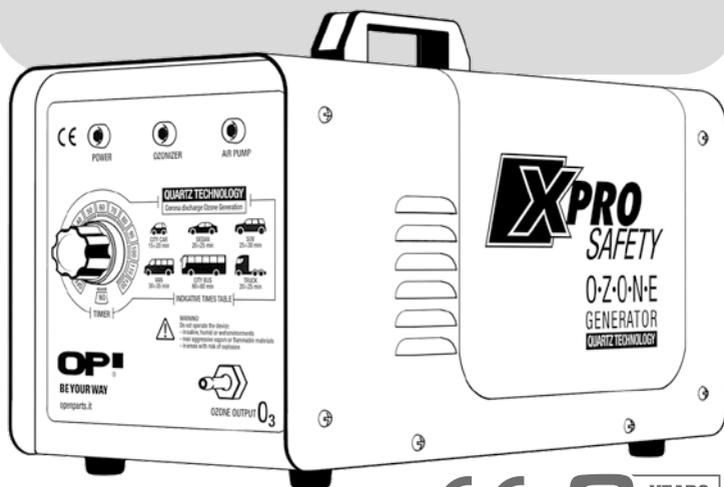


XPRO SAFETY

O·Z·O·N·E
GENERATOR
QUARTZ TECHNOLOGY



CE 2 YEARS WARRANTY
ew2years.com

Ozone Generator O₃
owner handbook

OPI[®]
BE YOUR WAY

EN

Thank you for choosing the **XPROZ01.05 Ozone Generator** from the **XPRO Safety** product line dedicated to personal and environmental protection, cleaning and disinfection.

Disinfection with OZONE

Ozone (O₃) is one of the most powerful bactericides present in nature. It is up to 25 times more effective than chlorine, acts on bacteria, fungi and moulds, modifying the permeability of the cell wall and thus causing their death within minutes. **Extremely effective against viruses** to which it damages the viral capsid and disrupts their reproductive cycle by interrupting virus-to-cell contact thanks to peroxidation and inactivating it in a time ranging from 10 to 20 minutes of exposure to treatment.

In its gaseous form it allows a meticulous disinfection in any environment because, being a gas, it can reach even the most inaccessible areas, making it indispensable for a full environmental disinfection.

It **removes** any odour, disinfects all surfaces, including furniture, penetrates into fabrics, ventilation ducts and all those points difficult to reach by other products. Its action is fast and 100% ecological and **it turns back into oxygen** when it decomposes, leaving no trace or chemical residue.

Effect of disinfection with OZONE

Organism	Treatment exposure time (minutes)
Bacteria	10÷20
Virus	10÷20
Moulds	30÷60
Fungus	1÷5

Health hazards

Ozone (O₃) is an extremely reactive gaseous molecule, capable of oxidising numerous cellular components, including amino acids, proteins and lipids.

Continued exposure to high ozone concentrations can cause damage that is not easy to detect and a drop in immune defences.

Pure ozone is a bluish gas with a characteristic bitter, pungent odour. It is easy to recognise especially after a storm: the classic scent of freshly mown hay. It is an inert gas with precise effects on humans: at a concentration of 0.008-0.02 ppm (15-40 µg/m³) its odour can already be detected; at 0.1 ppm it causes irritation to the eyes and throat due to its action on the mucous membranes. Higher concentrations cause irritation to the respiratory system, coughing and a sense of oppression in the chest which **makes it difficult to breathe**. The most sensitive individuals, such as asthmatics and the elderly may be subject to asthma attacks even at low concentrations. At 1 ppm it causes headache and at 1.7 ppm it can cause **pulmonary edema** (source: Emergency Live).

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1 Explanation of symbols



This symbol draws your attention to the instructions in this handbook.



This symbol certifies that the device has been manufactured in compliance with the European standards set out in the following regulations:

- Directive **2014/30/EU** (electromagnetic compatibility)

- Directive **2014/35/EU** (Low Voltage directive)

Directive **93/68/EEC** (Article 10, CE marking)

The declaration of conformity can be consulted on the company website www.exoautomotive.it in the “**Certifications**” section



This symbol, affixed on the product or on the packaging, indicates that the product should not be considered as normal household waste, rather it should be handed over to an appropriate collection point for the recycling of electrical and electronic appliances in accordance with the directives in force at national or local level.

Before scrapping the discontinued device, make it unusable.

2 Information and Safety

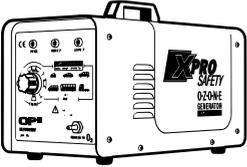
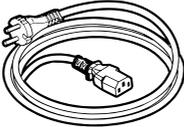
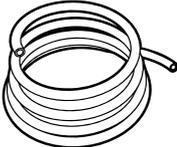
Before using the ozone generator, please read these instructions carefully as an essential requirement for the proper functioning of the product and as a guarantee for the SAFETY of the personnel responsible for its use.

- this device complies with the safety standards for electrical and/or electronic equipment (EC);
- the power cable must be intact, it must not be crushed to avoid short circuits and dangerous electric discharges;
- keep this handbook with care. If you hand over the device, please also hand over this handbook as well;
- do not operate the device if you have found damage resulting from transport;
- we recommend that the disinfection work be carried out only and exclusively by specialised personnel;
- we accept no liability for any damage resulting from improper use by unskilled personnel or which is not covered by these instructions;
- disconnect the power supply cord of the device from the electrical outlet before performing any inspection and/or cleaning work on the same;
- do not keep the machine in damp places and/or at high temperatures;
- avoid very frequent use of the device in metal storage warehouses as ozone gas is highly oxidizing.
- use only ozone-compatible hoses (silicone hose supplied). The use of inappropriate materials may result in accidental ozone leakage into the surrounding air environment;
- do not grease the ends of the ozone hoses with mineral oils and/or greases;
- keep this electrical device out of the reach of children;

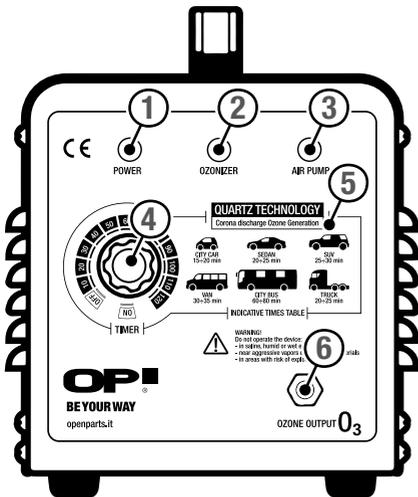
Caution

- before connecting the device to the mains, make sure that the voltage corresponds to the required specifications (AC 220-240 V / 50-60 Hz);
- there is high voltage inside the device during its operation.
- do not use the device in environments where flammable or explosive gases/liquids and electrostatic powder may be present;
- do not expose the device to rain or splash water to avoid the risk of fire or electric shock;
- it is forbidden to modify and/or tamper with the device.

3 Contents of the box

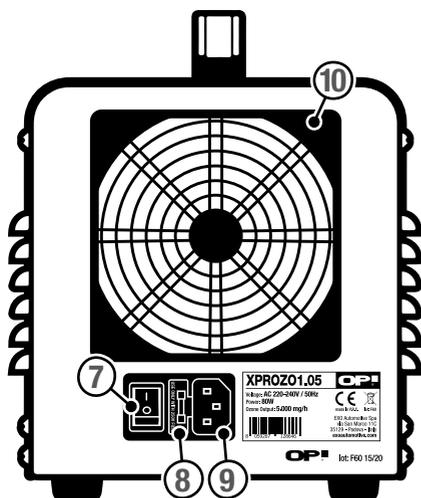
Ozone Generator	Power supply cable (schuko type socket)	Silicone hose (Ø 5/9 mm - 3 metres)	Handbook
			
1 piece	1 piece	1 piece	1 piece

4 Front control panel



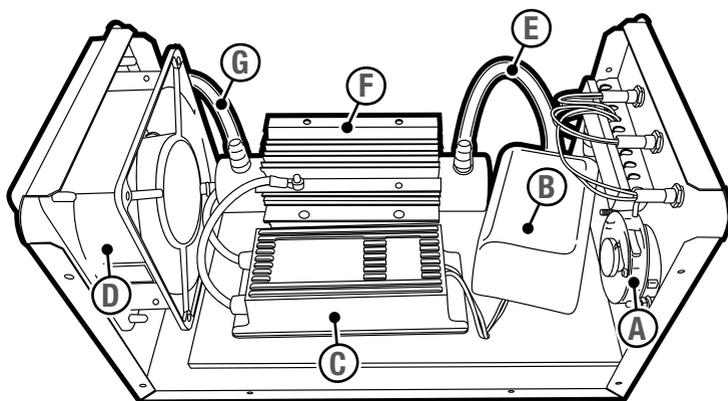
- 1 Power supply warning light
- 2 Ozone generator warning light
- 3 Air pump warning light
- 4 Treatment time adjustment knob (in minutes)
- 5 Approximate time table for the disinfection treatment
- 6 Ozone outlet nozzle

5 Rear control panel



- 7 ON/OFF switch
- 8 Safety fuse (3A / 250V)
- 9 Power supply socket (220-240 V)
- 10 Cooling fan / air intake

6 Internal components



- A Timer
- B Air pump
- C Power supply unit
- D Fan
- E Air inlet hose
- F Ozone generator
- G Ozone outlet hose

7 Technical specifications

Features	Specifications
Power supply	AC 220-240 V / 50-60 Hz
Power	80 W
Size	33x16x21 cm
Net weight	3.5 kg
Technology	Quartz
Ozone generation method	corona discharge
Programmable timer	1-120 min
Ozone release	5000 mg/h
Ozone concentration	15-25 mg/l
Area capacity	1-70 m ²
Internal pump efficiency	16 l/min
Pressure generated by the pump	15 KPA ±5
Drain pipe diameter	4 mm
Temperature range of the operating environment	5÷40 °C
Relative humidity of the operating environment	≤55%
Operating atmospheric conditions	101 KPa
Ozone generator module lifetime	20,000 h

8 Lifetime of the device

The ozone generator was designed and built with high quality materials and, thanks to its **QUARTZ TECHNOLOGY** for the generation of ozone gas (O₃), has a lifetime of about 20,000 h in operation.

The approaching end of life of the ozone generator module can be easily recognised by the absence of the peculiar bitter and pungent odour of the gas at the end of the treatment.

9 Utilisation environment

This device was designed and built for the disinfection of small and medium premises (up to 70 m²) such as vehicle cabs of all types and sizes (from city car to bus).

The maximum disinfection yield is obtained if the device is used:

- at a temperature range from 5 to 40°C
- with humidity ≤55%

10 Duration of disinfection treatment

Approximate times for a correct disinfection

The Ozone Generator XPRO develops an ozone emission equal to 5,000 mg/h (5 g in 1 hour) and can **reach in 1 minute the ozone saturation necessary to disinfect a space equal to 1 m³.**

It is recommended to set the ozone generator time according to the table below:

 CITY CAR 15÷20 min	 SEDAN 20÷25 min	 SUV 25÷30 min
 VAN 30÷35 min	 CITY BUS 60÷80 min	 TRUCK 20÷25 min

Preparatory phase for disinfection



Caution



- the generator may not be used by people with a impairment of sense of smell;
- do not control ozone production by directly smelling the generator output zones (ozone output nozzle (6));
- during the disinfection procedure, people and animals **MUST NOT** be present within the environment being treated;
- the device must be used on stable and horizontal surfaces and away from walls and/or materials that could obstruct the air intake from the rear fan (10) and the outflow from the side air intakes;

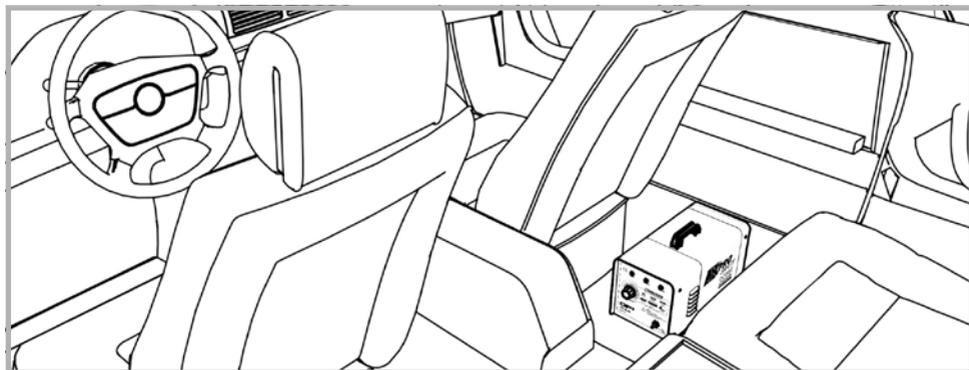
Recommendations for an effective disinfection

Open all the glovebox lids inside the vehicle, the air vents and the rear shelf where possible, so that ozone reaches all the interior spaces in the passenger compartment.

Method 1

Instructions for use with ozone generator placed inside the vehicle

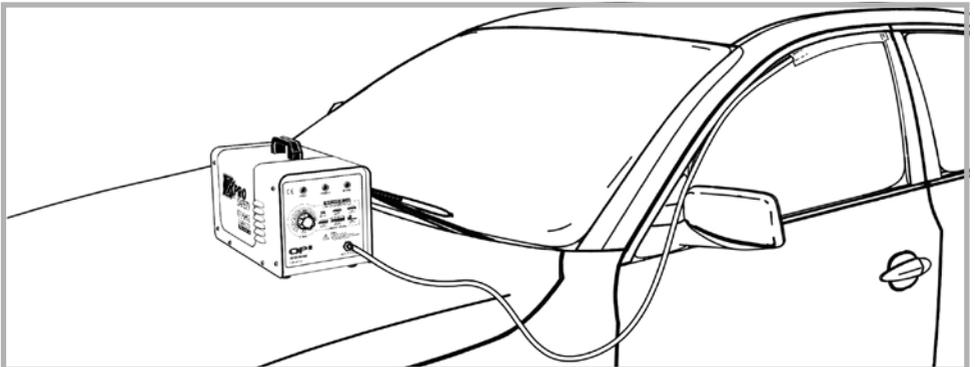
- 1) connect the power supply cord of the device through the rear socket (9);
- 2) connect the schuko plug into the mains;
- 3) position the ozone generator inside the vehicle in a stable and horizontal position (possibly in the middle of the rear seat or alternatively on the driver's side mat), taking care that there is a free space (min. 20 cm) around the device so that ozone is released from the nozzle (6) and at the same time that the cooling fan intakes (10)
- 4) set the time according to the minutes required for the type of treatment to be carried out in relation to the table (5) by turning the TIMER knob (4) clockwise. Caution/ once the timer is set, even if the time is decreased, the timer will continue to operate on the time set at the beginning.
- 5) switch the device on by turning the rear ON/OFF switch (7) to position "I"; the generator starts producing ozone and releasing it from the nozzle (6);
- 6) all front panel LEDs ("POWER" (1), "OZONIZER" (2) and "AIR PUMP" (3)) are lit;
- 7) close the doors and windows of the passenger compartment taking care not to squeeze the power supply cord;
- 8) when the set time has elapsed, the device will automatically deactivate and disinfection is completed;
- 9) the front panel LEDs ("OZONIZER" (2) and "AIR PUMP" (3)) are off while the "POWER" LED (1) is on to indicate that the rear ON/OFF switch (7) is still in the "I" position: the device is still live;
- 10) open all the doors of the passenger compartment and ventilate for 10/15 minutes in order to lower the concentration of ozone (O3) in the passenger compartment to a safe level, allowing it to transform into oxygen (O2).
- 11) deactivate the device by returning the ON/OFF switch (7) to position "0";
- 12) the "POWER" LED (1) is off;
- 13) disconnect the power supply cord from the mains.



Method 2

Instructions for use with ozone generator placed outside the vehicle

- 1) connect the power supply cord of the device through the rear socket (9);
- 2) connect the schuko plug into the mains;
- 3) place the device outside the vehicle in a stable, horizontal position (e.g.: on a trolley/table or the vehicle hood, NOT on the floor or ground);
- 4) connect one end of the supplied silicone hose to the ozone outlet nozzle (6);
- 5) slightly open the car window on the driver's side and insert the other end of the silicone hose into the passenger compartment (make sure the hose is not squeezed along its entire length). Bring the hose around the rearview mirror inside the passenger compartment, so that the end of the hose can be free and the ozone supply is not prevented;
- 6) seal the open part of the window with paper adhesive tape and close any other open windows or doors;
- 7) set the time according to the minutes required for the type of treatment to be carried out in relation to the table (5) by turning the TIMER knob (4) clockwise. Caution/ once the timer is set, even if the time is decreased, the timer will continue to operate on the time set at the beginning.
- 8) switch the device on by turning the rear ON/OFF switch (7) to position "I"; the generator starts producing ozone and releasing it from the nozzle (6);
- 9) all front panel LEDs ("POWER" (1), "OZONIZER" (2) and "AIR PUMP" (3)) are lit;
- 10) when the set time has elapsed, the device will automatically deactivate and disinfection is completed;
- 11) the front panel LEDs ("OZONIZER" (2) and "AIR PUMP" (3)) are off while the "POWER" LED (1) is on to indicate that the rear ON/OFF switch (7) is still in the "I" position: the device is still live;
- 12) deactivate the device by returning the ON/OFF switch (7) to position "0";
- 13) the "POWER" LED (1) is off;
- 14) open all the doors of the passenger compartment and ventilate for 10/15 minutes in order to lower the concentration of ozone (O_3) in the passenger compartment to a safe level, allowing it to transform into oxygen (O_2).
- 15) disconnect the power supply cord from the mains.



Air duct and climate control system disinfection

To disinfect the air ducts of the vehicle's climate control system, it is necessary to carry out the disinfection treatment with the vehicle on, making sure that the driving position is in parking (P) or in neutral for manual gearboxes and the parking brake activated (P). This operation must be carried out with the **climate control system** and **recirculation** buttons active and in an airy place so that the exhaust gases can be evacuated.



12 Maintenance and cleaning

Quartz technology guarantees a device life of 20,000 hours of work more than twice as long as other versions on the market (e.g. ceramic plate).

The ozone generator requires no maintenance other than standard cleaning.



- **Maintenance operations, especially those relating to internal components, must be carried out only and exclusively by qualified personnel, such as a qualified electrician.**
- **Unplug the power supply cord before cleaning the device.**
- **All operations must be carried out with cold equipment and with qualified equipment/tooling**

To access the internal components of the device, unscrew the screws on the sides of the chassis (picture below):



- periodically remove any dust that may be deposited on the internal (D) and external (10) fan grille using a vacuum cleaner or bristle brush;
- periodically clean the side air intakes by removing any dust deposits, using a vacuum cleaner or bristle brush;
- in case of use in environments with air humidity $>55\%$, some condensation could form inside the ozone generator: it must be dried with a clean cloth or with the help of the hot air jet of a hair-dryer.

- also periodically clean the silicone connection hoses (G and F) to avoid ozone production decrease.

13 FAQ

Frequently asked questions about disinfection

1) How do I calculate the time needed for the disinfection treatment?

The disinfection of a cab is reached in 20 minutes on average, the average time needed to inactivate more resistant viruses and bacteria. Of course, this time may vary depending on the volume of the area to be disinfected (city car or bus).

The XPRO ozone generator is able to reach in 1 minute the ozone saturation necessary for the disinfection of 1 m³. It is recommended to set the ozone generator time according to the table for treatment times of this handbook.

2) How often do I have to perform the disinfection treatment?

It depends on the environment to be treated and the type of use that is made of it. Under normal use of the vehicle, it is advisable to carry out the disinfection intervention at least twice a year, if possible in conjunction with the seasonal change.

3) By airing the passenger compartment, is the disinfection cancelled?

No, ozone has acted deeply on all surfaces and upholstery including air ducts

Frequently Asked Questions about Ozone Generator

1) How can I be sure that the Ozone generator is working properly?

When the device is activated, correct operation can be verified when all the warning lights (1, 2 and 3) are lit.

2) What is the correct positioning of the device during operation?

The ozone generator should be positioned inside the vehicle in a stable and horizontal position (possibly in the middle of the rear seat or alternatively on the driver's side mat), taking care that there is a free space (min. 20 cm) around the device so that ozone is released from the nozzle (6) and at the same time that the cooling fan intakes (10)

3) Can I use the ozone generator in environments other than my car?

Yes, the ozone generator can be used in environments requiring disinfection from viruses and bacteria, up to a maximum surface area of 70 square meters. In case of environments that are difficult to ventilate, such as rooms without windows, it is recommended to enter after 3 times the time used to disinfect the environment with ozone.

4) Does the ozone produced by the device ruin the materials?

The ozone generator is entirely safe. The amount of ozone produced and the recommended time of use allow disinfection only without damaging any type of material.

14 Problems / Causes / Solutions

Problem	Possible Causes	Possible Solutions
The device does not turn on, it does not work.	No electric power.	Check the presence of electrical power in the building or in the electrical panel (cut-out switch).
	Power supply cord damaged or not properly plugged in.	Check the power supply cord and insert it correctly.
The device does not produce ozone.	Fuse (8) blown	Replace the safety fuse.
	Air pump not working.	Contact the authorized dealer.
	Ozone release pump not working.	
	Clogged hoses.	Clean.
The device has ozone leaks.	Ozone chamber damaged.	Contact the authorized dealer.
	Damaged silicone hose.	Replace the silicone hose.

15 Warranty

The duration of warranty coverage is 2 years starting on the date of sale of the product to the Distributor and/or Dealer, specified in the delivery/transportation document (DDT).

The warranty coverage may be reduced or not envisaged in all those Countries where the **European Directive 1999/44/EC of 25 May 1999** does not apply. In this case, the trade agreements agreed upon between the local Distributor and/or Dealer and **EXO Automotive SpA**, in the distribution contract and/or the General Sales Conditions undersigned by the parties apply. Barring all liability for normal wear and tear due to use, **EXO Automotive SpA** guarantees the operation of its products against quality and manufacturing defects. Consequently, the warranty does not apply in the following cases:

- products that have been tampered with functionally and/or structurally;
- products that have been incorrectly installed, without following the instructions provided in the Instructions included in the packaging;
- products for which defects are found to ensue from accidents, negligence, incorrect use.

16 Final conditions

EXO Automotive SpA declines all responsibility for any damage resulting from improper use not in accordance with this handbook. We do not accept responsibility for any damage or injury to persons and/or property due to the product, nor for potential damage due to the use of the product by the user or third parties. The user is responsible for ensuring that the product is installed, used and stored in a workmanlike manner.

Codice Libretto Uso e Manutenzione:
Owner Handbook Code:
Code de la notice d'entretien :
Artikelnr. der Betriebs- und Wartungsanleitung:
Código del Manual de uso y mantenimiento:
Código do Manual de Uso e Manutenção:
Κωδικός του Βιβλίου Χρήσης και Συντήρησης:

LUMXPROZ01_00 (rel. 2020/04)



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