UVGERMI®

The specialist in microbiological water treatment using ultraviolet reactors.

MADE IN France

UVZEN 2P62 / 3P62

COMMISSIONING INSTRUCTIONS AND USE

Constructor : UVGERMI Z.A.C de la Nau 19240 Saint Viance - France
Tel. +0033 (0)5.55.88.18.88 - **E-mail:** contact@uvgermi.fr
www.uvgermi.fr

SUMMARY

I. ULTRAVIOLET TREATMENT

Ultraviolet radiation (especially at 254 nanometers) leads to the inactivation of microorganisms in the water by denaturing the genetic material of the cells (DNA). Bacteria, viruses and other microorganisms are no longer able to maintain their metabolism or reproduce.
Ultraviolet radiation is a contact disinfectant that does not need any other chemicals. However, it does not act on algae. It is therefore necessary to add a very small amount of chlorine to the pool (about 0.5 mg/l).
In addition, the UVc rays produced by the UV lamps of the UV reactor contribute to the degradation of chloramines in the pond water, compounds responsible for chlorine odors, eye and nasal irritation and respiratory disorders.

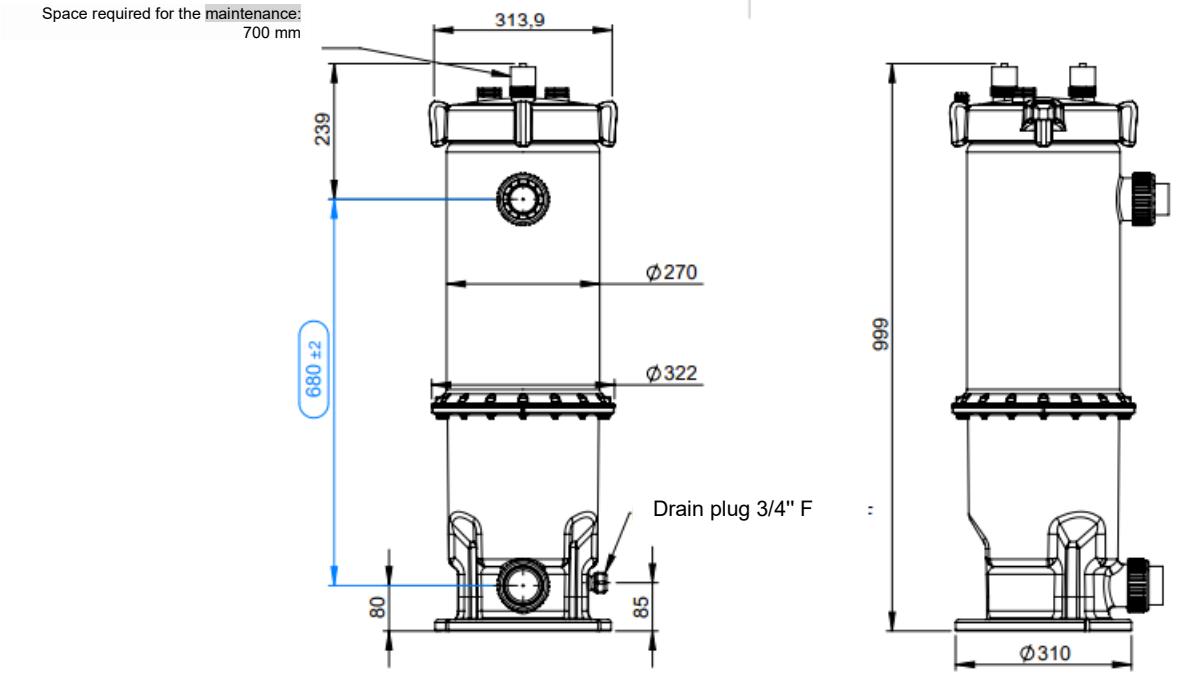
II. ADVANTAGE OF UV DISINFECTION/DECHLORAMINATION

Compared to conventional chemical treatments (chlorine, bromine, salt electrolysis, etc.) The reactor has many advantages:

- A more effective virulicidal and bactericidal action than that provided by chlorine
- It eliminates chloramines in your covered pools or pools equipped with roller shutters
- It eliminates the inconvenience of chlorine
- It removes irritation of the eyes, mucous membranes and skin
- It reduces the risk of allergies
- It reduces the use of chlorine
- It is compatible with all types of complementary treatment
- It gives the pool a healthy and crystal clear water quality
- It is an ecological treatment that reduces the use of chemicals
- Reduced carbon footprint
- No physico-chemical change in the water, no variation in the pH
- Chlorine odor destruction
- Simple and fun to use
- It prevents premature degradation of your installation
- It improves the atmosphere of sheltered pools
- It limits the use of chlorine shock

III. CONCEPTION

The UVZEN is a closed cylindrical reactor made of plastic. It is equipped with two or three low-pressure mercury vapor UV lamps, emitting in the germicidal wavelength of 253.7 nanometers and a unit electrical power of 62 watts.



In the treatment chamber, each UV lamp is placed in a quartz sheath. This achievement prevents the lamp from cooling down by the passage of water, as its maximum efficiency is at 40°C. The layer of air between the duct and the lamp is sufficient to maintain this temperature: the quartz duct serves as a separation between the lamp and the liquid as electrical and thermal insulation.

The whole system is controlled by an electrical box that ensures the lighting of the lamps, their operation and the counting of operating hours.

IV. TECHNICAL DATA

Model:	UVZEN 2P62	UVZEN 3P62
Treated flow rate (m3/h)	5 to 20	15 to 30
Pond volume (m3)	10 to 50	50 to 100
Power supply (V) – frequency (Hz)	230 ±10% /50 - 60	
Electrical Power (W)	124	186
Number of lamps	2	3
Unit power of lamps (W)	62	62
Total UVc germicidal power at 254 nm(W)	46	69
Lamp life (h)	16 000	
Working pressure (bar)	1.5	
Water inlet – outlet connection	PVC50 and PVC63 to be glued	
Vessel Material	Plastic	
Reactor + IP dimensions Overall Height x Width x Length (mm)	999x314x386 IP31	
Dimensions of the box Overall Height x Width x Thickness (mm)	358x248x119 – IP31	

V. INSTALLATION

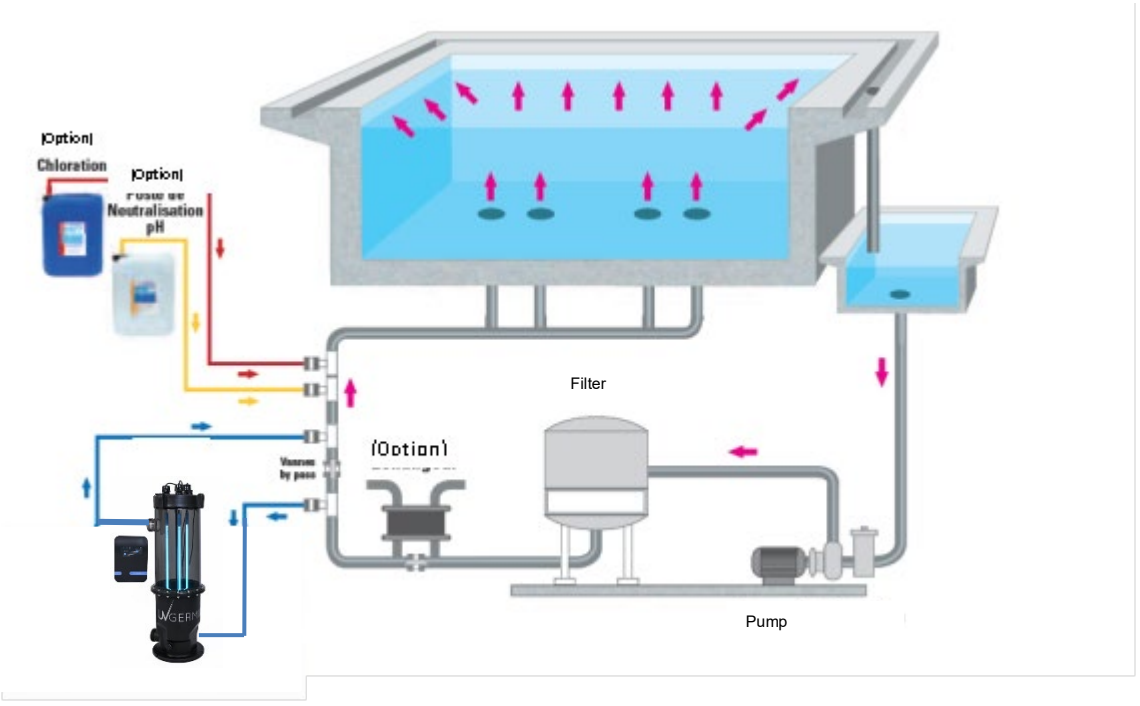
The installation of the reactor does not require major modifications.

1. Hydraulic connection of the UV reactor

The reactor comes with 2 PVC50 and 2 PVC63 adhesive tips. It's up to you to use the one that corresponds to your pipe diameter. The water supply must imperatively be from the bottom of the reactor and goes back to the pool from the top. It is designed to be installed vertically.
It is necessary to leave 0.7 meters above the UV reactor in order to best perform the maintenance and replacement of the UV lamps.
If the installation requires it, you can rotate 360° in 22.5° steps (i.e. 16 positions possible) of the upper part of the reactor. Please refer to chapter X - Changing the position of the Input/Output.

The operating pressure of the UV reactor is 1.5 bar.

The effectiveness of the treatment depends on the clarity of the water. It is therefore essential to have good filtration before the UV treatment in order to eliminate suspended solids that make the water cloudy.



It is recommended to add a valve before and after the UV reactor (or a bypass) to disassemble it during maintenance if necessary.

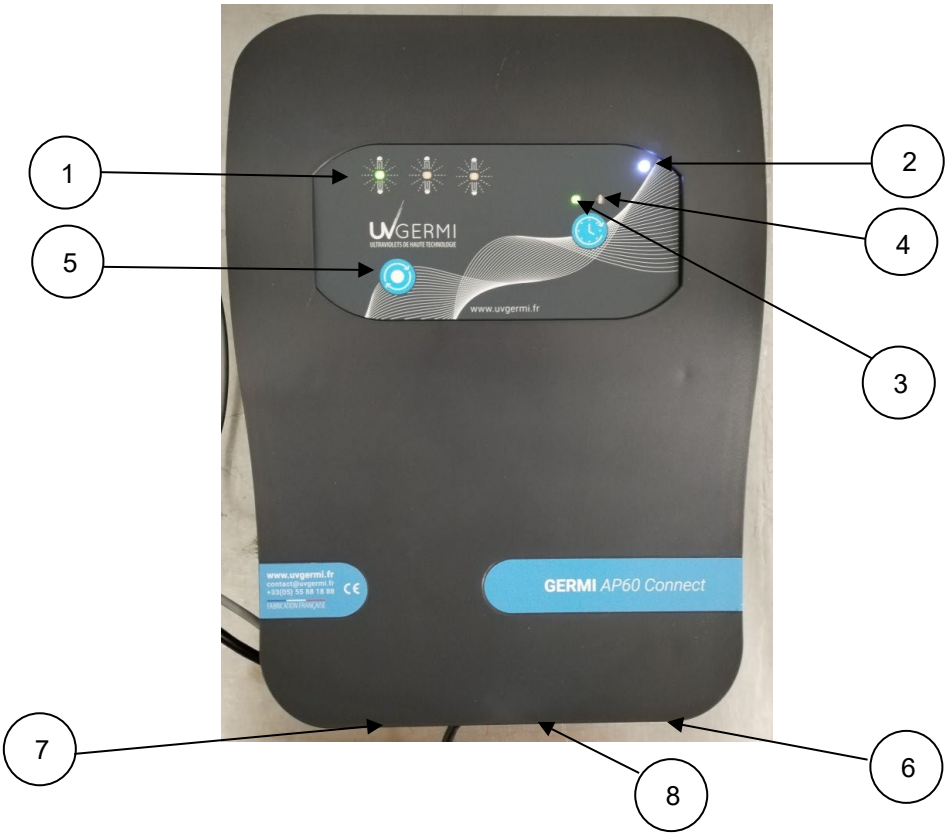
It must be protected from frost and high humidity.
The reactor must be isolated from "water hammer" and significant vibrations.
It should not be installed outdoors, a dry room with an ambient temperature between 5 and 40°C is essential.
The reactor must be controlled by filtration, never run the lamps without water circulation, and even less without water.

VI. ELECTRICAL CONNECTION

The electrical connection of the box is via a 3-pin socket with a ground. Before plugging in the appliance, make sure that the current matches the voltage of the appliance, 230 volts, 50 Hz or 60 Hz. Your electrical installation must be protected according to the NF C 15 -100 standard.
CAUTION: The reactor must be controlled by filtration.

VII. OPERATION

The Electrical Box:



① UV lamp operating light (Green/Red)
② Power on LED (White)
③ Uptime LED (Green/Red)
④ Uptime LED (Orange)
⑤ Run Time Reset Button
⑥ Physical Device On/Off Switch
⑦ Lamp cables
⑧ Power Cable

Usage:

Before starting the device, put the system in water and check for leaks. It is necessary to unscrew a cap slightly in order to expel the air from the reactor. Allow the water to circulate for 5 minutes, then make sure the quartz sheaths are dry before installing and connecting the lamps. For their first implementation, see section IX. Maintenance / UV lamp.

The reactor must be controlled by filtration. Never operate lamps without water circulation, and even less so in the absence of water. The transparent part of the reactor can become cloudy over time, without affecting the efficiency of the system.

Plug in the device. The power indicator light illuminates (2).
Activate the "On/Off" switch (6) to "On". The operating lights on the lamps (1) are flashing green. After a few seconds, they remain lit green. If you bought a UVZEN 2P62, only the first 2 lights (1) from the left will light up. For a UVZEN 3P62, all 3 LEDs (1) will light up.

The run time light (3) will stay on green as long as the unit has an run time of less than 15,000 h.
The LED (4) remains off.
After 15,000 hours and up to 16,000 hours, the light (3) will turn off and the light (4) will light up orange.
After 16,000 hours, the light (4) will turn off, the light (3) will illuminate red and the audible alarm will be activated.

Frequent "Off/On" (>5/24 H) or operation without water inside the treatment chamber is prohibited as it decreases the life of the UV lamp. It is recommended to run the reactor continuously and to avoid turning it off and on several times a day (maximum 2 times/day), this reduces the life of the lamps.

The UVZEN must operate with water temperatures between 15 °C and 30 °C, beyond which there is a risk of damage to the equipment. It should not be installed outdoors, nor in a room that is too humic. The electrical box has an IP rating of 31.

The operating time of the UV reactor must be proportional to the temperature of the water, i.e.:
T/2 = operating time of the UV reactor.
E.g. T pool water = 26 °C, UV reactor operating time: 13 H

Using the Connectivity App.

The operation of the UVZEN reactor can be monitored via the "UvGermi" app, available in the Apple Store and Google Play Store.

To link your device to your account, please follow the instructions in the app.

To be able to use the application, you must first connect your reactor to your box via wifi.

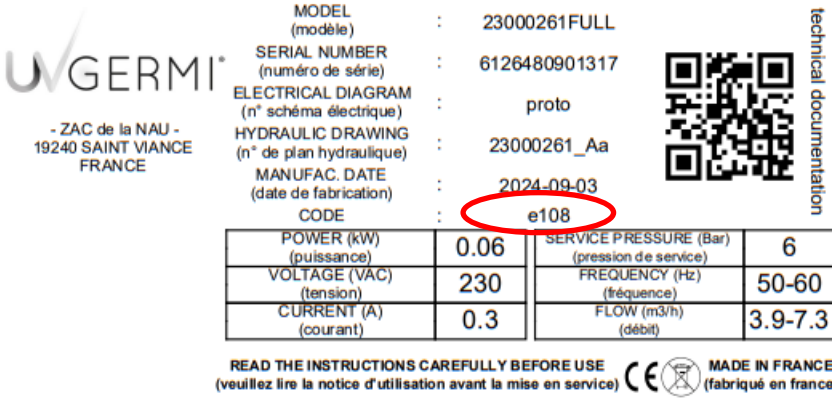
Please note that the flow is only open for metropolitan France. If your installation is located elsewhere, please inform us, we will do what is necessary to open the rights to you.

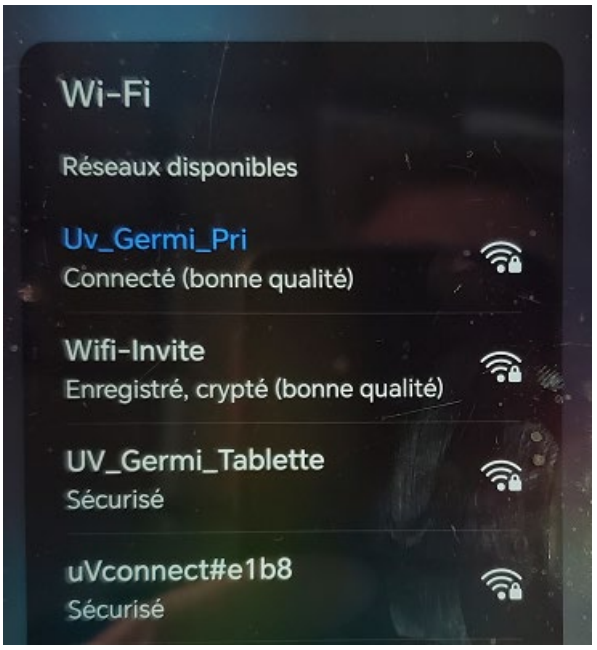
If you are using a professional (secure) Wi-Fi network, please refer to the Secure Wi-Fi Network section.

These operations can be done from a laptop, tablet or smartphone.

On some smartphones, it is necessary to disable mobile data for the following operations:

1) Select the wifi of the electronic card.
The password will be: uVgermi#abcd - (abcd: 4-character code that appears on the rating label, see example below).





2) Automatic opening of the http://www.msftconnecttest.com/ or http://192.168.4.1 web page (depending on the search engine, this may take 30 seconds).

3) Click on Wifi

Enter the SSID (in the drop-down list or in manual entry) and password of your box and click on "Submit". It's over!!

If your WiFi is not present in the drop-down list, it is because this network was not present at startup, you must turn off and turn the power back on to your device in order to redo the WiFi scan. This can take about thirty seconds.

Secure Wifi network.

On the flow in: not known to date.

On the output stream, allow these streams:

DNS: TCP port 53
HTTP: TCP port 80
HTTPS: TCP port 443
Specific to your device: TCP port 8883

VIII. SAFETY INSTRUCTIONS

Do not expose your eyes or skin directly to the UV lamp from UVZEN

The plastic material of your UVZEN completely blocks the UVC from the lamps, there is no risk in standing in front of a working reactor.

Eyes and skin exposed to direct or indirect UV rays, even for short periods of time, can suffer significant damage.

Always turn off the lamp during various maintenance operations. If you need to check it outside the reactor, wear suitable glasses (plastic glasses).

UVZEN should only be used for the purpose for which it is intended. It must not be used to treat flows higher than the maximum recommended flow rates.

Safety and operation are only guaranteed when installed in accordance with the recommendations described in this manual.

Maintenance work must be entrusted to competent personnel.

The treated water must not be colored or loaded with suspended solids, filtration may be necessary. It is advisable to perform a UV transmittance measurement at 254 nm to ensure that it is greater than 95%.

IX. MAINTENANCE

Maintenance is limited to changing the UV lamps and cleaning the quartz ducts.

The "On/Off" switch must be set to "Off" before performing maintenance work.
We recommend unplugging the UV device

UV lamp

UV lamps have a limited lifespan of 16,000 hours, beyond which water treatment is no longer provided.

Lamp change:

- Mandatory every 16,000 hours: the light (3) lights up red and the audible alarm goes off.
- When these no longer work: switch in the "On" position and lights (1) in red.

The quartz sheath protecting the lamp makes it much easier to change the lamp: the UVZEN does not have to be drained or disassembled.

- Turn the switch on, only the light (2) stays on.
- Unplug UVZEN.
- Pinch the flexible cap of lamp N°18 (see diagram on the next page).
- Pull the cap upwards, paying particular attention to the UV lamp coming out of the treatment chamber.
- Disconnect the N°22 lamp from the ceramic connector that is connected to the lamp cable.
- Insert the new lamp into the sheath by holding it by the ceramic tips and connect it.
- Reposition the black soft cap N°18 on the N°16 seal.
- Never touch the position of the N°6 hose clamp or the N°5 gasket that should be in contact with the clamp.
- Once reassembled, the lamp should touch the bottom of the quartz sheath.
- Repeat the operation for all the lamps.
- Plug the device back in, the white light (2) will illuminate.
- Turn the switch (6) on, the green lights (1) will flash before remaining solid green. The audible alarm and the red light (3) remain in operation.
- Press and hold the Reset button for 5 seconds, the buzzer sounds 2 times briefly.
- The light (3) will turn green.

When replacing the lamp, be careful not to put your fingers on the glass. Cleaning the lamp with alcohol will remove any fingerprints.

Note: Just like fluorescent tubes, a defective UV lamp must be disposed of in accordance with national regulations (return to the manufacturer or waste disposal center). It should not be disposed of at the same time as domestic or industrial waste (the lamp contains mercury particles).

Quartz sheath

When the quartz sheath protecting the lamp is dirty, water treatment is reduced.
It is necessary to disassemble and clean the quartz sheath at least once a year.

This cleaning is carried out using a dilute acid solution (hydrochloric acid, phosphoric acid, etc.) or even pure white vinegar.

It is necessary to cut off the water supply and depressurize the pipes to clean the quartz cladding.

- Turn the switch on, only the light (2) stays on.
- Unplug UVZEN.
- Close the valve upstream and downstream of the UVZEN.
- Depressurize the pipe by opening a valve or gently opening the reactor drain plug.
- Slightly unscrew the plug (or 1 of the 2) N°19 to make an air intake and completely unscrew the drain plug.
- Remove the lamps according to the instructions on the previous page.
- Unscrew sealing piece N°16.
- Remove the N°17 seal.
- Take out the N°15 quartz sheath.
- Clean the outside of the quartz sheath with a dilute acid solution.
- Reassemble the quartz sheath in the treatment chamber, checking that there is no moisture inside.
- It must rest in a receptacle as in Figure 3. Use the transparency of the body to make sure.
- Reposition the new O-ring N°17 on the top of the duct.
- Reposition sealing piece N°16 and screw it back on.
- Refill the appliance with water by opening the two isolation valves.
- Check that there is no leak in the duct. Tighten if necessary.
- Tighten cap N°19 only when there is no more air in the reactor.
- Reposition the lamp as shown in the previous range.
- Turn the switch (6) on, the green lights (1) will flash before remaining solid green.
- The LED (3) is lit green.

Exploded views of UVZEN

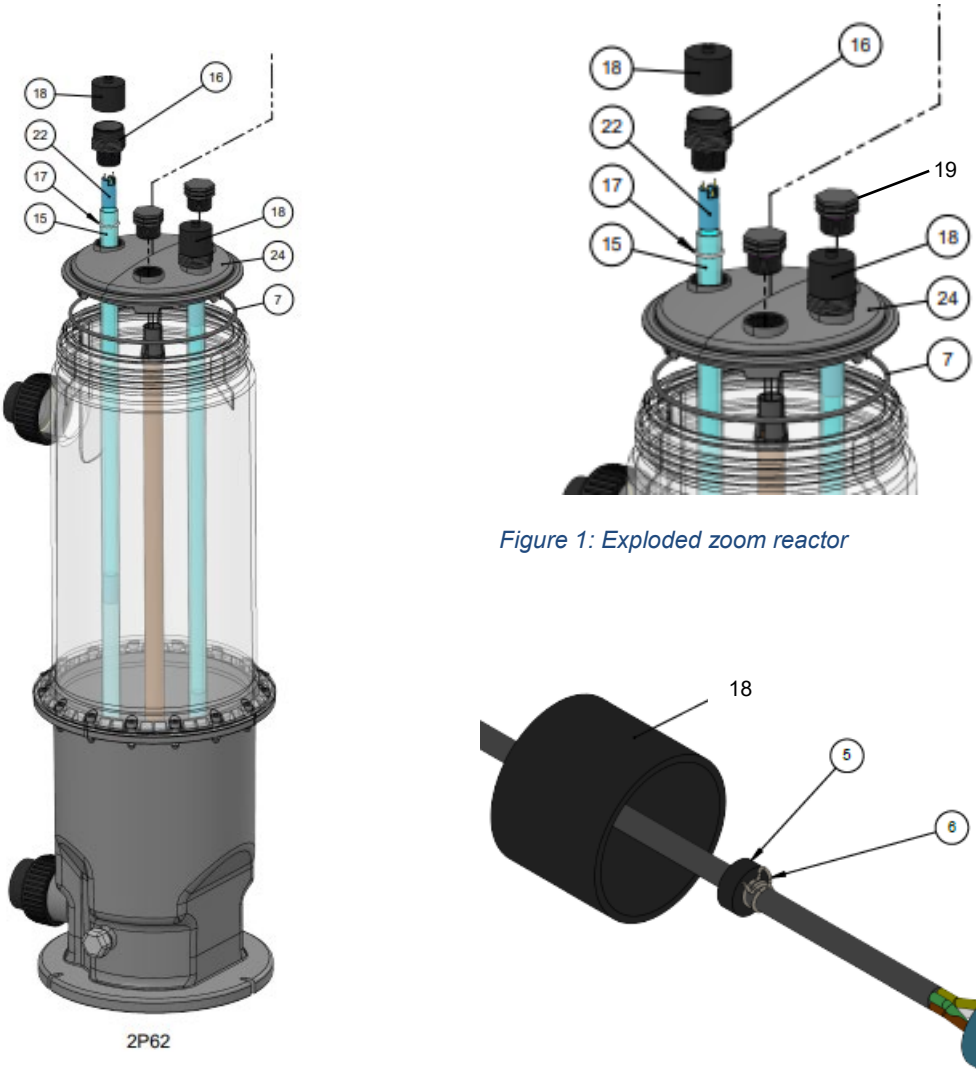


Figure 1: Exploded zoom reactor

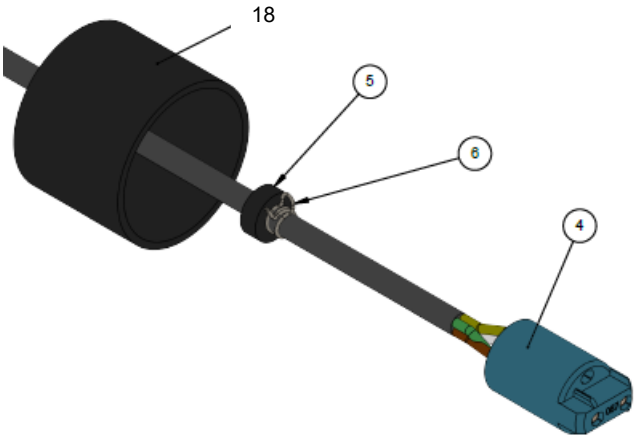


Figure 2: UV Lamp Cable Burst

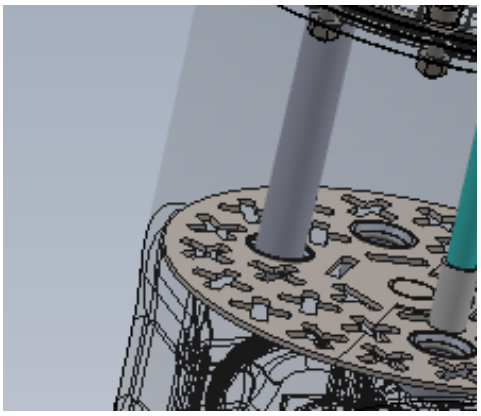
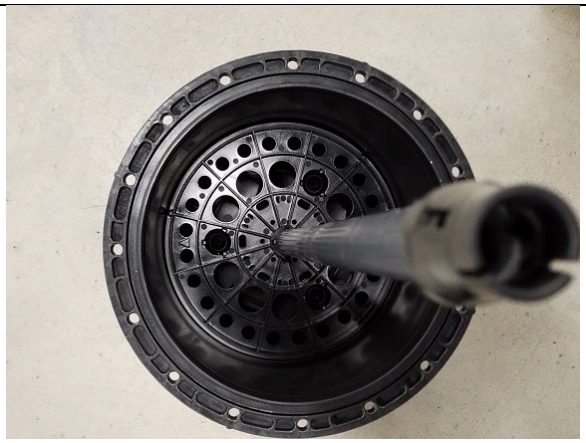


Figure 3: Reactor Bottom Zoom

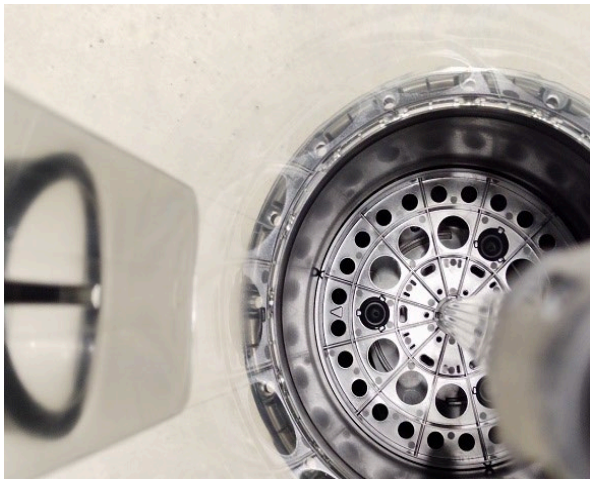
X. CHANGING THE POSITION OF THE INPUT/OUTPUT

In order to rotate the output, it is necessary to completely dismantle the reactor. This operation should take no more than an hour, including winding. You will need the following tools: a N°6 Allen wrench, a 13 spanner and a torque wrench. Sixteen positions are possible, corresponding to the sixteen screws. Here's how to do it:

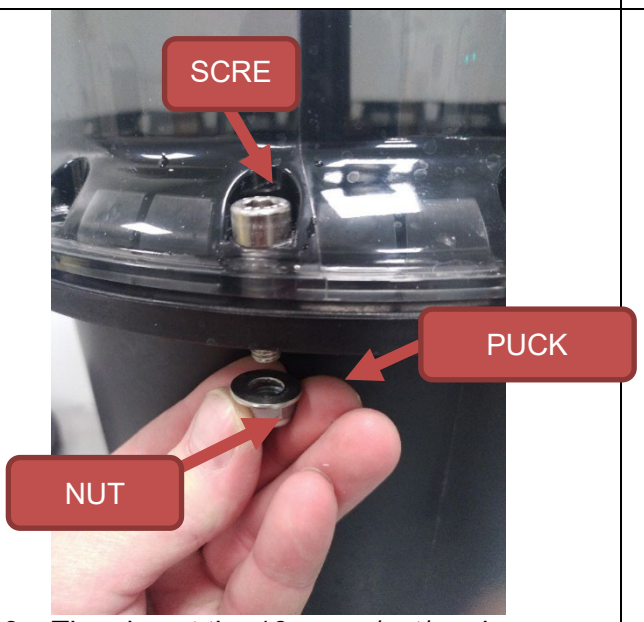
1. Remove lamps and ducts as described in paragraph X (Maintenance).
2. Using the two handles, unscrew the nut from the lid.
3. Pull up to remove the cover, making sure the O-ring stays in position.
4. Disassemble the 16 nut/washer/screw assemblies located in the middle of the reactor, between the translucent and the black parts.



1. Turn the diffuser/connecting tube assembly so that the arrow is pointing towards the position where you want to exit the reactor.



2. Position the upper part of the transparent body so that the outlet **aligns with** the diffuser arrow.



3. Then insert the 16 screw/nut/washer assemblies
   Tighten in a cross pattern with the Allen 6 wrench and torque wrench
   The tightening must be 14Nm

4. Make sure the O-ring is present at the bottom of the lid.
   Be careful the joint must not be twisted and wedged at the bottom

5. Insert the cover on the upper part of the body.
   Respect the notches provided.
   Press the top of the lid down tightly to allow the gasket to sit and the lid to anchor

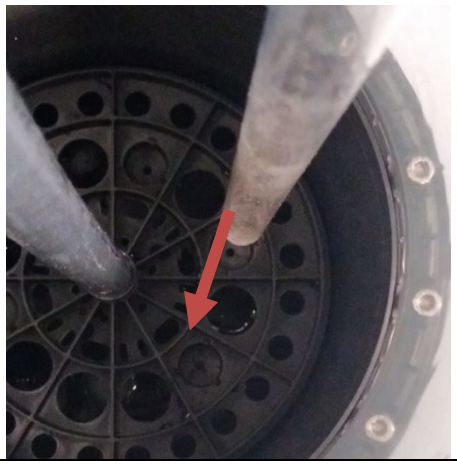
6. Help insert the connecting tube into the middle part of the lid (using a fine tool, flat screwdriver, strip, etc.)

7. Then screw the cover nut until you reach the hard point

8. Then use the handles to **finish tightening about fifteen centimeters**

9. Make sure the joints are present on the ducts

10. Insert the ducts and accompany them so that they fit into the diffuser slots provided.



11. Install seals and **tighten by hand.**
It's over.

XI. REPAIR OF MALFUNCTIONS

The "On/Off" switch must be turned to "Off" before performing the repair work

FAILURES	CAUSE POSSIBLE	MEASURE
The power indicator light (2) is off.	1- The outlet is connected to a wall outlet that is not connected to the network. 2- The fuse is blown.	1- Check your power supply. 2- Change the fuse on the electronic board.
The UV lamp does not turn on, the indicator light (1) is off.	1- Verify that the physical switch (6) is OFF. 2- The device was turned off remotely.	1- Flip the physical switch. 2- Log in to your account and turn on the device.
The UV lamp does not turn on, the indicator light (1) is on red.	1- The lamp is poorly connected 2- The lamp is worn or defective 3- The electronic ballast is defective	1- Check the lamp connector connection. 2- Replace the lamp. 3- Contact the after-sales service or your installer.
The LED (3) is off and the LED (4) is on solid orange.	The lamp life is between 15,000 and 16,000 hours.	Plan to change the lamp.
The LED (3) is solid red and the LED (4) is off. The alarm sounds.	The lamp life is more than 16,000 hours.	Change the lamp and reset the counter. Press and hold the Reset button for 5 seconds, the buzzer sounds 2 times briefly. The light (3) turns green See page 7.

XII. SPARE PARTS LIST

CODE	DESIGNATION	Qty in UVZEN 2P62	Qty in UVZEN 3P62	No.
24000037	62W K087 Lamp	2	3	22
19000086	O-ring 23x3 NBR	2	3	17
23000010	Quartz sheath 24x755 mm	2	3	15
Electrical box				
17000391	Ballast electro 1X55-95W 800MA PH	2	3	
24000511	2 A fuse	1	1	
20000306	Blue On/Off Switch	1	1	
24000077	1 to 3 Lamp Connected Control Board	1	1	
23000296	5VDC axial fan	1	1	
23000309	Fan grille	1	1	
23000076	Lexan with 6 built-in LEDs and 1 button	1	1	

XII. DECLARATION OF CONFORMITY

Representative: UVGERMI

Declares that the product designated below, due to its design and construction principle, meets the EC directives, according to the safety and public health standards in force.
For any modification of the product that has not obtained our approval, this declaration of conformity loses its validity.

Product description: ULTRAVIOLET REACTOR

Type: UVZEN

Product serial number: See the number on the packaging box and on the electrical box

XIII. GUARANTEE

The warranty for the devices in the UVGERMI range is exercised under the following conditions:

- 2 years for plastic body.

Disclaimer of Warranty:

Damage caused by overpressure (water hammer).
Exceeding the Maximum Operating Pressure.
Failure to follow installation instructions.
Reactor that has operated without being loaded or without water.

- 2 years for all components, except for UV lamps and gaskets (consumables) and quartz sheaths in case of breakage.

Disclaimer of Warranty:

Consumables (gaskets, lamps and ducts).
Electrical components are not guaranteed against power surges, lightning strikes.
Modification and addition of components in the control cabinet.
Use of spare parts that are not of UVGERMI origin.
Failure to follow installation instructions.
Installation outdoors or in a room with high humidity.
Reactor that operated without being in charge.
Failure to comply with operating and maintenance instructions.

Please note: the quartz sheath and the lamp are not guaranteed against the breakage.

Defective parts must be returned, specifying the name of the device and the serial number (under the electrical box), to the UVGERMI company, which will proceed with an exchange after technical expertise.

- The warranty takes effect on the date of invoice at the customer's premises. A copy of the invoice must be sent to UVGERMI with the return of the defective parts.
- In the event of non-compliance with the installation rules and instructions for use, UVGERMI cannot be held liable and the guarantees cannot be implemented.

Directions for use

➔ Couple the operation of the UVZEN with the pump and the filtration.

Reminder: the effectiveness of ultraviolet treatment depends on the clarity of the water, i.e. the performance of the filtration. It is therefore advisable to run the pump, filter and UV reactor for 10 to 14 hours a day during the summer.

The addition of a disinfectant/residual product is necessary in addition to UV (chlorination by pebble in the skimmer, by automatic injection or peroxide).

Rainy season:

It is best to leave the pool in water during the winter. The addition of a conventional wintering product prevents the proliferation of algae and the formation of limescale deposits. In this case you turn off the UVZEN (switch).

If you drain the water circuit to protect it, the UV reactor must be switched off.

Return to service in the spring:

➔ **Maintenance at the beginning of each season**

- Lamp replacement **every 16,000 hours**
- Quartz sheaths changed every 5 years
- Cleaning of UVZEN quartz sheaths
- Checking the seals and changing them if necessary
- Complete cleaning of the pool and filters
- Check the pH and adjust between 7 and 7.5 if necessary
- The pool must be completely clean before the UV reactor is put back into operation

Restart the chlorine injection or make a shock chlorine then put back slow chlorine pebbles or peroxide

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