

# e 3000X

optrel®  
swiss made 



## User Instruction e3000X

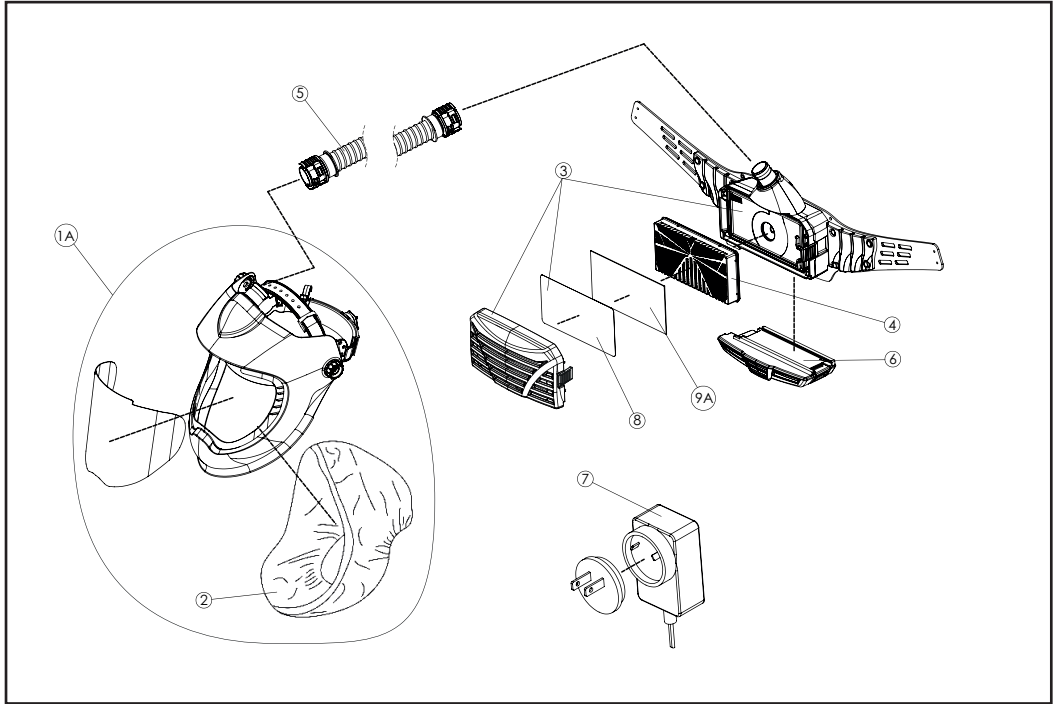
US manual



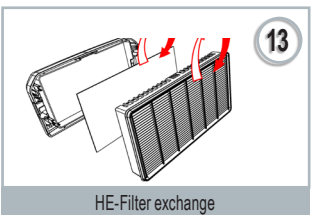
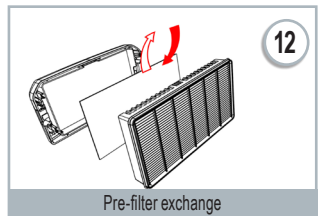
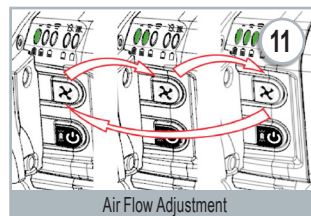
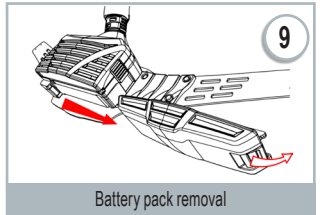
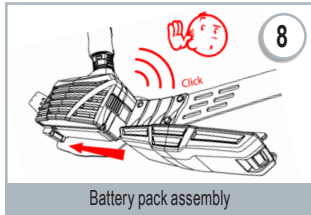
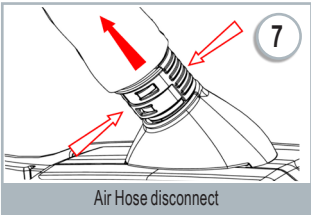
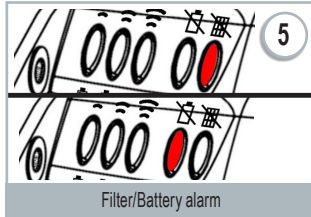
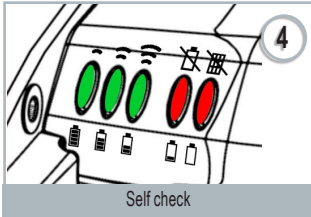
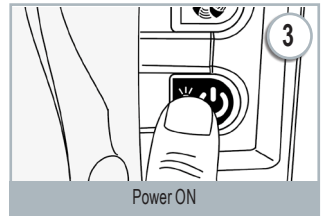
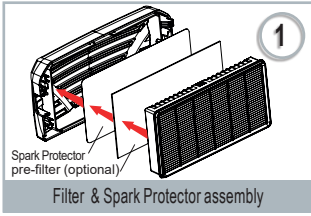


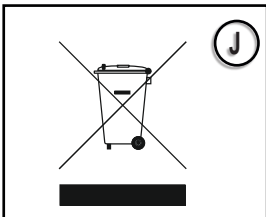
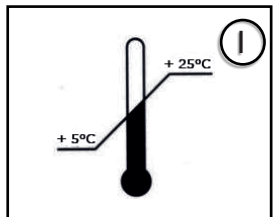
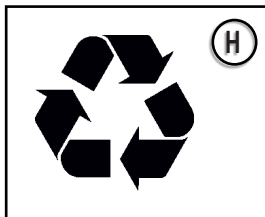
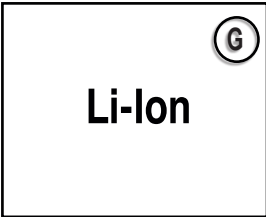
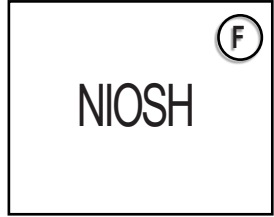
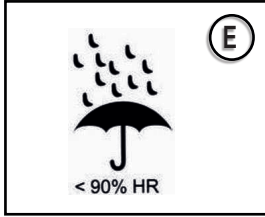
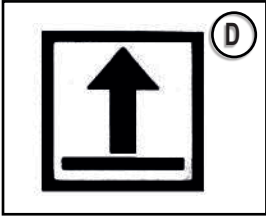
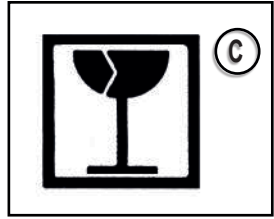
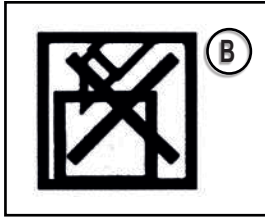
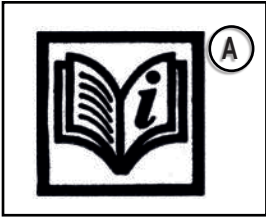


# Optrel e3000X with Clearmaxx PAPR USA



<b>Optrel e3000X with Clearmaxx PAPR USA</b>		
	Designation	Part. N°
1A	Clearmaxx PAPR USA	4900.020-US
2	CLEARMAXX FACE SEAL	4156.020
3	e3000X blower & belt assy	4553.000
4	PAPR HE Filter	4088.200
5	Air hose	4551.020
6	Battery pack e3000X	4553.020
7	Battery Charger e3000X	4551.070
8	Spark Protector	4088.202
9A	Accessory, pre-filter e3000X	4088.101
9B	Accessory, Hard Top Case (not shown)	4551.051
10	User Instruction e3000X.clear	9610.503.clear





# English

## SAFETY PRECAUTIONS

The Warnings, Cautions, and Notes contained in this manual have the following significance.

### WARNING

Maintenance or operating procedures and techniques that may result in serious personal injury, serious illness, or death if not carefully followed.

### CAUTION

Maintenance or operating procedures and techniques that may result in damage to equipment if not carefully followed.

## WARNING

- Your employer (or you, if you do not have an employer) is/are responsible for establishing that this respirator is suitable for the user's application.
- optrel cannot predict what will happen to this respirator in every potential environment. Materials can be chemically attacked if exposed to the wrong environment and may exhibit excessive corrosion or other forms of damage. Permeation or penetration of gases, liquids or particles through the materials could be excessive. Extremes of temperature might cause thermal degradation. Each of these things, or a combination of them, could create conditions in which this optrel respirator would be dangerous to use.
- Before entering a hazardous environment while wearing this respirator, you must conduct safe, scientific tests to determine if the environment could render the equipment unsafe. Results of this testing should be well documented. Seek the help of a certified safety professional or industrial hygienist. DO NOT USE this equipment if the user would be endangered in any way through environmentally induced degradation of the materials in the apparatus.
- All persons using this optrel breathing apparatus must be made aware of its limitations. We cannot be responsible for any damage to property, personal injury, or death in which environmental exposure is a contributing factor.
- Do not use this respirator if anything comes between the helmet faceseal and your face (e.g., hair, bandanna, head covering, etc.). This condition will prevent a good helmet seal and may allow the leakage of contaminants into the helmet.
- Do not use this respirator in environments where the concentrations of contaminants are unknown or are immediately dangerous to life or health (IDLH). IDLH atmospheres are defined as:
  - a. Those that the wearer could not breathe for short periods.
  - b. Those from which the wearer could not escape without the aid of a respirator.
  - c. Those which have an immediate or delayed adverse effect on health.
- NEVER use this respirator without an optrel HE filter P/N 4088.200.
- NEVER use this respirator without a Spark Protector P/N 4088.202.
- Do not use this respirator at temperatures above 130 °F (55 °C).
- Do not use this respirator where environmental conditions could cause the respirator helmet to be dislodged or slip.
- This respirator does not protect against gases or vapors. It is only for protection against particulate contaminants.
- Immediately return to a non-contaminated area if:
  - a. You taste or smell contaminants or if your eyes, nose, or throat become irritated.
  - b. Breathing becomes difficult.
  - c. The air you are breathing becomes uncomfortably warm.
  - d. You feel nauseous or dizzy.
  - e. You notice a loss or decrease in airflow.
- The helmet moves, slips, or leaks.
- This respirator does not protect exposed areas of the body. Some contaminants can be absorbed directly through the skin while others may irritate exposed areas.
- This respirator does not provide protection from harmful noise. Always wear proper ear protection.
- This respirator does not supply oxygen. Do not use the respirator in atmospheres containing less than 19.5% oxygen by volume.
- This respirator must not be used under water, for fumigation, interior structural firefighting, abrasive blasting operations, or in areas where prolonged durations of high heat or flames could contact the respirator.
- This respirator must be used in conjunction with a written respirator program

meeting the requirements of the OSHA standard for Respiratory Protection, 29 CFR 1910.134, available from the U.S. Department of Labor, Occupational Safety and health Administration. The program must include procedures for evaluating air contaminants and selecting appropriate respirators; procedures for proper use of respirators; procedures for testing the fit of respirators; procedures for cleaning, disinfecting, inspecting, maintaining, and storing respirators; procedures for determining if workers are physically and medically capable of wearing respirators; and procedures for training employees in the use and care of respirators and in recognizing the hazards associated with contaminants in the work place.

- Do not wear this respirator if a satisfactory fit cannot be obtained. See ANSI Z88.2, latest issue, and OSHA 29 CFR 1910.134, latest edition. Beards, stubble, or sideburns may prevent a good helmet face seal.
- Optrel respirators, accessories, and associated equipment should not be used in atmospheres that may contain contaminant concentrations above the lower explosive level (LEL).
- This respirator will reduce, but will not eliminate the inhalation of contaminants. Some sensitive individuals may experience health problems when exposed to even minute amounts of contaminants. This respirator will not prevent health problems to those individuals.
- Use of components other than those listed on the NIOSH approval label and in this manual, or as authorized by optrel, or modification of this respirator in any manner will void the NIOSH certification and invalidates all optrel's warranties for the respirator.
- Persons sensitized can have a severe reaction to chemicals at levels well below accepted health levels such as the OSHA Permissible Exposure Limit (PEL), ACGIH Threshold Limit Value (TLV), or NIOSH Recommended Exposure Limits (REL). DO NOT use this respirator if you have been sensitized from previous exposure or believe that you may be sensitive or allergic to any chemical (e.g., isocyanates, latex, etc.) until you obtain clearance from a medical doctor.
- Always read and follow the instructions listed in the Material Safety Data Sheet for the chemicals that are present in the work area.
- Do not use, if you have a preexisting skin condition (for example, folliculitis or vitiligo) until you obtain clearance from a medical doctor.
- This respirator must be worn and used as specified in optrel's instructions. Do not leave away any part of the respirator or leave out a mandatory step of the instructions.
- No respirator can provide complete protection from all conditions. Use extreme care for emergency conditions.
- Users must clean and maintain this respirator only in accordance with optrel's instructions. Accessories not offered by optrel, may degrade performance, and will void NIOSH certification.
- Discontinue use if you experience skin irritation or discoloration.
- This product may provide less than adequate protection if improperly used, which may result in serious personal injury, serious illness, or death.
- For use by trained qualified personnel only.
- Do not use this respirator if it has been left exposed in a contaminated environment as contaminants could collect on the inside of the helmet and be inhaled when the gas mask is donned.
- Routinely use respirators must be inspected before and after each use.
- **FAILURE TO OBSERVE ALL WARNINGS MAY RESULT IN SERIOUS PERSONAL INJURY, SERIOUS ILLNESS, OR DEATH.**

## Warranty & liability

Optrel will repair the product or replace it where necessary in cases of materials or manufacturing defects arising within 24 months from the date of purchase, provided the product has been used in accordance with the authorized use as provided by the operating instructions.

The warranty will be invalidated if the serial number has been altered, removed or rendered illegible, or the product has been intentionally damaged, misused, opened up or modified. The warranty will also be invalidated if the product is used incorrectly, non-original replacement parts are used or it is not properly serviced.

The warranty only covers repairs or the replacement of defective parts. Under no circumstances does optrel undertake to provide any warranty for general breakdowns or consequential damage.

## Area of application

The e3000X is a powered air purifying respirator (PAPR) for protection against dust and particles.

The e3000X is used to support the ventilation process, reducing the effort required to breathe and thus reducing tiredness. The electronic system for controlling the airflow monitors the blower, in order to ensure a constant flow of three levels; 170 l/min, 210 l/min, 240 l/min.

The effective operating time of the e3000X with a fully charged battery depends on the battery type (see technical specifications table).

## Prior to pre-use inspection and testing

- Carefully remove the packaging of the various parts.
- Charge battery completely before first usage

Inspection table:

Check whether the unit is complete in accordance with the scope of delivery and nothing has been damaged. If any damage is found or a part is missing, contact the sales department immediately. Never use a damaged or incomplete unit. Please have a specific look at the following components:

COMPONENT	LOOK FOR
Battery pack	<ol style="list-style-type: none"><li>1. Connector cracked or broken.</li><li>2. Loose battery case lid or damaged connector.</li></ol>
Air Hose	<ol style="list-style-type: none"><li>1. Holes, cuts or abrasions.</li><li>2. Damaged spirals.</li></ol>
Belt	<ol style="list-style-type: none"><li>1. Cuts, nicks, tears or broken stitching.</li><li>2. Damaged buckle.</li><li>3. Loose hardware.</li></ol>

## Pre-use inspection and testing

Before every use, ensure that the e3000X is in faultless condition and proceed as follows:

- Ensure that the filter and the Spark Protector are properly installed and that the cover removal handle is holding securely (Cover has to close with a clicking sound) (Fig. 1)
- Check the air hose and air connector for damage (holes, tears, cuts). Connect the air hose to the helmet and blower by pressing the hose onto the corresponding part on the unit until a clicking sound ensures that it cannot be removed by a slight pull. (Fig. 2).
- Switch on the e3000X by pressing the on/off button for about 0.5 seconds. (Fig. 3). During the startup of around 3 seconds all 5 LED's ( 3 LED's in green for the flow level selection and 2 LED's in red, whereof one is for battery status and the other one for filter status – Fig. 4) are switched on and an audible alarm (3 beeps) will sound. Afterwards the e3000X is ready for use.
- In addition, during this startup time the e3000X performs an initial self-check to ensure that the unit delivers a correct flow above 170 l/min. If the red filter LED turns off after the before-mentioned 3 seconds, a flow of at least 170 l/min is maintained. Due to an in-built flow sensor the e3000X controls and continuously maintains a correct flow above 170 l/min during the entire operation.
- As mentioned the e3000X has a visible and audible warning (Fig. 5) for low battery and missing, clogged or incorrectly fitted filter. If a warning is triggered the danger zone must be left immediately!

Check the low airflow/filter clogging alarm by simulating a low airflow condition as follows: With the e3000X unit turned on, remove the hose from the helmet and tightly cover the end of the hose with the palm of your clean hand; the motor will then automatically speed up, attempting to compensate for the low airflow condition. Continue to press your palm tightly against the end of the hose, making a tight seal. When you have achieved a tight seal, the unit will sound an audible alarm and the red filter LED will be switched on.

- To stop the alarm press the on/off button for about 3 seconds, and connect the hose to the helmet.
- Ensure that the safety helmet is undamaged, put it on and strap the PAPR to your hips.
- Start the blower and ensure that the air in the safety helmet is circulating normally.

If there is any damage you must replace any defective parts before using the PAPR.

## Mode of operation

**Adjusting the belt size:** Put the belt on (Fig. 6) and adjust the size so that the blower unit sits comfortably on your hips.

**Removing the air hose:** Push the hose connection on both sides and remove it from the corresponding part (Fig. 7).

**Install the battery pack:** The battery pack has to be inserted into the respective slide rail on the right side of the e3000X. Slide the battery pack until a click is heard (Fig. 8).

## Removing and charging the battery:

### WARNING

- optrel P/N 4553.020 battery pack can only be charged with a optrel charger (P/N 4551.070) using the US plug. Using other chargers could cause explosions resulting in injury or death.
- optrel battery chargers (P/N 4551.070) are for indoor use only and must not be exposed to outdoor elements. Do not charge battery pack below 32 °F or above 113 °F (0 °C - 45 °C). Do not charge battery pack near flammable materials such as boxes, paper and furniture.
- Battery charging must be done in a safe, non-hazardous location. Do not charge or store the battery in proximity to the welding apparatus.
- Do not expose the lithium ion cells to water or allow them to get wet. Incidental exposure of the battery pack to water is acceptable provided the lithium ion cells remain dry.
- Do not disassemble or modify the battery pack. The battery pack contains safety and protective devices, which, if damaged, may cause the battery pack to generate heat, explode or ignite.

### WARNING

- Do not place the battery pack in direct sunlight or use or store the battery pack near a source of heat or electric arc.
- Failure to observe these warnings may result in serious personal injury, serious illness, or death.

### CAUTION

- optrel recommends that the battery pack is charged and stored at temperatures between 40 °F and 80 °F (4.5 °C and 26.7 °C). Charging at higher temperatures causes a reduction in capacity and reduces battery life.
- Use caution to prevent puncturing or rupture of cells.
- If the lithium battery is damaged, appears to swell, leaks electrolytes or gets abnormally hot during charging, discontinue its use immediately and store in a fireproof container until it can be recycled.
- Do not leave the battery pack attached to the battery charger for more than 70 hours.

### Procedure

1. Pull back the cover removal handle on the battery and pull it out of the slide rail until it is completely removed from the blower unit (p.6, Fig. 9).
2. Connect then the battery pack to the battery charger (p.6, Fig. 10).
3. Plug the battery charger into a 110 to 120 VAC power outlet. The battery pack LED glows yellow, indicating that charging is in progress. If the yellow LED does not come on, the charger or battery pack may be damaged.
4. A totally discharged battery pack takes approximately 5 hours to obtain a capacity for ten hours of operation under normal operating conditions. When the battery is fully charged the LED turns green. It is recommended to charge battery packs overnight or between shifts.

**Check battery status:** Press the On/Off Button shortly and the LED will blink. Check the battery charge status on the lower scale

**Flow adjustment:** The blower has three air flow levels: 170/210/240 nL/min\*. To change the air flow level, cycle through the different flow levels by pressing the air flow button until your requested air flow level is reached. (p.6, Fig. 11)

**Filter replacement:** In case of a filter alarm indication please replace the HE-filter and or Prefilter (p.6, Fig. 12).

## WARNING

Filters must be replaced in a safe, uncontaminated environment only. Do not reuse a filter. Failure to comply with this warning could result in injury, illness, or death.

Air hose	Length: 1160 mm (elastic up to 1300 mm) Diameter: 31 mm (inside) Weight: 185g / 6.526 oz Color: black
Weight	1560g / 55.027 oz (incl. filter, belt and battery)
Dimensions	LxVxH: 222 x 213 x 92.6 mm
Standards/Regulations	NIOSH 42 CFR Part 84
Notified body	NIOSH

## Alarm function

**Filter clogging alarm:** If the filter clogging alarm switches on, the LED illuminates red. Without action, the flow levels III and II change to one lower. To replace the filter, please press the On/Off Button for 2 seconds in order to switch the e3000X off. Now you are able to replace the filters.

**Battery alarm:** If the battery alarm switches on, the LED illuminates red. The audible warning will beep once a second, and the unit will run for about 30 minutes, before the battery is empty - please note time depends highly on filter clogging level.

## Storage

The e3000X system and its accessories must be stored in a dry place. Protect from sunlight, high temperatures and from hydrocarbons and solvent vapors.

## Maintenance

Check the welding helmet regularly in accordance with the operating instructions. Check the face seal and the air nozzle for holes, cracks or other damage and check that they are correctly positioned on the helmet (see operating instructions). Do not use the system until all worn or damaged parts have been replaced.

Maintenance plan	
Activity	System in use
Cleaning, disinfection	After each use
Visual inspection	Before and after each use
Charging the battery pack	After each use
Replace seal between main HE-filter and blower unit	Replace only if the seal is worn or damaged

If the unit is in storage, the battery must be recharged every 4 months.

## Cleaning

Using a clean cloth moistened with soapy water, clean the blower, the air hose and the safety helmet. Leave the unit to dry at room temperature. Do not use strong detergents, solvents, alcohol or cleaning agents containing abrasives. The faceseal is washable (hand wash, do not spin).

## Technical specifications

(We reserve the right to make technical changes.)

Nominal protection factor	HE for USA
Blower unit	Flow rates: Level 1: min. 170 l/min* Level 2: min. 210 l/min* Level 3: min. 240 l/min* * at standard conditions: (all Levels controlled) 20° C, 0 metres above sea level (1013 hPa)
Material	PC+ABS
Blower	High quality ball beared long life brushless motor
Fuse	Electronic fuse

Battery	Type	<b>Standard</b>
	Type:	Li-Ion rechargeable
	Voltage / capacity:	14.8V / 3.25Ah
	Charging cycles:	> 500
	Operating time level 1*	18 h
	Operating time level 2*	16 h
	Operating time level 3*	13 h
	Charging time:	approx. 5h
	Weight:	420g / 14.815 oz
	Colour:	black
	*min. operating time is with new filter at room temperature	
Noise level	Max. 60 dB(A)	
Warning signals	optical and audible alarm for low power, clogged filter, no filter, and low flow	
Filter	HE filter	

## Troubleshooting

### Blower does not start

- Make sure the battery is inserted correctly.
- Make sure the battery is fully charged.

### Filter warning is on even when filter have been changed and properly installed

- Internal e3000X error
- Return the e3000X to your nearest dealer.

### Battery running time becomes very short

- Defective battery pack – replace and dispose of the used battery pack in accordance with the national regulations for special waste.
- Defective charging unit – replace.

## Scope of supply/spare parts (see cover)

1	Face piece	see approval label
2	Faceseal	see approval label
3	e3000X blower & belt assy	4553.000
4	PAPR HE filter	4088.200
5	Pre-filter e3000X	4088.101
6	Spark Protector	4088.202
7	Air hose	4551.020
8	Battery pack e3000X	4553.020
9	Battery Charger e3000X	4551.070
10	e3000 skull cap (only for e600)	5004.090

Further accessories can be obtained from the main catalogue or our website.

## Legend (see page 7)

- A Read the operating instructions prior to use
- B Do not use sharp objects to open
- C Contents fragile
- D Store with this side up
- E Protect from dampness
- F Notified body's mark
- G Contains lithium-ions
- H Plastic, recyclable
- I Recommended storage temperature: +5 °C to +25 °C
- J Must not be disposed of with normal household waste. Please dispose of in accordance with the national regulations for special waste.



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Serial No.:

Date of sale:

Dealer's stamp:



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