionality of the individual parts inside the unit.

Multiple Electronic Sensors

Various electronic sensors are attached to parts such as compressors, water pumps, the UV light, heating mechanisms and storage tanks. These sensors ensure that all parts are working properly and send a warning when there is a breakdown or performance irregularities in the machine.

Energy Saving Features

To conserve electricity, sensors have been placed in the storage tank to automatically stop the machine from making water when the tank is full or when hot/cold water reaches the preset data.

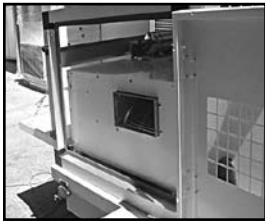


Fig 2

Chiller System (Fig 2)

We have designed, built and installed a unique chiller system that will chill and maintain the water temperature to offer cool tasting drinking water, and ensure the purity and cleanliness of the water further protecting the water from bacteria and any other contaminants.

Venturi Fan (on select models)

Newly designed Venturi-type fan increases production efficiency and greatly reduce the noise during operation.



Fig 3

Electrostatic Air Filter (Fig 3)

The first filter that air passes through before be condensed and converted to water; our electrostatic air filter effectively prevents micro particles and dust from entering the machine, as well as slime and fungus growth.

FEATURES



Fig 4

Condensing coils (Fig 4)

The condenser coils were designed specifically for this unit in order to produce more water in region with lower humidity. They are currently using both approved coatings on the coils to prevent any metal pollution and improve water production efficiency.

Ultraviolet Filter treatment (Optional Filter Pack)

AW-500M proprietary ultraviolet lamp sterilizes the water to ensure that all bacteria and microorganism are eliminated. The sterilization process is automatically controlled by the micro-computer.

Proprietary Activated Carbon Filter (Optional Filter Pack)

With our dedication in providing high quality, great tasting water to our consumers is seen in a brand new filter added to the machine. This is to ensure that you not only have pure water but also that the water also tastes great.

Overheat Protection

The overheat protection system further protects your machine in case of overheating in hot weather. This protector will automatically shut off the heating device. (If applicable)

Novel and Noble Body

The AW250M has a unique low slung and sleek design in comparison to other similar type mobile 'Water Generator' in the market today. The unit is compact and versatile made to the highest standards, all with advanced technology added to the unit in order to make the operation clear and easy.



Fig 5

Mobility (Fig 5)

The AW 500M is a Mobile unit, custom designed and constructed for easy towing and for deployment in a multiple of areas. The unit has been constructed to comply with all major international road safety standards.

DIRECTIONS FOR USE
AW250M
**Atmospheric
Water
Generator**
**IMPORTANT**
OPERATING THE AW250M

By following these simple instructions and maintenance procedures, your AW250M should give you years of trouble-free operation while producing the maximum amount of pure drinking water that is sufficient for your needs.

Please read this operation manual carefully before you start the machine. By reading and following the manual instructions and recommendations, you will familiarize yourself with your new AW250M water machine and all its functions, ensuring yourself of a machine that will be constantly operating at its' optimum level. Be aware that the machine is as basic a plug and play unit as can be factory made. However please follow the following instructions to ensure optimum operational results.

The unit should be placed on a solid, level ground. Try to ensure the machine is standing level and in a parked mode.

IMPORTANT

**CAUTION**

Do NOT connect it to power supply or switch it on for at least the first six (6) hours from unloading/ unpacking. This will allow the compressor and gas to properly settle to operational mode. Thereafter the unit is ready for use.

Let the machine remain in a standing position to allow the refrigerant to return to settle and to return to the compressor.

**CAUTION**

Instant plugging into a power receptacle will or may damage the compressor.

The unit should be placed no less than 36 inches (90 cm) from any wall or obstruction. Care should be taken to ensure there are no obstacles to the air intake section as this may affect the operation of the suction fan and allow the unit to overheat, thus causing severe damage to the unit. Similarly ensure there is nothing obstructing the air outlet section on the top of the machine to allow easy and unrestricted air flow.

IMPORTANT

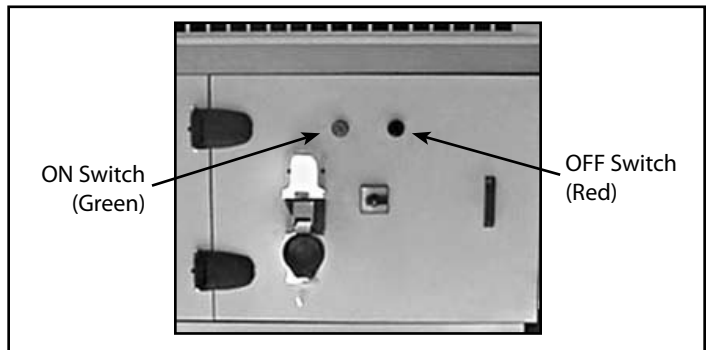
DO NOT ATTEMPT TO CHANEL THE AIR OUTLET (DRY AIR) FOR ANY OTHER PURPOSES

DIRECTIONS FOR USE**OPERATING THE AW250M (cont)**

Ensure the average temperature ranges between 20–40°C, and the Relative Humidity in the immediate locale ranges between 70-90%. If either or both are lower, the machine will still function, but will not make sufficient or the recommended amounts of water. (see Water Production Graph IBC) Alternatively, if the temperature and or the RH levels are higher, the machine may well exceed the amount of water it is designed to make daily.

Insert into electrical socket capable of handling no less than 15A.

Switch on the unit. You will now hear the air intake fan start, and the compressor will kick in after a few moments.



Your AW250M is now fully operational.

OPERATIONAL STAGE:

When the unit begins to operate, you should be able to hear a “beep” and the light on the power switch should also be on. The compressor will start to run after 2 to 3 minutes. If you do not see or hear any of the above, refer to the troubleshooting manual.

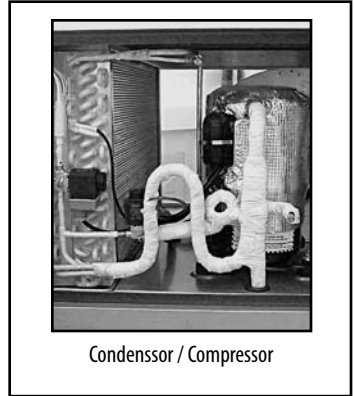
Your AW250M will now commence producing water.

Do not be alarmed when your machine turns off automatically. To conserve energy, your machine has been fitted with a

DIRECTIONS FOR USE**OPERATING THE AW250M (cont)**

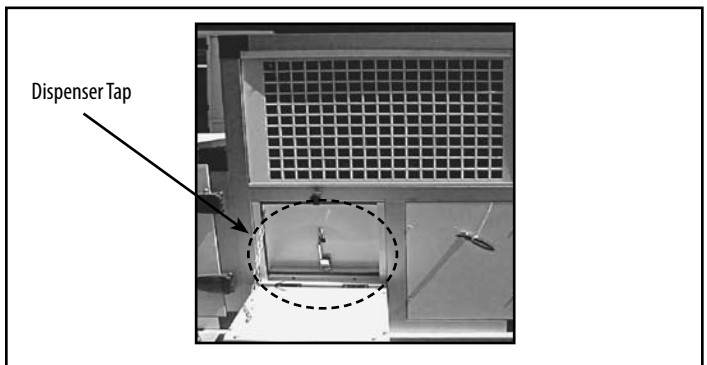
series of electronic sensors, which automatically switches the machine off when the storage water tank is full (optional equipment).

For the first operation, when the storage tank is full of generated water, please dispense and or drain off the water and then allow the tank to self clean in order to eliminate any odors/smell of the new machine. In addition, the through flow of the freshly made water into and out of the tanks and the filters will cleanse the entire system, ultimately giving you top quality, clean, clear and purified drinking water. Depending on the immediate surround, you may need to do this several times until the water taste and smell is perfect and to your liking.

**To Operate the Built-in Water Tap:**

(located at the rear of the machine)

The water dispensing tap has been built into a special housing section which is enclosed with a drop down flap type door.



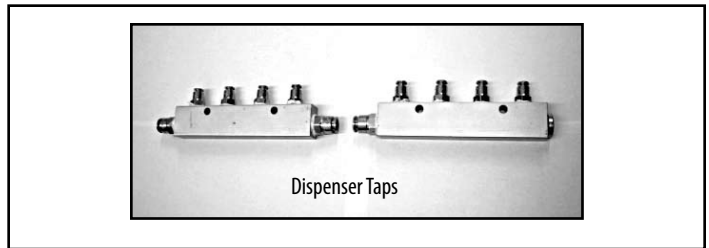
DIRECTIONS FOR USE**OPERATING THE AW250M (cont)****To Operate the Built-in Water Tap: (cont)**

Once the machine is fully operational, and there is water accumulated in the stainless steel water tank, you simply open the rear door of the machine, and open the drop down flap, exposing the water spigot which is electronically controlled to ensure no water is wasted. Then simply press on the black button and cold pure drinking water will exit from the tap. To stop water flowing, release the black button.

It is recommended that you regularly clean the water taps to maintain high levels of hygienic standards at all times.

Separate Air Water Dispenser Unit:

(located on outside left side of machine)



The AW250M has additional water exit points located on the outside of the left hand side of the machines. In addition, there are 'flow connectors cables' supplied with either the machines or with the alternate AW Dispensers. Please connect flow control cables to one of the top white connectors and connect the water fill hose to the lower metal connector.

Please make sure that the connectors are used in the same array.

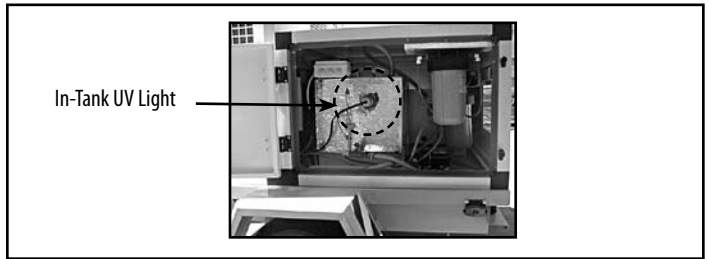
MAINTENANCE

AW250M
Atmospheric
Water
Generator

- Wipe the outer body casing with soft, damp fabric to clean.
- Use water to clean, avoid using harsh cleaning agent.
- Do not use a cleansing agent to clean the inside of the water storage tanks.
- Periodically, you should check the state of the In-tank UV Light. Take great care not to damage the UV Light as installed inside the water tank. To clean, simply unscrew and withdraw it, taking care not to rip or tear the wire connections, and wipe clean with a soft cloth. Replace carefully.

IMPORTANT

It is Important to keep the unit clean.



To Clean the Air Filters:

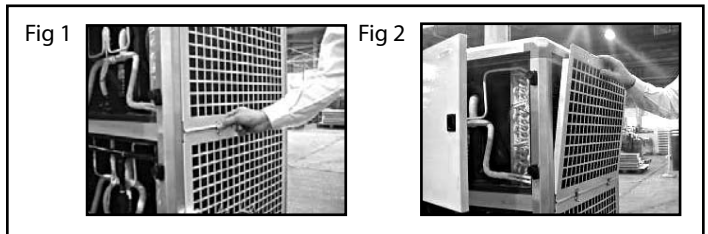
Clean the ‘air filters’ often by following the simple instruction shown below, to ensure proper and unrestricted air flow. Clean air flow will allow for the production of clean, clear and pure water.



DANGER

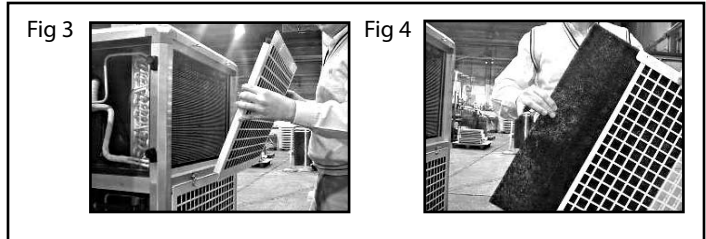
► ***Make sure the machine is powered OFF and unplugged from the electrical source.***

- Begin by removing the upper butterfly nuts and loosening the lower butterfly nuts. (Fig 1)
- Slide upper portion of the panel out. (Fig 2)



MAINTENANCE**(cont)**

- Lift and remove air filter containment unit. (Fig 3)
- Remove filter and wash in running water. Allow to thoroughly dry before placing it back into unit. To replace, repeat the steps listed above in reverse order.(Fig 4)

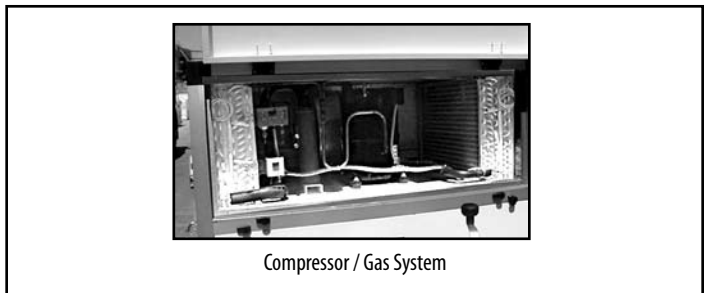
**Built-in Water Tap (located at rear of machine):**

It is recommended that you regularly clean the water tap to maintain high levels of hygienic standards at all times.

Compressor and Gas:

The AW250M machine uses a compressor and 'GAS' to operate the coolant and provide the cold temperature for the condensers which create the water droplets from the humidity in the air.

At all times make sure the machine is both transported and sited in an upright and level state. Tilting the machine can cause damage to the pipes and the gas flow may be interrupted.



MAINTENANCE
(cont)

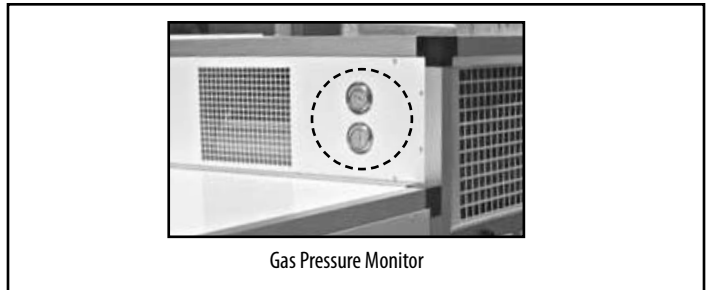
IMPORTANT

Compressor and Gas: (cont):

In the event there is a leak in the system, then an 'oily' substance may leak from the compressor, or from the pipes, or from the condenser itself. **DO NOT** attempt to fix this yourself.

Immediately call your dealer, or an experienced Gas or A/C engineer who will check the system and or refill the GAS into the pipe network.

A shortage of GAS may cause loss of coolant, resulting in systems malfunctions as well as lower water production. It is recommended that you regularly check the gas pressure/ levels and if necessary arrange for top up. Maintaining a good gas level ensures optimum working conditions and continuous supplies of water.



Additional Maintenance Tips:

- The AW250M has been designed for constant use. In the event of an extended period of inactivity, it is recommended that you always drain out the remaining water from the tanks before restarting the machine and using the newly made water.
- In some instances, it may be necessary to replace the filters to ensure proper water purification. Follow the same procedures as if you had just acquired the unit as new.

TROUBLESHOOTING**AW250M**
Atmospheric
Water
Generator

IMPORTANT

We have a listed here a number of troubleshooting issues that can be easily checked and rectified by the user. If additional or further problems arise, then please refer to your local dealer for further advice and help in resolving.

If you are not technically minded, and do not have the ability to self cure the items listed, **DO NOT** make further attempts to correct the machine without qualified assistance, as you may irreparably damage the machine.

**PROBLEM:**

The machine does not work even after the power cord is plugged in.

**SOLUTIONS:**

- Check for proper power voltage and ensure that it is in the correct range for local operations.
- Check that the power switch (Green) is turned 'ON'.
- Make sure that the connection to both the machine and the wall socket is tight and secure.

**PROBLEM:**

The machine makes water at a slow rate even after prolonged period of operation.

**SOLUTIONS:**

- Make sure the temperature level is at the correct range.
- Check the humidity level in the room. Low humidity level results in less water production.
- Ensure the hot/cold water spouts are not blocked.
- Ensure that the ingoing and outgoing air ventilation is free and not blocked.

TROUBLESHOOTING**(cont)**

- Check that the distance between the machine and the wall is not too close.
- Ensure the power voltage supply is not too low or too high.
- Make sure there is sufficient coolant gas in the system.
- Make sure there are no 'leaks' in the machine.
- Check the fan motor is fully operational.
- Ensure that the internal booster pump is operational.
- Ensure the water lines/pipes are not blocked and the flow is smooth.
- Make sure that the air filter net is cleaned regularly to ensure the free air flow.

**PROBLEM:**

The machine makes water but the water dispensed is not cold/chilled.

**SOLUTIONS:**

- Check the Chiller is operational. You can do this by checking the Chiller compressor is working and the chiller condenser is cold to the touch. If not, then check the electrical connections to the chiller unit to ensure there has been no disconnection.
- Check the gas level/pressure in the chiller compressor (separate to the machine compressor).
- Check the pipes/water flow from the chiller to the main water tank to ensure there are no open ends, or blockages.
- Check the UV Lamp in the water tank. (If the UV is not working, then either it needs to be changed,

TROUBLESHOOTING

or the fuse in the electric control box needs to be reset or replaced).

**PROBLEM:**

The water dispensed does not taste good, or has an odor or plastic taste.

**SOLUTIONS:**

- Immediately check and or change the filters. (See dealer)
- If new, allow for several liters/gallons of water to flow through the system to flush out any taste/odor problems resulting from transportation. After a while the problem will self rectify.
- Check all tubes and pipes for dirt, contamination and or blockages.
- It is possible that after an extended period of idle or non use, stale (old) water has accumulated in the water pipes and tank. To rectify this, flush out all the water in the water tank, and restart the machine allowing it time to make fresh water, After several gallons of freshly made water have passed through the machine, the system will self rectify.

**PROBLEM:**

The electronic water spouts are not dispensing water when activated.

**SOLUTIONS:**

- Check the water spout fitting is electronically connected to the internal power supply.
 - Check there is sufficient water accumulated in the main water tank.
-

TROUBLESHOOTING**(cont)**

- Check the water switch level is operational.
 - Check the UV lamp in the tank is fully operational.
 - Check the chiller system is operational.
-

**DANGER****PROBLEMS:**

Any or several electrical problems are occurring or recurring.

**SOLUTIONS:**

- The electronic control board and components are a complicated set of highly technical electrical circuitry, and extreme care and attention should be exercised before attempting any changes or repairs. It is advised to contact the local Air Water dealer who will send a qualified technician to attend the problems.
-

**PROBLEMS:**

When towing the AW250M Unit, what do I need to know and or do?

**SOLUTIONS:**

- The AW250M has been designed and built on a purpose-built trailer that has been constructed to all internationally accepted regulations and road standards. Ensure you connect the mandatory side/night lights and brake lights to the towing vehicle.
 - Do not tow the unit with the water tank full of water. Drain before towing.
 - Do not tow the AW250M at excessive speeds. Drive with care.
-

IMPORTANT

TECHNICAL SPECIFICATIONS

AW250M
 Atmospheric
 Water
 Generator

AW250M TECHNICAL SPECIFICATIONS

Capacity Liters:	250 Liters per 24 hrs
Ideal Working Conditions:	20-40° C, 60-100% RH
Size (H x W x D):	119 x 76 x 90 cm (tank, no chiller) 119 x 76 x 1320 cm (tank, chiller)
Weight:	150 kg
Power Consumption:	4.3 kW
Compressor Power Consumption:	3.5 kW
Average Power Consumption:	0.1 - 0.4* kWh/L
PS Phase:	230V – 50 Hz Single Phase
Electronic Control:	KAV-KOR
UV:	Included
Refrigerant:	R407c
Chiller:	Optional
Noise Level:	67 dB

GRAPHS

WATER PRODUCTION GRAPH*

AW250 - MOISTURE REMOVAL AT DIFFERENT TEMP. & R.H. % (Kg water/24h)								
TEMP.C	RELATIVE HUMIDITY %							
	50	55	60	65	70	75	80	85
35	220	228	238	260	288	322	362	406
32	182	196	210	232	260	290	326	366
30	160	174	192	114	250	268	302	338
29	148	164	182	204	235	258	290	324
28	136	154	174	196	220	248	278	312
27	124	142	164	186	212	236	266	298
26	112	132	156	178	202	226	254	284
25	100	121	146	168	192	216	242	270
24	88	110	138	158	182	204	230	258
20	72	88	108	128	144	162	182	204
15	40	56	74	82	104	116	130	146

* All figures shown above are to be considered averages and water production may vary depending on locality.

Once all the procedures have been performed, if your machine still does not work, or does not work correctly and efficiently, **DO NOT** try to perform other repair procedures yourself. Always call a qualified service technician or your local dealer to look at the machine and perform the necessary and applicable repair procedures. Air Water is not responsible for any damage(s) that may be incurred as a result of self-repair. In such an event, all warranty(ies) will become null and void.

For further information contact:

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