

NanoTech UV-C Ozone Disinfection System



User's Quick guide

Mod. *NT-UV87-TO*



Dear Client:

Thanks for choosing this Nano Tech UV Ozone disinfection system.

On the next [Index page](#), you will find the main information about this equipment by pressing on each section.

At the end of this Quick guide, there is a URL Link to the whole manual for additional info.

We also invite you to visit our website:

www.emauxgroup.com

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1. Safety warnings



This system must be connected only to a supply circuit that is protected by a Ground Fault Circuit Interrupter (GFCI), otherwise could result in electrical shock causing serious bodily injuries, including death.

- Disconnect all power supplies during installation.
- Do not operate the ultraviolet system if the power supply lead is damaged.
- Replace damaged cords immediately.
- To avoid possible electrical shock, special care should be taken keeping all connections dry and off the ground. Do not touch the plug with wet hands.
- For each of the following situations, do not attempt to repair the appliance on your own; return it to an authorized service facility for revision:
 - If the appliance falls into the water, DO NOT reach for it. First unplug it and then retrieve it.
 - If electrical components of the appliance get wet, unplug the appliance immediately.
 - Do not operate this UV-C system if the cord or plug is damaged, if it is not operating properly after a fall or otherwise caused damage.

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- Never look at the UV lamp directly while it is operating, as it may cause eye injury, burns, or even blindness.
- Lamps and quartz sleeves are extremely delicate. Care should be taken when handling or replacing these components:
 - Wear cotton gloves when handling lamps or sleeves.
 - Hold bulbs by the ends only and never touch the glass with bare hands, since it would leave dirt which would reduce its working life.
 - If any fingerprint is left, clean it with alcohol.
- Allow the ultraviolet lamps to cool before handling.
- Special safety must be taken into consideration for the model Nano-Tech UV-C Ozone NT-UV87-TO:
 - The UV lamp generates ozone that emits a strong odour, even in very small quantities, and can be harmful for eyes, nose and skin.
 - Check the system for any leakage. A proper installation and the correct position of the sealing rings are of crucial importance.

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2. Main features

Model	NT-UV87-TO
Power Supply	230V, 50 – 60Hz
Max. Flowrate	25 m ³ /h
Input power	87 W
Lamp model	GHO36T5VH
Maximum Working Pressure	3 bar
Inlet/ Outlet	1 ½" / 2" BSP
Radiation dose at recommended flow rate	30 mJ/cm ²
UV and Ozone Lamp Lifetime	10000 hours
IP Protection	IP 54
Max. O₃ production	0.6 gr/h

Inlet water recommended parameters :

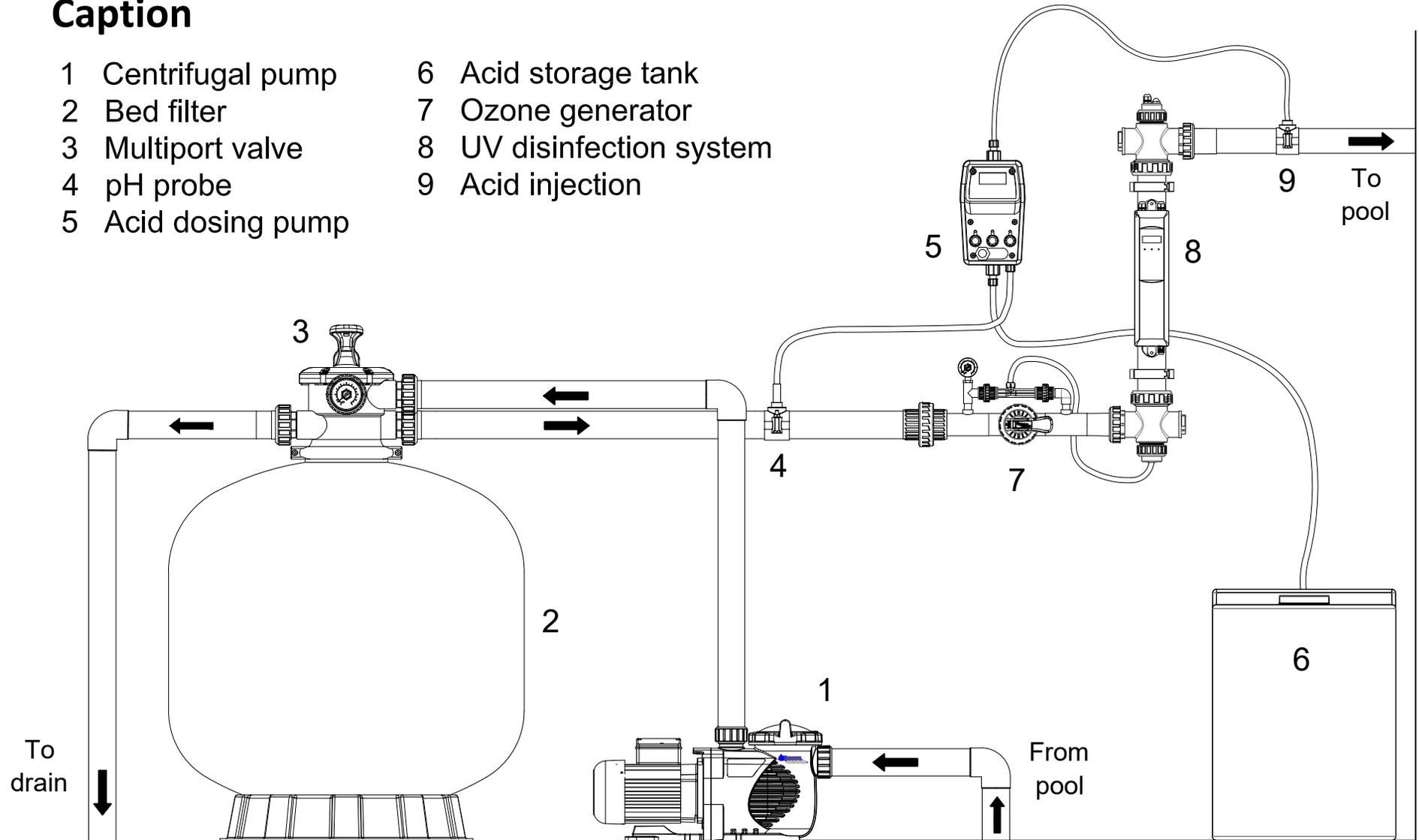
pH	7.2-7.6
Total alkalinity	60 – 120 ppm
Hardness	120 mg/l
Turbidity	< 1 NTU
TSS: Total suspended solids	< 10 mg/l
UV Transmittance	> 35%

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3. Facility scheme

Caption

- | | |
|--------------------|--------------------------|
| 1 Centrifugal pump | 6 Acid storage tank |
| 2 Bed filter | 7 Ozone generator |
| 3 Multiport valve | 8 UV disinfection system |
| 4 pH probe | 9 Acid injection |
| 5 Acid dosing pump | |



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4. Installation guide

Recommendations

To achieve the correct installation, please follow the recommendations listed below:

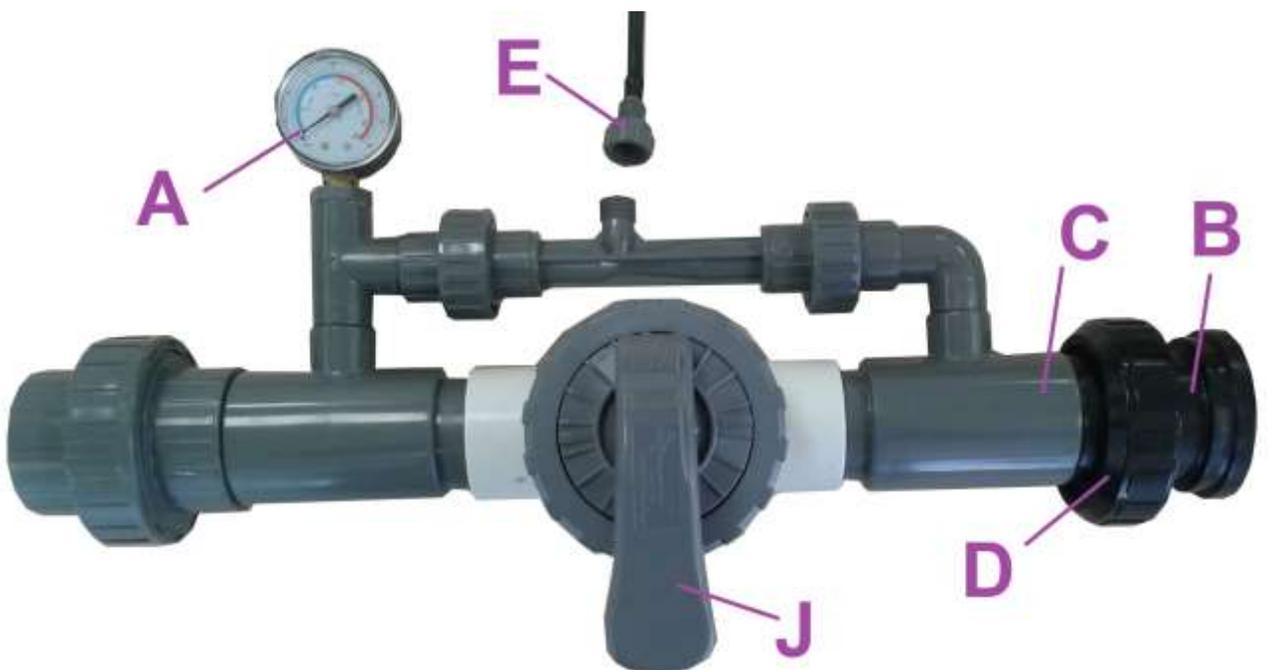
- Never install the UV-C system in an area exposed to direct sunlight. This equipment must be installed in a dry and ventilated area.
- The UV-C system must be fitted in a vertical position, and leaving a minimum space of 30 cm underneath and 1.5 meters at the top of the equipment for maintenance operations and replacing the lamp.
- The UV-C system needs to be installed always after the filter and before pH regulator or any possible salt chlorinator or dosing system. Please refer to the section [3.Facility scheme](#).
- If the filtration pump exceeds the maximum flow rate allowed for the UV-C system, a by-pass circuit will be required.

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Procedure

Follow the instructions below for installing the Nano-Tech UV Ozone System:

- Fit the manometer **(A)** onto the Venturi circuit using Teflon tape. Hand-tighten the manometer.
- The Venturi circuit must be installed in a horizontal position. Before gluing the fitting piece **(B)** into the outlet **(C)**, make sure that the threaded nut **(D)** is as the following image displays :



- Screw the female hose fitting **(E)** onto the male thread of the Venturi circuit. The other end of the hose must be fitted into the elbow adapter, on the top of the system **(F)**
- Joint the 3 parts **(B)**, **(D)** and **(L)**, so that the Venturi circuit and the UV system are firmly assembled.

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- Afterwards, choose at suitable place to install the assembled system, if and when it follows the order according to [3.Facility scheme](#).
- Fit the UV-C reactor with the supplied clips(**H**) and ensure that the 3-part couplings (**B**)(**D**)(**L**) are still solidly tighten. Never use a wrench, clamps or other tools whatsoever to fix the reactor.
- The power supply wire (**I**) has to be connected in a way that the UV system works as the same time as the filtration pump does. If not, all the UV system could get overheated.
- Check that the check valve (**M**) is properly place so as to not allow water come into the quartz.



- Activate the pump, vent the whole system and check for any leakage in the circuit.
- The quality of the ozone air in the system can be modified using the manual valve(**J**). The closer it remains, the more ozone will enter the circuit. The desirable range on the manometer is between 0.4 and 0.7 bar.
- Keep in mind: the air filtering intake (**G**) on the upper part of the ozone device is intended to absorb air for ozone generation. It has to remain cleared.

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5. Maintenance operations

The device must be cleaned between one and two times per year. If there is an increase in algae and/or scale, the quartz glass tube in which the lamp is positioned must be cleaned using a soft cloth with spirit vinegar or acid.

After any maintenance operation, ensure that all the components are as they were, and there is no leakage after running the whole system.

The UV-C lamps must be replaced once they lifetime is over. Please refer to the next section:

[Lamp replacement procedure](#)

For further information about maintenance, please refer to the online User guide on the next website:

[Nano Tech UV-C Disinfection System User Manual \(English\)](#)

In this manual, there are 2 sections regarding other maintenance procedures:

- 11.2 Stainless Steel housing maintenance
- 11.3 Electrical unit replace

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Lamp replacement procedure

Always switch off the power supply when replacing the lamp.

Do not touch the lamp with bare hands. Use a soft fabric or cotton gloves to handle or clean the lamp. If the lamp has been touched, it is recommended to clean it again using a soft fabric and some alcohol.

The procedure for replacing the lamp is as follows:

- Stop the whole system filtration pump and UV system
- Allow the ultraviolet lamp to cool for at least 10 minutes before handling.
- If you don't intend to change the quartz glass, you don't have to drain the system.
- Unthread the screw cap **(P)** on the top of the UV equipment without removing the cable. Carefully, extract a little the lamp **(R)** without unplugging it.



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- Once you can reach both lamp **(R)** and cable socket **(Q)** unplug carefully the lamp grasping it from its end. Afterwards, you will be able to take out the entire lamp. When doing this, bear in mind that carefulness is essential.



- If the quartz glass needs cleaning or replacing, then the system needs to be drained. After that, unthread both upper and lower quartz glass holders **(S)** and carefully remove the quartz glass **(T)** with o-rings **(U)**.
- Introduce carefully the quartz glass **(T)**. Ensure that it is placed as it was previously. Do not forget to replace the o-rings **(U)** at both ends of the quartz glass, so that the inner part of the quartz stays waterproof.
- Hand-tighten again the quartz glass holders **(S)** and introduce the new lamp carefully into the quartz glass.
- Plug the lamp into the cable socket **(Q)**, and then carefully finish to put the lamp inside the quartz.
- Thread again the screw cap **(P)** and ensure that it remains properly tighten.

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6. Troubleshooting

TROUBLE	POSSIBLE SOLUTION
UV-C system failure, possible lamp disconnection	Disconnect the power cord from the electrical outlet, disassemble the lamp and verify if the lamp connector is fixed firmly in place.
	Verify if the electric cable is connected into an electrified circuit. Test the electrical circuit. As it is said in section 4. Installation guide , UV system and the pump should start working at the same time.
	Make sure you have not connected the device into any power source other than specified on the unit's label. If you have done so in error, the electrical unit might have been damaged and should be replaced. Contact your supplier for the replacement (Not warranted).
The UV lamp no longer lit	Verify that the electrical outlet where the UV-C System is plugged into has the proper voltage and the cable is securely plugged into the outlet.
	The lamp has burned out. Replace the UV lamp.
	The electrical unit has burned out. Contact your supplier for the replacement.

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TROUBLE	POSSIBLE SOLUTION
<p>Pool water is green</p>	<p>Check the chemical balance of the pool.</p>
	<p>Check the UV-C system to make sure it is on.</p>
	<p>Run the UV-C system and the circulation pump longer. If the UV system is operated by a timer, increase a number of working hours.</p>
	<p>Consider replacing the UV lamp. After 4500 hours of operation, the lamp efficiency drops up to 80%. This is normal for all low-pressure type UV lamps.</p>
<p>UV-C system makes noise when operating</p>	<p>Check all connections and sealing rings, especially those near to the UV lamp and the quartz glass.</p>
	<p>Check the screws on the installation, and pay attention to those vibration points</p>
<p>Water is coming out; the UV-C system is leaking</p>	<p>Check all connections and sealing rings, make sure that all connections are threaded properly.</p>
	<p>Check the quartz glass if it is well placed, damaged or broken.</p>

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7. Additional data

For further information related to this equipment, please refer to the online User guide.

You can find it on the website by clicking on the image below:



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