SAHARA

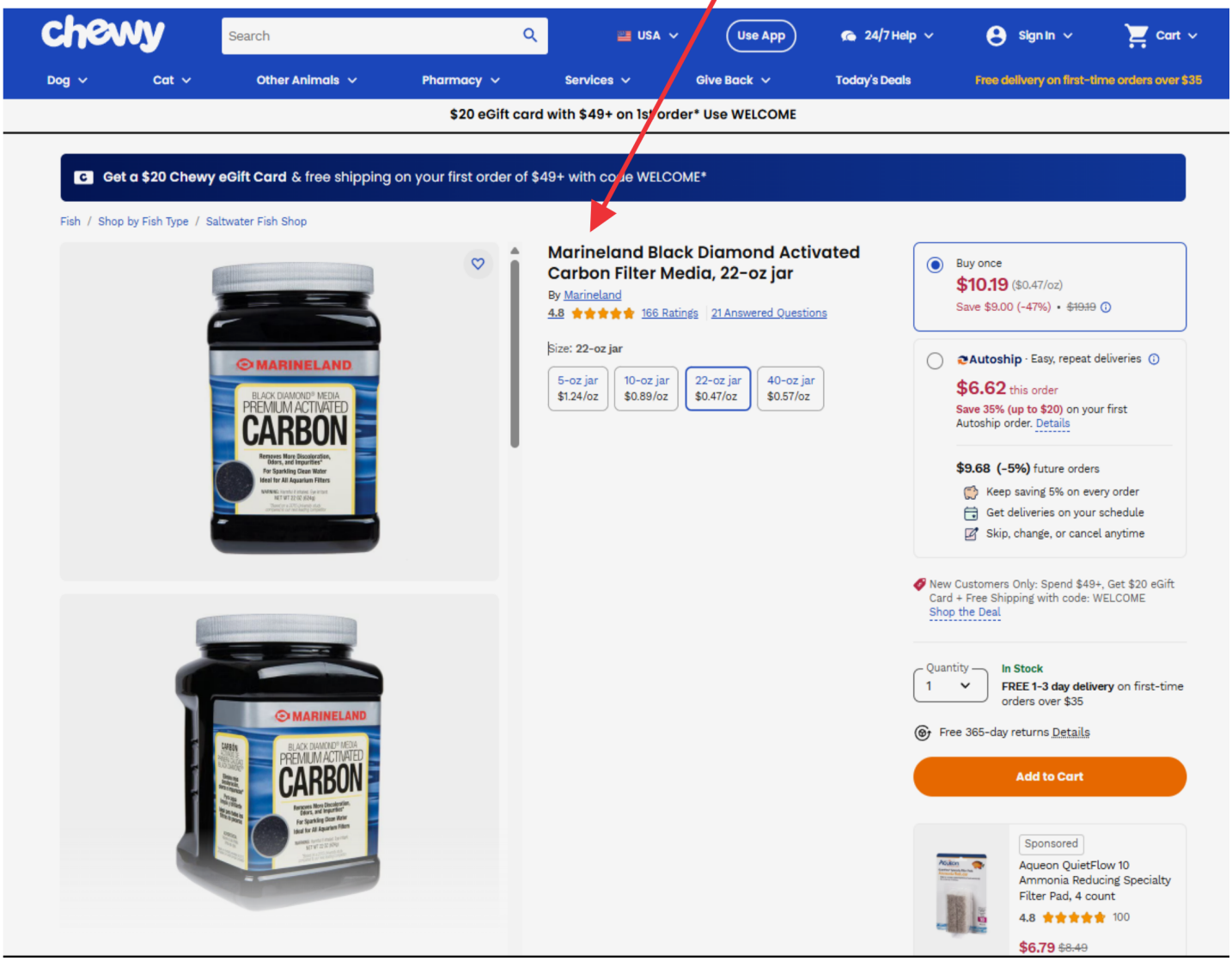
HIGH PURITY MISTER

EZ TIMERS MANUFACTURING

www.eztimers.com

702-376-6693 - bruce@eztimers.com

THIS PRODUCT CAN ALSO BE PURCHASED FROM AMAZON AND A NUMBER OF OTHER VENDORS. JUST GOOGLE THE DESCRIPTION SHOWN BELOW



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SAHARA II

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OPEN CARTON

REMOVE CARTONS

CUT STRAP AND UNPACK ALL ITEMS

SHIPPING INVENTORY

MANUAL

FILTER

THESE ITEMS ARE IN PLASTIC BAG

HEATER WIRE FOR COLD CLIMATE ONLY

NOZZLE TUBING

TANK

LID

LIFT PUMPS (QUANTITY 2)

NOZZLE PUMP

AIR INLET MAST

ELECTRONICS PACKAGE

LEVEL SENSING TUBE

WATER INLET

WATER INLET FUNNEL

LOCATING THE SAHARA II:

The SAHARA II is normally located close to the dry cleaning machine to reduce water handling. However, it may be located wherever convenient. The left side and front of the unit should be easily accessible. Leave a few feet of extra tubing in order to be able to move the unit for cleaning. **DO NOT COIL SEVERAL FEET OF EXTRA TUBING IT WILL CAUSE MISTING PROBLEMS.**

ROUTING THE TUBING FROM THE NOZZLE:

The SAHARA II has been designed to mist **OUTSIDE** the plant preferably on the roof or an exterior wall. To accomplish this the SAHARA II is supplied with 50' of twin all weather poly tubing. It is much easier to route the tubing from the nozzle to the SAHARA II. Point the nozzle towards the center of the roof, or if mounted on a wall, as straight up as possible, **DO NOT POINT IT OVER PATHWAYS OR PARKING LOTS**. The twin 1/4" tubing will pass through a hole slightly larger than 1/2". Ventilation ductwork, boiler room makeup air vents, evaporative cooler drops, along side of water tower piping and unused dry cleaning machine or dryer vents are all excellent candidates for entry of the tubing into the building. When passing the tubing through a hole be sure there are no sharp edges that might cut or fray the tubing and avoid pulling tubing around sharp corners. Care must be taken to avoid the tubing from contacting hot surfaces, steam piping, or being subject to abrasion.

COLD CLIMATE CONSIDERATIONS:

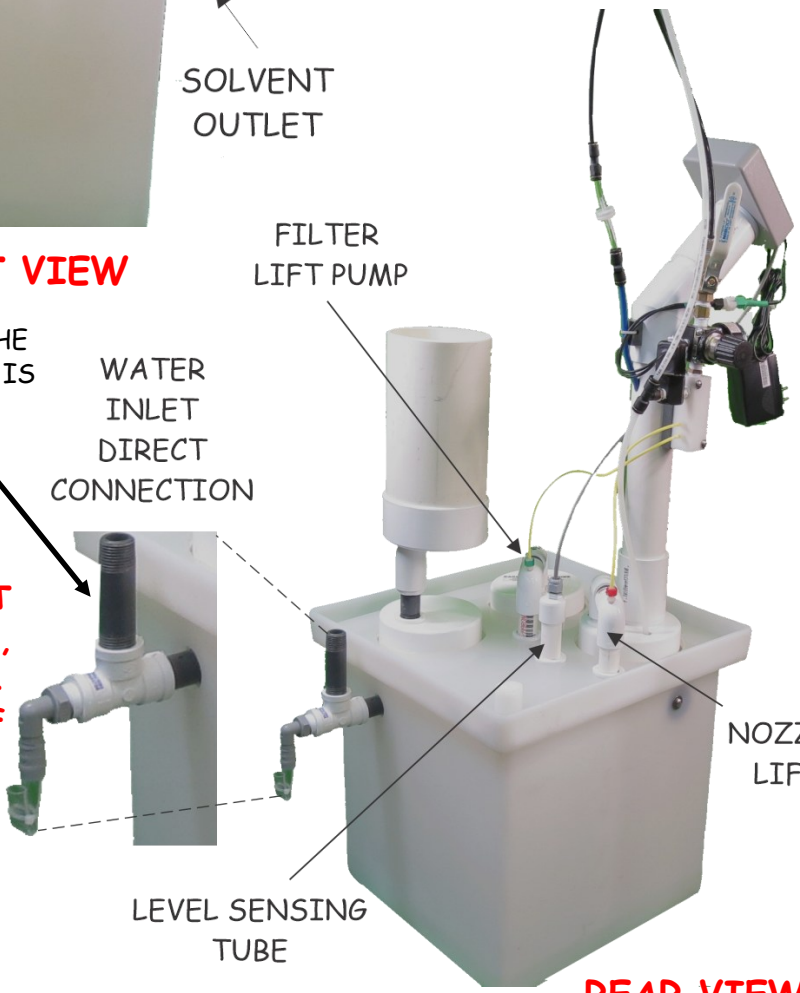
In areas where freezing regularly occurs, your SAHARA II is shipped with a 12 VDC nozzle heater, the installation of which is shown in following pages. When running the twin tubing run the supplied nozzle heater wire along with it. Keep in mind that from the nozzle to where the tubing enters the building should be run downhill and the portion of tubing exposed to the weather should be kept as short as possible. Tilt the side of the nozzle marked liquid down, to insure proper drainage.

COMPONENT IDENTIFICATION

FRONT VIEW

IMPORTANT!

BE SURE TO USE A KNIFE TO CUT AND REMOVE THE VINYL TUBING PLUG FROM THE SOLVENT OUTLET HOSE BARB AND THEN CONNECT A PIECE OF TUBING AND RUN IT INTO A CONTAINER TO CATCH THE SEPARATED SOLVENT



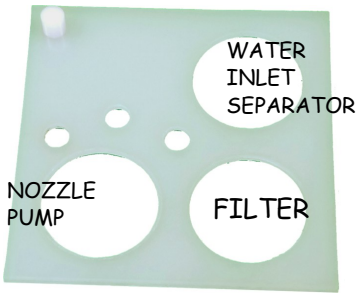
REAR VIEW

IMPORTANT!

IF YOU ARE PIPING THE HOSE BARB TO THE OUTLET OF THE WATER SEPARATOR, DO NOT ATTEMPT TO PULL THE VINYL TUBING OFF OF THE HOSE BARB, USE A KNIFE TO CUT THE VINYL TUBING.

PLACING THE LID

LABELS INDICATE
WHICH COMPONENTS
GO INTO THE HOLES



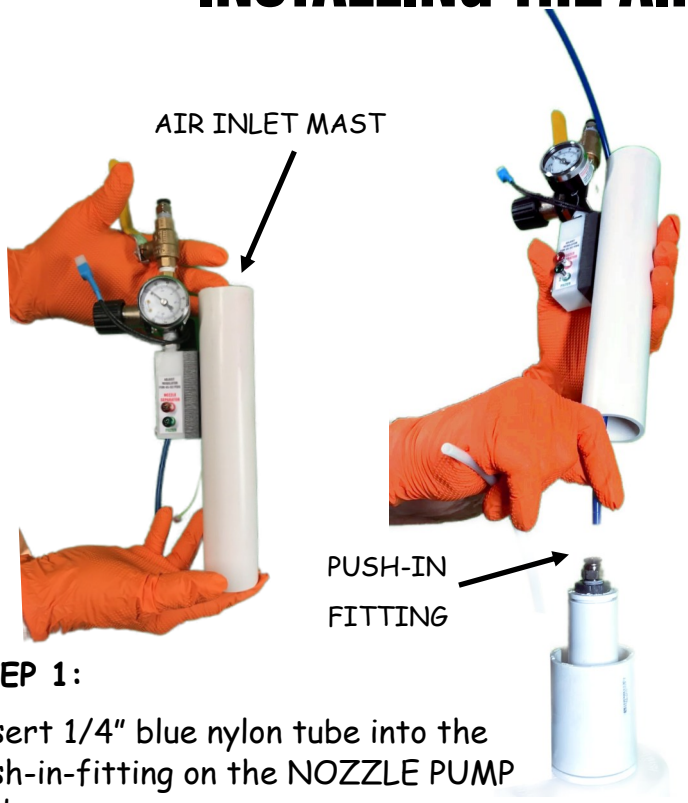
LID

TANK WITH LID IN

PLACING THE NOZZLE PUMP, WATER INLET, AND FILTER

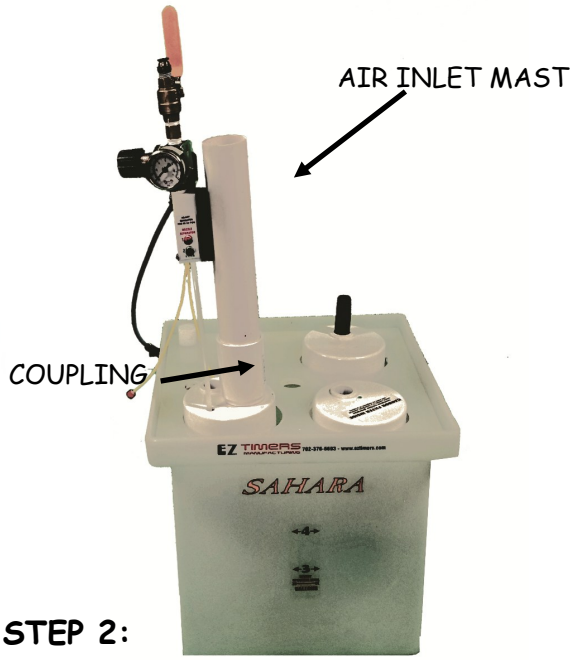
NOZZLE PUMP, WATER INLET
AND FILTER IN PLACE

INSTALLING THE AIR INLET MAST



STEP 1:

Insert 1/4" blue nylon tube into the push-in-fitting on the NOZZLE PUMP body.



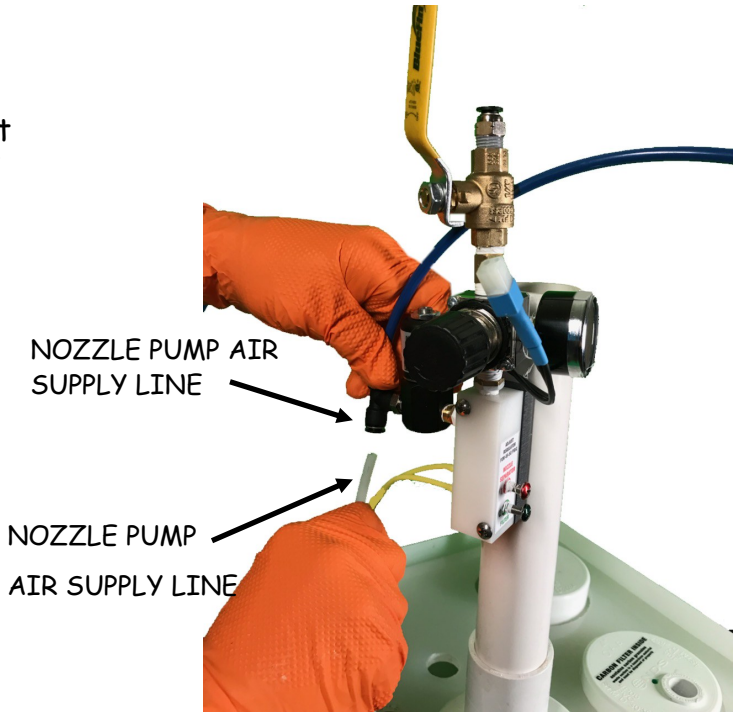
STEP 2:

Gently push the AIR INLET MAST into the coupling on the NOZZLE PUMP then rotate until the red and green adjustment screws are facing forward.

INSTALLING THE NOZZLE PUMP AIR SUPPLY LINE

STEP 1:

Insert the 1/4" white nylon tube that comes through the hole in the cap of the NOZZLE PUMP into the push-in-fitting on the NOZZLE PUMP AIR SUPPLY LINE TEE.

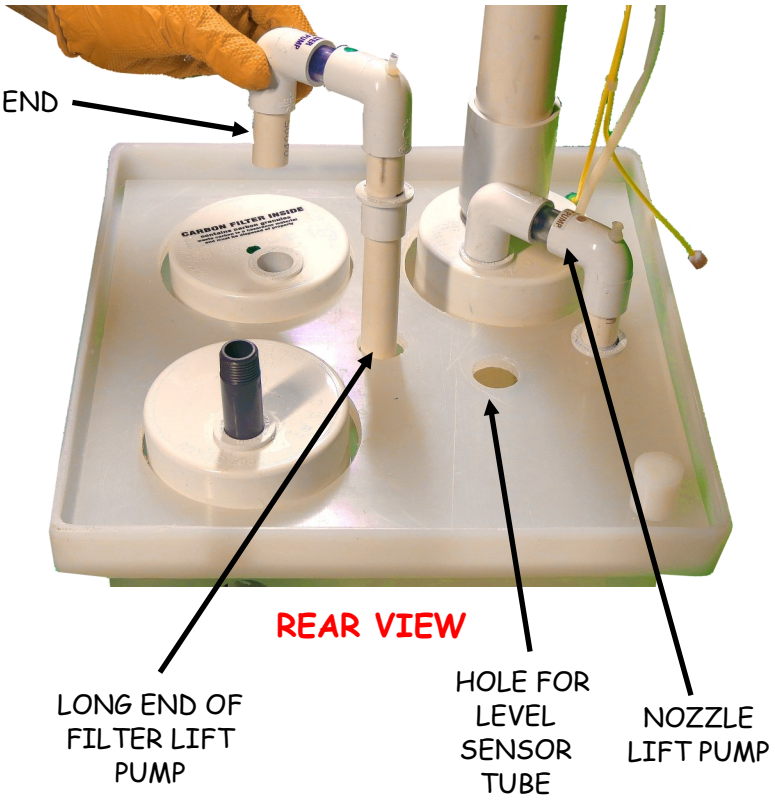


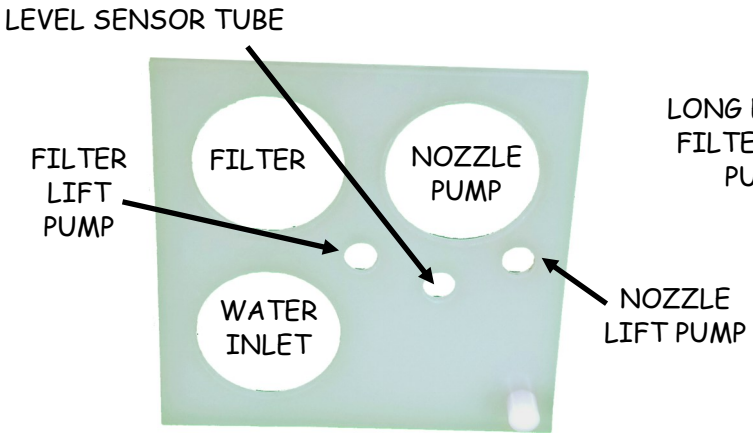
INSTALLING THE LIFT PUMPS, INLET AND OUTLET CONNECTIONS

LIFT PUMP LOCATIONS AS VIEWED FROM THE REAR OF THE SAHARA II

STEP 1:

Insert the long end of the filter lift pump into the hole on the left side of the TANK LID (AS SEEN FROM THE REAR OF TANK) and the short end of the filter lift pump into the hole in the FILTER LID. Repeat the procedure for the NOZZLE LIFT PUMP.





STEP 3:

Screw in the WATER INLET FITTING through the hole in the rear of the TANK.

STEP 4:

Screw the SOLVENT OUTLET FITTING into the hole on right side of the TANK.

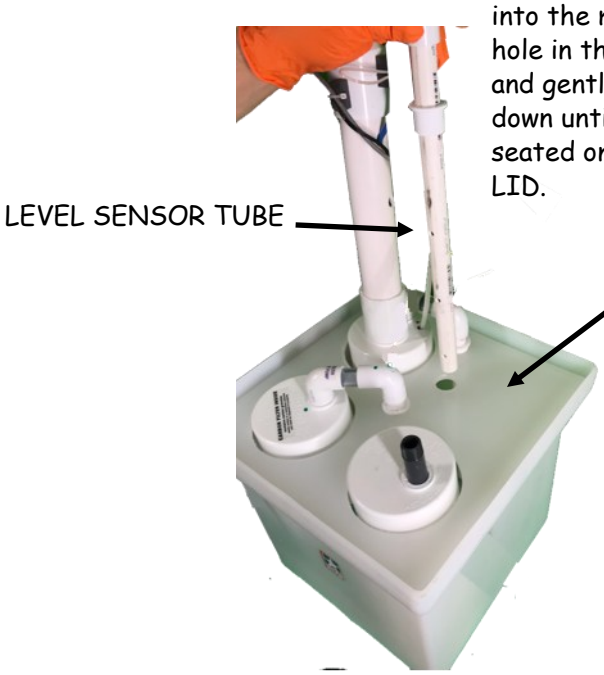
INSTALLING THE ELECTRONICS PACKAGE

STEP 1:

Gently push the control box assembly onto the end of the AIR INLET MAST and position it so the CONTROL BOX is facing forward.

STEP 2:

Insert the LEVEL SENSOR TUBE into the middle hole in the LID and gently push it down until it's seated on the LID.

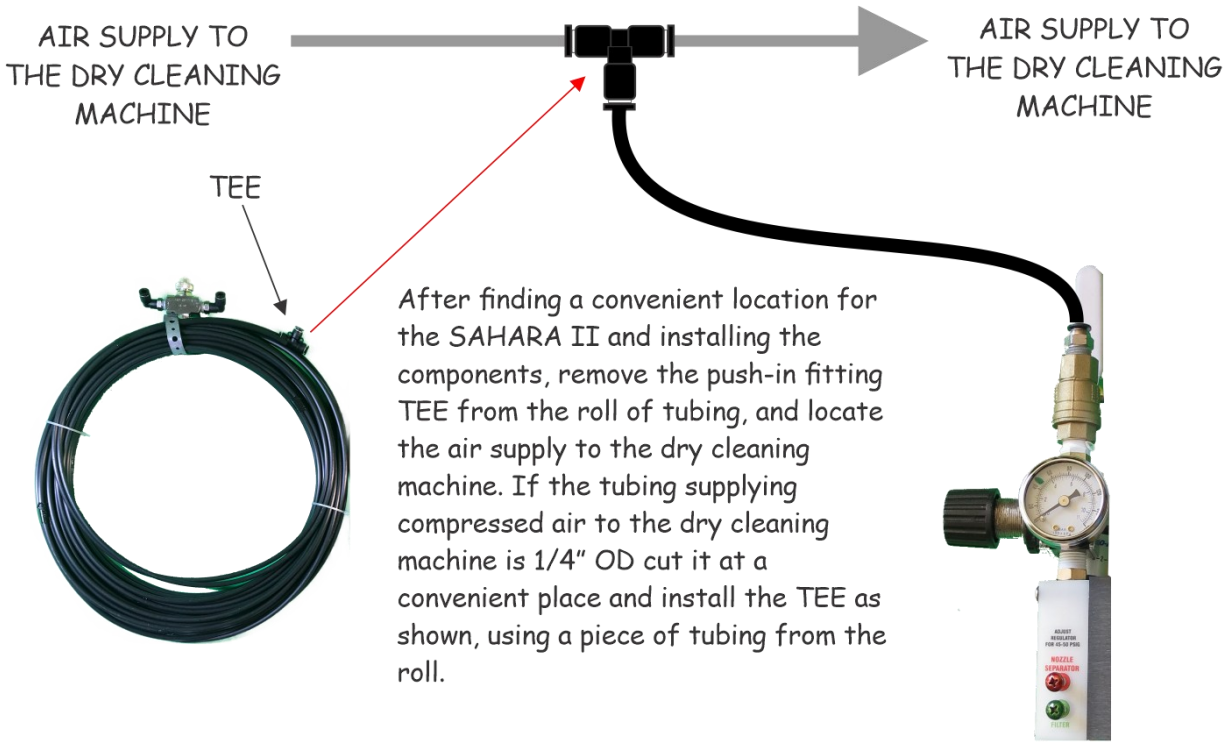


STEP 3:

Connect the white NOZZLE SOLENOID PLUG.

TUBING CONNECTIONS

INSTALLING THE COMPRESSED AIR SUPPLY



After finding a convenient location for the SAHARA II and installing the components, remove the push-in fitting TEE from the roll of tubing, and locate the air supply to the dry cleaning machine. If the tubing supplying compressed air to the dry cleaning machine is 1/4" OD cut it at a convenient place and install the TEE as shown, using a piece of tubing from the roll.

PREPARING DIRECT CONNECTIONS FOR SEPARATOR WATER AND SOLVENT OUT

CAUTION !

DO NOT ATTEMPT TO PULL THE TUBING OFF THE BARB, CUT IT, OR DAMAGE WILL RESULT

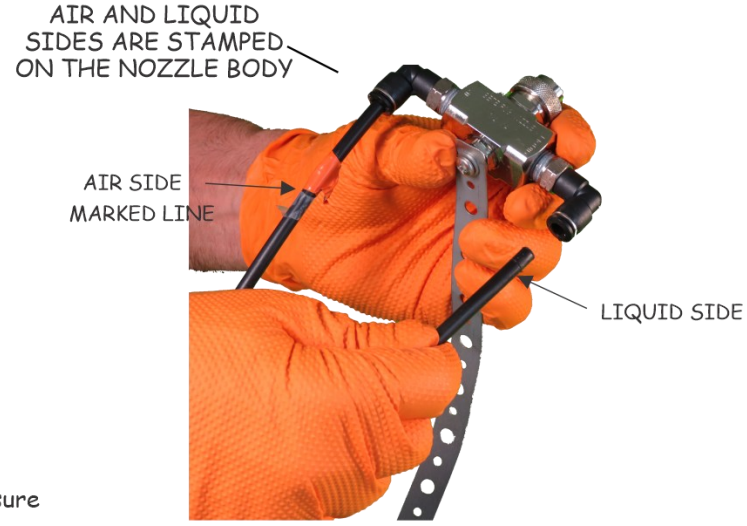
DIRECT CONNECTION FOR SOLVENT OUT OF SAHARA II SEPARATOR

If you are going to use the direct connections remove the vinyl tube from the hose barb by cutting through the tubing with a knife. The barbs are for 1/2" ID soft tubing.

DIRECT CONNECTION FOR DRY CLEANING MACHINE SEPARATOR WATER IN

NOZZLE CONNECTIONS

STEP 1:
When you're using this type of push-in fitting be sure to cut the tubing square using a sharp edge like a razor blade, not a side cutter or scissors. Simply insert the tubing into the fitting and push it in until it seats. To disconnect, push the RELEASE RING towards the body of the fitting and hold it pushed in, then pull the tubing out of the fitting. **DO NOT ATTEMPT TO REMOVE TUBING WHILE IT IS PRESSURIZED!**



STEP 2:
The perforated strapping attached to the NOZZLE provides an easy method to fasten to a pipe or anything you can get a screw into. The NOZZLE has two different connections, one line for water which is the liquid side, and one for air. The NOZZLE is stamped on the body indicating which side is liquid and which is air. The twin tubing is marked so use the marked line of tubing for the air side. If they are switched the mist will be more like a heavy spray. If you suspect the lines are incorrect change them at the other end where they connect to the SAHARA II.

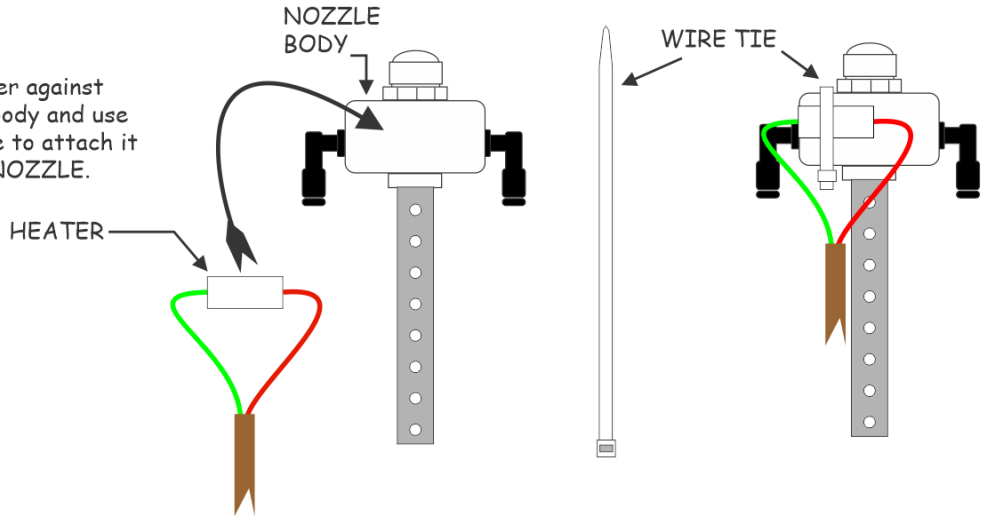
STEP 3:
After running the tubing from the roof to the SAHARA II connect the lines from the roof to the tubing on the SAHARA II paying attention that the water side of the NOZZLE connects to the NOZZLE FILTER on the blue colored tubing. If you are in an area where there are hard freezes run the wiring for the NOZZLE HEATER along with the tubing.

STEP 4:
Avoid excessive coiling, this will detract from nozzle performance. Allow about 2-3 feet of excess tubing at the SAHARA II to allow for movement of the machine for cleaning and maintenance.

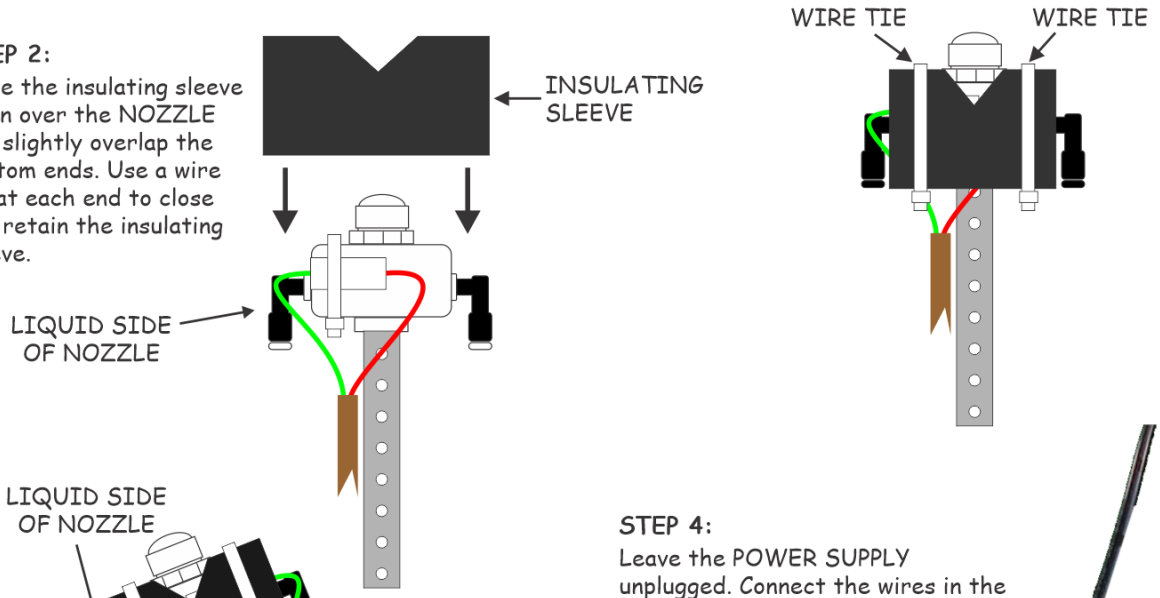
NOZZLE HEATER INSTALLATION

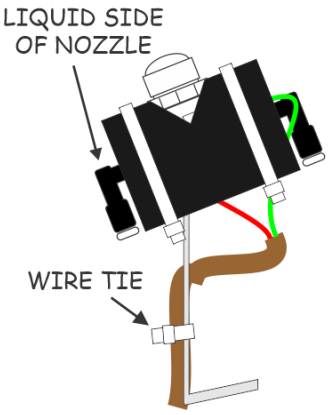
NOTE:
The NOZZLE HEATER is only supplied to customers located in areas subject to hard freezing conditions. You will probably be routing the heater cable along with the air and water tubing to the NOZZLE. Be sure to start at the NOZZLE end and route the tubing and heater cable down to the SAHARA II. wire colors may vary.

STEP 1:
Place the heater against the NOZZLE body and use a nylon wire tie to attach it firmly to the NOZZLE.



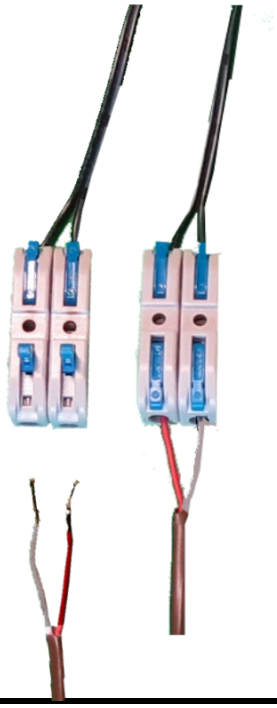
STEP 2:
Slide the insulating sleeve down over the NOZZLE and slightly overlap the bottom ends. Use a wire tie at each end to close and retain the insulating sleeve.





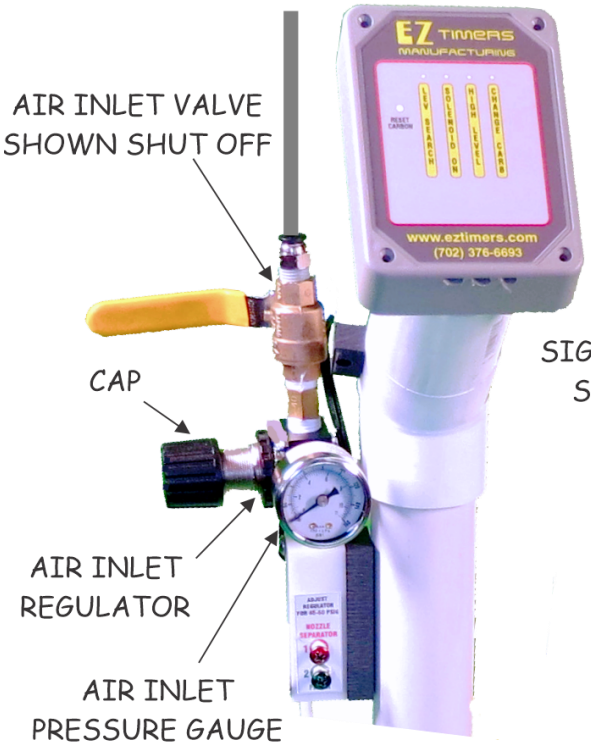
STEP 3:
Secure the wire to the mounting strap with a wire tie. Be sure not to run any exposed tubing horizontally and tilt the nozzle down towards the liquid side as shown in this illustration to allow drainage in order to prevent freezing.

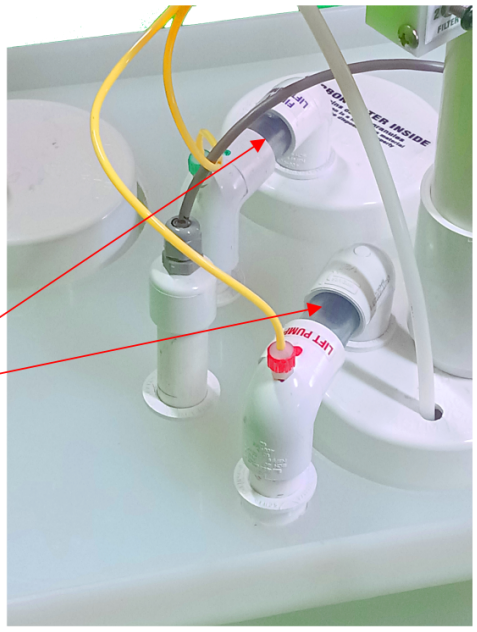
STEP 4:
Leave the POWER SUPPLY unplugged. Connect the wires in the NOZZLE HEATER CABLE TO the connector attached to the CONTROL BOX by lifting up the blue levers and inserting the wires into the terminal strip as far as they will go then pushing the levers back down. It does not matter which wires go to which terminal. Plug the POWER SUPPLY into a 120 VAC outlet and leave it plugged in throughout the cold season. Be sure to route all wiring away from areas where it may be damaged by foot traffic.



FILLING AND START-UP

FILLING AND START-UP

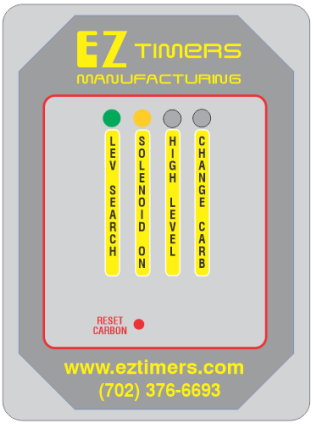




STEP 1:
The installation of the SAHARA II must be finished before completing the following steps. Be sure the Sahara II is **NOT** plugged into the electric outlet, the air inlet shut off valve is closed, the air compressor is on, and the air supply tubing to the Sahara II is connected.

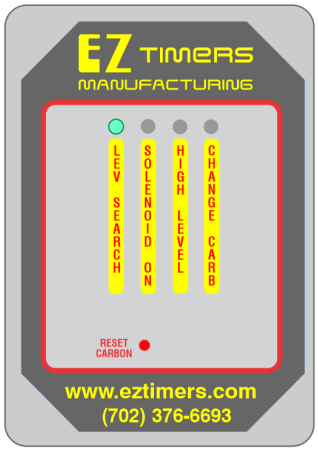
STEP 2:
Pour about 5 gallons of water into the funnel. Open the AIR INLET SHUT OFF VALVE and check the air inlet pressure gauge for a reading of 45-50 PSI. **(If the AIR INLET REGULATOR requires adjustment turn the black cap clockwise to increase the pressure and counter clockwise to reduce it).** Check the clear sight glass section of the lift pump. You should see pulses of water flowing through them **(if there is not flow through a lift pump see the page ADJUSTING THE LIFT PUMPS in the TROUBLESHOOTING section of this manual).** Allow about 5 minutes for the NOZZLE PUMP CYLINDER to fill.

STEP 3:
Plug in the Sahara II and wait a few seconds. Observe the lights on the electronic control box. A yellow, then green and yellow, then a steady green panel light indicators will continue to cycle until the level in the SEPARATOR TANK drops down to slightly over the three gallon mark at which time it will shift to a blinking green. If you observe the nozzle you will see it misting whenever the yellow switches on.



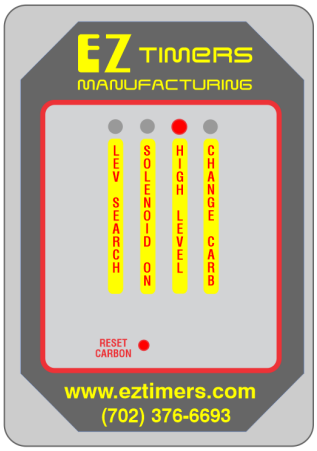
CONTROL PANEL OPERATIONS

LEVEL CHECKING

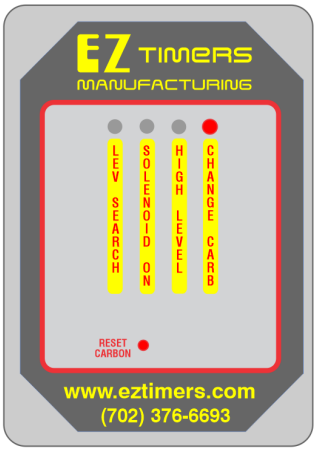


BLINKING GREEN:
A blinking green indicates that the control senses that the level is OK and the Sahara will continuously cycle through blinking green until the level rises.

ERROR CONDITIONS



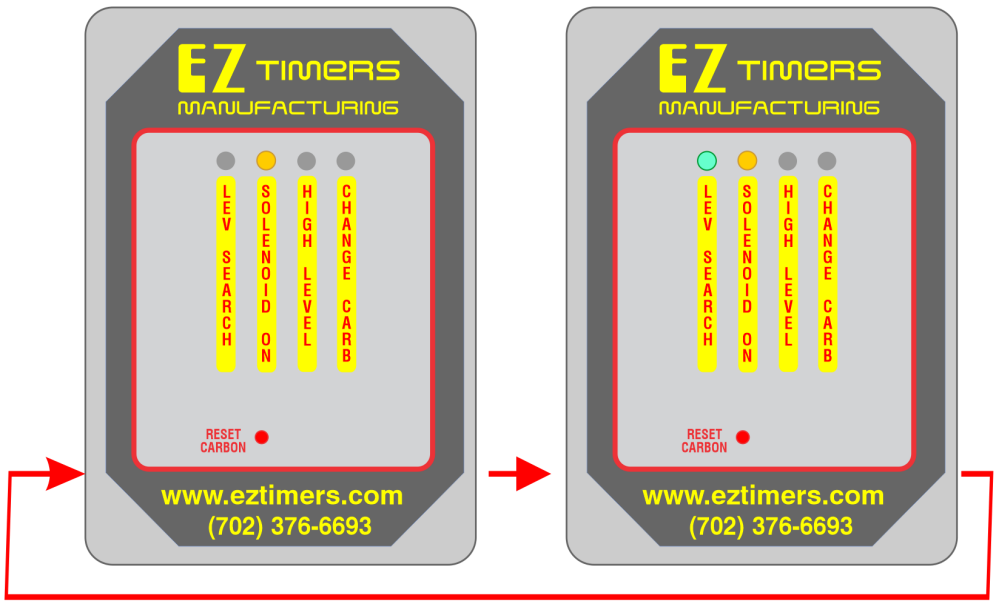
HIGH LEVEL RED LITE IS ON:
A red lite and continuous beep indicates either a high level of solvent or a low level of water in the white separator reservoir. The Sahara will cease misting until this situation is corected



CHANGE CARBON LITE IS ON:
A red lite and intermittent beep indicates it's time for changing the carbon in the filter. To reset hold in the reset carbon button on the lower left of the control panel through a full cyole.

MISTING

MISTING CYCLE:
When the level in the white separator/reservoir is reached the Sahara will enter the misting cycle, advancing through the steps shown on the illustration. When the level in the white separator/ reservoir drops to the shut off point a little above the three gallon mark it will return to a blinking green.



STEP 1 SOLID YELLOW:
A solid yellow indicates the control has sensed a high water level and and the nozzle solenoid has turned on and the nozzle pump has begun the misting process.

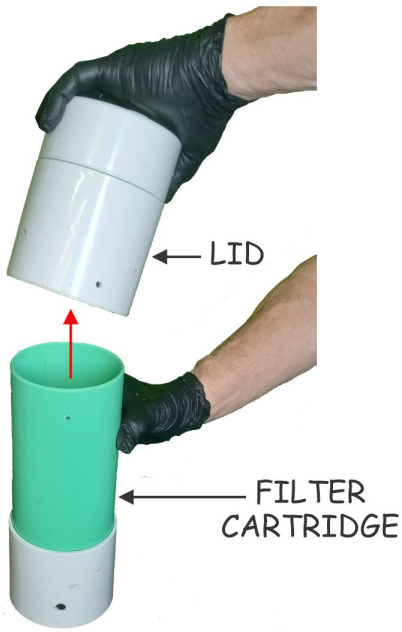
STEP 2 SOLID GREEN AND YELLOW:
A solid green and yellow indicates the nozzle solenoid has shut off and the nozzle pump is refilling.

GENERAL

MAINTENANCE

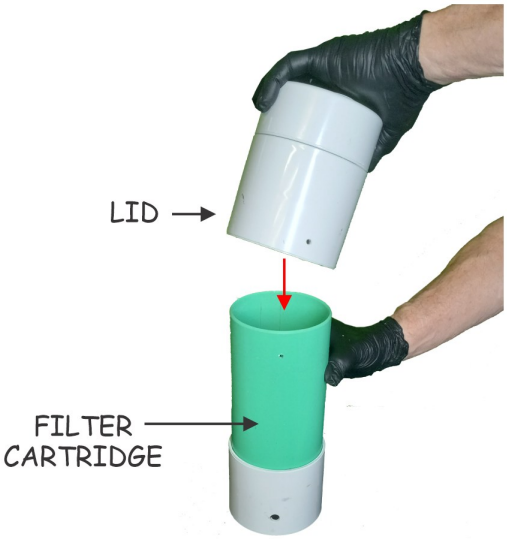
FILTER MAINTENANCE
CARBON REPLACEMENT

STEP 1:
Unscrew locking screw from filter cartridge and place it where it won't get lost.



STEP 2:
Remove the lid from the filter cartridge and then **DUMP THE USED FILTER GRANULES INTO YOUR HAZARDOUS WASTE DRUM.**

STEP 3:
Add 2 cups of granulated carbon for lighter than water solvents and 4 cups for perc.



STEP 4:
Replace the lid on the top of the filter cartridge. Align the holes and replace the locking screw.

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CLEANING THE WATER INLET FILTER BAG

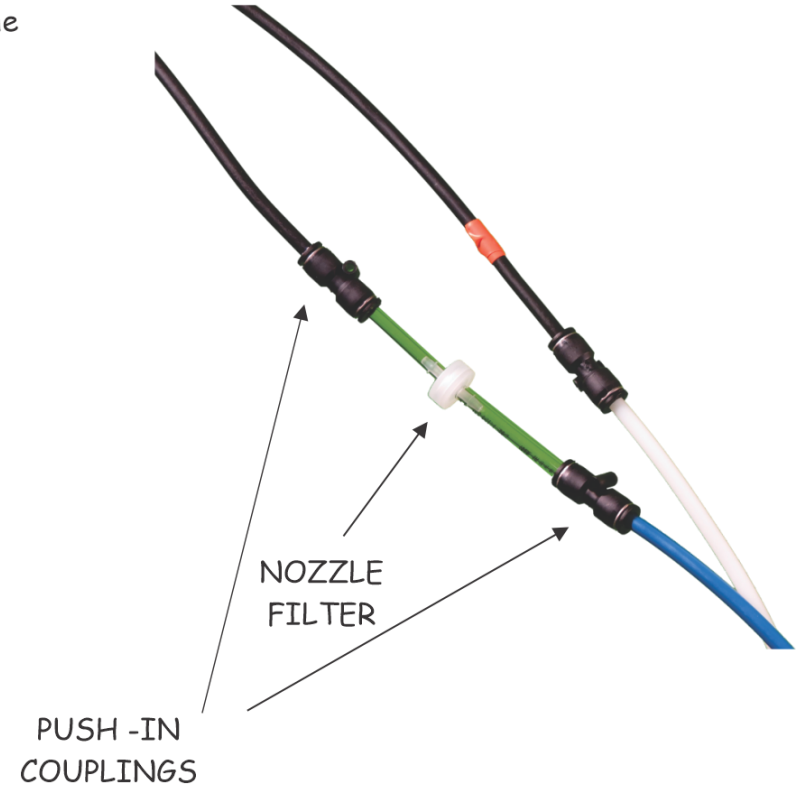
STEP 1:
Unscrew the DIRECT WATER INLET FITTING.

STEP 2:
Slide the assembly up and clear of the SAHARA II. then cut the zip-lock and slide the bag off of the pipe. dump the contents of the bag in the hazardous waste receptacle and reverse the process to re-assemble.

CHANGING THE NOZZLE FILTER

STEP 1:
Disconnect the tubing from the push-in couplings.

STEP 2:
Replace the nozzle filter by reversing the procedure.



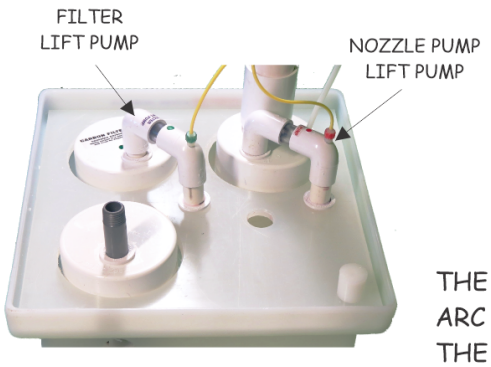
TROUBLESHOOTING

ADJUSTING THE LIFT PUMPS

LIFT PUMPS SELDOM REQUIRE ADJUSTMENT AND ARE VERY SENSITIVE SO IT'S BEST TO CALL THE FACTORY BEFORE ATTEMPTING ADJUSTMENTS

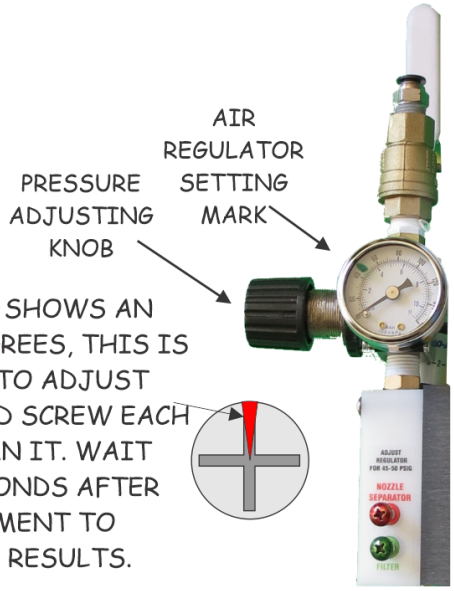
HOW THE LIFT PUMPS WORK

There are 2 lift pumps on the SAHARA 2 machine. The NOZZLE PUMP LIFT PUMP which fills the nozzle separator with purified water which is pumped to the NOZZLE for misting, and the FILTER LIFT PUMP which continuously circulates water through the FILTER CANNISTER. A small volume of air flows through the lift pump, which is a tube containing a small air line extending down its length. This air forms a bubble at the bottom of the tube which lifts water from the bottom of the tube to the tube outlet. The water **FLOWS IN SPURTS, NOT A STEADY STREAM, FROM THE OUTLET OF THE LIFT PUMP**. This is observable in the clear sight-glass at the top of the pumps. **AS THE WATER LEVEL IN THE SEPARATOR TANK DECREASES, THE FLOW THROUGH THE PUMPS WILL ALSO DECREASE UNTIL THE WATER LEVEL REACHES THE LOWEST OPERATING LEVEL MARK ON THE SEPARATOR TANK**, at which time the pumping action will cease. This is a normal situation.



STEP 1:

;Be sure the water level in the separator tank is around the 4 gallon mark before making any adjustments.



THE RED AREA SHOWS AN ARC OF 20 DEGREES, THIS IS THE AMOUNT TO ADJUST THE MANIFOLD SCREW EACH TIME YOU TURN IT. WAIT ABOUT 10 SECONDS AFTER EACH ADJUSTMENT TO MONITOR THE RESULTS.

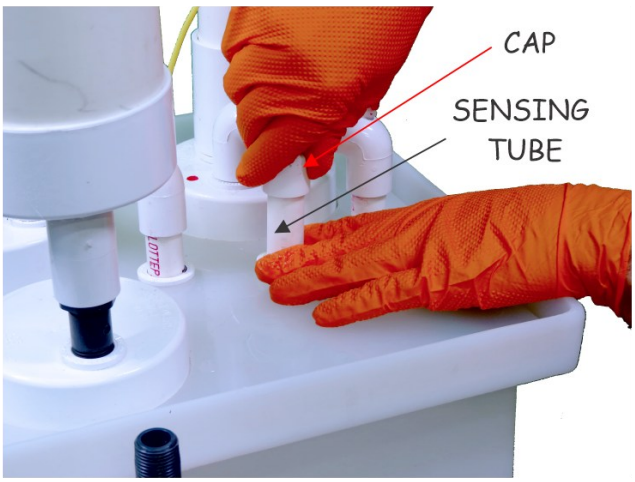
STEP 2:

Check the air pressure setting. It should be approximately 45-50 PSI on the air inlet pressure gauge. Adjust the inlet air regulator to adjust if necessary. Rotate clockwise to increase, counter clockwise to decrease pressure.

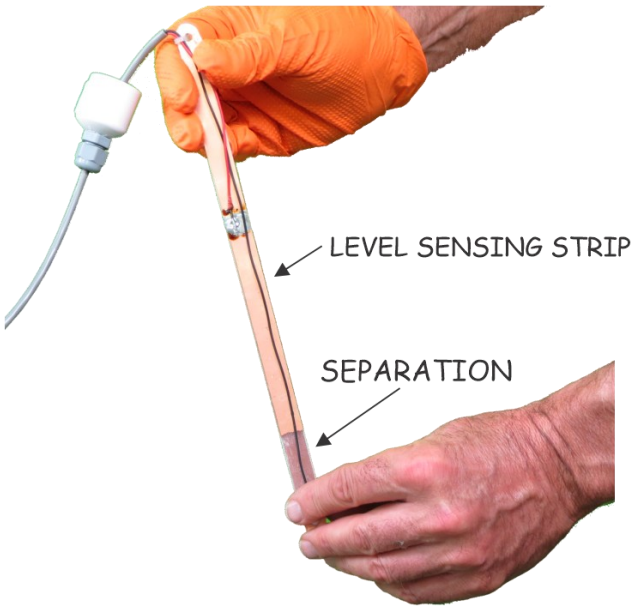
STEP 3:

If the output of the lift pumps are not adequate; an adjustment of the airflow to the faulty pump may be required. Airflow adjustment are made using the 2 colored screws corresponding to the color of the markings on the lift pump which it controls. When adjusting the airflow, clockwise rotation decreases the airflow, counter-clockwise rotation increases it. To begin the adjustment disconnect the airline going to the lift pump and hold it near your cheek. **TURN THE ADJUSTMENT SCREW GENTLY CLOCKWISE UNTIL THE AIRFLOW ALMOST STOPS COMPLETELY. RECONNECT THE AIRLINE AND TURN THE SCREW COUNTER CLOCKW9ISE ONLY 15-20 DEGREES AT A TIME, PAUSING ABOUT 10 SECONDS AFTER EACH ADJUSTMENT** until you observe the proper water pulses through the clear section at the top of the lift pump. **AS THE WATER LEVEL IN THE SEPARATOR TANK DECREASES, THE FLOW THROUGH THE PUMPS WILL ALSO DECREASE**.

TESTING AND CLEANING THE LEVEL SENSOR



STEP 1:
While holding the LEVEL SENSING TUBE firmly in place, rotate and pull up on the cap to remove the copper LEVEL SENSING STRIP from the tube.



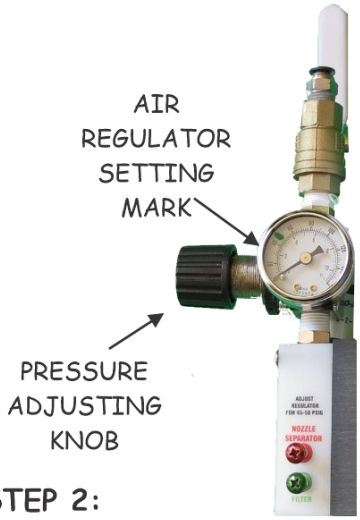
STEP 2:
Shortly after removal of the strip you should get a red HIGH LEVEL WARNING light and a continuous beep. Wet you fingers and grasp the lower 1 inch of the COPPER LEVEL SENSING STRIP (below the separation). This should turn off the red light and beeping and yield a blinking green light.

STEP 3:
Next grasp the lower portion of the sensing strip in your fist enveloping both sections. This should cycle the NOZZLE PUMP solenoid.

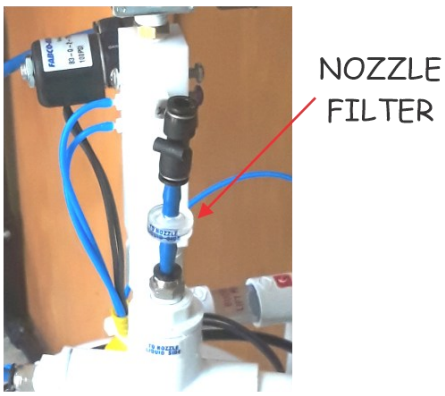
STEP 4:
If the ELECTRONIC CONTROL PANEL doesn't operate as described take a wet Scotch Brite sponge or equivalent and using the green abrasive side polish any dirt and/or corrosion off the surface of the copper strip **(be careful not to damage the wires soldered to the strip)**.

TROUBLESHOOTING EXCESSIVELY HEAVY MIST

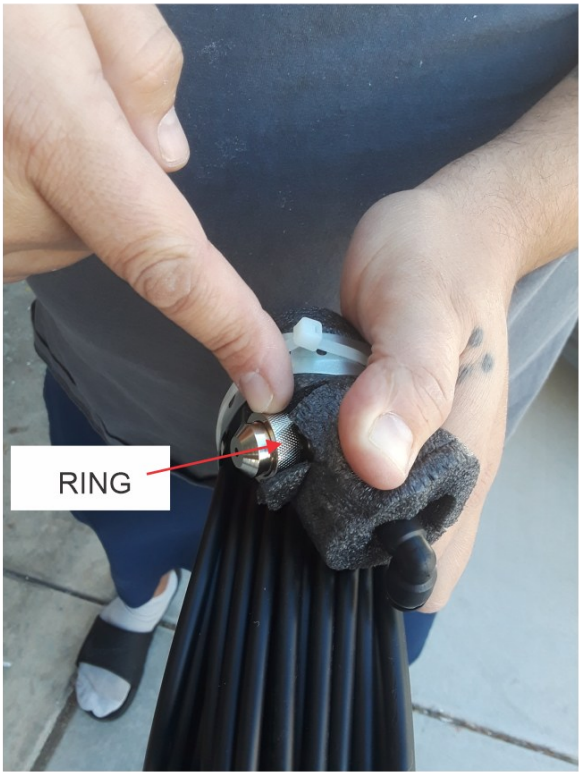
STEP 1:
Eliminate any coiling of extra coiled tubing.



STEP 2:
Make sure regulator is set between 45-50 PSI. Rotate clockwise to increase ,counter clockwise to decrease pressure.



STEP 3:
Install new nozzle filter.

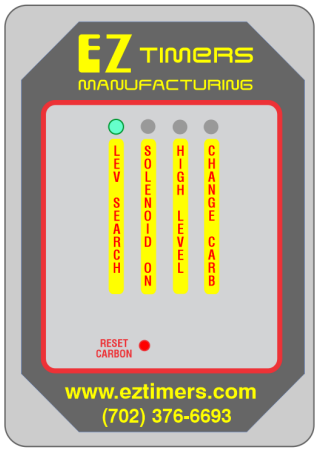


STEP 4:
Be sure ring on nozzle is screwed on tight.

STEP 5:
While nozzle is spraying push the cleaning tool in and out of the center hole in nozzle. be sure tool goes all the way down through the center hole and not just into the top part of hole.

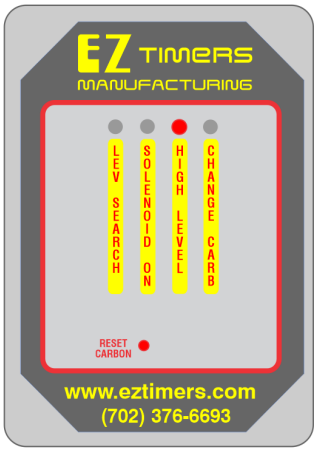
CONTROL PANEL OPERATIONS

LEVEL CHECKING

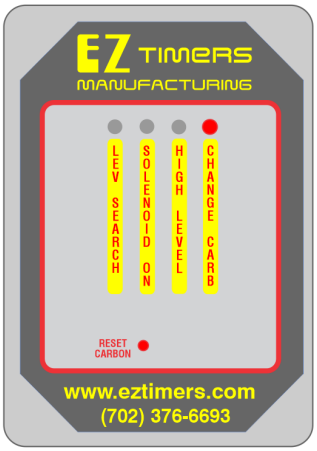


BLINKING GREEN:
A blinking green indicates that the control senses that the level is OK and the Sahara will continuously cycle through blinking green until the level rises.

ERROR CONDITIONS



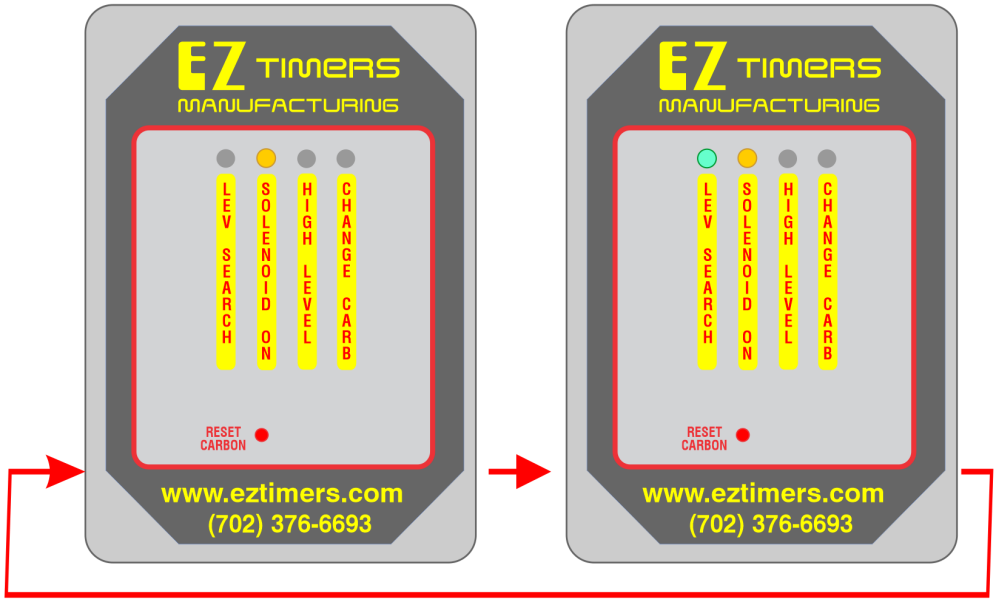
HIGH LEVEL RED LITE IS ON:
A red lite and continuous beep indicates either a high level of solvent or a low level of water in the white separator reservoir. The Sahara will cease misting until this situation is corected



CHANGE CARBON LITE IS ON:
A red lite and intermittent beep indicates it's time for changing the carbon in the filter. To reset hold in the reset carbon button on the lower left of the control panel through a full cyole.

MISTING

MISTING CYCLE:
When the level in the white separator/reservoir is reached the Sahara will enter the misting cycle, advancing through the steps shown on the illustration. When the level in the white separator/ reservoir drops to the shut off point a little above the three gallon mark it will return to a blinking green.



STEP 1 SOLID YELLOW:
A solid yellow indicates the control has sensed a high water level and and the nozzle solenoid has turned on and the nozzle pump has begun the misting process.

STEP 2 SOLID GREEN AND YELLOW:
A solid green and yellow indicates the nozzle solenoid has shut off and the nozzle pump is refilling.