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BIO-UV Range

DESCRIPTION	UV10	UV20	UV30	UV40
MAXIMUM PRESSURE in use	<u>3 Bar</u>	<u>3 Bar</u>	<u>3 Bar</u>	<u>3 Bar</u>
MAXIMUM FLOW RATE m ³ /h (after pressure difference)	7	12	20	28
EXPOSURE TIME / seconds	2,8"	2,6"	2,3"	2,1"
PERFORMANCE (in millijoules) of the recommended output above. (required standard for drinking water: 25mj)	25 mj	25 mj	25 mj	25 mj
BALLAST	1	1	1	1
LAMP (number and power)	1 x 33 W	1 x 59 W	1 x 75 W	1 x 100 W
LAMP DURATION	8000 h	8000 h	8000 h	8000 h
DIMENSION of UV CHAMBERS in cm	32	58	83	108
DIAMETER	15	15	15	15
TOTAL HEIGHT in cm	42	69	94	120
WEIGHT (dry) in kg	7,6	9	11	14
CAPACITY IN LITRES	6,40	11,70	17,30	22,40
INPUT / OUTPUT (diameter in mm) With joints supplied	50	50	63	75

BIO-UV sterilizers are ready to install. Nothing needs to be done inside the appliance

REMINDERS & RECOMMENDATIONS

Bearing in mind the operating environment of a swimming pool, it is vital to review the basic rules concerning the various parameters such as hydraulics, filtration and water balance that, whatever the type of water treatment used, help obtain the desired results while at the same time reducing the amount of chemicals used and avoiding unpleasant, costly disasters.

Prevention = comfort and money saved

Pool hydraulics:

Water must circulate throughout the pool. The number of backflows, skimmers or overflow intakes must be sufficient for such circulation and eliminate any 'dead' zones.

Pump power must be sufficient to cope with the volume of water in order to be able to treat the whole pool in a reasonable amount of time (4 to 5 hours).

Pipe diameter should also be large enough to cope with the volume of the pool.

Poor hydraulics = development of bacteria and algae.

Filtration : filtration is a key element in water treatment.

Its role is to remove suspended substances and various particles from the filtered body of water.

Good filtration helps save on disinfectant products.

A filter needs maintenance: wash the reverse side of the filter at least once per week.

It should be cleaned and de-scaled once a year with a special product (eg: **BIO-UV FILTRE**) that removes lime-scale deposits and the substances that seal it.

FILTRATION TIME MUST BE ADHERED TO

Basic rule: half the water temperature.
If over 28°, filter continuously.

Flocculation: when using sand filtration,

Parameters for balanced water:

PH indicates the water's alkalinity or acidity. It is usually a good idea to keep it at around 7 (neutral PH).

- If lower than 7: acid water, aggressive to skin and pool lining.

- If higher than 7.4: possible discomfort for swimmers (smarting eyes), algae and lime-scale deposits develop, inefficient flocculation...

TH: this indicates the hardness of the water, i.e. calcium and magnesium content.

For a reading higher than 25°F, add a lime sequestrant once per season (e.g.: **BIO-UV ANTI-CALCAIRE**).

Very hard water leads to scaling and damages pipe-work.

Water that is too soft (acidic) may be corrosive.

TAC: this shows the water's bicarbonate and carbonate content, i.e. its alkalinity. The level should be between 10 and 15 ° F, and can be changed by using suitable products (TAC+ OR TAC-).

Various substances present in the water:

- **Algae:** these plants can grow in the pool. Large quantities are carried in the air. To get rid of them, a disinfectant alone would be used up before deploying its anti-bacterial action. We therefore recommend using, in addition to **REMANENTS**, an algicide or **BIO-UV ALGICIDE SUPER CONCENTRATE**

- **Organic matter:** brought in by swimmers, nature and the environment, not harmful, they should be kept down by filtration and other treatment procedures.

- **Micro-organisms:** bacteria, viruses and fungi are carried into the pool in the same way as other substances and can be harmful to health. The role of the ultraviolet BIO-UV appliance is to destroy them.

The addition of **REMANENT** provides remanence in the pool and prevents them from developing between 2 runs through the BIO-UV appliance.

- **Metal ions:** iron, copper, manganese... these may be found in large quantities in water from boreholes, or after crop spraying ((copper sulphate spraying). These ions may also damage liners and colour the water...

We recommend that you do not use borehole water to fill your pool.

However, it is possible to confine these ions by using certain specific products.

- **Phosphates and nitrates:** they are present in highly variable quantities and encourage algae to develop.

They may be an indication of ground water pollution.

Do not use borehole water.

Warnings and safety:

- ❑ NEVER LOOK AT A ULTRAVIOLET LAMP WHILE IT IS ON WITHOUT WEARING PROTECTIVE GLASSES, THIS MAY RESULT IN SEVERE RETINAL DAMAGE OR EVEN BLINDNESS



- ❑ NEVER UNSCREW THE STAINLESS STEEL BINDING NUT (16) WHEN FILTRATION IS WORKING. THE QUARTZ TUBE MAY BE SHOT OUT OF ITS RECEPTACLE AT HIGH SPEED AND INJURE YOU.



Before accessing the connection terminals, ensure that all supply circuits are disconnected. If the cable is damaged, it should be replaced with a cable or special unit available from the After Sales Service.

For your safety as an installer and/or user:

1. Read all the instructions in this manual before switching on the BIO-UV appliance.

2. WHEN REPLACING THE LAMP OR CARRYING OUT ANNUAL CLEANING OF THE QUARTZ TUBE, MAKE SURE THAT THE ELECTRICAL ELEMENTS ARE IN PLACE AND CORRECTLY ATTACHED BEFORE SWITCHING ON THE APPLIANCE. MAKE SURE THAT THE NUT, WASHER AND O-RING (16 – 15 – 14, providing waterproofing) ARE PROPERLY POSITIONED, OTHERWISE THE QUARTZ TUBE MAY BE SHOT OUT OF ITS RECEPTACLE AT HIGH SPEED AND INJURE YOU.
3. To avoid electric short circuits, do not place the electric wires or the BIO-UV appliance in the pool water or in any other maintenance or cleaning fluid.
4. Unplug the BIO-UV appliance before carrying out any maintenance or cleaning operation.

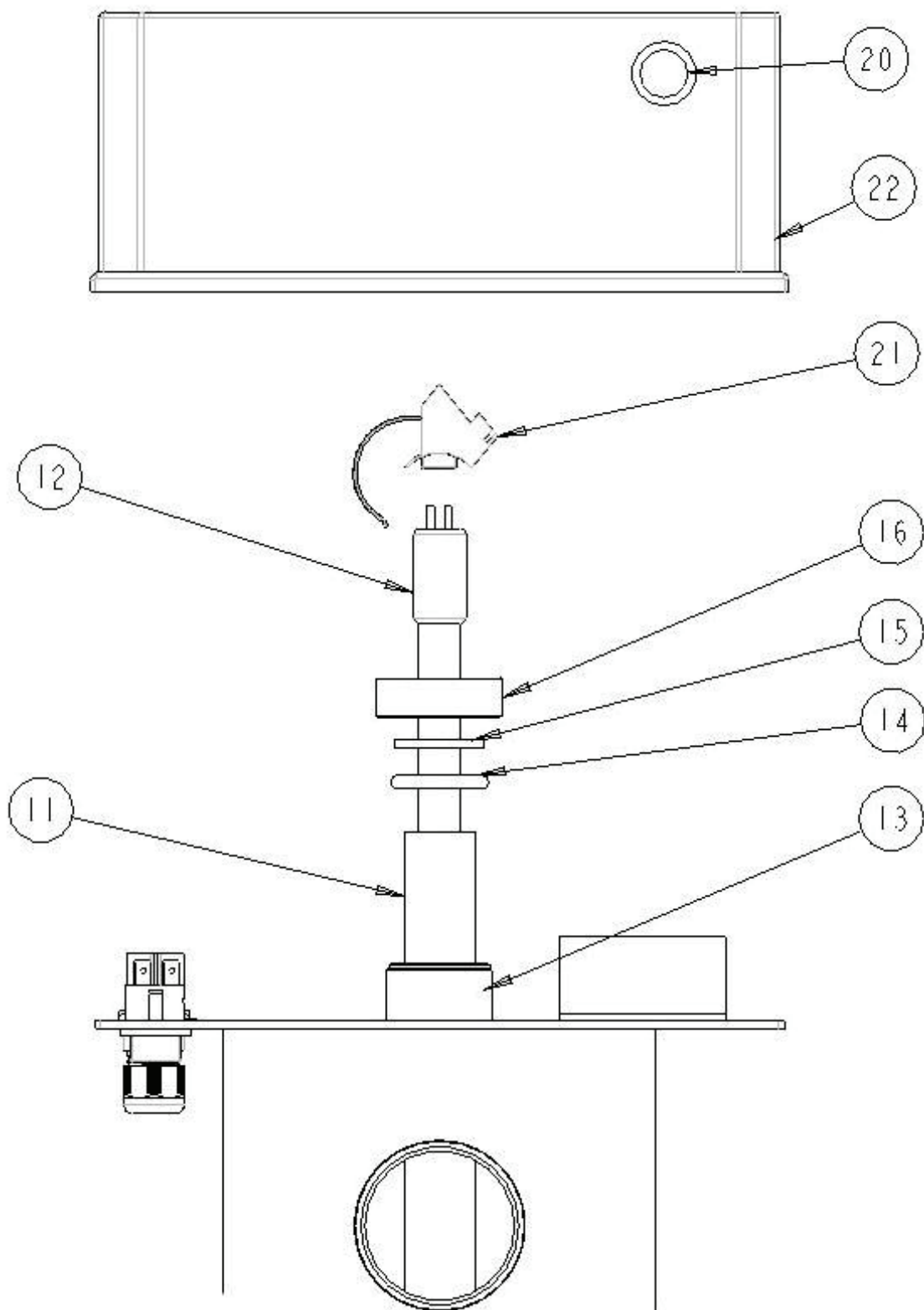


5. Allow the ultraviolet lamp to cool before handling it.

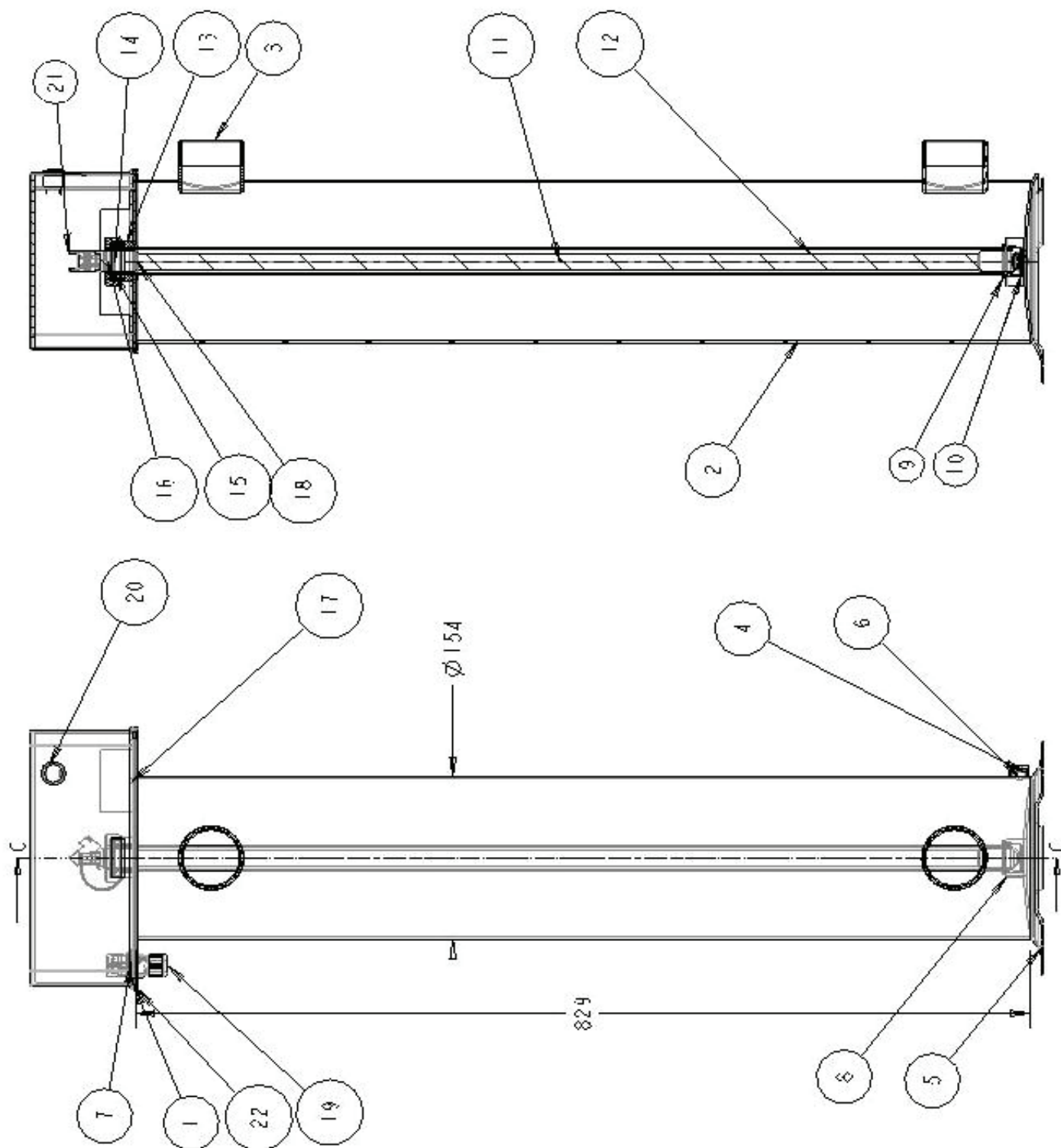


6. Do not touch the ultraviolet lamp with bare hands, as these would leave impurities that shorten the life of the lamp. . If you do touch it: clean with alcohol or white vinegar.
7. Do not use the BIO-UV steriliser if the electricity supply wire is worn or damaged.
8. Do not re-start the system until the appliance's electric unit and upper electrical box are correctly back in place.
9. Do not use the BIO-UV steriliser for any other use than that for which it was designed.

STERILIZER – BLOW UP VIEW

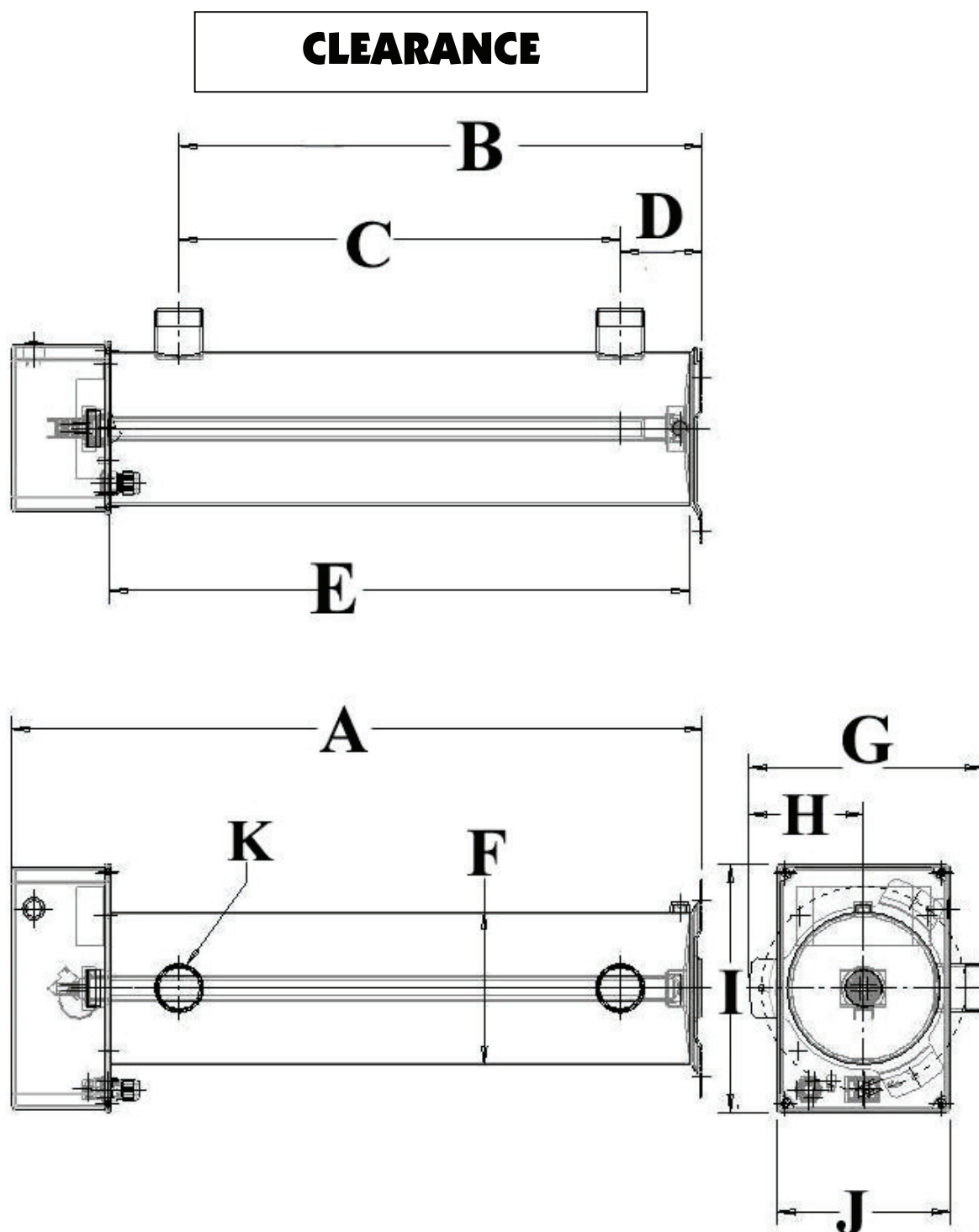


DETAILS OF THE PARTS STERILIZER U



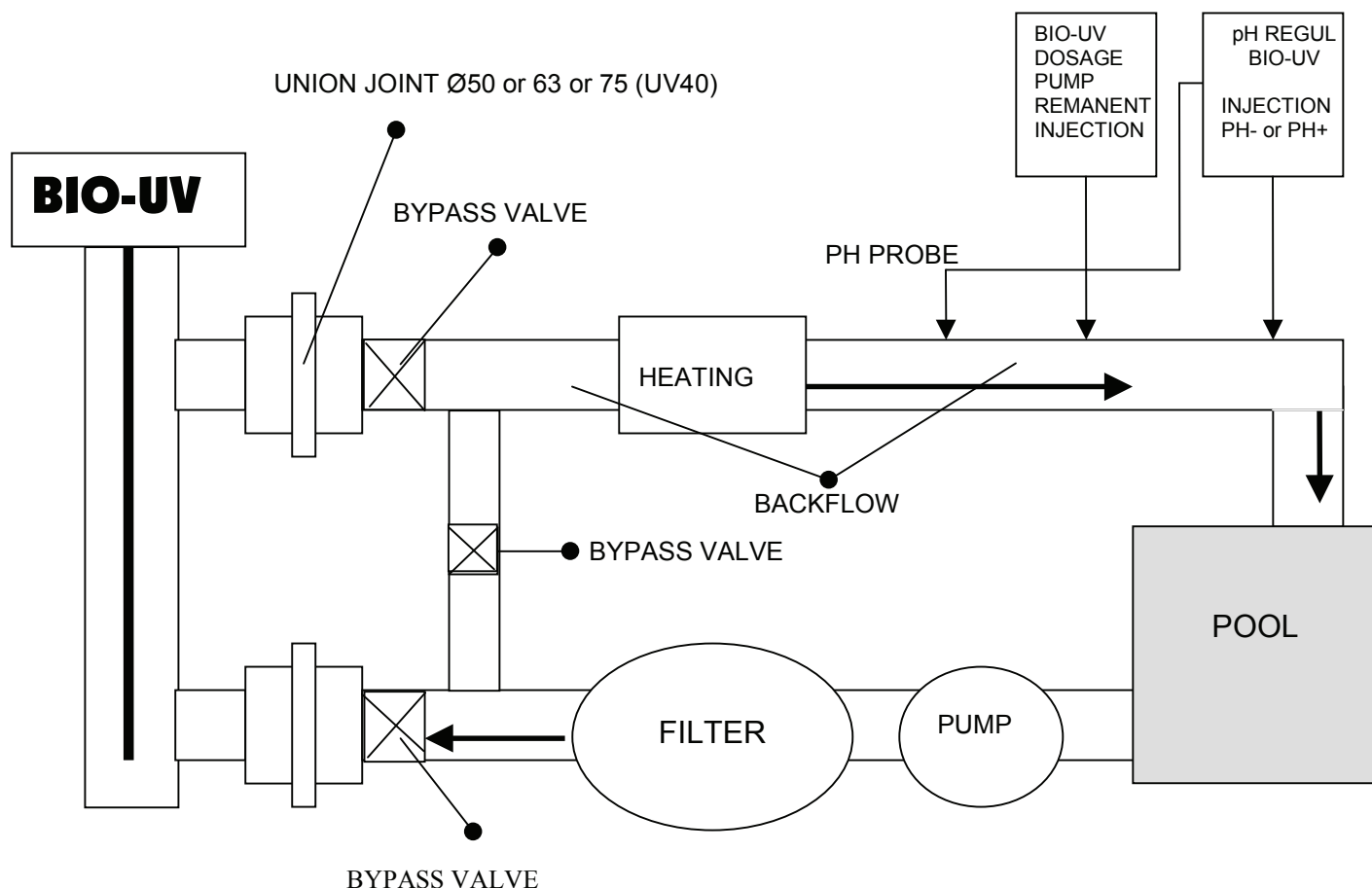
Nomenclature

N°	Qty	Reference	Designation
1	1	UI-1-005 A	Top
2	1	UI-1-010	Body
3	2	UI-1-015	Sleeve
4	1	UI-1-017	Sleeve purge
5	1	UI-1-018 B	Bottom
6	1	UI-1-023	Purge plug
7	1	UI-1-024	Terminal
8	1	UI-2-004	Support Guide
9	1	UI-2-008	Plug 14x
10	1	UI-2-009	Plug 14
11	1	UI-3-004	Quartz tube
12	1	UI-3-008	UVc lamp
13	1	UI-4-004	Tip
14	1	UI-4-005	O-ring joint
15	1	UI-4-007	Washer
16	1	UI-4-009	Stainless steel nut
17	1	UI-5-002	Ballast
18	1	UI-5-003	Switch
19	1	UI-5-004	Padding
20	1	UI-5-005	Indicator light
21	1	UI-5-071	Socket
22	1	UI-6-004	Cover



Clearance for U range sterilisers (dimensions in mm)											
Type	A	B	C	D	E	F	G	H	I	J	K
UV10	423.5	255.5	173	82.5	313	154	235	115	249	174	1"1/2
UV20	693.5	525	443	82.5	583	154	235	115	249	174	1"1/2
UV30	939.5	721.5	689	82.5	821	154	235	115	249	174	2"
UV40	1193.5	1025.5	943	82.5	1083	154	235	115	249	174	2"1/2

INSTALLATION GUIDE



Install the BIO-UV appliance in the pump house, taking care to respect safety areas outside volume 0.1 and 2 in line with current installation regulations .

Make sure you choose a position where the lamp can be taken out – the AVAILABLE HEIGHT in the pump house should be DOUBLE the total height of the appliance.

Unless the lamp is laid down to change the bulb and clean the quartz tube.

The BIO-UV appliance should be installed on the backwashes **after the filter** and **before the heating** (if necessary).

The appliance's water inlet should preferably be at the bottom and the outlet to the pool therefore at the top. (It may be positioned horizontally).

The union joints to ease fitting and removal are supplied in diameters of 50 (UV10-20) and 63 (UV30) - (UV40 = 75 diameter).

If a bypass is used for heating, the BIO-UV appliance should be installed before the bypass.

Using the connection collars (50, 63 or 75) fix the REMANENT and liquid pH injectors and the pH analysis probe in order, **see above diagram**.

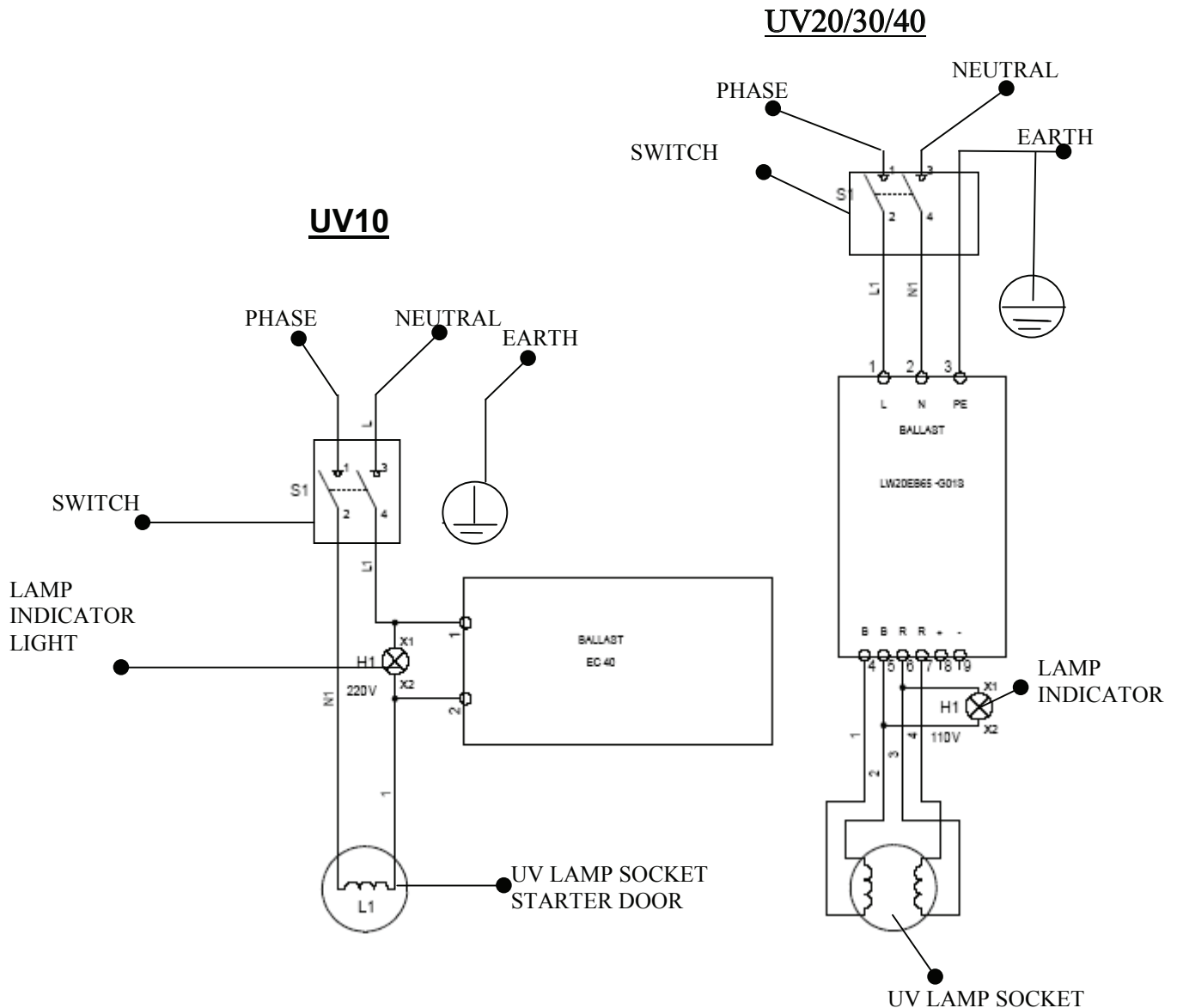
CONNECTION

The ultraviolet BIO-UV appliance is **dependent on the filtration system** and therefore has to work at the same time.

It is connected to the electricity unit on the filtration time delay, at **220 V**.
(Caution: 380 V).

The whole installation should be protected by a 30mA differential trip-switch.

UV ELECTRICAL DIAGRAM



The BIO-UV appliance has been wired for an earth connection



Disconnect the BIO-UV steriliser before any electrical work

CHECKS PRIOR TO START-UP:

- Check that the electrical connection in the filtration box is correct.
- Check that the upper part of the appliance has been correctly repositioned.
- Check that union joints and collars are in the right place and fitting tightly to the backflows.

PREPARING THE POOL



For new pools or fresh water

- After filling (use mains water supply) check that the filter and skimmers are clean, put in a shock dose of hydrogen peroxide (active oxygen), 1 L/10m³, to make everything really clean (filtration system in operation).
- Carefully balance the water's various key parameters:
TAC, pH and add a lime-scale sequestrant if the water is hard or very hard. This will make the water well balanced and less likely to cause lime-scale build-up, so disinfectants will be used up more slowly and will work more effectively.
- Check that the skimmers are opening and sucking in correctly.
- Position the backflow ducts facing slightly upwards. As pollution arrives via the surface, it will be taken rapidly towards the skimmers. Make sure that water is circulating optimally around all parts of the pool to avoid "dead areas" where algae love to settle.

For old water:

Water that has had 4 or 5 years of chlorine, bromine, PHMB, etc:

- After thoroughly cleaning the pool, skimmers, filtration system and pump pre-filter, add some fresh water.
- Concerning the filter, change the filter medium if it is more than 5 years old. Otherwise, open it to check that it is clean and apply a suitable cleaning product.
- Then, carry out the same operations as for fresh water.

STARTING UP

When you have checked the assembly of the BIO-UV steriliser and the BIO-UV dosage pump (see instructions):

- Set the timers.
- Adjust filtration times to the temperature of the water.
- **Check that the switch under the UV chamber case is in the ON position**
- Place the REMANENT container with the number of picots desired on the dosage pump timer.
- Start filtration and after a few seconds the indicator will show whether the UV lamp is operating correctly.

The BIO-UV appliance disinfects the water.

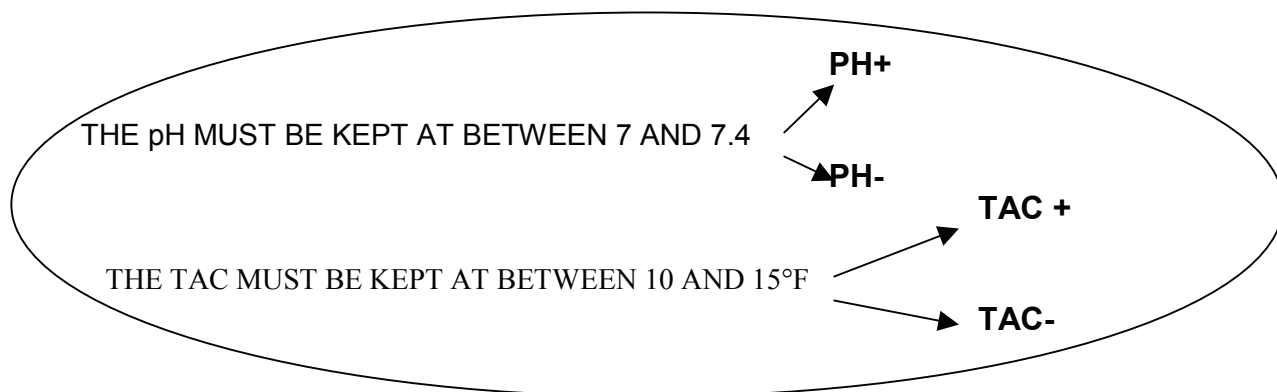
REMANENT makes the water disinfectant.

The whole system is automatic.

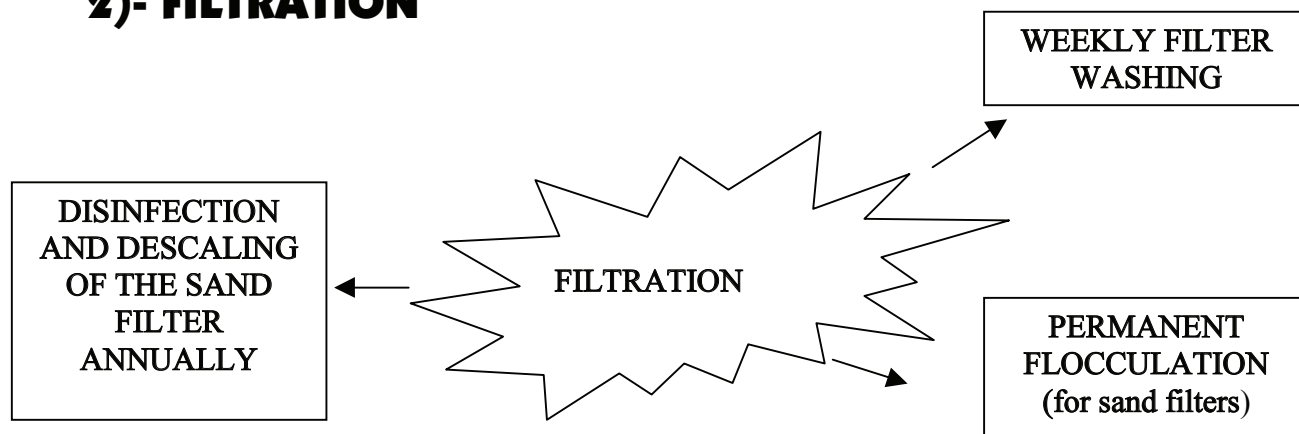
Don't forget to check pH every week if the equipment is not fitted with **BIO-UV pH** automatic regulator.

THE 4 ESSENTIAL STEPS

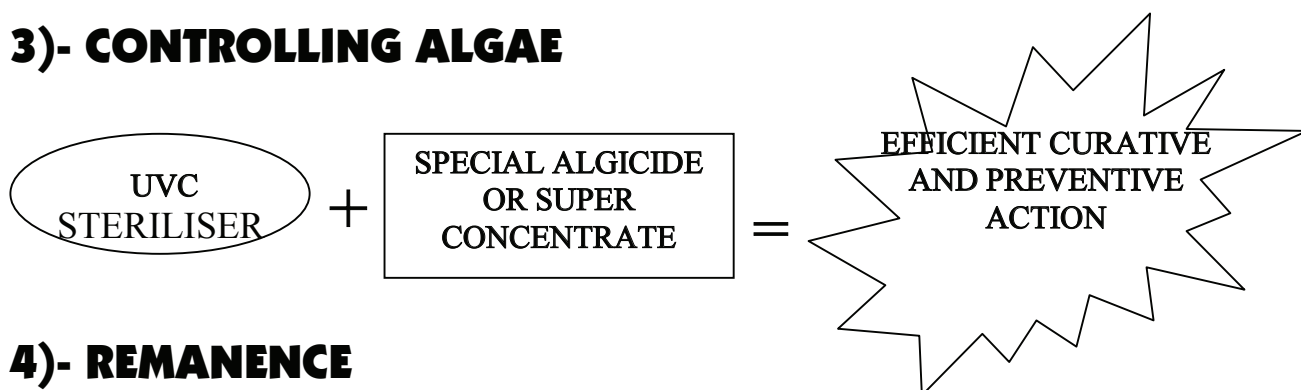
1)- WATER BALANCE



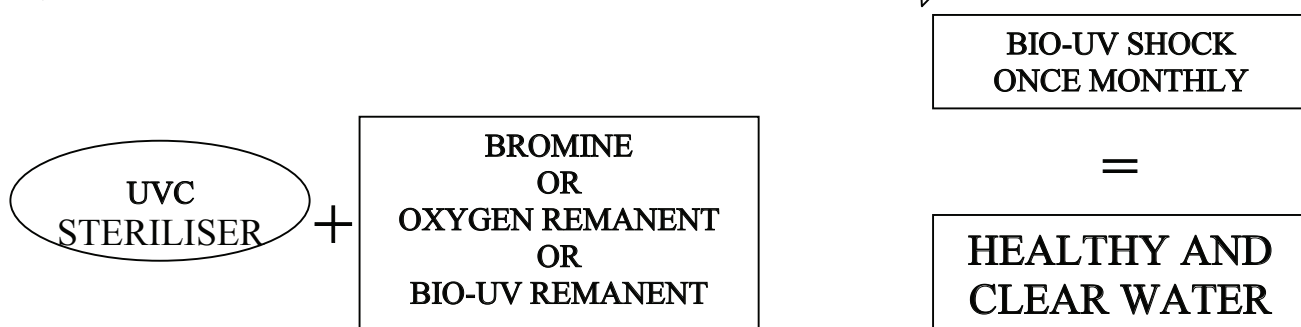
2)- FILTRATION



3)- CONTROLLING ALGAE



4)- REMANENCE



MAINTENANCE

(see exploded view p5)

The ultraviolet lamp is designed to last 8000 hours or 1000 switch-ons, i.e. around 2 years for an outdoor, seasonally-used pool or 1 year for an indoor pool operating 24 hours a day. In order to avoid premature wear we recommend one start-up per day, i.e. one filtration cycle. This also saves the filtration pump from wear.

Changing the lamp:

It is essential to work with the lamp and filtration switched off.

Whether installed vertically or horizontally, check that there is sufficient clearance to remove the lamp.

Dismantling (see parts diagram page 5)

- Dismantle the technical unit (22).
- Take the 4 PIN connector (21) and gently draw the lamp upwards while rotating it.
- As soon as the lamp has come up by a few centimetres, remove the connector, take hold of the ceramic base and remove the lamp from the quartz tube **while keeping it straight**. **This operation should be carried out carefully.**

Do not drop the lamp into the quartz tube, it may break and damage the quartz.

Reassembly

- Pick up the new lamp. Make sure that you touch only the upper and lower ceramic bases. If you touch the lamp, clean it with alcohol and a soft cloth.
- Slide the lamp into the quartz tube, **keeping a very straight line**.
- When it is $\frac{3}{4}$ of the way in, attach the bulb by its 4 pins to the connector (21) making sure it is facing the right way (guide pin). **Do not force it.**
- Slide the lamp all the way into the quartz tube.
- Refit the box (22)

Cleaning the quartz tube:

Every year, you should check that the quartz tube has not been turned opaque by lime deposits. The tube should be **perfectly transparent** so that it does not restrict the passage of ultraviolet rays.

- **Stop the filters and work with the lamp switched off.**
- Close all the valves on the installation.

Removing the quartz tube

CAUTION: The guarantee does not cover breakage.

- Remove the lamp (see previous paragraph).
- Place it on a soft surface, where it will not risk breakage.
- Unscrew the stainless steel nut by hand (16),
- Remove the white plastic washer (15),
- Insert your thumb or finger inside the tube and **gently slide it** until the O-Ring (14) is freed from its housing.
- Pull the quartz tube right out of the appliance, **keeping a very straight line**.

If the tube is clean and perfectly transparent: put it back it following the instructions below.

If you can see white lime-scale deposits, the tube must be cleaned with a soft cloth and white vinegar or an acid. **The quartz must not be scratched, as this will affect the ultraviolet rays.**

Putting back the quartz tube:

- **Carefully** slide the tube into the appliance, keeping a very straight line.
- With your finger inside the tube, place the quartz on its base at the bottom of the appliance. The quartz should protrude slightly (by the thickness of the O-Ring). It must not drop right to the bottom. If the quartz is correctly positioned in the base, you should feel suppleness when you apply slight pressure (pneumatic effect).
- Moisten the O-Ring (14) and position it round the tube. Use your fingernail to push it into its housing. **(Do not use tools).**
- Place the white plastic washer (15) inside the stainless steel thread.
- Re-tighten the stainless steel nut (16) by hand.
- Refit the lamp (see previous paragraph).
- Refit the box (22).
- Switch back on.

GUARANTEES

Units in the BIO-UV range are guaranteed subject to the following conditions:

- **5 years** for the stainless steel reactor (materials and welding) except in the event of use in a highly corrosive environment (brackish or very salty, e.g.: seawater),
- **2 years** for all other components, excepting the UV lamp (1 year and/or 1000 switch-ons) electrical components are not guaranteed against over voltage and lightening damage.

Caution! The quartz tube and the lamp are not guaranteed against breakage.

- Faulty parts must be returned to BIO-UV, with details of the unit type and serial number, for exchange after technical evaluation.
- Shipping costs will be shared between the retailer and BIO-UV.
- The guarantee runs from the day of installation: this date must be notified to BIO-UV by returning the guarantee validation form by post or fax (see following page).

Caution: If the guarantee validation form is not returned within 3 months following purchase of the unit, BIO-UV will use the month and year of manufacture of the unit as the guarantee start date.

If the instructions for installation and use are not followed, BIO-UV cannot accept responsibility and the guarantees will be considered null and void.

CONCLUSION

The BIO-UV system offers unparalleled water quality, comfort and peace of mind. Easy installation, low maintenance and after-sales support maximise its reliability.

Physical treatment of water by UV-C light offers a process that is environmentally friendly, producing no harmful chemical residues, benefiting both users and nature.

How to contact the BIO-UV team

BIO-UV SA

ZA La Petite Camargue
34400 LUNEL

Tel + 33 (0)4 99 133 911 Fax + 33(0)4 99 133 919

www.bio-uv.com Email: info@bio-uv.com

Brand name, Designs and Patents registered – Exclusive Products

GUARANTEE VALIDATION**● USER**

Name:

First name:

Address:

.....

Post code and city:

Tel:

Unit serial number:

UNIT TYPE

(check the relevant boxes)

☐ UV10☐ UV20☐ UV30☐ UV40

What type of application is the steriliser used for? (check the relevant boxes)

☐ **Swimming pool**Pool volume:m³Type of filtration: ☐ sand
☐ diatom
☐ cartridgeIs the unit installed with a pH regulator (BIO-UV pH)? ☐ Yes ☐ NoIs the unit installed with a dosage pump (BIO-UV TEMPO)? ☐ Yes ☐ No☐ **Spas**☐ **Ornamental pool (Fish)**☐ **Other (please give details):****● INSTALLER**

Name:

First name:

Address:

.....

Post code and city:

Tel:

Date of installation:

Please complete the above and return the document (*within 3 months of purchase*)
to the following address:**BIO-UV SA****ZA La Petite Camargue****34400 LUNEL****Or by fax: + 33(0)4 99 133 919**