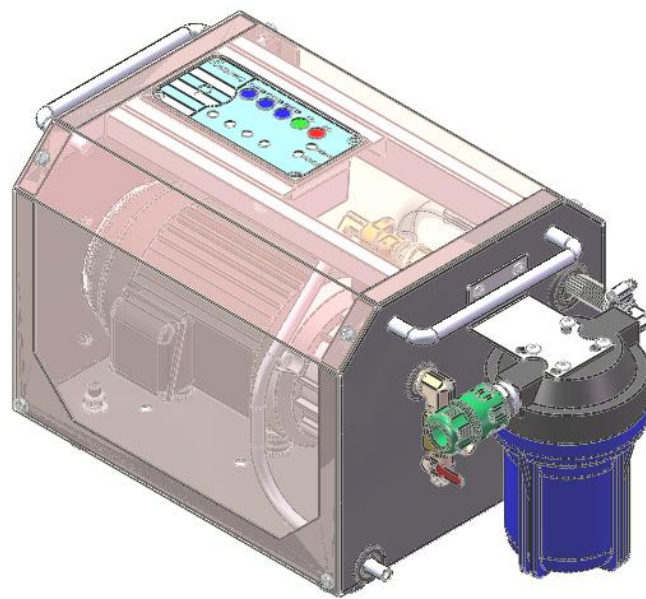


# **Mini-Cool Systemic Misting Machine Operating Manual**



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## A. GENERAL INFORMATION

This manual provides you with the information for proper use and maintenance of the misting pump. Please, carefully follow the instructions provided. The manufacturer / supplier is not liable for any damage to people or goods, or to the system itself, if the equipment is used differently from as described in this manual.

This manual is provided to the user / technician for correct use of the misting pump. Information provided in this manual does not replace regulations on safety at work currently in force. Therefore, the user should comply with the regulations in the country where the pump is installed, as well as following common sense rules.

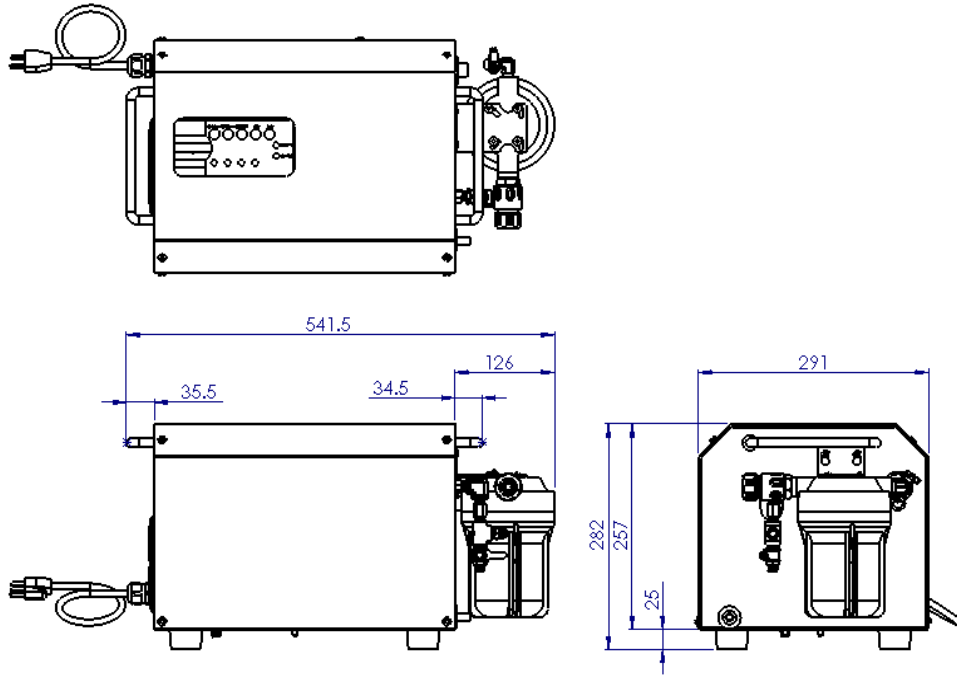
Do not use the product if you notice any defect or wear that may compromise the original safety standards. The user or the maintenance technician must report any fault to the supplier. The machine is meant for specific applications. Do not modify and /or use it for applications other than the specified ones.

Instructions, drawings, tables and all the contents of this document are confidential technical documentation and are the exclusive property of **TANONG Precision Technology Co. Ltd.** No information may be released to third parties without written permission by **TANONG Precision Technology Co. Ltd.** Descriptions and images in this document are meant as indications and practical examples. They may be modified at any time and without prior notice. If further technical and functional details are needed, please contact the manufacturer / supplier.

### IMPORTANT

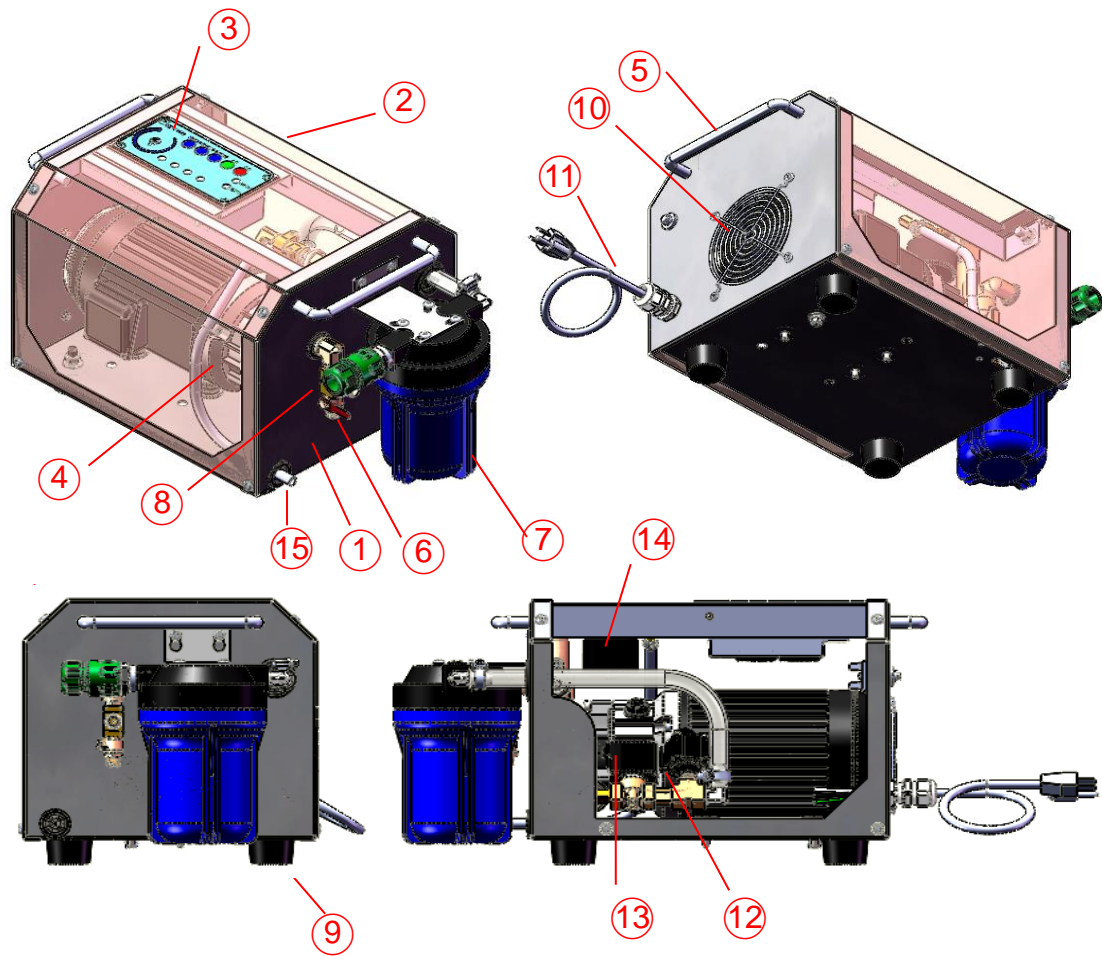
- Please, read the information contained in this booklet since they will provide you with the information and instructions required for safe installation, use and maintenance.
- The manufacturer is not liable for any damage to people or goods, or to the machine itself, if the pump is used differently from that described in this manual.
- Keep this booklet in a safe place and make it available for future reference.
- On delivery, check for any possible damages due to transport.

## B. SPECIFICATION



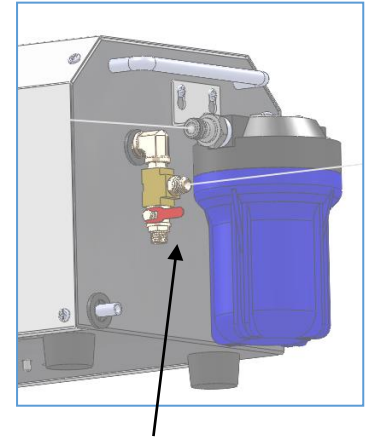
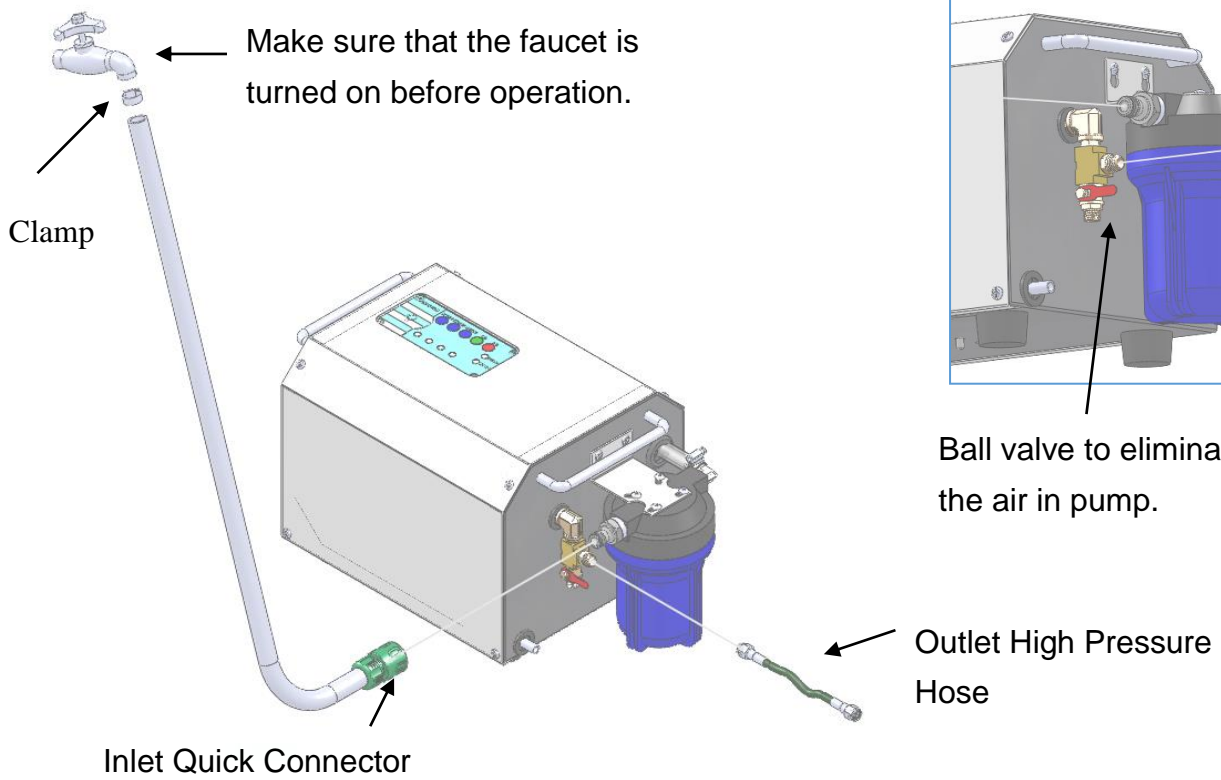
MODEL	Mini-Cool Systemic Misting Machine
OPERATING PRESSURE	1000 PSI 70 kgf/cm <sup>2</sup>
SUCTION VOLUME	NS1 0.62 L/min (1450rpm) / 0.74 L/min (1750rpm) NS2 1.63 L/min (1450rpm) / 1.96 L/min (1750rpm)
MOTOR	Total Enclosed Induction Motor, Single Phase, 4 P 110V/220 V (240V available) 50/60 Hz
DIMENSIONS L*W*H	541.5 *291 * 282 mm
WEIGHT	18.6 kg
ACCESSORIES	<ul style="list-style-type: none"> <li>• Electric Solenoid Valve, Inlet (This valve would stop water inlet when the machine unit is shut down.)</li> <li>• Electric Solenoid Valve, Outlet (When the machine unit is shut down, this valve would be switched on to avoid water leaking from the nozzles.)</li> <li>• LCD Control Panel</li> <li>• 5" Single Filter</li> <li>• Drought Switch Sensor</li> </ul>
OTHER FEATURES	<ul style="list-style-type: none"> <li>• Built with two handles for easy carry.</li> <li>• An installed ball valve eliminate air in the pump.</li> <li>• An installed overheating protector avoid the damage of electric motor.</li> <li>• 4 Built-in Modes make it very easy to operate.</li> </ul>
REMARK	Forbidden Use in Rainy Day

## C. PARTS DIAGRAM

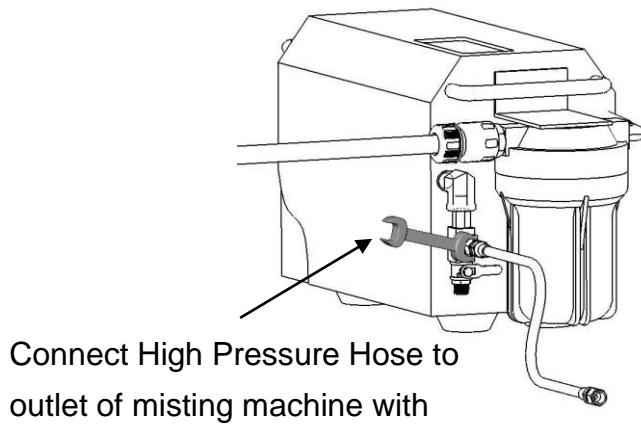


1	IRON BASE	9	ABSORBER
2	IRON FRAME COVER	10	FAN MESH
3	CONTROL BOX	11	POWER CORD
4	PUMP	12	LOW PRESSURE SWITCH
5	HANDLE	13	LOW PRESSURE SOLENOID
6	OUTLET VALVE	14	HIGE PRESSURE SOLENOID
7	5" FILTER	15	HIGH PRESSURE DRAIN PIPE
8	INLET SLIP LOCK CONNECTOR		

- Piping Display :



Ball valve to eliminate the air in pump.



## D. SAFETY INSTRUCTIONS

Before using this product please read this manual and follow all safety rules and operating instructions. Failure to comply with instructions could result in personal injury and/or property damage.

The manufacturer is not able to predict all possible dangers caused by this product during operating, checking and maintaining. Thus, not all possible dangers are listed in this manual. Any condition not shown in this manual is still needed to be careful watch during operating, checking and maintaining. Please contact to your supplier for any further information.

The manual is considered as part of the machine and must be kept in a safe place for future reference, enabling quick consultation.

### DANGER

- Power source shall be equipped with residual current circuit breaker so no one will get an electric shock.
- If any malfunctions happen, stop using this machine immediately.
- Do not use this machine under rain or thunder. There will be the risk of fire or electrical shock.
- Be sure the electrical plug is removed from the electrical socket before attempting any cleaning or maintenance. Fail to do so may cause electric shock.
- Any electrical maintenance out must be done by a specialized technician, a qualified electrician, who is professionally qualified and trained for the inspection, installation and repair of electrical equipment.
- Check cables, plug, contacts, and ground connection before operation. Do not run the machine if there is any part loose or damaged.
- To protect against electrical shock, do not immerse unit, plug, or cord in water or spray with liquids.
- Do not move or operate the machine with wet hands or bare foot.
- The machine must be out of reach for children. Children or untrained people are not allowed to run this machine.
- In order to avoid accidents, be sure that there won't be anyone approaching this machine within 1 meter of radius from it during operation.
- Be sure this machine is on a stable, flat surface and the brake of the wheel must be turned on when in operation. Set the machine with good ventilation when in operation.
- Do not pull hard, roll up and stamp on the electric wire.
- All parts are designed for high pressure. If any part gets damaged, please replace it with the parts from original manufacturer.

## **⚠ WARNING**

- Before using this machine, make sure the pump has been filled with sufficient oil. The manufacturer suggests filling R68 or equivalent for about 150 C.C.
- Connect the machine with correct electric specification (Frequency, Voltage and Current) as instructed.
- This pump is non-submersible and rated for a maximum operating pressure of 1000PSI. Changing the pressure output above 1000PSI may create a dangerous situation and will void manufacturer's warranties.
- Never run the machine without water. Usually, water will be sucked into the pump when motor starts after 10 seconds. If there is no water into the machine for over 20 seconds, please stop the machine and check it.
- Do not open the metal cover to touch the motor or other parts inside the machine during the operation.
- Before starting this machine, check if there is any loose of electrical wiring, plug, terminals, and other parts.

## **⚠ CAUTION**

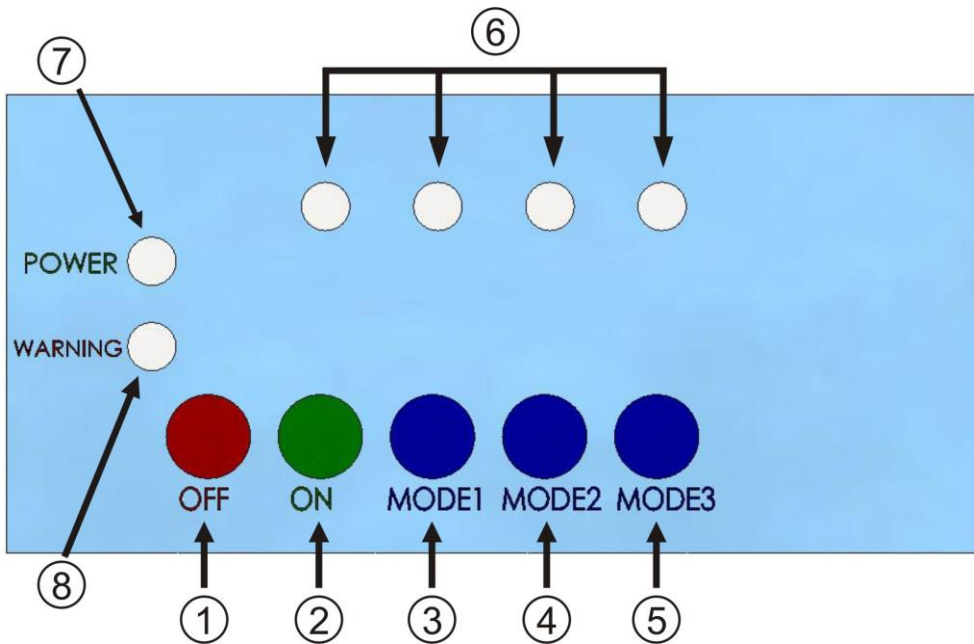
- The diameter of the water supply hose should be larger than  $\varnothing 9$  mm.
- Extension leads are not allowed to exceed 30M from the electric breaker to the machine. The power cord must be bigger than  $\varnothing 1.25\text{mm}^2$ .
- Connect the water supply directly to the faucet. The inlet flow rate is no less than 4 L/min and pressure below 3 bar.
- The water temperature should not be higher than  $55^{\circ}\text{C}$ . Also check that the filters have clean cartridges inside.
- Make sure that all the inlet / outlet pipes, connectors, joints and ground wire are firmly tightened before operation.
- Let air inside the pump come out from evacuation valve by starting the motor. After 5 ~ 10 seconds, the nozzles will have fog out, then close the evacuation valve. If only less fog or still no water come out, please follow the above steps again.
- The best number of applied nozzles is varied according to the pump mode installed inside this machine. If the total number of the applied nozzles is too few, there might be an unpredictable pressure raise during operation. However, if too many nozzles are used, the misting performance will not be good. Please refer to the specification of the machine.



- The manufacturer suggest adding a ball valve at the end of misting pipe system to help a quicker elimination of air. After the water come out smoothly, turn off the ball valve and start misting.
- The manufacturer suggests adding a safety valve at the beginning of misting system to avoid any system damage or body injury from a sudden pressure boost.
- The machine is designed to operate with drinking water only. Tap-water, bottle water, and other sources deemed suitable for human consumption will ensure optimal functionality of the machine. Water with impurities might cause damages to the machine.
- Do not use this machine when temperature is below 0°C. Running pump with ice in the hose or pump will cause damage to the pump.

## E. OPERATION

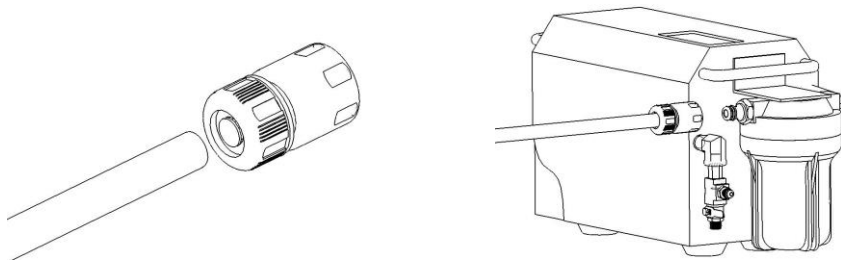
### 1. Instruction of Control Panel :



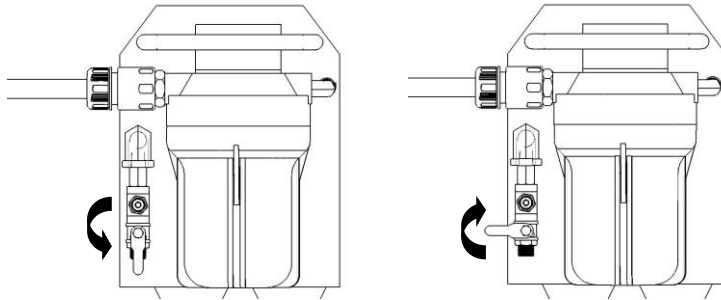
No.	DESCRIPTION	
1	OFF	Power Off
2	ON	Continuous Misting
3	MODE 1	Mist : 15 seconds / Stop : 20 Seconds
4	MODE 2	Mist : 25 seconds / Stop : 30 Seconds
5	MODE 3	Mist : 40 seconds / Stop : 40 Seconds
6	INDICATOR Light	Indicator Light on : Operating Mode
7	POWER Light	Indicator Light on : Power ON
8	WARING Light	Indicator Light on : Lack of Water Supply

### 2. Before Operation :

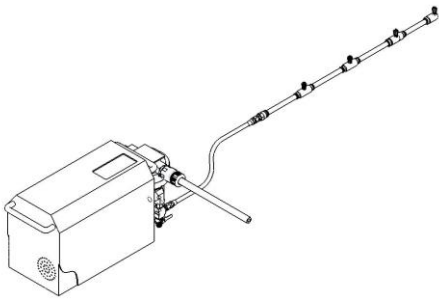
- Insert garden hose into 1/2" Hose Quick Connector and connect to faucet. Connect Quick Connector to quick coupling on filter. Then open faucet.



- Switch Evacuation Valve. Turn on misting machine for several seconds to flush the clogged air bubbles out of high-pressure pump until water comes out smoothly, and then close Evacuation Valve for normal operation.



- Make sure all inlet and outlet pipes, and joints in the circuit are securely tightened without any leaking.



### 3. Start The Machine :

#### **⚠ CAUTION**

- PLUG POWER CORD : Run the machine with correct electronic specification (voltage and current) as instructed on the machine (110V~220V, 50/60Hz).
- Power light on means power supply is active.
- Push button **ON** to start default mode.

## LOW PRESSURE DROUGHT SWITCH SENSOR

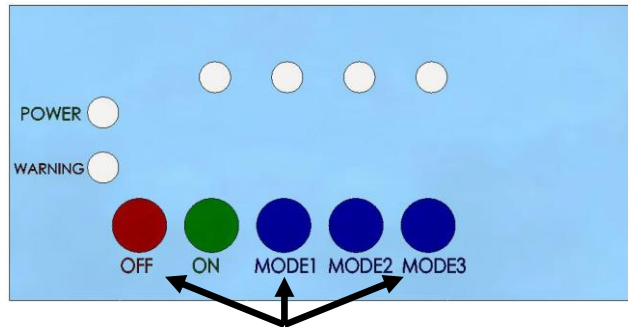
STEP	BUTTON DISPLAY	DESCRIPTION of INDICATOR & FUNCTION
1		Red warning light on indicates that the inlet pipe has been detective with no water pressure. The pump will stop automatically and no reaction when push any button.
2		<ol style="list-style-type: none"> <li>Check the water inlet first to see if AUTO SHOUTDOWN SLIP LOCK CONNECTOR connect well. If not, plug tightly again.</li> <li>Check the water inlet faucet to see if it shutdown. If the faucet shutdown, turn it on again.</li> <li>Check water inlet pipe to see if it clogs. If yes, eliminate the situation.</li> </ol>
3		Confirm the water inlet pipe works normal. Push red button. When WARNING LIGHT off indicates that the situation is gone.
4		Confirm the inlet pipe status, then push the red off button. If the indicator light is still on, open the case and check the low pressure switch to see if the cables, connectors and plugs are loosen or broken. If not, please contact the distributor for repair.
5		After RED INDICATOR LIGHT off, push the green or blue button to initiate the misting machine.

## CONTINUOUS MISTING & INTERMITTENCE MISTING

STEP	BUTTON DISPLAY	DESCRIPTION of INDICATOR & FUNCTION
1		POWER LIGHT ON : CONTINUOUS MISTING
		Push the Button of MODE 1 Mist : 15 seconds / Stop : 20 Seconds
		Push the Button of MODE 2 Mist : 25 seconds / Stop : 30 Seconds
		Push the Button of MODE 3 Mist : 40 seconds / Stop : 40 Seconds
2		Push the red <b>OFF</b> button will force this machine shut down immediately.
		<ol style="list-style-type: none"> <li>It is possible to switch to other mode while the machine is running. Push either other MODE button or ON buttons directly.</li> <li>The high pressure solenoid will open 3 seconds and then close. The pressurized water will come out through drain pipe when pump stop during intermittence misting.</li> </ol>

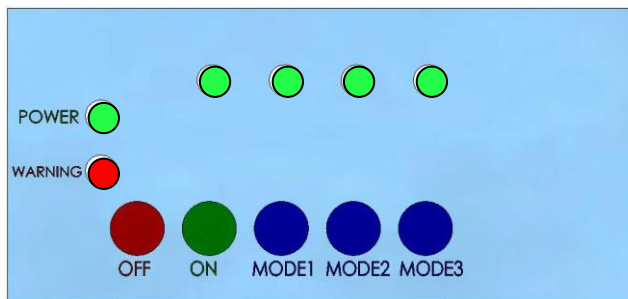
#### 4. Setting of the Programmable Modes :

a. Before pushing the **ON** button, press **OFF** 、 **MODE1** 、 **MODE3** at the same time.

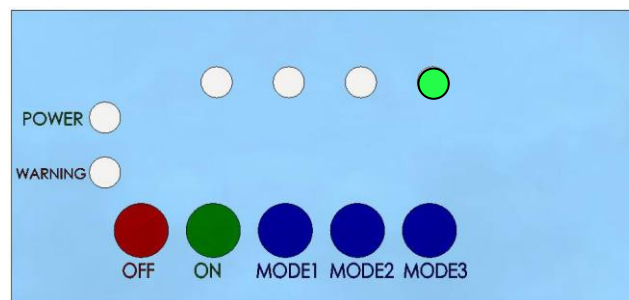


Push these three buttons

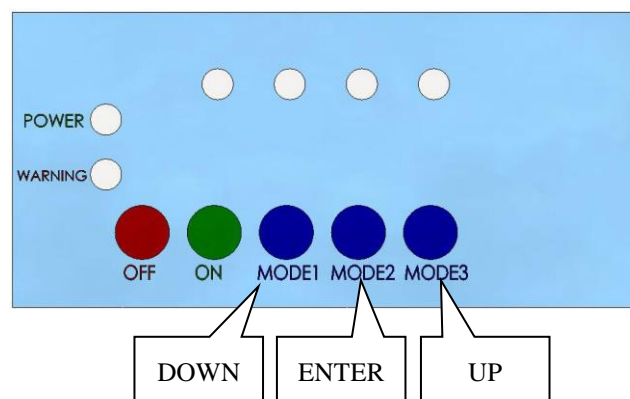
b. Power on by pushing ON button, then the six LED indicators are all light on. (Please keep Pushing 3 buttons mentioned above) ◦



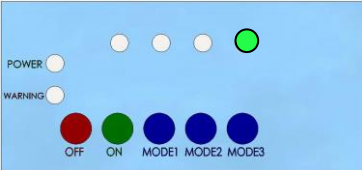
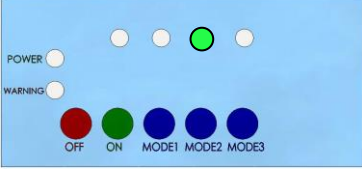
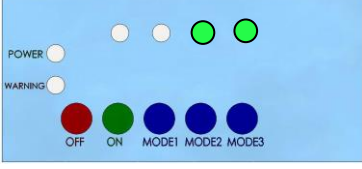
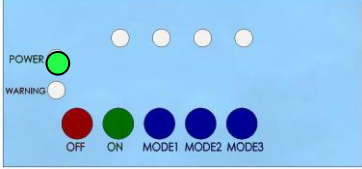
c. Release all buttons , the LED indicator show the default setting ◦ (No Power light up at this moment)



d. MODE1 = DOWN 、 MODE2 = ENTER 、 MODE3 = UP ◦



e. Push MODE button to select UP & DOWN as below :

Program No.	LED Light Display	Setting Condition
Program 1		ON : Continuous Misting MODE 1 : Mist : 50 seconds / Stop : 15 Seconds MODE 2 : Mist : 50 seconds / Stop : 30 Seconds MODE 3 : Mist : 50 seconds / Stop : 50 Seconds
Program 2		ON : Continuous Misting MODE 1 : Mist : 15 seconds / Stop : 20 Seconds MODE 2 : Mist : 25 seconds / Stop : 30 Seconds MODE 3 : Mist : 40 seconds / Stop : 40 Seconds
Program 3		ON : Continuous Misting and stop after 2 minutes MODE 1 : Mist : 15 seconds / Stop : 20 Seconds MODE 2 : Mist : 25 seconds / Stop : 30 Seconds MODE 3 : Mist : 40 seconds / Stop : 40 Seconds
Program 4~15		Reserve
Finish		After select the specific MODE, push ENTER (button of MODE 2) 3seconds until all LED indicators light out. The new program has been set up. When POWER lights on, the machine start misting.

## F. TROUBLESHOOTING

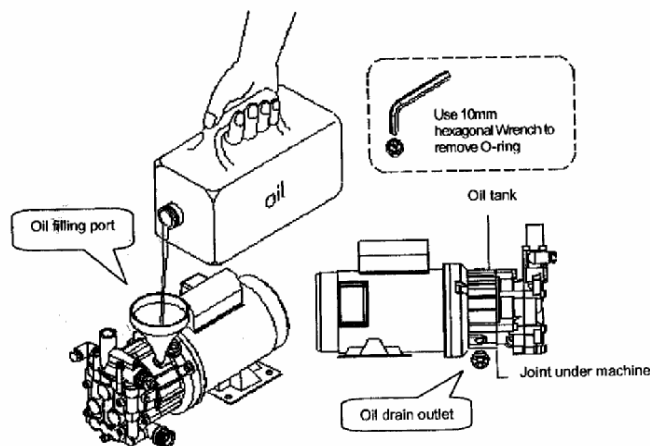
FAULT	CAUSE	REMEDY
No mist come out of nozzle	<ul style="list-style-type: none"> <li>• The misting nozzle get blocked.</li> <li>• Air exist in the pipe line.</li> <li>• Air get into the pump.</li> <li>• The valves worn out or the pump is clogged with rubbish</li> <li>• Misting nozzle worn out.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the nozzle. If it doesn't work, change the nozzle.</li> <li>• Let go the air.</li> <li>• Tighten all joints connected to the water inlet.</li> <li>• Check or change the O-ring of all joints if necessary.</li> <li>• Change or clean the valves, then reset the pump.</li> <li>• Change misting nozzle.</li> </ul>
The pump is fail to absorb water	<ul style="list-style-type: none"> <li>• No water supply</li> <li>• The valves worn out or the pump is clogged with rubbish.</li> <li>• Air get into the pump.</li> <li>• The water filters is blocked.</li> <li>• The seals or packings inside the pump worn out.</li> </ul>	<ul style="list-style-type: none"> <li>• Turn on the water faucet.</li> <li>• Change or clean the valves, then reset the pump.</li> <li>• Tighten all joints connected to the water inlet.</li> <li>• Check or change the O-ring of all joints if necessary.</li> <li>• Clean the water filters.</li> <li>• Replace the worn out seals or packings.</li> </ul>
Unstable output pressure	<ul style="list-style-type: none"> <li>• The pump's regulator worn out or get stuck.</li> <li>• The pump's valves worn out.</li> <li>• The seals or packings inside the pump worn out</li> </ul>	<ul style="list-style-type: none"> <li>• Dismantle the regulator, clean and/or change related parts if necessary.</li> <li>• Change valves.</li> <li>• Replace the worn out seals or packings.</li> </ul>
Abnormal noise or vibration	<ul style="list-style-type: none"> <li>• The lubrication ability from oil is insufficient.</li> <li>• Water pipe and nozzle circuit get blocked.</li> <li>• Water supply (include inlet pressure) is abnormal.</li> </ul>	<ul style="list-style-type: none"> <li>• Add or change oil.</li> <li>• Clean or change nozzle and/or water pipes.</li> <li>• Check water supply line, clean or reset it.</li> </ul>
Oil or water leaks	<ul style="list-style-type: none"> <li>• The seals or packings inside the pump worn out or are damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the worn out or damaged seals or packings.</li> </ul>
Motor cannot run	<ul style="list-style-type: none"> <li>• The voltage of the power supply is not stable.</li> <li>• The wire extend too long, and cause voltage and current drop.</li> <li>• The built-in thermos switch activates to protect the motor.</li> <li>• The setting of the control panel restrains the motor.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply a constant voltage regulator and/or shorten the extension of the power cable.</li> <li>• Check the operating pressure is within a proper range.</li> <li>• Run the machine in a ventilation space.</li> <li>• Refer back to the manual and check all setting are correct.</li> </ul>

## G. MAINTENANCE

**Shut down the power supply before conduct maintenance or repair.**

### 1. Pump Maintenance :

- Disconnect power first to prevent electric shock.
- Oil must be changed after first 50-hour operation, and then be changed every 90 days or 250-300 hour running.
- Use monograde oil R68 or equivalent. The oil capacity is around 150 c.c.
- Be sure to check area near vent hole, and ensure that there is no oil leakage at the bottom.



### 2. Inspection of electrical device

- Check if there is any loose of electrical wiring, plug, terminals, and other parts.
- Do not splash water to electromagnetic switch, motor, plug and etc. Keep the machine dry and check insulation resistance.
- When the motor is hygroscopic, check over the value of insulation resistance. The motor is required  $1M\Omega$  or more for 1 minute at  $40^{\circ}\text{C}$  while motor is at 500 VDC.
- Lower the continuous rated current at low condition when motor is loaded. If at high current, install pressure gauge to the water outlet and lower the pressure to the indicated range.

### 3. Inspection of pipe accessories : Check carefully if there is any leaking, damage, and wear for pressure hoses, suction hoses, electric wires, nozzles, overflow hoses, and etc. If something is wrong, please immediately contact the supplier for repair or replacement part.

### 4. Sintered Filter Cleaning

- The filters should be checked frequently and replaced if needed.
- The filter's life depends on the water source. If the filter is dirty, replace immediately. This dirty condition will restrict water flow to the pump and may damage the system.



- We seriously suggest changing the first cartridge at least every three months and the second one every six months.
- When there is no misting or after 200-hour running, please clean the sintered filter.

#### 5. **Pump Component Replacement**

- All repair or replacement of components must be completed by supplier's technician or a qualified technician.
- Contact our Customer Service Department for more information.

### **⚠ CAUTION**

For initial operation after a long duration of non-use, it is necessary to flush the system completely. Remove the nozzles. Then power up the machine and allow water to flow through the piping system for a few seconds. After flushing the system, reinstall the nozzles.

## H. PERIODIC INSPECTION ITEMS

Items	Period				
	Before operation	50h	100h	200h	300h
<b>Main Machine Structure</b>					
Inspection of each clamping	◆				
Water Leak check	◆				
Oil leak check	◆				
Abnormal sound and vibration inspection	◆				
Inspection of damage, deformation on base & cover	◆				
Broken and dirt with important label	◆				
<b>High Pressure Hose</b>					
Check the water hoses and packings	◆				
Check and clean water filter	◆				
Check high pressure hose, quick coupling and all seals	◆				
Check the all the high pressure hoses between the water tank and the pump	◆				
<b>Electric Wire</b>					
Check if any damage on the outside of the wire	◆				
Check if there is any wire loose	◆				
<b>High pressure Pump</b>					
Check and clean the unloader valve			◆		
Check oil	◆				
Change oil		◆ (only for the first time)			◆
Check evacuation valve					◆●
Change the sintered filter				◆	
Check the oil seals					◆●
Check the Plungers					◆●
<b>Motor</b>					
Check the isolation on the motor					◆●

- All the Power of the machine must be turn off before any checking.
- Above mentioned time is refers to general standard inspection not the durable time.
- According to the different exploitation conditions, there is a possibility of checking ahead of time period.
- The mark of ● inspecting item needs specialized technology and the specialized tool, please kindly contact the store you brought from.

## J. WARRANTY

These misting products are warranted for one full year from date of shipment to the purchaser to be free from any defect in materials and workmanship. This warranty does not cover damages from abuse, failure to properly install, operate or maintain the product in accordance with the printed materials provided.

### Listed below are Not Covered by Warranty

- Any modifications or intervention which are not authorized by the manufacturer.
- Use contrary to specific normative in force.
- Use of pump different from those indicated in this manual and/or lack of regular maintenance.
- Result from the malfunction or improper use of customer due to force majeure caused by the incident.
- Any parts or labor to repair or adjust any system that the customer has installed themselves or by a third party other than an authorized installer.
- Use of non-original or not specified parts for the pump
- The damages caused by natural disasters, faulty usages or consumable purposes.
- Control panel digital process controllers, sensors, or transmitters that have been adjusted outside normal operating parameters
- Minor maintenance problems, i.e. leaking pipe or tube fittings, adjustments to nozzle spray patterns, system adjustments
- Clogged nozzle replacement due to minerals or contaminates in the customer's water supply.
- Filter, pipe, connector, joint, seal & valve kits for pumps.
- Pump crankcase oil or other lubricants.
- Relocating system components after installation has been completed and signed for by customer.

This warranty does not cover repair or replacement of any item that should be replaced or maintained under normal operating and maintenance practices within the stated warranty period of one year.



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