

DIGI COOL Systemic Misting Machine Operation Manual







Directory

1. GE	NERAL INFORMATION	1
2. Spe	ecification	2
2.1	Dimensions	3
2.2	Identifying the Components	3
2.3	Part drawing	4
2.4	Part list	5
3. Qu	ick set-up	
3.1	Installation	
3.2	A Framework Diagram of Digi cool	7
4. Op	eration Instruction	8
4.1	DANGER	8
	WARNING	
	CAUTION	
5. Op	eration	10
	Introduction of the control panel	
5.2	Operation Method	10
	Store	
6. Tro	ouble Shooting	12
7. Ma	intenance	13
7.1	Periodic Check and Inspection	13
7.2	The Procedure for Oil Change	14
7.3	The time to change oil and attention	18
7.4	Oil Changing Interval (hours or months)	20
7.5	Oil Selection	21
8. Wa	nrranty	23

1. 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

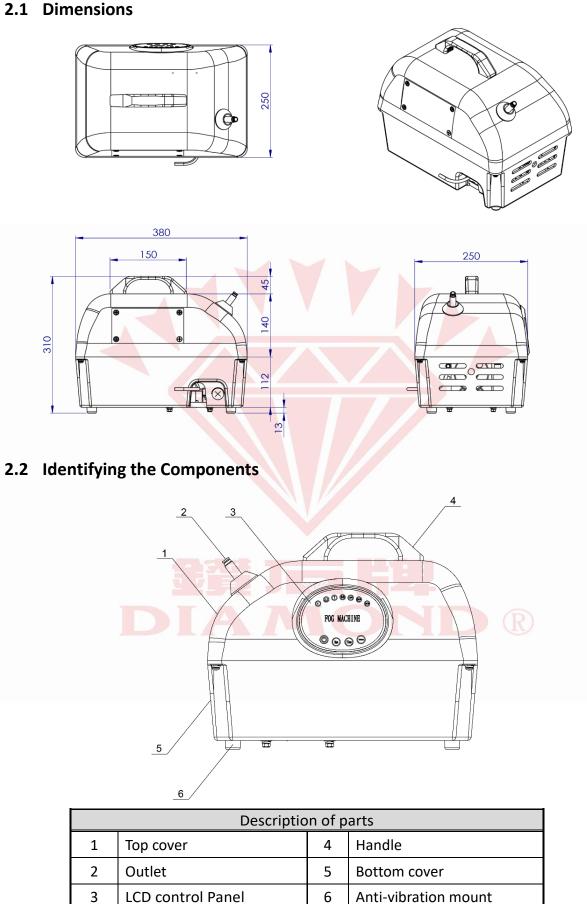
2. Specification

	DIGI Cool
Model	DIGI Cool
Max. operating pressure	725 psi / 50 bar
Flow rate	 1450 RPM 12V DC 150W 0.5 L/min ≒ 6 PCs (0.15mm nozzle)
Motor	12V DC 150W
Adapter	Input : 110-240 V~2.0A MAX, 50~60Hz Output : 12V 12A
DIMENSIONS	L×W×H : 415×315×345 mm
Weight	8.2 kg
Standard Components	 Electric Solenoid Valve, Inlet Electric Solenoid Valve, Outlet LCD Control Panel Drought Switch Sensor
Optional Accessories	 External Control Box (5m, 15m, 20m) LCD panel Protector
Power cable	 3φ (PSE)300V,VCT 3.5mm×4C×3.5m 1φ (PSE)300V,VCT 3.5mm×4C×3.5m
Functions	 Automatic Power-off With Drought Switch Automatic Power-off When Motor Overload Temperature & Humidity Surveillance Total Running Time Recorder 300 hours Maintenance Reminder Regulator with Internal By-pass design Mode 1 : Continuous misting Mode 2 : 3 sec. Misting / 10 sec. Stop Mode 3 : 10 sec. Misting / 10 sec. Stop Mode 4 : 20 sec. Misting / 10 sec. Stop
REMARK	DANGER Forbidden to use outside the house on rainy days Strongly recommended to add water pressure motor

SPECIFICATION

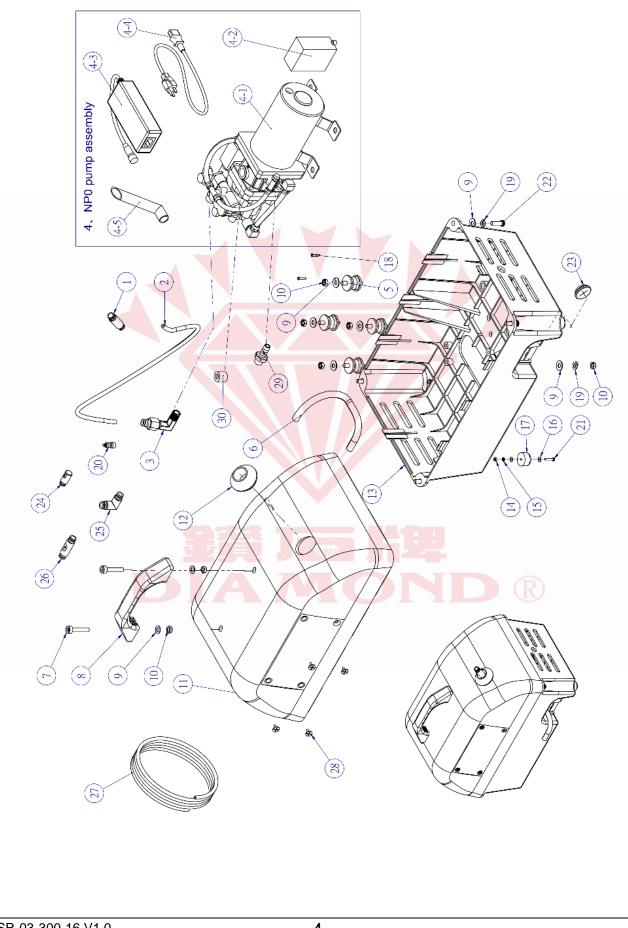
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2.1 Dimensions



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2.3 Part drawing



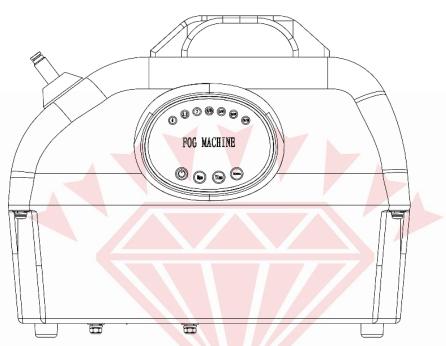
2.4 Part list

Pos.	Parts NO.	Parts Name	Quantity
1	06-05-4023	Slip lock connector	1
2	10-02-4021	Nylon pipe	1
3		Push-in fitting	1
4		NPO pump assembly	1
4-1		NP0 pump	1
4-2		Adapter	1
4-3		Transformer	1
4-4		Power cable	1
4-5		Vent Pipe	1
5	018-7000-001	Anti-vibration mount	4
6		Hose	1
7	06-01-0509	Bolt	2
8	05-11-0037	Handle	1
9 <	145-0104-002	Washer	14
10	146-0600-001	Nut	10
11		Up cover	1
12	11-10-0002 Rubber bushing		1
13	03-02-0002	Base cover	1
14	146-0300-001	Nut	4
15	144-0300-001	Spring washer	4
16	145-0300-001	Washer	8
17	06-10-1002	Anti-vibration mount	4
18		Screw	2
19	144-0104-002	Spring washer	8
20	06-13-0008	Nozzle	10
21	142-0300-002	Screw	2) 4
22	142-0600-004	Screw	4
24	06-05-4027	Slip lock end	1
25	06-05-4102	L type slip lock	4
26	06-05-0421	Slip lock connector	9
27	10-02-4021	Nylon pipe	1
28		Screw	4
29	059-C187-002	Joint	1
30		Headless hexagon socket head	1

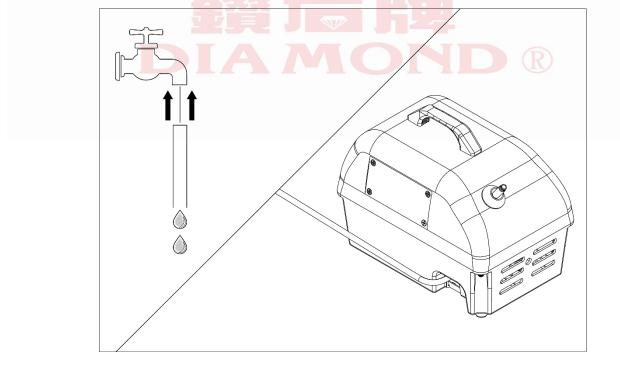
3. Quick set-up

3.1 Installation

- 3.1.1 Unpack the machine
 - 3.1.1.1 Remove the Digi Cool II from the box, and verify all accessories present.
 - 3.1.1.2 Check the machine to see if there is any damage.

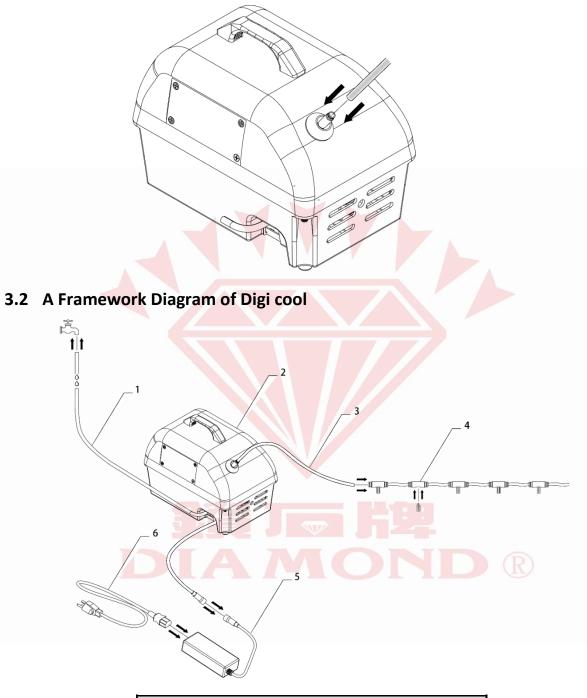


- 3.1.2 Install the water supply line
 - 3.1.2.1 Connect the water hose to the push-to-connect fitting securely.
 - 3.1.2.2 Connect the hose to a faucet.



3.1.3 Connect the outlet

Connect the nylon pipe to the Slip lock connector.



1	A Framework Diagram of Misting System		
1	Water supply hose		
2	Digi-cool misting machine		
3	Nylon pipe (output)		
4	Nozzle circuit		
5	Transformer		
6	Power cable		

4. Operation Instruction



It indicates that an unfair use can cause possible death or sustain serious injury.

It indicates that an unfair use may highly cause possible death or sustain serious injury.



It indicates that an unfair use may highly wound the user and/or damage the product, also is possible to bring out an unpredictable event.

4.1 DANGER

- 4.1.1 This machine is forbidden to be used in rainy day.
- 4.1.2 Only professional engineer or worker are allowed to operate this machine. Children and adults who are not well-trained are forbidden to operate the machine.
- 4.1.3 Power source shall be equipped with residual current circuit breaker so no one would get an electric shock.
- 4.1.4 Do not touch or try to move the machine when operator's hands get wet, take off his/her shoes or find any fail electric insulation.
- 4.1.5 Mount the machine on cement pavers or other solid, flat surface that provide a firm, level supporting. Keep the machine and its surrounding dry and away from fire, so no electric short circuit and fire will occur.er shoes or find any fail electric insulation.
- 4.1.6 In order to avoid any possible damage and risk, do not operate the machine before study this operating manual carefully.

4.2 WARNING

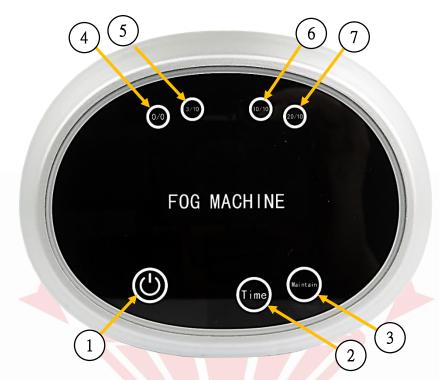
- 4.2.1 In order to operate the machine safely, the manufacturer suggests to add one discharge unloader at the end of nozzle circuit. This device will avoid the possible damage to the system and hurt to people when sudden pressure rise occur.
- **4.2.2** During operating the machine, do not open the cover and touch either the motor or the pump. A possible risk may occur when touch those running parts.
- 4.2.3 Before running the machine, check whether wires, plug, and hoses are connect well and firmly.

4.3 CAUTION

- 4.3.1 Do not operate the machine under 0 degrees Celsius, unless anti-freezing agent is applied.
- **4.3.2** Before starting the machine, please check whether lubrication oil inside the pump is sufficient or not.
- 4.3.3 Apply only the power source with correct electrical voltage (V), frequency (Hz) and adequate current volume according to machine's specification.
- 4.3.4 Do not set up the operating pressure of the pump over 1000 psi (70kgf/ cm²).
- 4.3.5 Do not run the machine when there is inadequate water come in through inlet port. Insufficient water supply will damage the components inside the pump and shorten the life of the machine seriously.
- 4.3.6 The water supply hose must be more than 8mm in diameter.
- 4.3.7 The power cable shall not be longer than 10m, and all extension cable must be bigger than 1.25mm in diameter.
- 4.3.8 Verify the flow rate for water supply not less than 4 L/min. The water pressure at inlet port shall be higher than 3 bar (may come from pressurized pipe water).
- 4.3.9 Water temperature shall not exceed 60°C, and must be well-filtered. Suitable water can help to extend the life span of whole misting system.
- 4.3.10 Before use, check whether the lubrication oil in the pump has deteriorated, and whether all the water inlet pipes, outlet pipes and joints in the circuit are locked firmly.
- 4.3.11 The number of nozzles for the best mist effect recommended for this model will vary depending on the pump flow rate used. When the number of nozzles used is too small, it will lead to overpressure use, if too many nozzles are used, the pressure will drop and the atomization effect will be poor. Please refer to the catalog specification for details.
- 4.3.12 A cock installed in the end of misting system is recommended. It will help the system to let go the air inside the pipe when start the machine and reach set pressure as soon as possible. Once the air inside the system is gone, close the cock.
- 4.3.13 When misting, check all nozzles and ensure none are blocked. If blocked, clean or change it.
- 4.3.14 When misting, check all pipes and connectors without leaks. If there is leak, reinstall the connector or change the fail one.
- 4.3.15 For storage in winter, please dry run the machine few seconds. It will help to drain out all water inside the inlet and outlet pipes. Remove the high pressure hose before store this machine.

5. Operation

5.1 Introduction of the control panel



NO.	Description		
1	ON/OFF	Power switch	
2	TIME	Switch time mode	
3	MAINTAIN	Anomaly detection	
4	MODE 1	Continuous misting	
5	MODE 2	Misting: 3 sec. / Stop: 10 sec.	
6	MODE 3	Misting: 10 sec. / Stop: 10 sec.	
7	MODE 4	Misting: 20 sec. / Stop: 10 sec.	

5.2 Operation Method

- 5.2.1 Continuous Misting:
 - Press ON/OFF button to start operation.
 - The machine keeps continuous operation unless press ON/OFF button.
- 5.2.2 Intermittent Misting:
 - Repeated run and stop; in a certain period of time.
 - Press Time button to choose the misting mode, the machine will start intermittent misting.

- Open evacuation valve in counterclockwise direction and press ON/OFF button. There is water flowering from evacuation valve after the motor being generated. The nozzle will have fog out. If only less fog, please follow the above steps again.
- After a long period of unused, please follow the above steps to let impurities within the piping system to be washed away.
- Do not adjust the operating pressure over appointed range 725psi (50kgf/m²).

5.2.3 Drought switch protection

- When the water tank is empty, the motor will stop. At this time, the blue indicator light will flash repeatedly.
- The circuit will stop after pressing the ON/OFF button. Then refill water from inlet.
- After finishing water refilling, press the ON/OFF button again and the fan will resume the operation.

5.3 Store

- 5.3.1 Press ON/OFF button, then the machine will shut down.
- 5.3.2 When it may cause water freeze in storage place, please follow the steps below to drain water from pump.
 - a. Please drain off the water and remove the 2 terminals of float switch. Keep the terminals away from the metal parts of the machine.
 - b. It will start to drain the water after pressing ON/OFF button. If water cannot be drained off from the unit, please press ON/OFF button to protect the pump from running without water.
 - c. Assemble the terminals.

- If the machine is loaded on a moving vehicle, please remove the fan and extension tube because wind pressure may cause the fan blade damage.
- When the machine is not in use, please keep it indoors.
- If exposed to rain, please stop the machine and remove plug to avoid electric shock or leakage.
- Take care when taking apart the pressure hose, water pipe and filter because there may be still pressure (5kgf/cm²) inside. The water inside the system may spray out.
- 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.

6. Trouble Shooting

FAULT	CAUSE	REMEDY
No mist come out of nozzle	 The misting nozzle get blocked. Air exist in the pipe line. Air get into the pump. The valves worn out or the pump is clogged with rubbish. Misting nozzle worn out. 	 Clean the nozzle. If it doesn't work, change the nozzle. Let go the air. Tighten all joints connected to the water inlet. Check or change the O-ring of all joints if necessary. Change or clean the valves, then reset the pump. Change misting nozzle.
The pump is fail to absorb water	 No water supply The valves worn out or the pump is clogged with rubbish. Air get into the pump. The water filters is blocked. The seals or packings inside the pump worn out. 	 Turn on the water faucet. Change or clean the valves, then reset the pump. Tighten all joints connected to the water inlet. Check or change the O-ring of all joints if necessary. Clean the water filters. Replace the worn out seals or packings.
Unstable output pressure	 The pump's regulator worn out or get stuck. The pump's valves worn out. The seals or packings inside the pump worn out 	 Dismantle the regulator, clean and/or change related parts if necessary. Change valves. Replace the worn out seals or packings.
Abnormal noise or vibration	 The lubrication ability from oil is insufficient. Water pipe and nozzle circuit get blocked. Water supply (include inlet pressure) is abnormal. 	 Add or change oil. Clean or change nozzle and/or water pipes. Check water supply line, clean or reset it.
Oil or water leaks Abnormal	The seals or packings inside the pump worn out or are damaged.	 Replace the worn out or damaged seals or packings. Change the control panel or contact the
control panel Motor cannot run	 Control panel damaged. The voltage of the power supply is not stable. The wire extend too long, and cause voltage and current drop. The built-in thermos switch activates to protect the motor. 	 local distributor. Apply a constant voltage regulator and/or shorten the extension of the power cable. Check the operating pressure is within a proper range. Run the machine in a ventilation space.
	 The setting of the control panel restrains the motor. 	 Refer back to the manual and check all setting are correct.

7. Maintenance

7.1 Periodic Check and Inspection

	Period				
Items	Before operation	50hr	100hr	200hr	300hr
Main	Machine St	ructure			
Check All Components Tightened	•				•
Check Water Line without Leakage	•				•
Check Pump Oil without leakage	•				•
Abnormal Sound and Vibration Check	•				•
Frame and Cover Damage Inspection	•				•
Important & Safe label Check 🔪 📉	•				•
	Hose/Pipe	2			
Check Connectors and Hoses Damage or Loosen	•			•	
Check and Clean Inlet Water Filter				•	
Check Nozzle Leaking or Blocked	•			•	
	Electric Wi	re			
Check Power Circuit Damage or not	•			•	
Check Electric Cord Loosen or not	•			•	
A	ccessory h	ose	r	1	
Check and clean the Pressure Regulators					•
Check Oil Quantity	•		•		
Change Oil Quality		(Only for the first time)			•
Check pressure Relief Val <mark>ve</mark>					•
Change the Oil S <mark>eal</mark>					•
Check the Plunger					•
	Motor				
Check the Isolation on the Motor					•

Before doing check, make sure that power has been off.



The mark of means that the item have to use professional skill and tools to measure.



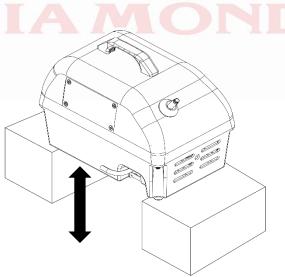
- The interval mentioned above does not means to the time of durability.
- The checking list is only for reference, actual change time should be judged by frequency of use.

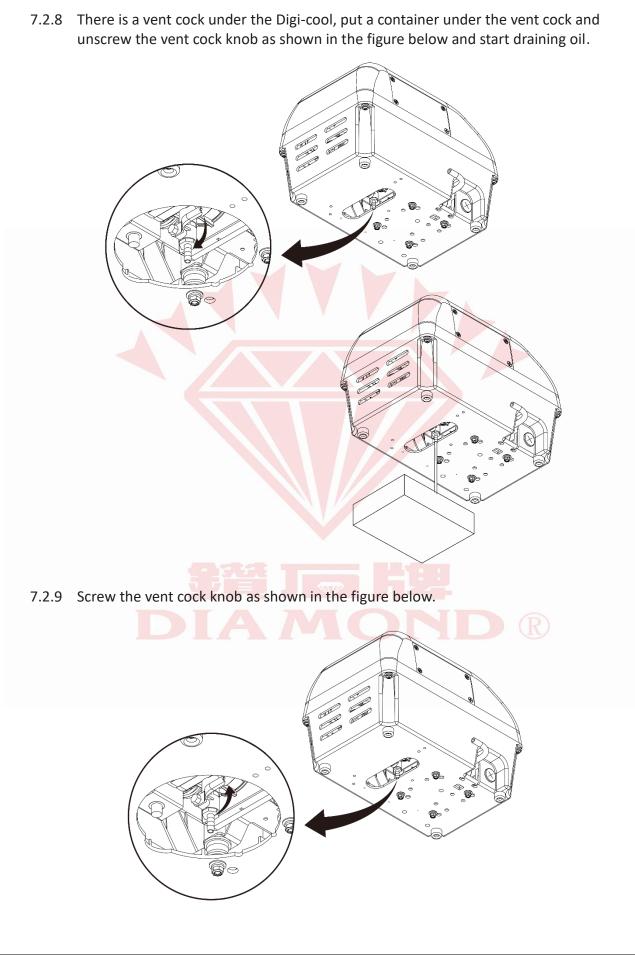
7.2 The Procedure for Oil Change



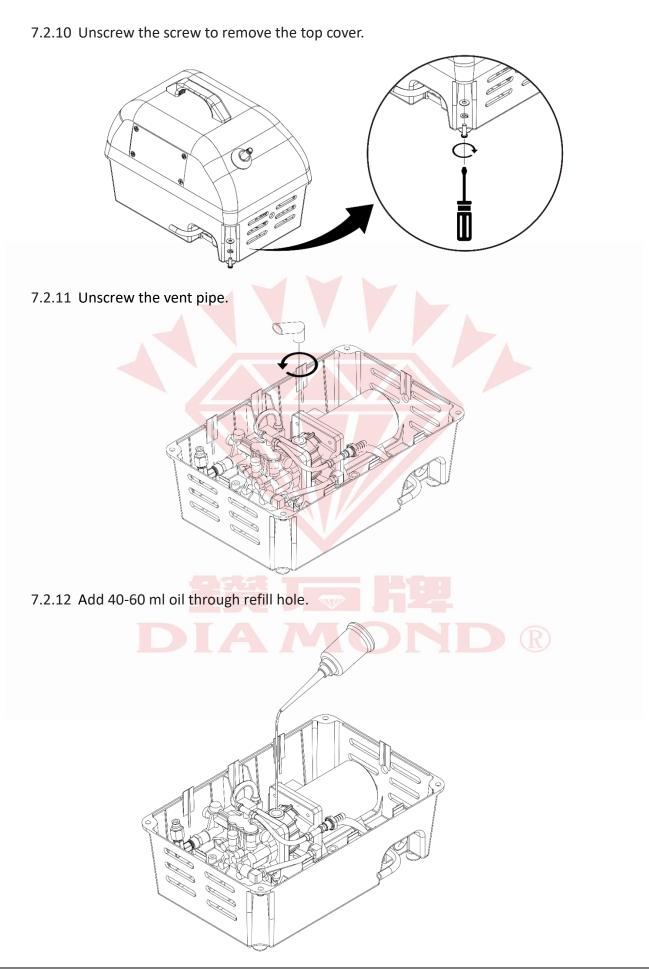
In order to avoid any possibility of getting electric shock, please power off the machine before doing any maintenance or inspection.

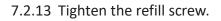
- Without regular maintenance and failure to change the oil regularly or replace the oil that does not meet the requirements, will cause damage to the machine parts or shorten the service life.
 - When changing the engine oil, please make sure to remove the old oil, otherwise too much old oil will be mixed, which may affect the quality of the new oil or deteriorate.
 - Please make sure change the oil when the engine is cold, and the pump must be kept in a horizontal. The angle of inclination should not exceed 5° in all directions to avoid oil expansion and misjudgment of oil level.
- 7.2.1 Open the discharge cock at the end of the nozzle circuit, and clean the whole pipe system.
- 7.2.2 Remove the water supply hose and high pressure misting hose, then wipe all components.
- 7.2.3 Check the bottom of the machine to see if there is any leakage of oil from pump body.
- 7.2.4 Check the oil inside the pump. If the oil quantity is inadequate, refill it. If the quality of oil is not good (oil shows white color or too dirty and/or viscos), Change it.
- 7.2.5 Oil must be changed after first 50 hour operation, and then be changed every 250-300 hour running. Use gear oil VG68 or equivalent. The oil capacity is around 60 ml (ISO VG68 \ VG 100 or SAE GEAR 80W90).
- 7.2.6 Disconnect power first to prevent electric shock.
- 7.2.7 Place items on both sides under the Digi-cool to raise the body in order to facilitate drain oil.

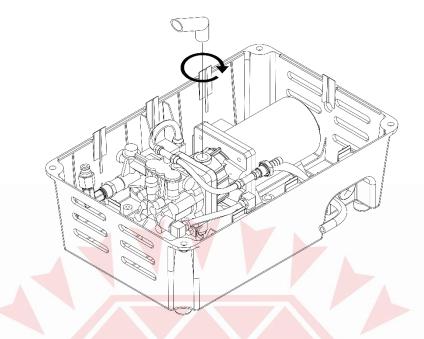




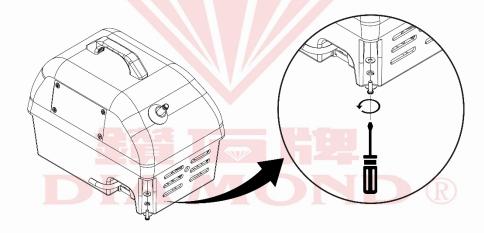
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7.2.14 Tighten the screws of the upper cover to lock the top cover back.



7.2.15 After maintenance, Please recheck all bolts, screws and connectors are all tighten and fixed firmly.

• If the screws are not locked properly, it will cause damage to the machine parts or shorten the service life of the product.

Maintenance

Question	Reason	Method
	 For changing the oil, it should follow the regulation of using hour or regular interval. Overdue or expired will cause components damage because of lack of lubricity. 	 Change oil regularly or whichever occurs first. (see Chapter 7.4)
The effect of oil selection, time of change and working environment on machine.	 1. Using improper or inferior quality oil (e.g. recycle oil) cannot achieve proper lubricant function and components protection. 2. If used oil is not drained completely whenever changing oil, the left impurities of used oil will be dissolved in new oil. That will accelerate the oil deterioration. 3. Please do not mix up with different group oil because their chemical composition and additives are different. Mixed oil could cause deterioration. 4. Please avoid using PAG oil. a. Most common rubber and plastics are closed to polarity that will be affected by PAG, led to swell or shrinkage. b. The paint will be eroded and then peeled off by PAG oil. c. Light metals (e.g. Aluminum alloy) will be eroded or cracked by PAG under the effect of stress. d. PAG oil is hydrophilic; thus, water cannot be filtered out by filtering system. 	 1.1 Please choose good quality oil sold from us or other qualified brands. Please avoid using inferior oil such as recycled oil. 2.1 Whenever the time of changing oil, please ensure the used one is as drained as possible for the quality of new oil. 3.1 For replacing oil with different group oil, the used one needs to be drained completely and then washing the oil tank with replaced oil before refill it. 4.1 Please avoid using PAG oil.

7.3 The time to change oil and attention

Question	Reason	Method
	 The interval between the highest and the lowest temperature will directly affect the liquidity and lubricity of oil. 	• 1.1 Please select the oil with adequate viscosity according to workplace environment in order to have best lubricity and protection. (see Chapter 7.5)
	2. Under wretched work environment (e.g. heat, stuffy, directly exposed under sunlight or rain, dusty, high humidity, bad air quality), the selection of oil and time of changing oil will directly affect the maintenance and lubricity of the machine.	 2.1 The time of changing oil is based on regular operation. Operator should consider the affection of workplace, temperature and humidity for increasing or decreasing the interval of changing oil, and should also shorten the interval, depending on the condition of the liquidity, impurity, odor and deterioration.
The effect of oil selection, time of change and working environment on machine.	 If the operator uses the machine under constant overpressure, it will lead to losing of oil lubricity rapidly. 	 1.1 If operational condition is strict such as operation in constant overpressure, then the interval of changing oil should be shortened. * The performance of machine is limited. Overpressure operation will lead to component damage and then reduce life of machine.
	2. If the machine is left unused for long time or only used rarely. It will lead to oil deterioration by oxidation, or even cause internal components rusted.	 Please follow the instructions of pressure specification for the sake of long- term use. 2.1 Please change the oil regularly when the machine remains unused for long time. 2.2 If the machine needs to be
		 used after long-term unused status, please check the internal components and also change oil. 2.3 If the components are rusty, please do not use it and return it to the manufacturer.

7.4 Oil Changing Interval (hours or months)

Oil Type Interval Frequency	Above ISO VG68 Mineral base	Above ISO VG68 Semi synthetic base	Above ISO VG68 synthetic base	Remark
First time use	50 hr. or 1 month	50 hr. or 1 month	50 hr. or 1 month	• First time use is for component running in period result in scraps. It is important to change oil.
Monthly average 8 hr. /days above	500 hr. or 2 months	600 hr. or 2.5 months	700 hr. or 3 months	 For reference only. The affection of workplace and environmental elements also should be considered.
Monthly average 2 hr. /days above	300 hr. or 1.5months	400 hr. or 2 months	500 hr. or 2.5 months	• For reference only. The affection of workplace and environmental elements also should be considered.
Monthly average 8 hr. /days below or only use occasionally	100 hr. or 1 month	200 hr. or 1.5 months	300 hr. or 2months	 For reference only. The affection of workplace and environmental elements should be considered.
	J i DI/	授 丁 、 不 、 不 、	i 片理 ON	• If the machine is left unused for long time. It will lead to oil deterioration by oxidation, or even causes internal components rusted.
Left unused for long time	Once every 2 months	Once every 3 months	Once every 4 months	 If the machine needs to be used after long-term unused status, please check the internal components and change the oil. If the internal components are rusty, please do not use it and then return to the manufacturer.

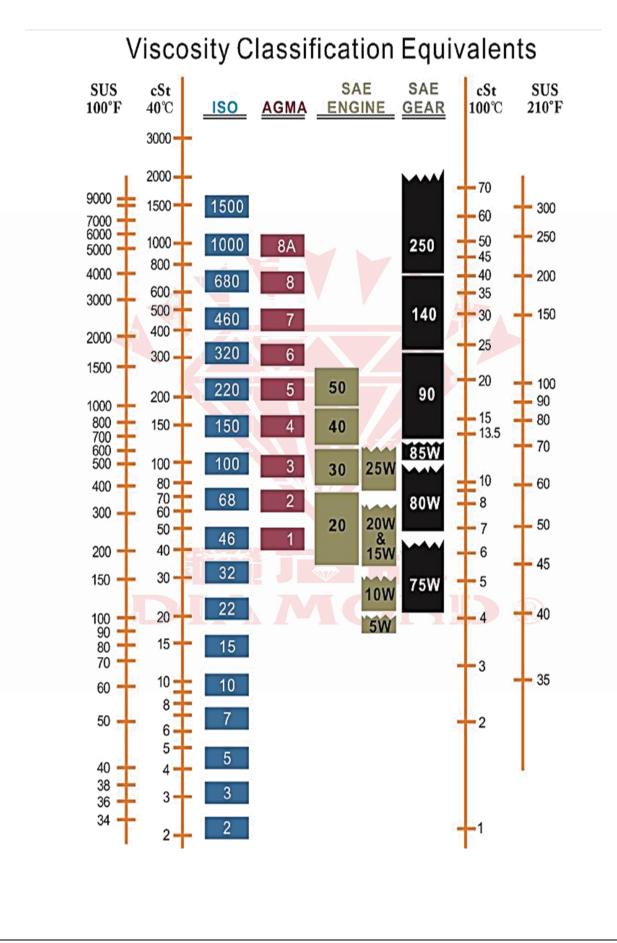
Maintenance

7.5 Oil Selection

Please select the oil with adequate viscosity according to workplace environment in order to have best lubricity and protection.



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Maintenance

8. Warranty

Please read the Operating manual carefully before use.

8.1 Warranty content : If the original parts that constitute the product are not suitable in terms of materials and manufacturing, please apply for warranty in accordance with the period and conditions indicated in this manual.

Warranty is based on the exchange or repair of parts, and the unsuitable parts removed will be owned by Tanong Precision Technology Co., Ltd.

- 8.2 Warranty period : The warranty period is within one year from the delivery date.
- 8.3 Listed below is void of the warranty :
 - Modifications and changes that our company does not recognize.
 - Exceed the usage limit indicated by our company.
 - Failure to regularly inspect or fail to comply with prohibited matters or storage methods.
 - The machine is repaired by untrained or unauthorized personnel when it is break down.
 - Use non-original parts and other brand oils (lubricating oil) other than the original oil.
 - Damage caused by natural phenomena such as natural rust caused by time changes and natural disasters such as earthquakes.
 - Additional costs incurred due to the unsuccessful use of the machine (such as: losses caused by closure, costs of renting other machines and operating losses, etc.)
 - There is no effect on the function, and the abnormality is judged based on the feeling alone (sound, vibration and slight scratches on appearance, etc.)
 - The cause of the machine failure is because user didn't used according to our "Operation Manual".
 - Filters, nozzles, pressure, high pressure pipes, oil seals and other related consumables.

- When requesting warranty, be sure to show this warranty, otherwise, the warranty repair will not be provided.
- When the machine is placed in an environment containing asbestos, dangerous dust, or in an environment where radiation may explode, these environments may cause health hazards to repairers, so warranty repairs cannot be accepted in these dangerous environments.

diamÿnd				
Quality Assurance Certificate				
Name : Systemic Misting Machine				
Model : DIGI COOL				
Serial Number :				
Date of purchase : Date Month Year				
1. This product is made through strict quality management and inspection process.				
2. When there is an abnormality in this product, free after-sales service can be obtained within 1 year after installation.				
 Even if the quality guarantee period is not exceeded, the following items will still be charged for the service (repair fee + parts fee + travel fee, etc.) 				
• Failure caused by improper maintenance and repair.				
Natural disasters (fire, flood and others).				
• Failure or damage caused by falling, etc. after installation.				
• The life of the part itself is exhausted (filter, etc.)				
 Unspecified matters, as stated in the warranty terms. 				
4. This warranty must be presented when repairs are required.				
Service Application				
 Before contacting, please reconfirm the usage method in the instruction manual and the inspection items at the time of failure. 				
2. If the abnormality still exists after confirmation, please stop using it and consult the sales office or the company.				
產品合格章:				

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No.6,Feng Ming Rd., Ta-ya Dist., Taichung,Taiwan R.O.C.42872 TEL: +886-4-25662106 FAX: +886-4-25662109 E-mail: Info@tanong.com.tw http://www.tanong.com.tw

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