

*Compact, Multipurpose
Ultrasonic Humidifier*

FT-F series

F25~F245

F25UV~F245UV

INSTALLATION AND OPERATION MANUAL

Thank you for purchasing this UCAN ultrasonic humidifier unit.
Please read these instructions thoroughly for correct installation,
Maintenance and inspection of the unit.

Keep Handy For Quick Reference

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Safety Caution

Be sure to read before use. Keep this manual handy for the user to consult at any time necessary.

The cautions shown here are to ensure the safety in use of the humidifier and to preclude any danger and damage to the user and others. What could conceivably result from wrong handling is identified in the form of either "Warning" or "Caution". They should both be observed strictly as important points that pertain to safety.



WARNING

Matter that could cause death or serious injury to human



CAUTION

Matter that could cause injury to human or damage to property



WARNING

- **Do not see the light of the UV lamp. It may cause loss of visual power.**
- Do not touch any electric circuit during power on especially by wet hands. It will get electric shock.
- All of electric cable/wire should not damage, processing, pulling or forcibly bending. It will cause electric leakage and make fire or electric shock.
- All of electric cable/wire should not bind or tie not to cause electric leakage or firing.
- When you have noted smoking or abnormal smell, shut off electric power source immediately and also off the power switch of the unit. And manual valve for water supply should be closed. If you keep running the unit it may cause fire or electric shock. Then please report it to your supplier immediately.
- Do not disassemble the unit except cleaning purpose and also do not modify the unit. It may cause fire or electric shock.
Do not splash any water on the unit. It may cause short circuit or electric shock.

CAUTION

- Be careful not to expose the light of UV lamp to the skin so long. It will cause skin inflammation.
- Do not move or shake the unit during the operation. It may cause electric shock or leakage.
- Do not install or locate the unit where such as unstable or vibrating places. It may cause fall down the unit and hurt the people around there.
- Do not install or locate the unit where dusty place , sun shine light exposing directly, high temperature, close to fire. All are very risky for the fire of the unit.
- Keep open through around the electric safety breaker to shut down the power easily at any emergency cases.
- Use only specified electric power source and no other voltage required.
- Connect Ground without fail.
- Do not use megger tester for the electric circuit check. It may cause out of order of the electric parts due to the high voltage.
- In case of using the unit at cold weather location, such as lower then freezing point, all of water pipe lines should be protected from freezing. Otherwise, pipes may brake due to the freezing.
- The life of the oscillator is about 5,000 hours. The life sometimes becomes shorter because of the using conditions such as water itself, or cleaning of the scale etc. Timely replacement of the oscillator required.
- To keep clean inside of the water reservoir and inside of the blow off duct hose, Clean up every three days. It may happen, the miscellaneous germs or bacteria become breeding.
- Cut off the power source when you do the cleaning. Otherwise, I may have Electric shock.
- Drain off all water of the water reservoir if you stop the running for a while. Otherwise, it cause the offensive odor created by some bacteria and it may Affect health.
- Use only clean water for the unit. Other liquid may cause trouble of the unit and make fire or electric shock.

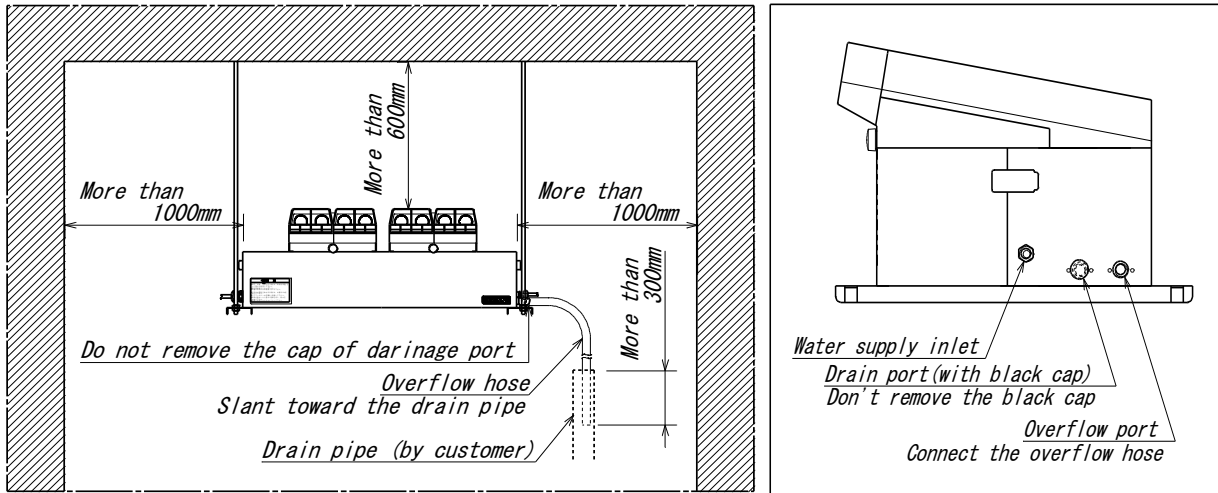
Remarks for further unit:

To keep clean the water reservoir, you can get additional device as of the option. We can assemble drainage solenoid valve which makes drain the water automatically once off the power supply.

1. Installation

■ Installation of the humidifier unit

The necessary space of the humidifier



*Leave the rear of the humidifier from the wall side more than 100mm.

*Insert the overflow hose in the drain pipe more than 300mm.

1. 1 Installation of main body

- 1) Setting location of the unit must be considered after review the air flow direction, location of the air conditioner and direction of the mist spray where should not have any article.
- 2) The unit must be set in horizontal. Be careful not to have any article that should not have any condensation within 3 meter in front of the mist spray.
- 3) Keep distance, minimum 600mm between the ceiling and top of the unit and also minimum 100mm between the wall and back side of the unit.
- 4) For the maintenance, keep certain space around the unit and in case of high place setting, provide some footing if possible.

1.2 Installation of Power Transformer Box

- 1) Do not set the box where is high humidity. In case of refrigerator chamber set the box outside of the chamber.
- 2) If you use extension cable for the box, be sure to use proper cable.
- 3) The location of the box should be considered about maintenance such as easy removable of the front cover.

1.3 Installation of Humidistat (Optional component)

- 1) The humidistat or sensor (in case of separate type) should be set not to have the mist directly.
- 2) If you use timer also, be sure how to use with the manual.

1.4 Installation of the Drain pan

(If the unit is hanging from ceiling)(Optional component)

- 1) Install the drain pan so that the top end may become level.

▪ Hanging type

Hang drain pan first, and fix it on the bolt. (By customer)

▪ **Wall mounting type**

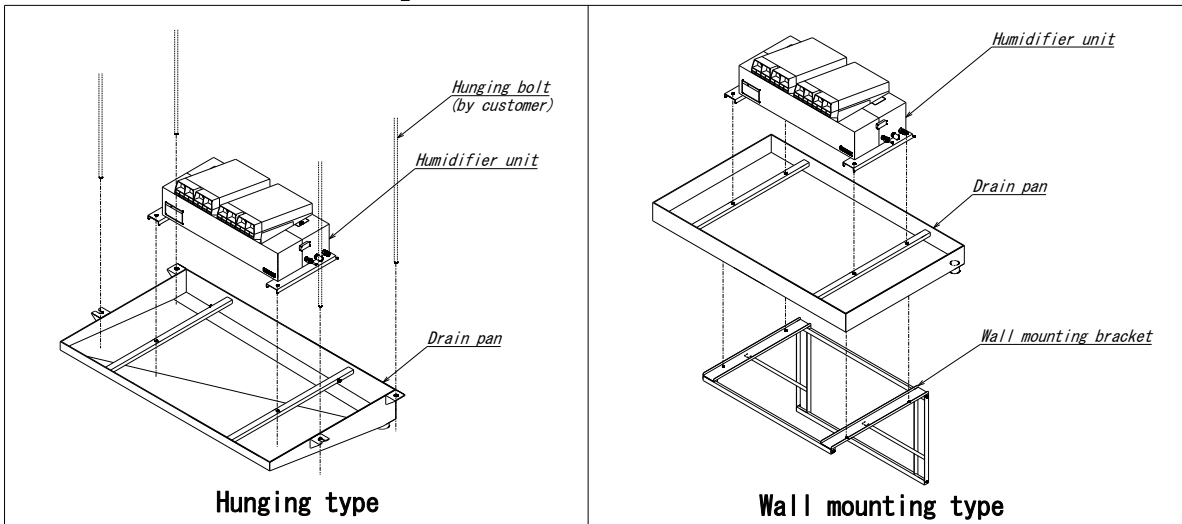
Install an anchor (About M10 : By customer) on the wall side first.

(Installation is possible by the M4 tapping when it has the strength which is enough for the wall side.) Fix a wall mounting bracket to the anchor. Then, fix the drain pan at the top of the wall mounting brackets.

- 2) Fix the body fixture on the drain pan with bolts. And then, install the humidifier unit there.
- 3) Connect the overflow elbow tube on the overflow port of Humidifier unit to drain the water surely in drain pan.
- 4) Refer to [■Installation of the humidifier unit] for other establishment surrounding conditions.

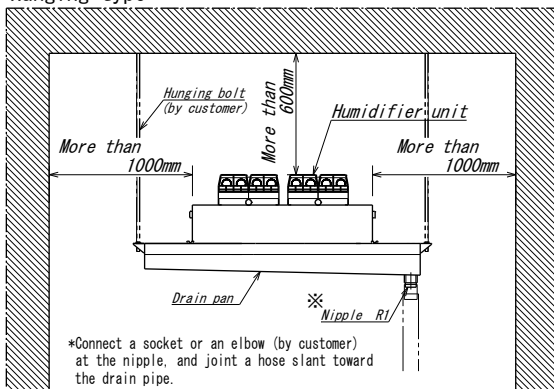
! CAUTION:
 Drainage hose from the drain pan should not be twisted and set it in slant for water flow.

Installation of the drain pan



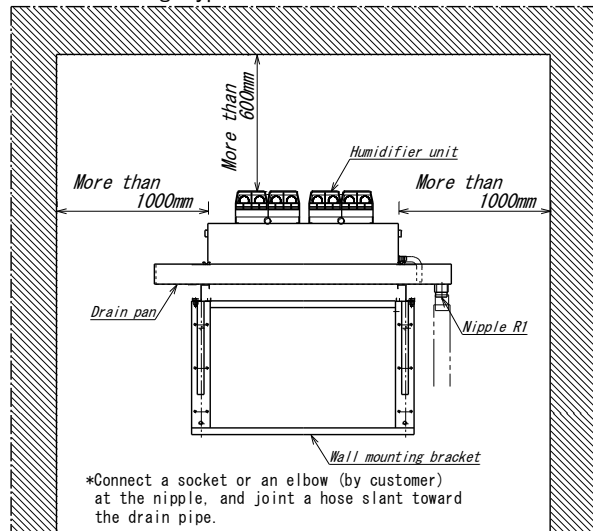
The necessary space of the humidifier

Hanging type



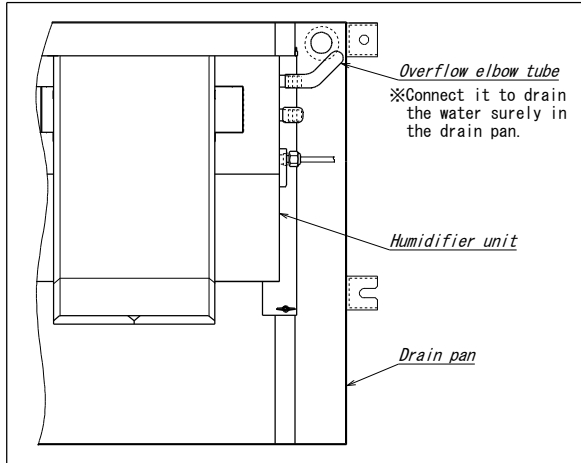
- *Leave the rear of humidifier from the wall side more than 100mm.
- *Insert the drain hose into the drain pipe more than 300mm.

Wall mounting type



- *Leave the rear of humidifier from the wall side more than 100mm.
- *Insert the drain hose into the drain pipe more than 300mm.

Connection of the overflow elbow tube



1.5 PIPIG INSTALLATION

- 1) Use city water or pure water (de-mineral water). But should not connect the unit with city water line directly. Provide private water reservoir or cistern to supply the water to the unit.
- 2) Water pressure to the unit must be 0.3-0.5kgf/cm².
- 3) Provide and install water supply valve with nipple which has 1/2" thread. For strainer within 1 meter from the unit. Fix the strainer to the nipple of the water supply valve and set the 1/2"X1/4" bushing and connector for 6mm dia. water tube at the outlet side of the strainer.
- 4) Connect the water tube at the strainer and open the water valve to flow the water to clean the inside of the tube and then connect the other end of the water tube to the water inlet of the unit.
- 5) Insert the accessory vinyl hose to the outlet of overflow to make flow out to drainage pipe or drain pan. The hose should be set on the slant.
- 6) Leave the black cap intact on the drainage outlet. The cap to be removed only for draining water reservoir to do cleaning or maintenance.

! CAUTION:

Install a water shock absorbing device in the water supply line where water hammering is likely to occur

2. ELECTRIC WIRING

- 1) Electric power source should have On-Off switch independently only for the humidifier unit.
- 2) Reconfirm proper voltage of the power source. Remove the cover of the transformer box and connect the two wires to the terminal Nos. 1 and 2 of the transformer individually.
- 3) All of the numbering cables of the unit should be connected with the terminals of the transformer box accordingly to the same numbered places. The terminal for Ground connection is screw type. Be sure to use this terminal to connect the unit to the ground.

3. OPERATION

3.1 Preparation

- 1) Sure the voltage of the power supply before starting the running. (We assembled the transformer for your requested AC voltage.)
- 2) If you use the unit with humidistat, set the dial of the humidistat at your expecting level.
- 3) Open the valve of the water supply.
- 4) The running order of the unit after switch on.

3.2 Operation

(In case of lower humidity than set level of humidistat)

- 1) The water supply solenoid valve will open to start the water supply.
- 2) After reaching the set level of the float sensor (to prevent waterless operation) will be released. The oscillators and fans start operation. If use the remote switch, adjust the knob for mist volume control for expectable mist volume.
- 3) When water level comes up to the limit level (Approx: 40 mm depth), the water supply solenoid valve will close to stop the water supply. The float sensor (for water supply) makes repeat this operation.
- 4) If the water line stop, the float sensor (to prevent waterless operation) will make stop the operation of the unit. However the water supply solenoid valve has still been opened until shut off the power switch of the unit. If switch off the unit, the solenoid valve will close.
- 4) If the water pressure is too high, the water supply float switch will activate for the water supply solenoid valve and it may emit a tick sound. If it happen, turn the valve down to adjust.
- 5) When turn on the UV malfunction indication lamp on the transformer box, the lamp is burn out or the power of the lamp is down to less than 50%. If it happen, replace the UV lamp for new one immediately.
- 6) If the mist volume is too little, it may caused by the formed oil film in the water reservoir. Open the top cover and check it. If oil film is noted, wipe it off after drained the water.
- 7) Recheck all of piping line not to have any water leakage.

⚠ CAUTION:

- Do not lift up or move the unit during the operation.
- Do not lay down on it's side or turn it upside down under switch On the unit. It may cause out of order of the oscillator circuit by no water running.
- Do not use the megger to check electric circuit. It may cause damaging of the transistors.

4. Disassembling

For parts replacement or maintenance

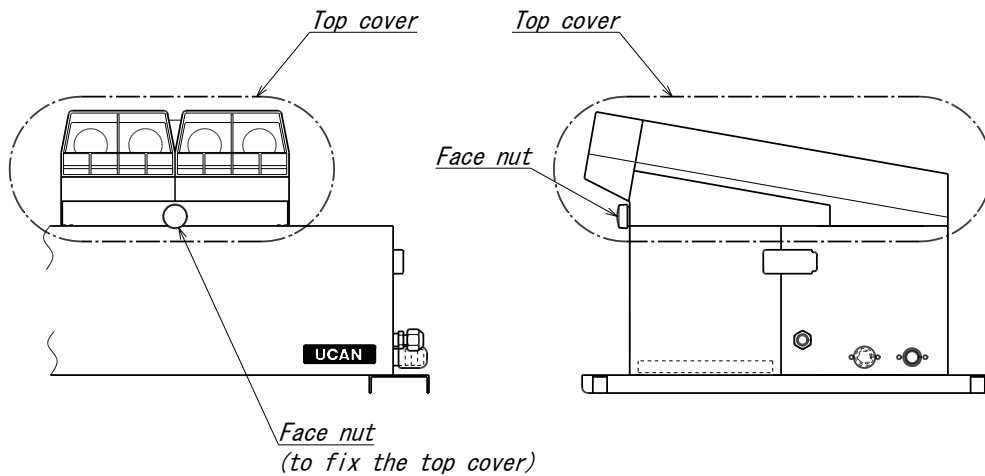


CAUTION

- Turn off the power supply and shut the water supply in advance.
- Drain the inside water in the water reservoir before maintenance.
- When the power supply switch is off, it drains automatically.
- Remove the top cover before disassembling, there is a risk of crack.

[Removal method of the top cover]

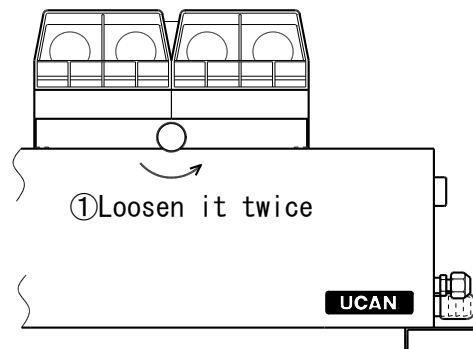
: To clean the spray nozzle, inside of the water reservoir, the float switches, surface of the oscillators and the outside of the grass tube of the UV lamp.



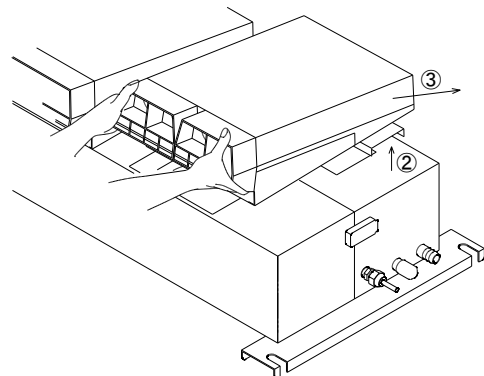
*the top cover is fixed with the face nut.

Procedure

- 1) Loosen a face nut about twice.

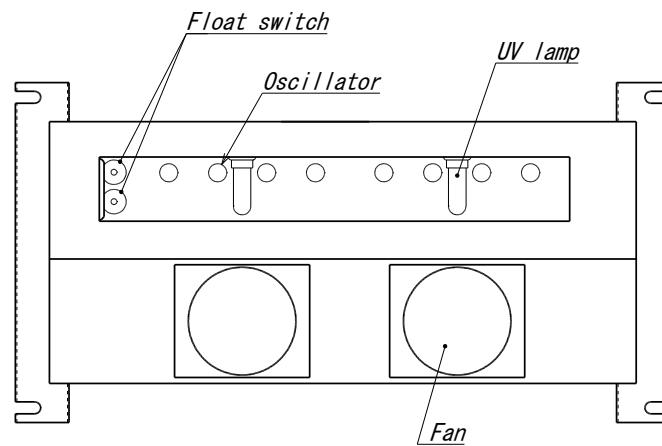


- 2) Hold the spray nozzle with both hands, then lift up the right side of the top cover.
- 3) Pull out the top cover toward the upper-right side.



*Condensation formed on the nozzles.
Please take care not to spill it.

After that, it becomes possible to clean the inside of the water reservoir, surface of the oscillators, outside of the tube of the UV lamp.



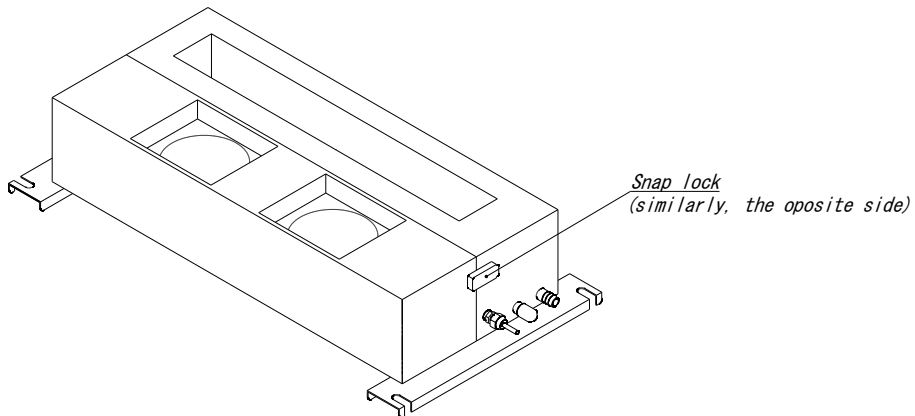
Top view

[Removal method of the fan box]

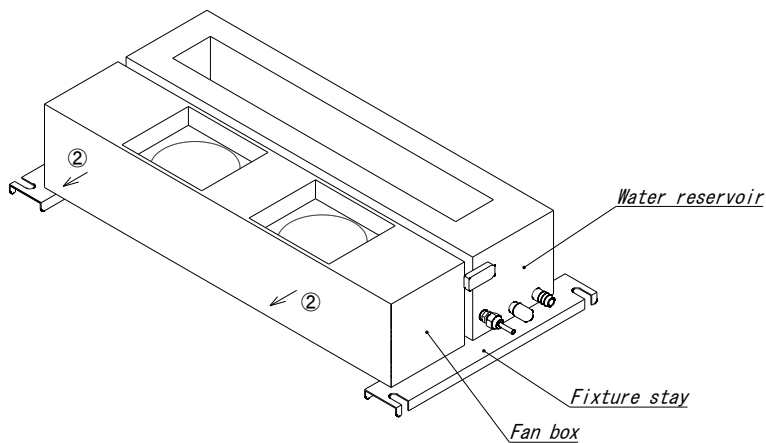
: Replacement of the oscillators, the float sensors or maintenance of the water supply solenoid valve.

Procedure

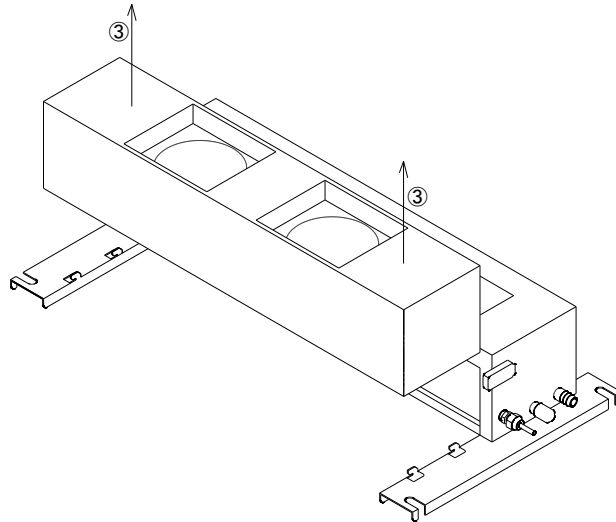
- 1) Unlock the snap lock on both side of the fan box.



- 2) Slide the fan box toward upper side.

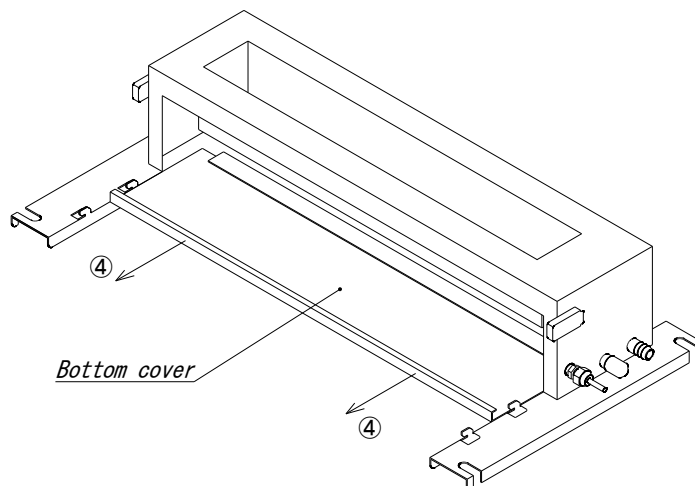


- 3) Pull out the fan box to upper side.



***Put the fan box on the top of the water reservoir temporarily. Then, remove the connectors between the fan box and water reservoir. And then move the fan box in a stable location.**

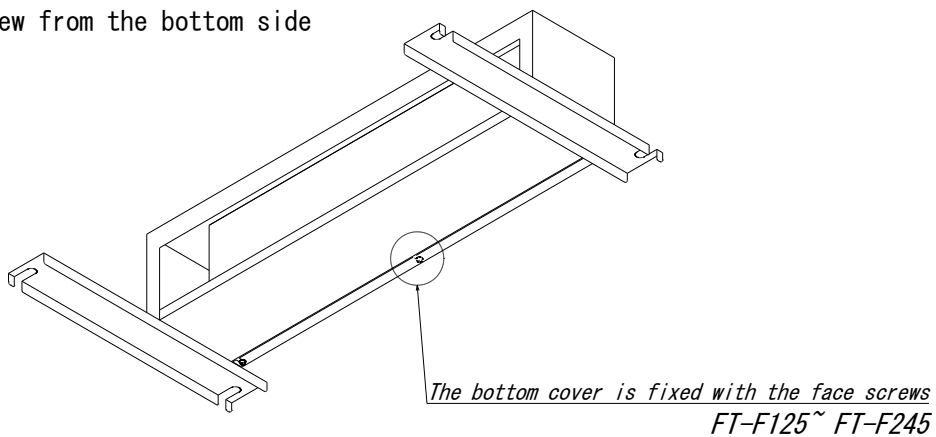
- 4) Pull out the bottom cover toward the front side.



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: loosen the fixing screws on the bottom side of the bottom cover about twice in advance.

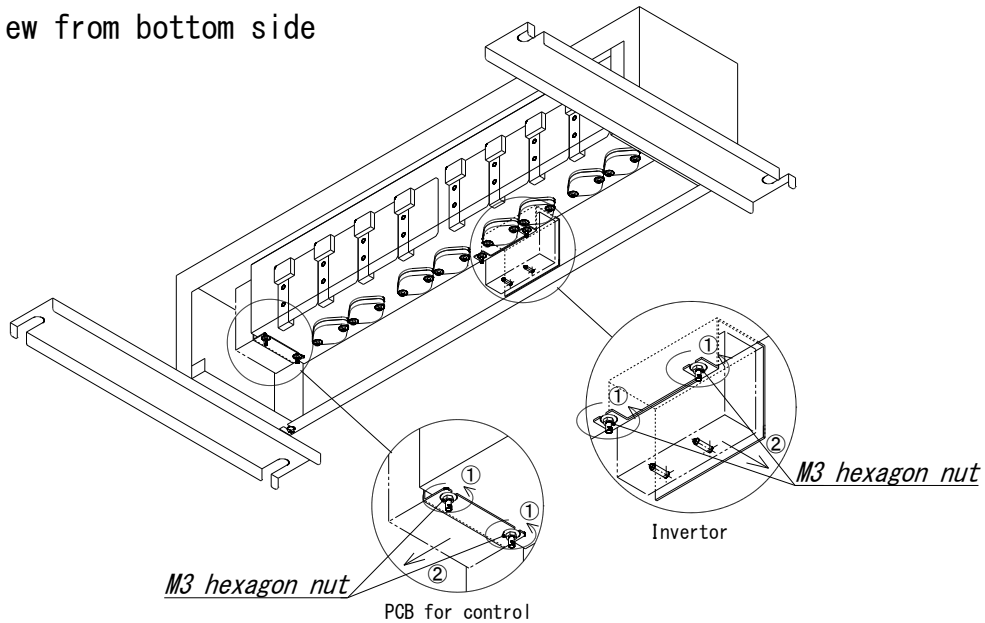
View from the bottom side



After that, it becomes possible to replace the oscillators and PCB for the oscillator, the float sensors or maintenance of the water supply solenoid valve.

[Removal method of the PCBs (Printed circuit board) for control and Invertor]

View from bottom side



Procedure

1) Loosen the M3 hexagon nuts that fixing the PCB about twice.

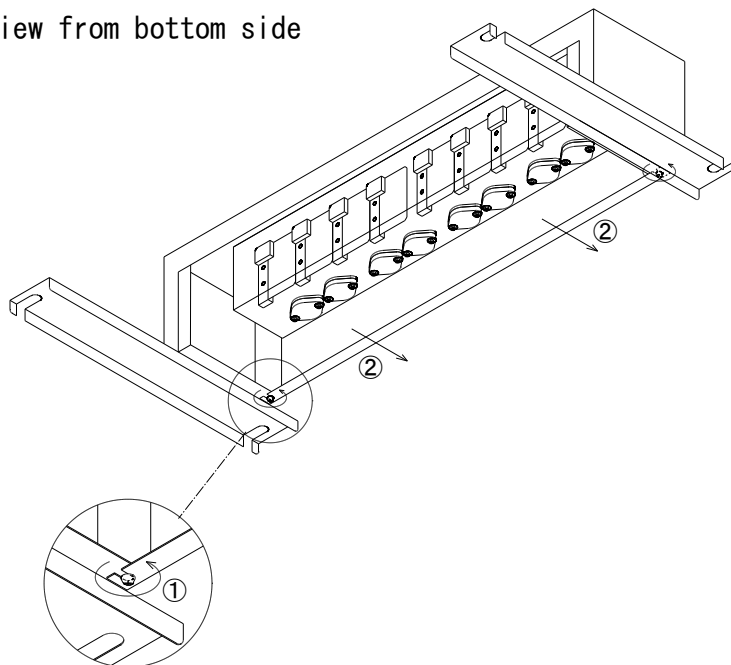
***It is not necessary to remove the nuts.**

2) Slide the PCB (with bracket) as shown above.

*** Remove the connectors if necessary.**

[Replacement method of UV lamp]

View from bottom side



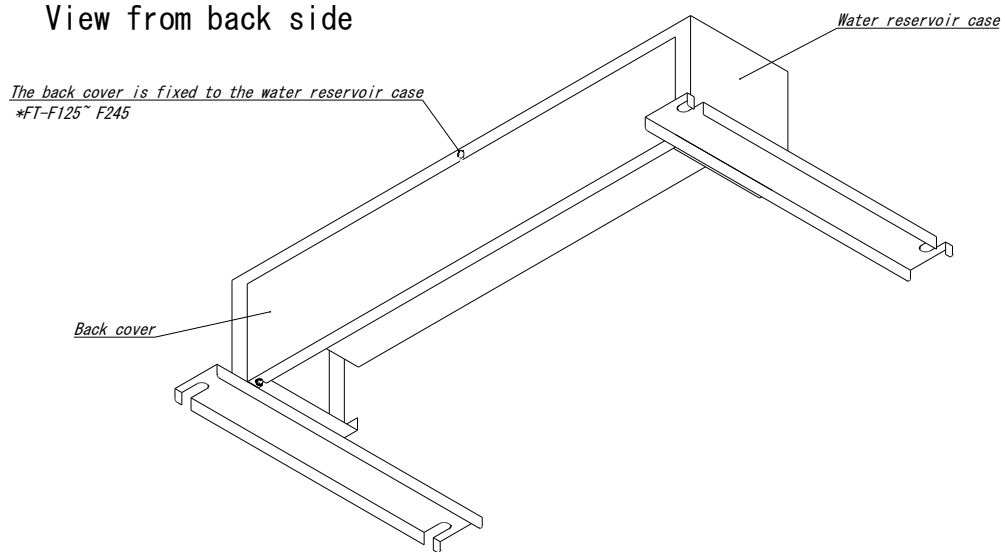
1) Loosen the M4 screws that fixing the both ends of the back cover.

2) Remove the back cover as shown above.

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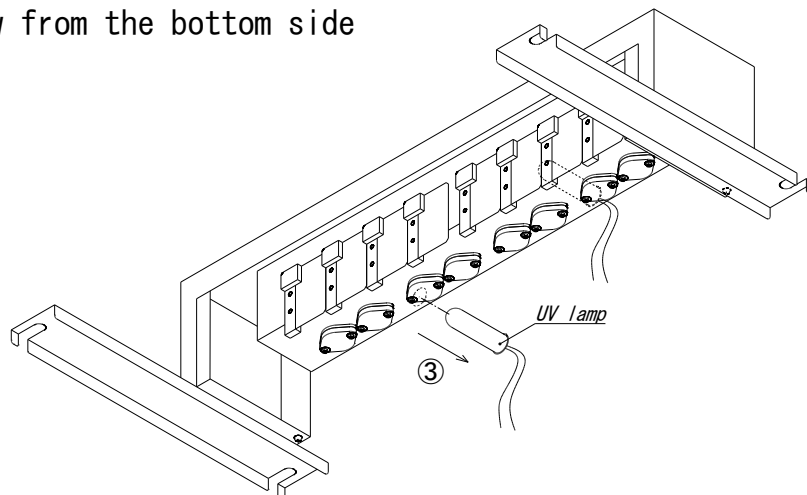
: loosen the fixing screws on the back side of the back about twice in advance.

View from back side



3) Pull out the UV lamp.

View from the bottom side



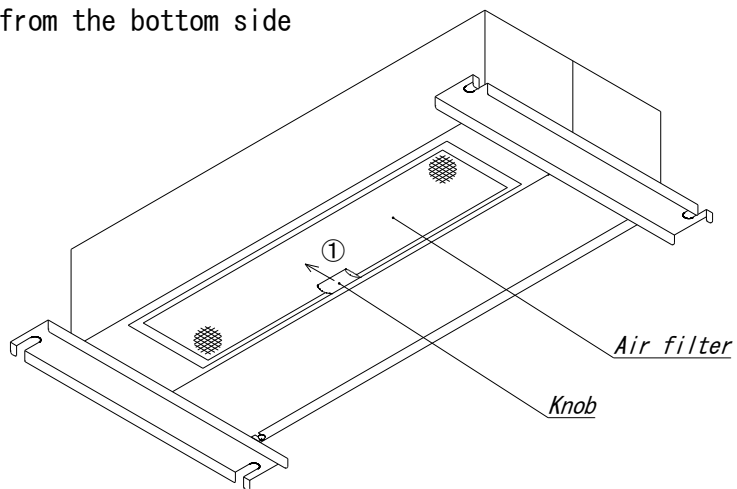
***Please be careful packing is not twisted or out when replace the UV lamp.**

[Maintenance method of Air filter]

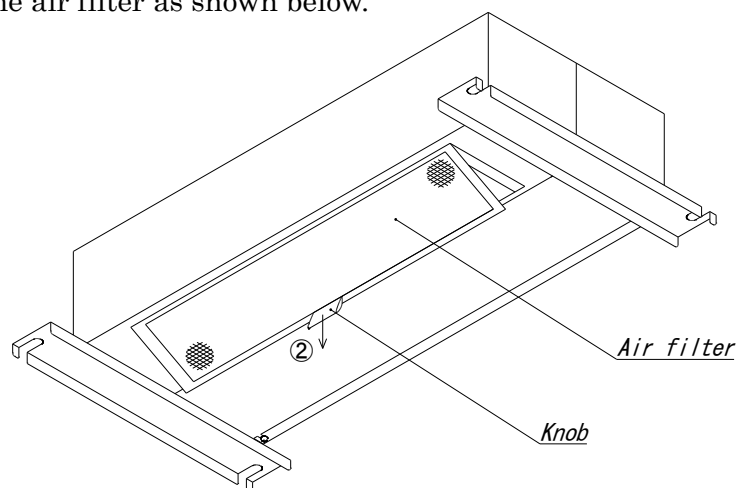
Procedure

- 1) To slide forward Grasp the Knob of the air filter.

View from the bottom side



- 2) Remove the air filter as shown below.



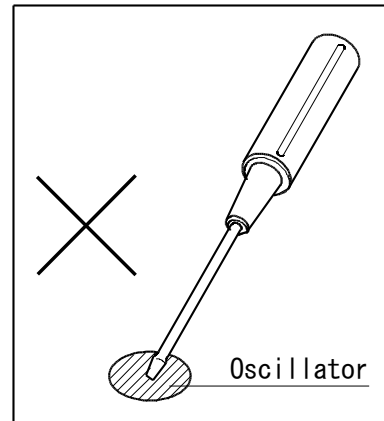
[The method of the cleaning of the air filter]

Clean up any built up of the dust by hand or blow off by compressed air. In case of heavy contamination, wash the filter with neutral detergent.

5. Maintenance

5.1 Cleaning of water reservoir and oscillator element

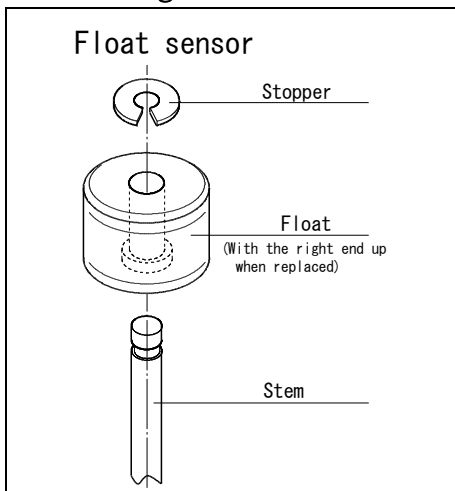
- 1) Turn off the power supply switch.
- 2) Remove the spray port assembly and water reservoir top cover from the water reservoir.
- 3) Drain the water. Wipe off smudge and dirt with a soft rag.
- 4) Wipe off any dirt from the surface of the oscillator (a round metal plate) with a soft cloth. Do not try to scrape or strike the surface with a screwdriver or any hard objects.
- 5) After clean up the inside of the water reservoir and reassembled the unit, turn on the switch to supply the water reservoir. And once again drain the water to clean more the inside of the water reservoir.



! CAUTION:

The inside of the water reservoir become soiled with impurity in the water and dust in the air. Then periodical (at least once a week) cleaning is recommended for hygiene and sanitation.

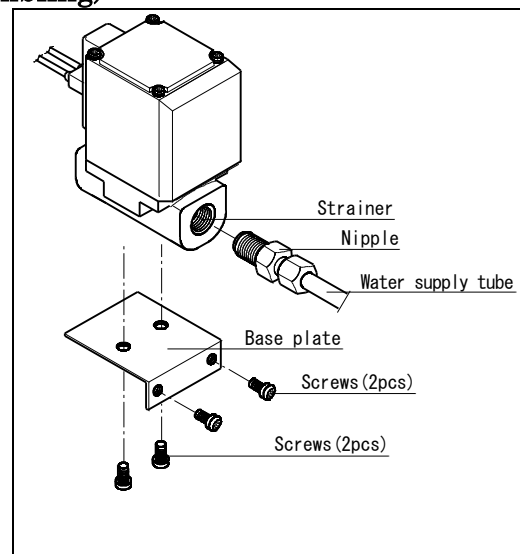
5.2 Caring of float sensor



- 1) To check the function of the float sensor, move the float up and down by finger. And then clean up the stem and the float carefully.
- 2) Remove the stopper and pull out the float for the above.
- 3) When taking out the float, be sure to see which end is up. It must be reassembled in the right direction. (The magnetic end comes to the bottom side.)

5.3 Caring solenoid valve (method of disassembling)

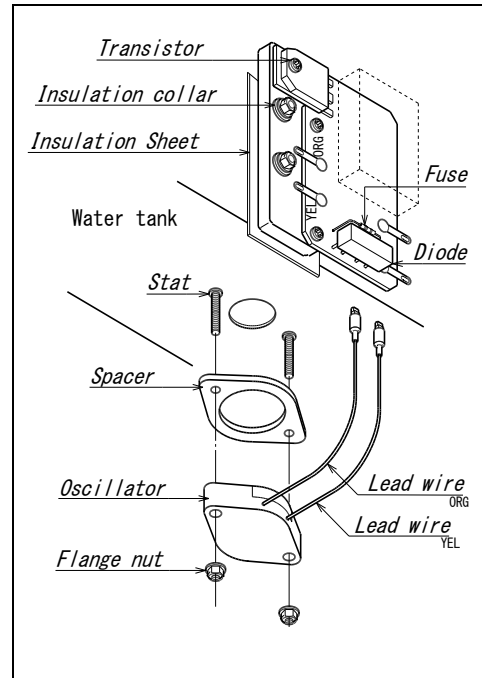
- 1) Close the water supply valve and turn off the electric power switch of the transformer box and power supply main switch.
- 2) Use double wrenches (double spanners) to unscrew the water supply tube and nipples.
- 3) Remove the solenoid valve by unscrewing the two screws.
- 4) Remove any dirt remained in the strainer.
- 5) If the solenoid valve is out of order, replace it to the new one.
- 6) Reassemble all parts in order same as before disassemble. Be careful not to have any dirt in the solenoid valve.



5.4 Checking and replacing ultrasonic oscillator

The oscillator located at the bottom of the water reservoir (round shape from top view) becomes worn out after use and the producing mist volume will decline. When it happen, renew the oscillator by replacement.

- 1) Shut the water supply valve and switch off the electric power supply.
- 2) Unscrew two flange nuts fixing the oscillator at the bottom of the water reservoir from the outside. (Use box type screw driver for 3mm- nut)
- 3) Unplug two wires, yellow and orange colored one from PCB (printed circuit board) and remove the oscillator from the water reservoir.
- 4) Put the new one and fix it using the same 3mm-nuts. Keep the balance of the tightening for two nuts.
- 5) Connect/plug in the two wires to the PCB according to the color indication.
(YEL: Yellow color ORG: Orange color)



! CAUTION:

The safety fuse will burn out if switch on the unit without connecting the oscillators.

REMARK:

The life of the oscillator is around 5,000 running hours in total. We recommend you to change the oscillator for new one a little earlier than 5,000 hours.

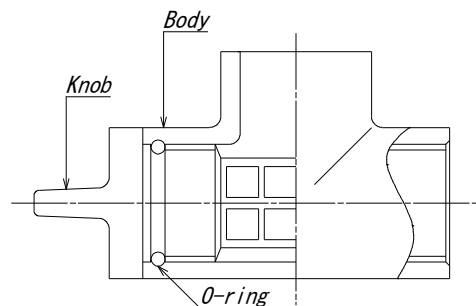
5.5 Caring strainer

Strainer must be set between the water line and the water inlet pipe to protect the unit by eliminating the dirt or the dust.

- 1) Close the water supply valve.
- 2) Turn the knob of the strainer holder counter clockwise to remove the knob.
- 3) Take out the strainer from the holder and clean up if there are dirt or dust.
- 4) Return the strainer to the right place and shut it by knob.

! CAUTION:

- Close the knob/cap firmly and tightly before test running or after maintenance and Checking.
- Be sure not to have water inside of the strainer holder when close the know/cap. Otherwise, the water pressure may twist the O-ring and it may cause water leakage.



5.6 Caring Ultraviolet Lamp

- 1) Remove the mist outlet part.
- 2) Drain the water from the tank. Wipe out the glass tube of the lamp with soft cloth to clean up. Do not shave it by the hard thing like driver or do not hit the glass tube not to damage or break.
- 3) After clean up, open the water line valve and switch on the electric power to full the water in the tank and drain off so that the tank will be clean.
- 4) Reassemble the mist outlet part on the water reservoir.

⚠ CAUTION:

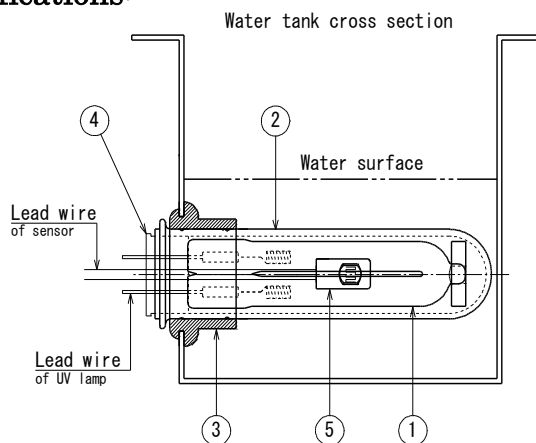
- The UV lamp has glass tube and very fragile. Then handle it very carefully.
- Also, be sure to switch off the electric power when you clean the lamp.
- Do not see the light of UV lamp. It may cause loss of visual power.
- Change the UV lamp for new one after 10,000 hours of turning on in total, otherwise the function (sterilizing power) will be down.

- ※ Keep clean the surface of the protecting glass tube (quartz jacket) by rag and so on because the more it becomes dirty, the more sterilization ability declines.
- ※ UV lamp sterilizes the inside of the water reservoir, but it isn't effective in the inside of the duct hose and spray nozzle. So clean them regularly.

⚠ WARNING:

- 1) Do not see UV lamp. It may causes loss of visual power.
- 2) Don't expose the light of UV lamp to the skin so long.

Specifications:



No.	Description	Part number
①	Ultraviolet lamp	GUL 1.2
②	Quartz jacket	φ18, L=70mm
③	Silicon packing	UVP-001
④	Silicon cap	UVP-002
⑤	Sensor	UVS-cds

5.8 Checking of the power transformer

Off the Main power source switch before checking.

- 1) Remove the transformer cover.
- 2) Check the fuse. If it burn out, replace the spare one fastened to the switch base with the tape.
- 3) Turn on the switch of the main electric power and switch on transformer box. Remove the terminal cover. Check all the voltage of the terminal by the tester referring to the electric diagram.

6. TROUBLE-SHOOTING

6.1 When the unit get in trouble, check the following point first.

Troubled function	Possible reason	Countermeasure
No water supply.	The valve of water line is closed.	Open the valve.
No operation.	No electric power.	Check with tester.
	Off the power switch of transformer box.	Switch on.
	Turn on the UV malfunction indicator lamp.	Replace the UV lamp
	Burn out the fuse.	Replace to spare fuse.
	Wrong setting of humidistat or higher humidity than setting level.	Reset the humidity level of the humidistat (set higher level for test and then set to proper level.)
Less out put the mist.	There are water in the duct hose.	Apply to declivity for the duct hose.

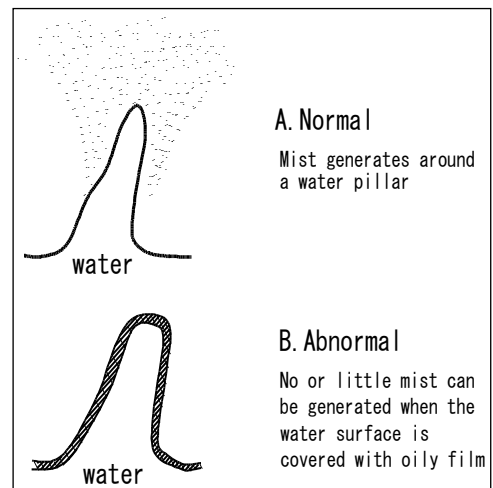
6.2 Other possible reasons for out of order:

1. The running of the unit after declined output of the mist for long hours, it may cause the damage of the transistor of the PCB.
2. If the unit is lay down or upside down and switch on the power, float switch will operate to make running of the unit without water and it cause damage the transistor of the PCB.
3. If the water supply pace is slower than consumption pace of the water to make mist, the water inlet solenoid valve will react ON-Off very often and it may cause damage the valve. Minimum water pressure is 0.3kgf/cm².
4. Big electric surge occurred by lightning strike may cause damage of PCB.
5. If use megger tester to check PCB, it may cause damage of the PCB.
6. If the water of the tank has grits, pebbles or iron powder etc, and operate for long hours, it may cause the damage of the oscillator.
7. If the some dirt or dust are caught at the valve, it may cause overflow.
8. Higher voltage of the electric power supplied than specified voltage.

6.3 Countermeasures

<In case of declining of mist output at short after the installation.>

- 1) If the water reservoir is contaminated with some oil or adhesive materials used in plumbing, the mist production will be declined. If it might be so, switch off the power and drain the water. And disassemble the mist outlet part and clean the tank with neutral detergent and soft sponge. And keep supply the water and drain it until the bubble of the detergent will disappear to make clean the tank.
- 2) Check the voltage of the electric power supply. If it lowered, must be correct by power service station.



<In case of declining of mist output after long hours running.>

- 1) Check the surface of the oscillator. If it covered by some soil, clean up the surface with soft cloth.
- 2) If the surface is damaged or the plating is peeled off, replace it with a new oscillator because the life has expired.

<In case of no mist come out.>

- 1) Check the PCB by following way. It might be burn out the fuse resistance, R6. Check it by tester. Set the resistance range, X1 and if you see the indication Zero, the fuse is OK. But if it is showing over 5 ohm, the fuse is out of order.
- 2) Check the transistor of the PCB by following way. Set the resistance range, X 1 of the tester. Touch the black probe, MINUS at B side(Base) and then Red probe, PLUS touch at C (Collector) or at E,(Emitter). If the indication is showing under 10 ohm, the transistor is OK but if it shows close to ZERO, the transistor is out of order. Then next step checking should be done. Touch red probe, PLUS at B side (Base) and then black probe, MINUS at C (collector) or at E,(Emitter). If the indicator is showing infinity or big number of ohm, it is OK. If the indicator is showing between Zero to 10 ohm, it is out of order.
- 3) If all transistors are in order, check the fuse for the PCB. If it burn out, replace the PCB.



NOTE:

Please use analog tester.



CAUTION:

If you find out of order by the above checking, the PCB should be replaced immediately. Otherwise, other components of the unit will be damaged.

7. COUNTERMEASURE FOR MALFUNCTION

The unit operates automatically and gives humidification as long as the water is supplied normally and the power at proper voltage. Should it fail even under these normal conditions, check the following points and correct the problem.

Caution: Be sure to cut off the power supply when there is a need to lift the unit or dismantle it.

1. Poor spray

Trouble function	Possible reason	Countermeasure
*Oscillator failure	Deterioration with age	Replace
*Pool of water building up in the duct hose	No slope provided	Give the hose some incline
*Overflow	Dirt caught in the solenoid valve	Dismantle the valve and clean

2. No spray output at all

Trouble function	Possible reason	Countermeasure
*No water in the water reservoir	Faulty solenoid valve Float switch failure Poor connection to the connector, etc.	Replace Replace Repair
*Water in the tank but still no spray output	Faulty transformer Ultrasonic unit PCB failure Fan failure Float switch failure Poor connection of connectors/soldered parts	Repair Repair Repair Repair Repair Check with a tester and repair faulty connections

*** Replace or repair should be done by professional.**

WARRANTY

UCAN warrants to the original first customer that the products will be free from defects in material and workmanship for only the period of 12 months from the date of delivery from the UCAN factory.

If any UCAN product is proven to be defective in the material or workmanship by UCAN during above applicable warranty period, UCAN only will repair or supply replacement for the defective product at free of charge. And only after having informed by UCAN, the customer can return the defective parts to UCAN without any charge, the costs for transport of the parts to be repaired shall be born by UCAN. In case of replaced or repaired the goods, the original warranty period shall be kept.

UCAN shall not be liable for under any circumstance :

1. If all actions described in UCAN 's installation and operation manuals do not carry out even by well trained and sufficiently qualified personnel authorized by the owner.
2. If the customer do not follow UCAN's installation and operation manuals.
3. If the products have been modified, or altered without written agreement with UCAN.
4. Under circumstances of any direct, indirect, incidental, consequential damages, or damages for injury occurrence to person or property, loss of business or information, loss of profit or production interruption in relation to the manufacture or use of the products.
5. Any damage or malfunction due to act of providence such as earthquakes or fires.
6. Any damage or malfunction during transportation or transfer such as dropping the product after the purchase.
7. Any damage or malfunction caused by other source not directly cause by UCAN products.
8. Any damages or malfunctions caused by mishandling or unauthorized repairing jobs.
9. The oscillators for the Ultrasonic Humidifiers.
The sheathed heater for Resistive Steam Humidifiers.

UCAN shall not be liable for any cost or expense whatever either direct or indirect costs for removal, re-installation for any defective product and installation for the replacement.

By purchasing UCAN products, the purchaser understands and agrees the terms and conditions of this warranty.

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