

## User's manual

# Aquarium Pump Wave Maker CW-110, CW-120, CW-140, CW-160

51656–51659



Illustration similar, may vary depending on model

Please read and follow the operating instructions and safety information prior to initial operation.

Technical changes reserved!

Illustrations, functional steps, and technical data may deviate insignificantly due to continuous further developments.



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## Introduction

Thank you for choosing to purchase this quality product. To minimise the risk of injury, we ask you to always take some basic safety precautions when using this product. Please read this operating manual carefully and make sure that you understand it.

Keep these operation instructions in a safe place.

This vibration pump simulates natural waves like in the ocean and imitates natural whirls; thus, it offers the fish and other aquatic organisms a species-appropriate surrounding.

Before using this product, read the following instructions for use carefully and keep them.

## Safety instructions

### **CAUTION:**

The use of this device is only allowed with a fault current protection switch with a triggering nominal current up to 30 mA (according to VDE 0100 Article 702 and 738).

The device is not intended for use by persons (including children) with impaired or limited physical, sensory, and mental abilities or lack of experience and/or real knowledge, unless they are supervised by a person responsible for their safety or follow the instructions made by this person on how to correctly use the device.

Children should be supervised to ensure that they do not play with the device.

### **ATTENTION:**

- Perform a visual inspection of the device before every use. Do not use the device if the safety appliances are damaged or worn out. Never override safety regulations.
- Only use the device accordingly to the intended purpose stated in this manual.
- You are responsible for the safety of the working zone.
- If the cable or the plug is damaged due to external influences, it must not be repaired. It must be replaced with a new one. This work may only be carried out by a qualified electrician.
- The voltage of 230 V AC indicated on the nameplate of the device must match the existent mains voltage.
- The device must never be lifted, transported, or attached by the power cord.
- 
- Make sure that the electric plug connections are protected from flood and humidity.
- Always unplug the appliance before working on it.
- Avoid exposing the device to direct water jets or rain.
- The user is responsible for complying with local safety and mounting regulations. Ask an electrician, if necessary.
- In the event of a malfunction of the appliance, repairs must only be carried out by a qualified electrician.
- Read all safety precautions and instructions. Failure to obey the safety precautions and instructions might cause an electric shock, a fire, and/or severe injuries.
- Keep all safety precautions and instructions for future use.

## Warning notices

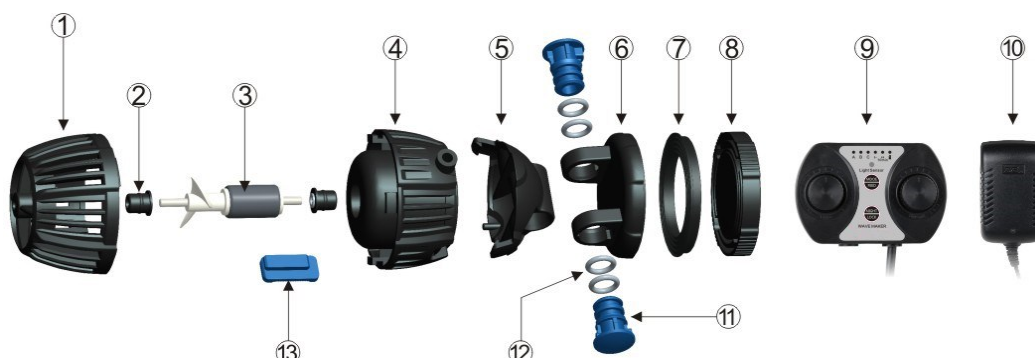
- **Caution:** Please make sure that all pump parts are intact before switching on the wave maker. Do not connect it to voltage supply sources whose voltage do not match the one indicated on the device.
- There must be no sand in the pump, otherwise certain components may be destroyed. Damages caused by presence of sand are not covered by warranty.

- Due to the strong magnetism, it must be kept out of reach of children.
- Place the magnets on either side of one aquarium wall. Avoid putting your hands or fingers between them as this can cause injury.
- If the distance of the magnets is only 5 cm, the attractive force between the magnet, metal parts, and other magnets becomes very strong. To avoid injuries, keep them sufficiently away from edges, sharp objects, and other magnets.
- These magnets might cause permanent damages to electric or other devices such as pacemakers or credit cards. Therefore, they should be kept at least 30 cm away from it.
- To avoid damaging the aquarium, attach the two magnets as follows: Never move the magnets from both sides of the glass wall at a 180° angle towards each other, but place them offset on both sides and push them towards each other until they overlap.

### Properties

- The pump features three operation modes: wave mode, random mode, and constant-flow mode.
- Low energy consumption
- Low-voltage direct current pump (AC 100~240 V 50/60 Hz)
- Intelligent, user-friendly control system
- Suitable for aquaria with freshwater and saltwater

### Parts list



No	Name	No	Name
1	Rotor cover	8	Magnet holder
2	Bearing	9	Control panel
3	Rotor	10	Adapter
4	Motor	11	Spindle
5	Rear cover	12	O-ring
6	Bracket	13	Tap
7	Rubber joint ring		

### Installation

1. Clean the aquarium before fixing the pump. Attaching the magnets is easier in clean aquariums, as dirt residues on the glass panes make it more difficult for the magnets to adhere. If the pump does not hold properly on the glass and falls, it might get damaged. To avoid a disturbance caused by noise and vibrations and to ensure proper operation, the pump must be fixed below the water surface (see fig. 1).
2. To install the pump, first remove the cable. Then, separate the magnets from each other.



3. Fit the magnet to the pump by fixing the rear cover (5) to the support (6) using the O-rings (12) and the spindle (11).
4. Submerge the pump completely in the water and place it in the required location. Place the external magnet against the glass outside of the tank but not directly against or near the wave maker unit.
5. Slowly slide the external magnet towards where the internal magnet of the pump has been placed until both magnets overlap (see fig. 2).
6. Then install the control panel in the desired location. **Tip:** If you want to attach the control panel to the aquarium as well, it is best to use double-sided adhesive tape.
7. Connect the pump housing to the control unit using the three-pin connector. Connect the direct current plug to the control unit. Connect the alternating current adapter to the wall socket.

**Important:** The magnets are very strong and should be handled with care and caution. Do not let them go or drop them. Keep the magnets away from the aquarium holder for they might cause damages to the aquarium.



Figure 1

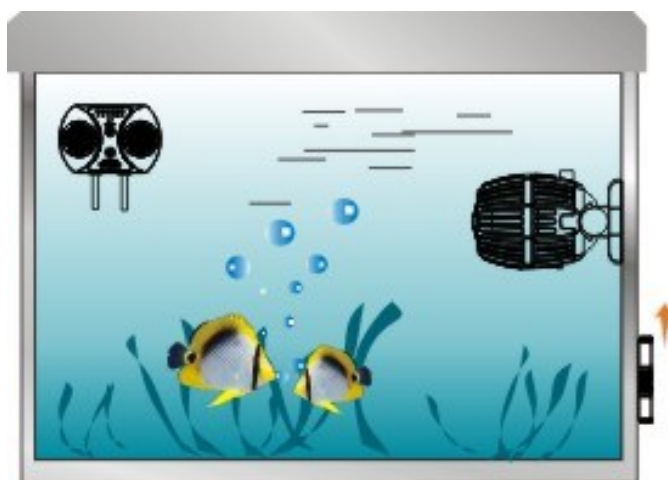


Figure 2

### Caution

- Make sure that the pump does not run dry.
- Only connect the device to the mains after installation.
- The control unit and the mains plug must not come into contact with liquids; hence, a drip loop is absolutely necessary.
- The pump, the control unit and plug must not be modified or disassembled.

## Functionality



### 1. Key functions

**MODE/FEED:** A single press takes you to the selection menu; press and hold this button to enter feeding mode.

**NIGHT/LOCK:** A single press takes you to the night mode; press and hold this button to enter lock mode.

The wave cycle and the type of wave can be set using the “Time function key” in the left half of the control panel. The function key for the flow in the right half of the control panel controls the capacity.

### 2. Mode functions

**Wave mode (A):** The “Time controller” function key and the “Flow controller” function key regulate the flow and waveform. Turning the time control clockwise extends the wavelength. The flow regulator can also affect the swing of the wave. By turning the “time regulator” counter-clockwise, the wavelength becomes shorter.

**Note:** It is advisable to fine-tune the “time controller” after the flow controller has been set to maximum. The device should be observed for at least 10 s after each fine-adjustment.

**Random mode (B):** Here the power/force of the wave is changed on a random basis. The flow and waveform are also randomly influenced.

**Constant flow mode (C):** In this mode, the pump provides a constant flow. The constant flow is set via the flow regulator.

**Feeding mode:** Press the “**MODE/FEED**” button longer, the display now shows “10 Min.,” which means that the flow pump will pause for 10 min so that you can feed the fish. After 10 min, the pump automatically returns to the previously set mode. To reset the flow pump to operation mode, keep “**MODE/FEED**” pressed until the indication disappears.



### 3. Night/Lock functions:

The light sensor ensures a natural attenuation of the waves when darkness sets in. Depending on the brightness outside, the pump switches to day or night mode. The switching is controlled by a photocell located in the front panel of the control unit.

**Night mode:** To activate the night mode, simply press the “**NIGHT/LOCK**” button. The status LED of the night mode (moon and stars) lights up and thus indicates the activated mode. When it starts to get dark, the flow pump switches to night mode: While working according to the respective setting during the day, it works with minimum power at night. To exit night mode, simply press the “**NIGHT/LOCK**” button and the night light switches off.

**Tip:** If you place the control unit of the wave maker pump in a cabinet, then the day/night simulation can be carried out with a timer-controlled lamp in the cabinet.

**Lock mode:** Pressing and holding the “**NIGHT/LOCK**” button causes the “**LOCK**” indicator to light up and the flow pump to lock the waveform and flow settings. To be able to set the waveform and current again, press and hold “**NIGHT/LOCK**” until the indication disappears.

### Maintenance

Regularly clean and maintain the pump and its parts to extend their service life. To do so, proceed as follows:

1. Disconnect the pump from the mains by carefully pulling out the plug.
2. Take the pump out of the water. To do this, grab the pump unit in the water with one hand and the magnet on the outer wall of the aquarium with the other. Carefully slide both magnets away from each other.
3. Carefully open the pump unit. The rotor cover can be removed by sliding the closure on the pump body. Clean the rotor with a soft cloth and rinse the pump housing well with water.
4. Carefully clean the individual parts, do not use detergents or impregnating agents!
5. After cleaning, the pump must be reassembled in reverse order. Make sure that the two grooves fit together and that the shaft sits correctly.
6. Please use a dry cloth to clean the control panel if it is wet.



**Important:** This device is only suitable for indoor use. The control unit and adapter must always be kept dry.

When connecting the cable to the socket, provide a drip loop that prevents the water running down on the cable from getting into the socket.

### Technical specifications

Model	Item number	Power supply	Power (W)	Flow rate (l/h)	Suitable for aquaria (cm)
<b>CW-110</b>	<b>51656</b>	Power consumption: AC 220–240 V/50 Hz  Power output: DC 24 V	10	500–4000	50–70
<b>CW-120</b>	<b>51657</b>		20	700–8000	70–120
<b>CW-140</b>	<b>51658</b>		40	1200–15000	100–150
<b>CW-160</b>	<b>51659</b>		60	1700–20000	150–200



## Regulations for waste disposal

The Waste Electrical and Electronic Equipment Directive (WEEE Directive, 2012/19/EU) of the EU was implemented in the German law related to electrical and electronic equipment and appliances.

All WilTec electric devices that fall under the WEEE directive are labelled with the symbol of a crossed-out wheeled rubbish bin. This symbol indicates that this electric device must not be disposed of with the domestic waste.

WilTec Technik GmbH is registered with the German registration authority EAR (Stiftung Elektro-Altgeräte Register) under the WEEE-registration number DE45283704.

Disposal of used electrical and electronic devices (intended for use in the countries of the European Union and other European countries with a separate waste collection system for these devices).

The symbol on the packaging or the product itself indicates that this product must not be treated as normal domestic waste but must be disposed of at a recycling collection station for electrical and electronic waste.

By disposing of this product correctly, you contribute to the protection of the environment and the health of your fellow people. Inappropriate disposal threatens the environment and health.



Material recycling helps to reduce the consumption of raw materials.

Additional information about the recycling of this product can be provided by your local commune, the municipal waste disposal facilities, or the store where you purchased the product.

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