

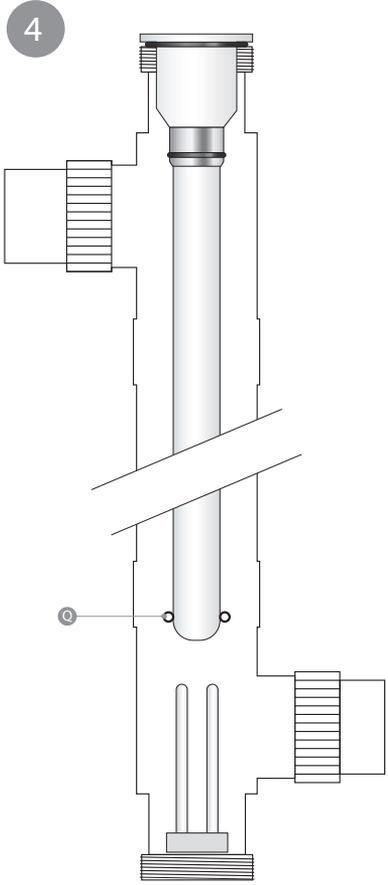
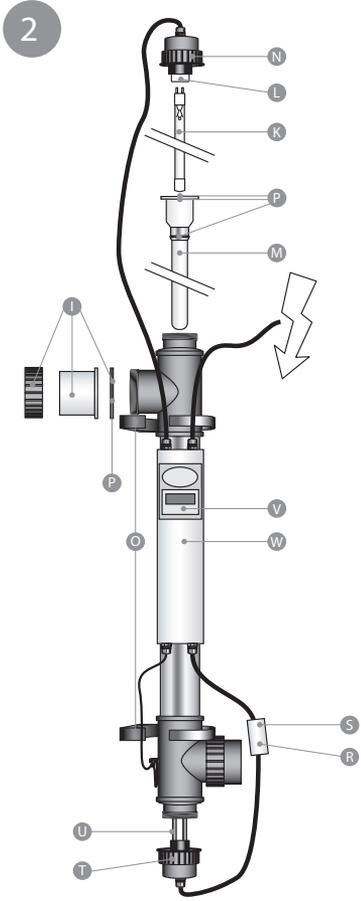
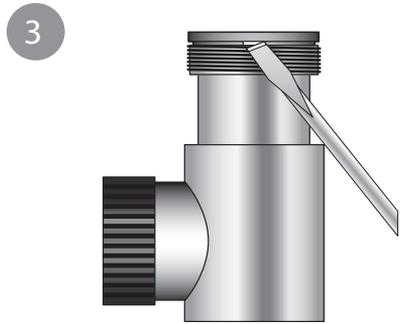
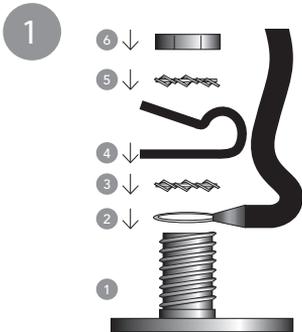


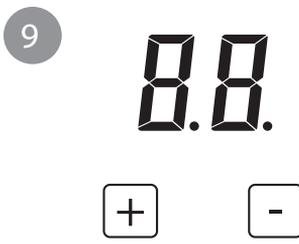
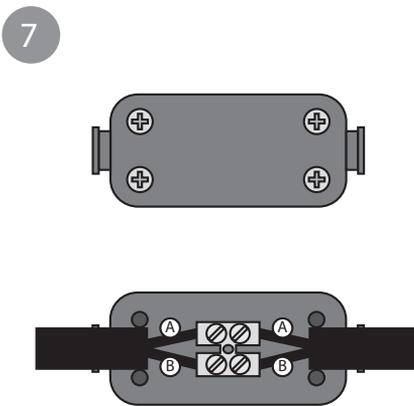
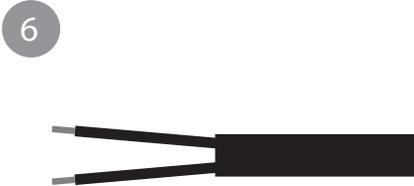
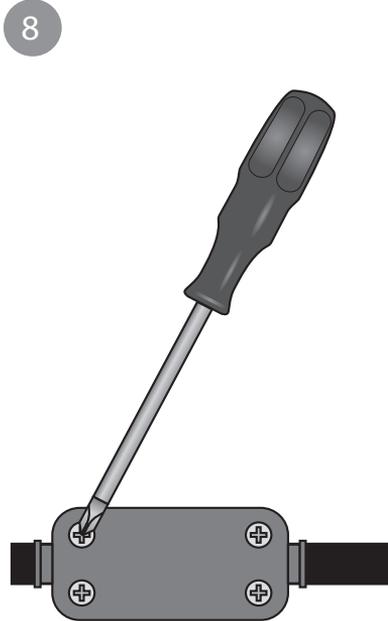
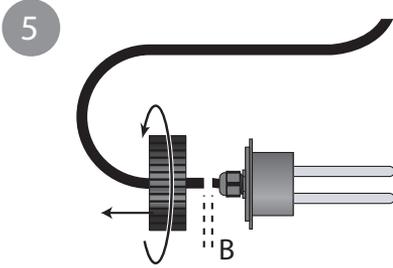
UV-C COPPER  
IONIZER



40 WATT  
75 WATT









Please read through these instructions for use carefully before installing this device.

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### HOW IT WORKS

The UV-C Copper Ionizer treats your swimming pool water through a combination of copper electrolysis and UV-C radiation. The UV-C Copper Ionizer is placed in the pipe system after the swimming pool filter. The swimming pool water flows through the housing of the UV-C Copper Ionizer. The housing contains a UV-C lamp and a copper unit. The copper electrode continuously releases copper ions into the water that flows through the housing. The positively charged copper ions ( $\text{Cu}^{2+}$ ) are attracted to the negatively charged cell wall of micro-organisms. Once a bond has been established with copper ions, the permeability of the cell wall is severely disrupted; the organism no longer absorbs nutrients and dies. The process by which positively charged copper ions are released is called copper electrolysis or copper ionization. Copper ions remain active until they are absorbed by a cell wall. Therefore the copper remains effective for a long time, even when the filter is not operating. The UV-C lamp located in the UV-C Copper Ionizer produces UV-C radiation. This radiation, with a wavelength of 254 nm, damages the DNA of micro-organisms, killing them. The reactor is designed in such a way that the water is optimally exposed to the UV-C radiation. The 316L stainless steel reactor provides additional reflection of the UV-C radiation, increasing the efficiency to 35%. With a good water balance, the combination of UV-C and copper ionization makes it possible to greatly reduce the use of chlorine. With the UV-C Copper Ionizer your water will be treated efficiently and safely, so you will maintain excellent water quality.

### USE

The UV-C lamp will light up as soon as the lead is plugged into a wall socket. It takes some time before the ionizer builds up an optimal level of copper ions (i.e. between 0.4 and 0.7 ppm). After about a week the copper level will be high enough to measure with the copper test strips. The test strip shows whether the copper content is too high or too low. You switch on the ionizer by pressing the '+' button on the display (V) (see figures 2 & 9). The display shows the level of copper emission in red. This is a number from '0' to '99'. When you set the ionizer to '00', the ionizer is off and no more copper is released. How high you should initially set the display depends on the size of your pool and the result of your first water test, as indicated by the test strip. If the first test shows that the copper content is too low or too high, you increase or decrease the copper emission with the '+' and '-' buttons respectively. Repeat the measurement after a week and adjust the ionizer if necessary. If the copper content is too high, reduce the setting to '00' with the '-' button so that no more copper is released into the water. When you test the water again a week later, the result shown on the test strip tells you whether it is time to switch on the ionizer again. By repeatedly testing and adjusting the setting higher or lower you will ultimately achieve the right copper balance in your pool.

Every 14 days the ionizer switches off automatically. You will see that the numbers on the display are no longer lit. The UV-C lamp will remain on as long as the device is supplied with power. When the ionizer switches off, you should test the water with the enclosed test strips. You can switch the device on again with the '+' button. The level set on the display before it automatically switched off is now shown on the display again. After switching on the ionizer you can no longer turn off

the display manually. The display switches off automatically after 14 days. If you made a mistake or do not want to switch on the Ionizer, you can simply set the display to '00'. During the first month of use you must test the pool water every week until you reach the desired balance. After a month you can reduce the test frequency to once every two weeks. The pH can also be tested with the test strips. A pH value between 7.0 and 7.6 is the most ideal value for copper ionization. When using copper ionization it is important that you always use inorganic chlorine. The use of organic chlorine can cause the copper electrode to become contaminated, preventing it from releasing copper into the water. The calcium hardness should always be between 5 and 10 °dH. The wrong water chemistry and/or poor earthing of the pool can result in copper being deposited on parts of the pool, causing stubborn stains.

Warning! Never add Chlorine, pH regulators or other chemicals through the skimmer or other water outlets. The temporarily high concentration of chemicals can contaminate the electrode to such an extent that it can no longer release copper. When adding a flocculant, the ionizer must be switched off temporarily.

#### REPLACEMENT LAMP AND COPPER UNIT

The UV-C lamp has a service life of  $\pm 9000$  hours and the copper unit  $\pm 4000$  hours. When the number '88' is flashing on the display of the UV-C Copper Ionizer you must replace the UV-C lamp and copper unit. You can obtain a replacement set from the dealer where you purchased the device. Each type of device has its own replacement set with the correct type of UV-C lamp. Once you have replaced the UV-C lamp and copper unit you can reset the display by holding the '+' and '-' buttons simultaneously for three seconds.

**Replacement set: Copper, 40 Watt lamp & test strips, article number: B200012**

**Replacement set: Copper, 75 Watt lamp & test strips, article number: B200013**

#### ADVANTAGES OF UV-C TREATMENT

- Ensures fresh, clean and clear water
- Disinfects water efficiently and safely
- UV-C light breaks down organically bound chlorine and prevents chlorine smell and the associated skin and eye irritation (red eyes)
- Protects your pool from germs
- Helps to keep the formation of mould, bacteria and algae under control
- Can significantly reduce the use of chlorine and other chemicals
- More environmentally-friendly than traditional methods

#### CHARACTERISTICS OF UV-C COPPER IONIZER:

- Disinfection through UV-C
- Disinfection through copper electrolysis
- 316L stainless steel reactor produces up to 35% more UV-C through reflection
- UV-C lamp service life is  $\pm 9000$  hours, copper unit  $\pm 4000$  hours

- Easy installation and maintenance
- 2-year warranty against manufacturing defects

#### INSTALLATION OF THE EARTH (DRAWING 1)

1. Pull the cable (2) through the strain relief (4) before fitting the synthetic strain relief (4) onto the earth bolt (1). Position the strain relief (4) at approximately 10 cm from the eye (2) of the earth cable.
2. Place the eye (2) of the cable onto the earth bolt that is fitted to the housing.
3. Then place a toothed lock washer (3).
4. Fit the strain relief (4), creating a loop of Ø5 cm.
5. Finally place the second toothed lock washer (5) and the lock nut (6) onto the earth bolt.
6. Once the parts have been placed onto the earth bolt in the correct sequence, they can be tightened with a spanner or a ring spanner number 8.

#### INSTALLATION OF THE DEVICE (DRAWING 2)

Never submerge this device in water. The installation must always take place outside of the pool. Ensure that there is always water flowing through the unit when the lamp is on. The UV-C Copper Ionizer must never be installed behind the PH regulator in your swimming pool installation. The ideal location is behind the pump and the filter.

1. Determine where the device will be installed.
2. Fit the unit into the circuit using the three-part couplings (I).
3. Fit the supplied pipe clips (O) in fixed positions, press the unit into the pipe clips and tighten the three-part coupling (I). Ensure that there is sufficient space available (+/- 1 metre) to remove the lamp (K) / quartz glass (M) for replacement and/or to carry out maintenance.
4. Carefully slide the UV-C lamp into the quartz glass (M). Fit the lamp (K) into the lamp holder (L) and tighten the nut (N) onto the unit by hand.
5. Activate the pump and check the system with regard to flow-through and leakage. Pay attention to the correct position of the sealing rings (P), both with regard to the connections and the quartz glass.
6. Place the UV-C device plug into a wall socket that is fitted with a safety ground and a earth leakage current circuit-breaker (ELCB). Check that the lamp is on by looking through the transparent sections of the device.
7. The device will be completely switched off if the plug is removed from the socket.
8. Make sure to leave a free area of +/- 1 metre in order to be able to remove the lamp (K) / quartz glass (M) for the purpose of replacement and/ or maintenance. There must be a minimum space of 30 cm at the bottom for the replacement of the copper unit (U).

#### DISASSEMBLY / MAINTENANCE / REPLACEMENT COPPER & LAMP

Always disconnect the mains power during maintenance/disassembly of the device. The device must be cleaned every three months. When biofilm and/or scale deposits have built up, the quartz

sleeve (M) in which the lamp is inserted must be cleaned. The copper unit can be used up more quickly as a result of external influences. Therefore also check the copper unit during cleaning. Under normal use the special UV-C lamp must be replaced after about 9000 hours and the copper unit after about 4000 hours. The stainless steel reactor can be cleaned with a soft brush.

1. Unscrew the three-piece couplings (I) and let the water drain out of the device.
2. Unscrew the nut (N) and slide it part way out with the lamp. Carefully remove the lamp from the lamp holder (K). Once the lamp is loose, carefully remove the lamp from the quartz sleeve. Caution is advised as these are very delicate parts.
3. Carefully remove the quartz sleeve (M) using a large, flat screwdriver (see figure 3). Never use force!
4. Clean the quartz sleeve with an appropriate cleanser. We recommend a cleaning agent based on citric acid. Always use a soft cloth to clean the sleeve and avoid scratches.
5. When reinstalling the quartz sleeve in the housing, pay attention to the correct position of the sealing rings (P) and carefully slide the end of the quartz sleeve into the holder (Q) (see figure 4). Never use force!
6. To replace the copper unit (U) (see figure 3) unscrew the protective cover (R) from the junction box (S) with a screwdriver and disconnect the wiring from the terminal block. Then unscrew the nut (T) on the bottom of the device. Carefully remove the copper unit using a large, flat screwdriver (see figure 3). Never use force! Now place a new copper unit in the device and reconnect the wiring to the terminal block (see figure 5). Finally, tighten the screws on the terminal block. Then reinstall the protective cover on the junction box. Make sure the black sheath on both sections of cable is inserted far enough into the connector and tighten the cover.
7. Please read the Installation and Disassembly section before installing a new housing or electrical section. The electrical section of the device is in the display housing (W) on the device. This display housing is sealed with adhesive and cannot be opened. When replacing the electrical section, the entire housing must be unscrewed and the wiring disconnected from the device (see figures 1 & 5). Unscrew the nut (N) and carefully disconnect the lamp holder from the lamp. Make sure you save the various parts, such as the earthing, etc. These are not supplied with a new housing or electrical section. If in doubt about the connection, you should consult a qualified installer.

The UV-C Copper Ionizer is available in the following types:

**UV-C Copper Ionizer 40,000 litres / 40 Watt (230V; 50/60Hz) article number: BH04402**

**UV-C Copper Ionizer 75,000 litres / 75 Watt (230V; 50/60Hz) article number: BH04752**

TECHNICAL SPECIFICATIONS	40,000 L	75,000 L
• Lamp TUV UV-C	40 Watt	75 Watt
• Swimming pool content (L)	40,000 l	75,000 l
• Recommended max. flow	23,000 l/h	23,000 l/h
• Maximum copper	0.7 ppm	0.7 ppm
• Maximum pressure	2 bar	2 bar
• Maximum temperature	50°C	50°C
• Minimum temperature	0°C	0°C
• Connection size	Ø 63 mm	Ø 63 mm
• Length of the device	100 cm	100 cm

#### SIX STEPS FOR A PERFECT SWIMMING POOL WHEN USING AN IONIZER

1. **Shock**  
When your pool is new, filter your water and give it a 'shock' of 2 ppm chlorine.
2. **Balance**  
Your pool should have a pH balance of between 7.0 and 7.6, tested weekly.
3. **Total alkalinity**  
The ideal values are between 100 and 200 mg/l CaCO<sub>3</sub>. Correct alkalinity can generally be achieved through sufficient back-flushing of the filter. This refreshes the water.
4. **Calcium hardness**  
The ideal value is between 5 and 10 °dH.
5. **Installing your Ionizer**  
Install your Ionizer as described in the instructions for use.
6. **Copper level (0.4 – 0.7 ppm)**  
Set your Ionizer so that the copper level remains within the ideal range of 0.4 to 0.7 ppm. You can test this with the supplied test strips.

**For the safety instructions and terms of guarantee we would like to refer to the general UV-C manual from VGE International B.V.**