

## Determining and setting the appropriate ozone output

As a rough guide, use about 10 mg of ozone per hour for every 100 liters of salt water, or about 5 mg of ozone per hour for every 100 liters of fresh water.

When first using the ozonizer, we recommend slowly increasing the ozone output over a timespan of about 14 days, so that the aquarium may gradually adjust to the enhanced water quality.

## Operation with the Sander Redox Controller

For precise management of your setup's ozone requirement, we recommend using the ozonizer in combination with a redox controller (**Sander redox potential detector and controller, part number 7.1C**). This device automatically turns the ozonizer on or off, depending on a set value for the redox potential.

To connect the redox controller, remove the dummy plug from the 4-pin socket **(8)** on the ozonizer, and replace it with the single plug on the supplied redox controller adapter cable. Then connect the two plugs on the other end of the cable with the redox controller.

The actual value for the redox potential, as well as the controller state, are displayed on the redox controller's top panel.

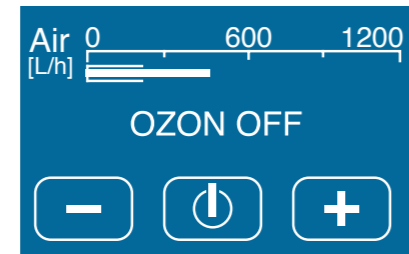
For further instructions, please refer to the redox controller's user guide.

## Operating the ozonizer

As soon as the power supply is connected, the ozonizer starts up automatically.



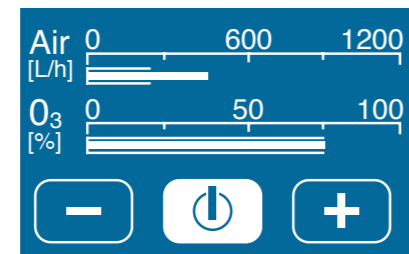
During startup, the display **(2)** briefly shows the Sander logo, and then changes to the main control interface:



The upper bar graph (»Air«) indicates the amount of airflow through the ozonizer in litres per hour.

While ozone production is off, the display shows the label »OZON OFF«.

Use the center button **(I/O)** to turn ozone production on or off.

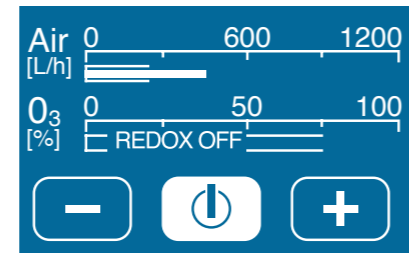


The lower bar graph (»O<sub>3</sub>«) indicates the ozone output as a percentage.

Use the **-** and **+** buttons to reduce or increase ozone output stepwise from 0 percent (off) to 100 percent (full power).

Both bar graphs consist of two parts: a thick center bar with two thin bars above and below. The thin bars indicate the set value, while the thick bar indicates the actual (current) measured value.

## Using a redox controller



When using a redox controller, ozone production is turned off automatically once the target redox potential set on the redox controller has been reached. When the redox potential drops below the set value, ozone production is resumed.

## Ozone output throttling with insufficient airflow

If airflow drops below 250 litres per hour, the ozonizer will reduce ozone production proportionally to prevent overheating.

Example: If airflow is 125 litres per hour, and ozone production is set to 100 %, the ozonizer will operate with a throttled output of 50 %.

The minimum required airflow is 75 litres per hour. In the event that airflow drops below this limit, ozone production is shut down completely to protect against overheating.

## Cleansing and maintenance of the ozone generator

Humidity and dust contamination in the inlet air cause ozone output to be reduced substantially. With this in mind, the ozone generator has been designed for easy maintenance and cleansing.

With continuous operation, it is recommended that the ozone generator be examined for contamination about once every 3 to 6 weeks.

Before cleansing the ozonizer, please set the ozone output to zero, but keep it running for a few minutes. This will cause any residual ozone to be removed from the ozone generator.

## Opening and cleansing of the ozone generator

- Turn off the ozonizer **(I/O)** button).
- Allow the ozone generator **(5)** to cool down.
- Disconnect the power cable from the mains socket.
- Remove the plug from the power supply connector **(7)**.
- Disconnect the tubing for inlet air and ozone.
- Remove the screws **(4)** holding the ozone generator cover **(5)** in place using the supplied hex-tip tool.
- Remove the ozone generator cover **(5)**.
- Wipe the ozone generator's ceramic plates with a sponge (if necessary, by using household scouring agent). Please make sure to remove any deposits from the connection nipples as well.
- Allow to dry.

## Reassembly to resume operation after cleansing

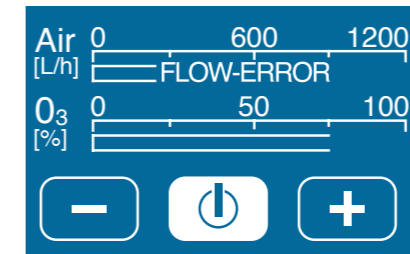
- Reattach the ozone generator cover **(5)**, taking care that the insulating o-ring is seated firmly in its groove.
- Tighten the hex-tip screws **(4)** crosswise until they are hand-tight.
- Reattach the tubing for inlet air and ozone.
- Reconnect the 24 volts plug into the power supply socket **(7)**.
- Reinsert the wall plug into the mains socket.
- Turn on the ozonizer **(I/O)** button).

## Display cleansing

- To clean the display, use a microfiber cloth only.
- Cleansing only with hand gloves, eye protection, and proper clothes. Caution with acid residues.
- Dry immediately.

## Troubleshooting

### Insufficient airflow



If airflow through the ozonizer drops below 75 litres per hour, ozone production will shut down to prevent overheating. Please provide sufficient airflow to the ozonizer, removing any blockages.

### High temperature shutdown

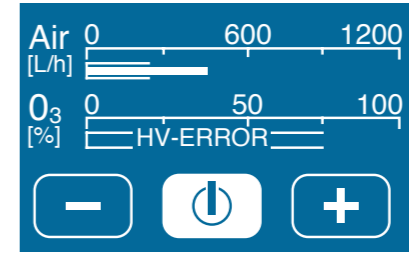
If there is insufficient ventilation for cooling or insufficient airflow, both combined with high-level ozone production, the temperature in the ozonizer may exceed its limit (70 °C). In this event, the ozonizer will shut down to prevent damage. Please provide sufficient circulation of air, in particular if the ozonizer is mounted in a cabinet. The ozonizer will resume operation once the temperature has dropped to be within limits.

## Disposal

Packaging is made from eco-friendly materials that may be disposed of at any local recycling facilities.

Should you need to dispose of the ozonizer, please do not place it into your regular domestic waste. In the interest of environmental protection, please use an appropriate disposal facility for electrical equipment. Your local (municipal) government will provide you with the locations and opening times of such facilities.

## High voltage malfunction



Water or dirt particles entering the ozone generator may cause damage, creating a faulty voltage potential inside the ozonizer. In this event, please disconnect the ozonizer from the power supply immediately, removing the wall plug from the mains socket. Blowing air through the ozonizer may remove any water that has entered. Please cleanse the ozone generator as described above. If the problem persists, please send the ozonizer in for inspection at Sander company headquarters (see address on back cover page).

## Specifications

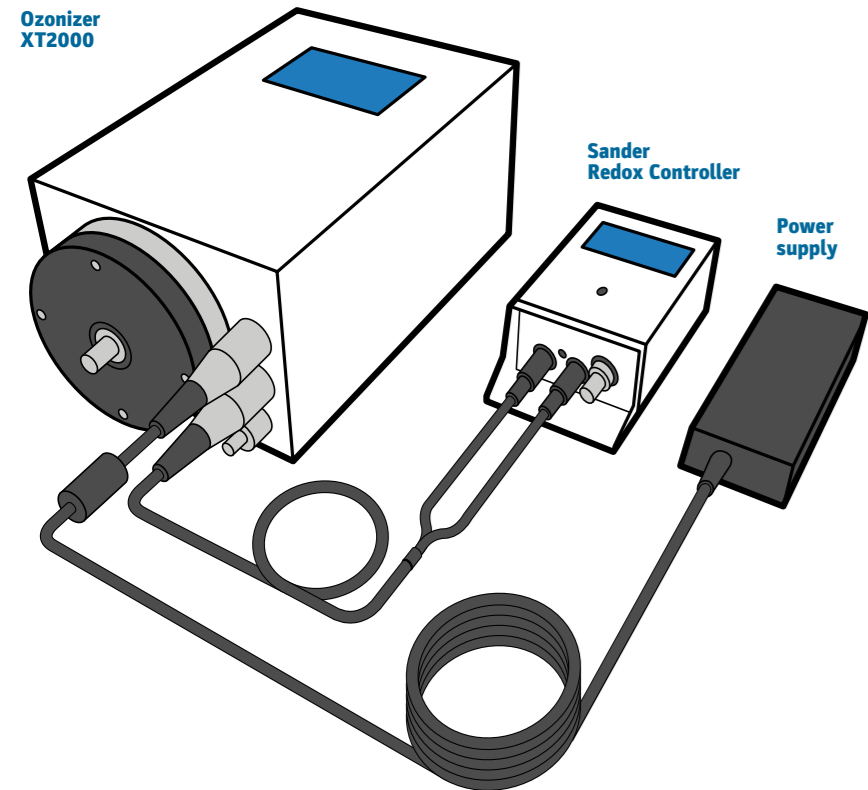
- **Ozone output:** 2000 milligrams per hour
- **Power supply:** 100–240 volts AC (50/60 Hz)
- **Current consumption:** 1,5 ampères
- **Operating voltage:** 24 volts DC



## Ozonizer XT2000

User Guide **EN**

Ozonizer XT2000



## Ozonizer XT2000



- 1 Air inlet for cooling
- 2 Display
- 3 Cooling fan
- 4 Hex-tip (Allen™) screws for the ozone generator cover
- 5 Ozone generator cover
- 6 Ozone outlet (connector for 6/8 mm tubing)
- 7 3-pin connector for power supply (24 volts)
- 8 4-pin connector for Sander Redox Controller (with dummy plug)
- 9 Air inlet for ozone generation (connector for 6/8 mm tubing)

## Introduction

Congratulations on your purchase of this Sander quality product. We are confident that you will be satisfied with this ozonizer. Our many years of experience in aquarium technology will benefit you in every detail.

Please familiarize yourself with the ozonizer before using it for the first time — by reading this user guide and paying particular attention to the safety instructions. The ozonizer may only be used for the specific purposes described below. Please keep this user guide handy for future reference, and include this guide when handing the ozonizer over to a third party.

## Package contents

Immediately after unpacking, please make sure the following items are included in the package, and in flawless condition:

- Ozonizer XT2000
- Power supply
- Power cable
- Adapter cable for connecting the Sander Redox Controller
- Hex-tip (Allen™) tool
- Mounting hooks (2×)
- Mounting dowels (2×)
- User guide

## Intended use for aquariums and ponds

The ozonizer is a device for generating ozone from air. It was developed specifically for use with aquariums and ponds.

When operated with dry air, the ozonizer has a rated output of 2000 milligrams (2 grams; 0,07 oz.) of ozone per hour. When using ambient air (40 – 80 % humidity), ozone output is reduced by about half.

Ozone must be released into the water at a depth of no less than 20 cm (8 in).

We recommend using a skimmer, such as our **Helgoland** series devices (for salt water), or **Fresh-Skim** (for fresh water).

Other uses or device modifications are considered non-intended use and may result in injuries and/or damage to the ozonizer. The manufacturer assumes no liability for damages resulting from non-intended use.

The device is not intended for commercial use.

## Safety instructions

**!** The use of the ozonizer occurs at your own risk.

**!** The ozonizer may not come into contact with water.

**!** Free ozone is hazardous by inhalation. To avoid release of excess ozone, it must only be produced in the quantity required by the application. The threshold limit value (TLV, or maximum acceptable workplace concentration) for ozone is 0.1 ppm (200 µg/m<sup>3</sup>). However, the odour detection threshold for ozone is 5 to 10 times lower (about 0.02 ppm). Detection of ozone odour is a sign of excess ozone generation. Excess ozone (eg. from a skimmer's exhaust) must be released into the outside air or fed into a residual ozone absorber.

**!** The ozonizer requires an airflow of no less than 75 litres per hour. Reduced airflow may cause the ozone generator to overheat. The ozonizer will detect insufficient airflow and automatically shut off ozone production to avoid overheating.

**!** The ozonizer may be used by children from age 8 — as well as by persons with reduced physical, sensory or mental capabilities, or insufficient experience and knowledge — only under supervision, or if instructed on the safe use of the ozonizer, and if they are aware of and understand the potential hazards. Children may not play with the ozonizer. Maintenance and cleansing tasks may be performed by children only under supervision.

**!** Do not open the ozonizer's casing. Improper repair work or other modifications may create considerable hazards. In the event that your ozonizer requires repair or other servicing, please contact your specialist supplier or refer directly to the manufacturer.

**!** Do not operate the ozonizer if it is damaged. Damaged ozonizers may pose considerable hazards to the user.

**!** The ozonizer may only be operated with the original power supply unit (item designation GS60A24-P1), 24 volts, 2.5 ampères, 60 watts).

**!** The surfaces of the ozone generator may be hot. Before performing any maintenance or cleansing tasks, please allow the ozonizer to cool.

## ! Warranty and liability exclusion

There is a 24-month warranty for all Sander-manufactured ozonizers. During this time, all parts that fail due to material or manufacturing defects are replaced at no cost.

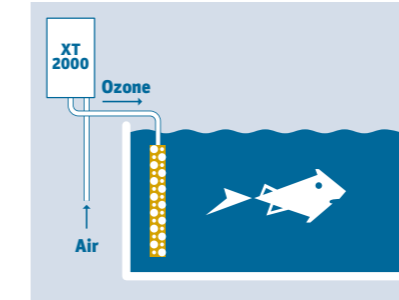
**Please note that the warranty does not cover the following types of failure or damage:**

- Failure or damage due to unintended use. This specifically includes any use not covered by these instructions.
- Failure or damage due to improper repair work, modifications, cleansing, opening of the ozonizer casing, etc.
- Failure or damage due to improper transport, drop or shock, etc. after the date of purchase.

The warranty and liability offered by the manufacturer (Erwin Sander Elektroapparatebau GmbH) only covers the package contents.

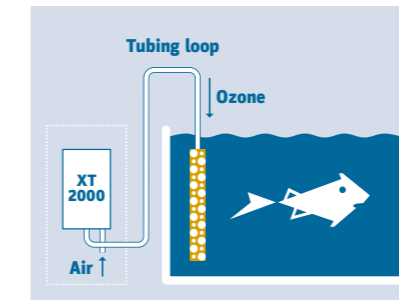
## Installation

### Wall mount



There are two fastening clips on the reverse side of the ozonizer. These may be used for wall mount. It is recommended that the ozonizer be mounted above the water level. This will prevent water from flowing back into the ozonizer, eg. in the event of a power failure.

### Cabinet installation



The ozonizer may be installed in an equipment cabinet. If the ozonizer is operated in a small enclosed space such as a cabinet, it is essential to provide sufficient ventilation to avoid overheating. If the ozonizer is installed below the water level, provide a loop of tubing extending above the water level to avoid water flowing back into the ozonizer.

### Connecting the ozonizer for skimmer operation with airstones

Connect the air inlet (9) to an air pump using 6/8 mm tubing. Connect the ozone outlet (6) to the airstone in the skimmer using ozone-resistant tubing.

If ozone production is turned off while the ozonizer is still connected to the skimmer, the air supply must remain on. This will prevent water from entering the ozone generator.

### Connecting the ozonizer for skimmer operation with an injector

Connect the injector with the ozone outlet (6). In this setup, airflow through the ozonizer is provided automatically. To keep the inlet air free of contaminants (including dust), it is recommended to use a filter at the air inlet (9).

## Setup

- 1 Mount the ozonizer and power supply in a dry environment.
- 2 Connect the tubing for inlet air and ozone.
- 3 Connect the power supply: first, insert the 24 volts plug from the power supply into the socket (7) on the ozonizer, then connect the power cable with the power supply. Finally, insert the wall plug on the power cable into the mains socket.



For more information, expert advice and orders, please contact us at:

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Web www.aqua-sander.de

## Notification and hazard symbols

**!** Important information

**!** Caution — Danger

**!** Caution — Electric shock hazard

**!** Caution — Hot surfaces

**!** Caution — Hazardous substances



## Ozonizer XT2000

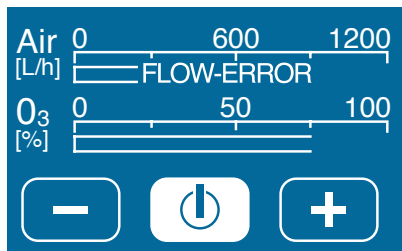
User Guide

EN



# Troubleshooting

## Insufficient airflow



If airflow through the ozonizer drops below 75 litres per hour, ozone production will shut down to prevent overheating. Please provide sufficient airflow to the ozonizer, removing any blockages.

## High temperature shutdown

If there is insufficient ventilation for cooling or insufficient airflow, both combined with high-level ozone production, the temperature in the ozonizer may exceed its limit (70 °C). In this event, the ozonizer will shut down to prevent damage. Please provide sufficient circulation of air, in particular if the ozonizer is mounted in a cabinet. The ozonizer will resume operation once the temperature has dropped to be within limits.

# Disposal

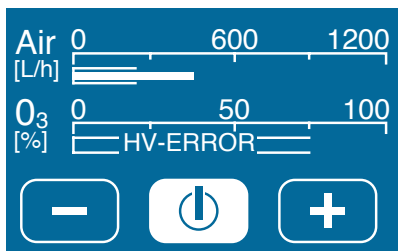


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Should you need to dispose of the ozonizer, please do not place it into your regular domestic waste. In the interest of environmental protection, please use an appropriate disposal facility for electrical equipment. Your local (municipal) government will provide you with the locations and opening times of such facilities.

## High voltage malfunction



Water or dirt particles entering the ozone generator may cause damage, creating a faulty voltage potential inside the ozonizer. In this event, please disconnect the ozonizer from the power supply immediately, removing the wall plug from the mains socket. Blowing air through the ozonizer may remove any water that has entered. Please cleanse the ozone generator as described above. If the problem persists, please send the ozonizer in for inspection at Sander company headquarters (see address on back cover page).

# Specifications

- **Ozone output:** 2000 milligrams per hour
- **Power supply:** 100–240 volts AC (50/60 Hz)
- **Current consumption:** 1,5 ampères
- **Operating voltage:** 24 volts DC

## Cleansing and maintenance of the ozone generator

Humidity and dust contamination in the inlet air cause ozone output to be reduced substantially. With this in mind, the ozone generator has been designed for easy maintenance and cleansing.

With continuous operation, it is recommended that the ozone generator be examined for contamination about once every 3 to 6 weeks.

Before cleansing the ozonizer, please set the ozone output to zero, but keep it running for a few minutes. This will cause any residual ozone to be removed from the ozone generator.

### Opening and cleansing of the ozone generator

- Turn off the ozonizer (I/O button).
- Allow the ozone generator (5) to cool down.
- Disconnect the power cable from the mains socket.
- Remove the plug from the power supply connector (7).
- Disconnect the tubing for inlet air and ozone.
- Remove the screws (4) holding the ozone generator cover (5) in place using the supplied hex-tip tool.
- Remove the ozone generator cover (5).
- Wipe the ozone generator's ceramic plates with a sponge (if necessary, by using household scouring agent). Please make sure to remove any deposits from the connection nipples as well.
- Allow to dry.

### Reassembly to resume operation after cleansing

- Reattach the ozone generator cover (5), taking care that the insulating o-ring is seated firmly in its groove.
- Tighten the hex-tip screws (4) crosswise until they are hand-tight.
- Reattach the tubing for inlet air and ozone.
- Reconnect the 24 volts plug into the power supply socket (7).
- Reinsert the wall plug into the mains socket.
- Turn on the ozonizer (I/O button).

## Display cleansing

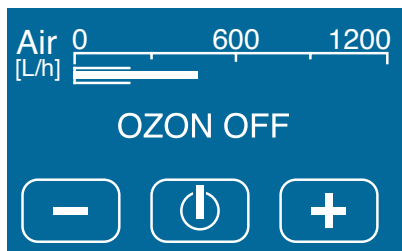
- To clean the display, use a microfiber cloth only.
- Cleansing only with hand gloves, eye protection, and proper clothes. Caution with acid residues.
- Dry immediately.

## Operating the ozonizer

As soon as the power supply is connected, the ozonizer starts up automatically.



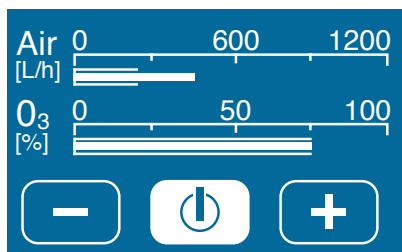
During startup, the display **(2)** briefly shows the Sander logo, and then changes to the main control interface:



The upper bar graph («Air») indicates the amount of airflow through the ozonizer in litres per hour.

While ozone production is off, the display shows the label «OZON OFF».

Use the center button (I/O) to turn ozone production on or off.

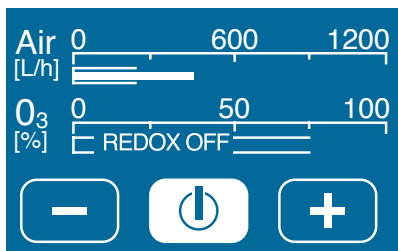


The lower bar graph («O<sub>3</sub>») indicates the ozone output as a percentage.

Use the **-** and **+** buttons to reduce or increase ozone output stepwise from 0 percent (off) to 100 percent (full power).

Both bar graphs consist of two parts: a thick center bar with two thin bars above and below. The thin bars indicate the set value, while the thick bar indicates the actual (current) measured value.

## Using a redox controller



When using a redox controller, ozone production is turned off automatically once the target redox potential set on the redox controller has been reached. When the redox potential drops below the set value, ozone production is resumed.

## Ozone output throttling with insufficient airflow

If airflow drops below 250 litres per hour, the ozonizer will reduce ozone production proportionally to prevent overheating.

Example: If airflow is 125 litres per hour, and ozone production is set to 100 %, the ozonizer will operate with a throttled output of 50 %.

The minimum required airflow is 75 litres per hour. In the event that airflow drops below this limit, ozone production is shut down completely to protect against overheating.

## Determining and setting the appropriate ozone output

As a rough guide, use about 10 mg of ozone per hour for every 100 liters of salt water, or about 5 mg of ozone per hour for every 100 liters of fresh water.

When first using the ozonizer, we recommend slowly increasing the ozone output over a timespan of about 14 days, so that the aquarium may gradually adjust to the enhanced water quality.

## Operation with the Sander Redox Controller

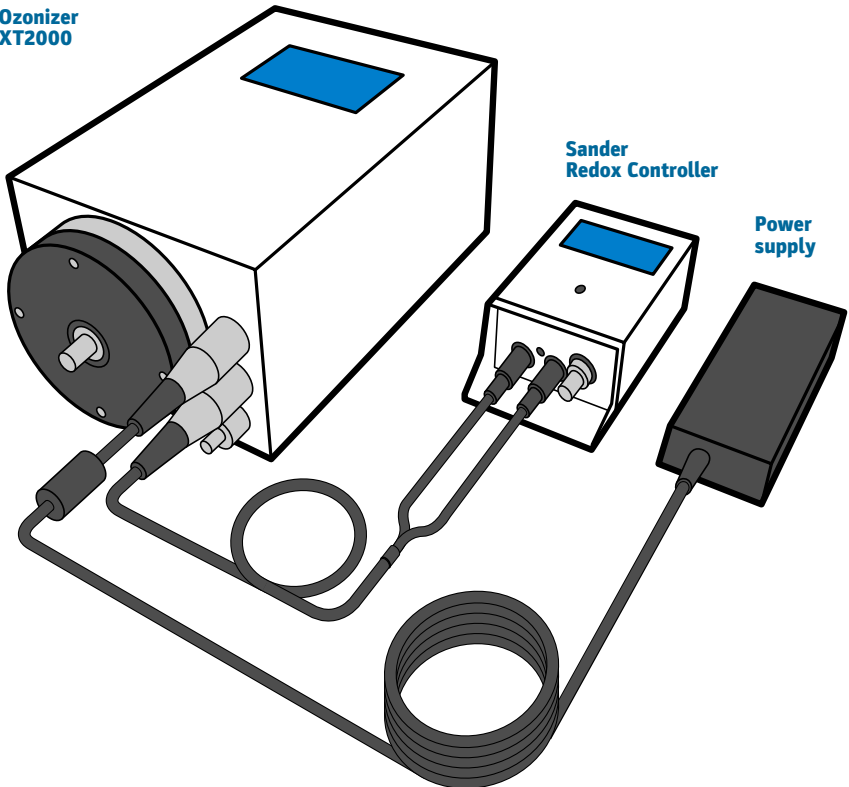
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To connect the redox controller, remove the dummy plug from the 4-pin socket (**8**) on the ozonizer, and replace it with the single plug on the supplied redox controller adapter cable. Then connect the two plugs on the other end of the cable with the redox controller.

The actual value for the redox potential, as well as the controller state, are displayed on the redox controller's top panel.

For further instructions, please refer to the redox controller's user guide.

**Ozonizer  
XT2000**



# Ozonizer XT2000



- 1** Air inlet for cooling
- 2** Display
- 3** Cooling fan
- 4** Hex-tip (Allen™) screws for the ozone generator cover
- 5** Ozone generator cover
- 6** Ozone outlet (connector for 6/8 mm tubing)
- 7** 3-pin connector for power supply (24 volts)
- 8** 4-pin connector for Sander Redox Controller (with dummy plug)
- 9** Air inlet for ozone generation (connector for 6/8 mm tubing)



## Introduction

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The device is not intended for commercial use.

## Notification and hazard symbols



**Important information**



**Caution – Danger**



**Caution – Electric shock hazard**





**Caution – Hot surfaces**





**Caution – Hazardous substances**


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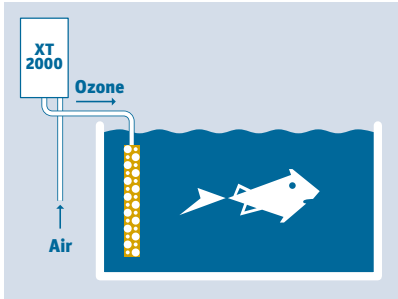
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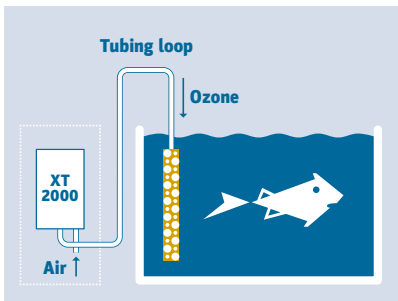
# Installation

## Wall mount



There are two fastening clips on the reverse side of the ozonizer. These may be used for wall mount. It is recommended that the ozonizer be mounted above the water level. This will prevent water from flowing back into the ozonizer, eg. in the event of a power failure.

## Cabinet installation



The ozonizer may be installed in an equipment cabinet. If the ozonizer is operated in a small enclosed space such as a cabinet, it is essential to provide sufficient ventilation to avoid overheating. If the ozonizer is installed below the water level, provide a loop of tubing extending above the water level to avoid water flowing back into the ozonizer.

## Connecting the ozonizer for skimmer operation with airstones

Connect the air inlet **(9)** to an air pump using 6/8 mm tubing. Connect the ozone outlet **(6)** to the airstone in the skimmer using ozone-resistant tubing.

If ozone production is turned off while the ozonizer is still connected to the skimmer, the air supply must remain on. This will prevent water from entering the ozone generator.

## Connecting the ozonizer for skimmer operation with an injector

Connect the injector with the ozone outlet **(6)**. In this setup, airflow through the ozonizer is provided automatically. To keep the inlet air free of contaminants (including dust), it is recommended to use a filter at the air inlet **(9)**.

## Setup

- 1 Mount the ozonizer and power supply in a dry environment.
- 2 Connect the tubing for inlet air and ozone.
- 3 Connect the power supply: first, insert the 24 volts plug from the power supply into the socket **(7)** on the ozonizer, then connect the power cable with the power supply. Finally, insert the wall plug on the power cable into the mains socket.



For more information, expert advice and orders, please contact us at:

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