

# Dräger

## Dräger Oxy SR CAP III

### Instructions for use

enUS



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 www.draeger.com

### 1 Safety information

- Before using this product, carefully read the instructions for use.
- Strictly follow the instructions for use. The user must fully understand and strictly observe the instructions. Use the product only for the purposes specified in the intended use section of this document.
- Do not dispose of the instructions for use. Ensure that they are stored and used appropriately by the user.
- Only trained and competent users are permitted to use this product.
- Comply with all local and national rules and regulations associated with this product.
- Use only genuine Dräger spare parts and accessories. Otherwise, the proper functioning of the product may be impaired.
- Do not use a faulty or incomplete product. Do not modify the product.
- Notify Dräger in the event of any component fault or failure.
- Use the training device to practise handling.
- Only open the self-rescuer in order to use it.
- Only wear the functional unit once.
- Replace used devices.
- Opened devices are classified as used and must be disposed of.
- The National Institute for Occupational Safety and Health (NIOSH) requests, but does not require, that purchasers of this respirator register each unit with NIOSH. Registration will enable NIOSH, which approved this model of respirator, to attempt to notify you if a problem is discovered that might affect the safety or performance of this respirator. Registration will also assist NIOSH in locating deployed units to periodically evaluate whether this respirator model is remaining effective under field conditions of storage and use. The applicant can obtain a copy of these procedures from the NIOSH web page: <http://www.cdc.gov/niosh/npptl>.
- Before occupational use of this respirator, a written respiratory protection program must be implemented meeting all the local government requirements. In the United States, employers must comply with OSHA 29 CFR 1910.134 which includes medical evaluation, training, and fit testing.

Both the latest edition and other languages of these instructions for use can be downloaded in the Technical Documentation database ([www.draeger.com/ifu](http://www.draeger.com/ifu)). Due to product actualizations, Dräger recommends always using the latest edition of the instructions for use.

### 2 Conventions in this document

#### 2.1 Meaning of the warning notices

The following warning notices are used in this document to alert the user to potential hazards. The meanings of the warning notices are defined as follows:

Warning sign	Signal word	Classification of the warning notice
	WARNING	Indicates a potentially hazardous situation. If not avoided, it could result in death or serious injury.
	CAUTION	Indicates a potentially hazardous situation. If not avoided, it could result in physical injury. It may also be used to alert against unsafe practices.
	NOTICE	Indicates a potentially hazardous situation. If not avoided, it could result in damage to the product or environment.

#### 2.2 Typographical conventions

- This triangle in warning notices indicates the possibilities for avoiding danger.
- This symbol indicates information that facilitates the use of the product.

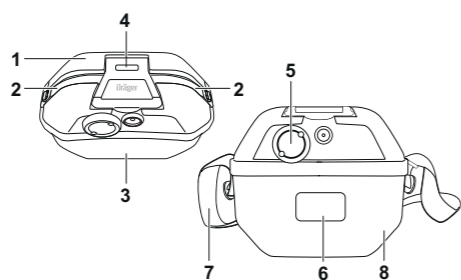
#### 2.3 Glossary

Term	Explanation
Carried device	Self-rescuer which is carried on the body or is subjected to static and dynamic loads during transport.
Stored device	Device which is stored free from impacts and vibration or is mounted on structures in such a way that no static or dynamic strain is transferred to the device.
Used device (in deployment)	Functional unit which is removed from its housing in an escape situation.
Re-stored device	See stored device.

### 3 Description

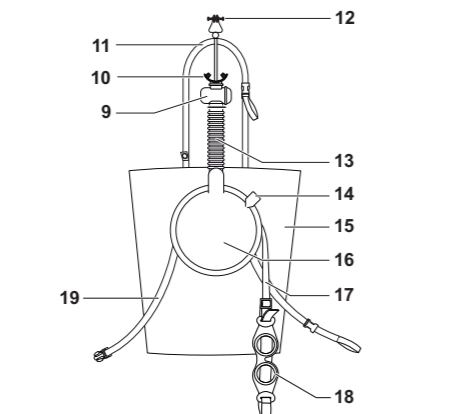
#### 3.1 Product overview

##### 3.1.1 Housing



1	Upper part of the casing
2	Retaining straps
3	Lower part of the casing
4	Opener with sealing tag
5	Safety Eye with humidity indicator and heat indicator
6	Name plate
7	Shoulder strap (not shown: support ring for fastening the self-rescuer to a waist belt)
8	Abrasion protection (optional)

##### 3.1.2 Functional unit



9	Heat exchanger
10	Mouthpiece

11	Neck strap
12	Nose clip
13	Breathing hose
14	Starter
15	Breathing bag
16	KO <sub>2</sub> cartridge and heat shield
17	Button strap
18	Goggles
19	Chest strap

#### 3.2 Feature description

The Dräger Oxy SR CAP III is a respiratory protective device for self-rescue which is independent of ambient air. Chemically bound oxygen is used with a closed pendulum breathing system to recycle exhaled air. The oxygen source is potassium superoxide (KO<sub>2</sub>).

The oxygen is released by the reaction of the chemical KO<sub>2</sub> with the carbon dioxide (CO<sub>2</sub>) present in the alveolar air and moisture. In this reaction the carbon dioxide is bound and heat is released.

The length of the usage period depends on the user's respiratory rate and the condition of the device.

When the self-rescuer is carried every day, it can either be hung over the shoulder or carried by hand or worn on a belt. The self-rescuer can be mounted in a fixed location on a device bracket. The Safety Eye must be visible.

The device is fitted with an automatic starter. The starter is activated when the mouthpiece is deployed. An initial quantity of oxygen is delivered into the breathing bag.

The indicator concept is used to assess the functional integrity of the self-rescuer (see chapter 4.2 Daily Checks):

- Mechanical overuse
  - Metal cup: Dents indicate what forces have been acting on the self-rescuer.
  - Safety Eye: allows an assessment of whether the KO<sub>2</sub> cartridge has been mechanically overloaded.
- Deterioration of the chemical
  - Moisture indicator: The moisture indicator indicates a leaky self-rescuer and potential deterioration of the chemical.
  - Heat indicator: The heat indicator indicates whether the chemical has been damaged by excessive temperatures.

RFID technology facilitates computer-supported processing of information (e.g., serial number, production date).

Additional weight tests or leak tests are not required. Due to the chemical reaction which occurs when it is worn, the self-rescuer can only be used once.

#### 3.3 Intended use

The self-rescuer is an emergency device intended for escape from areas where smoke, toxic gases or oxygen deficiency are present.

#### 3.4 Limitations on use

The self-rescuer is not a work tool. The self-rescuer must not be used in areas with positive pressure.

The self-rescuer can only be used within temperature classes T1, T2, T3 and T4 (see standard IEC 60079). The surface of the starter on the self-rescuer can reach a maximum temperature of 275 °F (135 °C) in the first 3 minutes. After that, the starter cools down to ambient temperature.

#### WARNING

##### Fire hazard!

If gases or vapors with ignition temperatures below 275 °F (135 °C) are present, the temperature of the self-rescuer can ignite these gases and cause a fire.

- Do not use the self-rescuer in the presence of air mixtures which contain gases or vapors with ignition temperatures below 275 °F (135 °C).

The self-rescuer is not approved for use in chemical, biological, radiological or nuclear (CBRN) applications.

The self-rescuer is not intended to protect from liquids, vapors or gases which can poison as a result of skin absorption. If the self-rescuer is to be worn in such environments, adequate protective measures must be taken.

Since the self-rescuer is equipped with mouthpiece and protective goggles, it is suitable for those who wear dentures and/or glasses only to a limited extent. Suitability can be determined with a training device, a practice simulator or a mouthpiece assembly.

### 3.5 Approvals

The self-rescuer has been certified by NIOSH in compliance with title 42, Code of Federal Regulations, Part 84. It is approved as a Capacity 3 Closed-Circuit Escape Respirator (CCER). Only use in combinations specified in the Approval Label (see document 9300857).

#### 3.6 Marking

The following information is shown on the name plate:

- Date of manufacture
- Serial number
- Order number
- Approval marking
- Testing standard
- Name of device
- Nominal usage period of device (see chapter 3.2 Feature description)

When the self-rescuer is delivered, the delivery date must be entered on the name plate. Specify the number of shifts per day on the device and when devices are re-stored if there is no fleet management tool available. Do not use any punch numbers for the inscription. Dräger recommend engraving or etching. Every device supports RFID technology for easier application

### 4 Regular inspections

#### 4.1 Inspection intervals

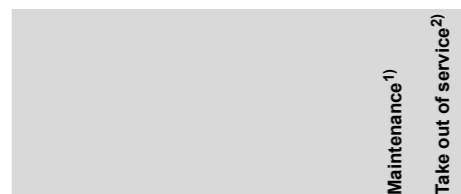
No inspections are necessary while the self-rescuer is stored and undeployed. In all other cases, the inspections must be performed as follows before the self-rescuer is used.

	Daily	Daily for 2 weeks, then every 90 days thereafter
Device is worn	X	
Device is re-stored		X

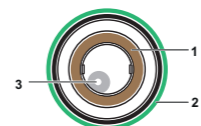
The following inspection checks must be carried out before the device is worn. If any of the inspection checks mentioned can be answered with "Yes", maintenance must be performed by trained persons or the device must be taken out of service.

#### 4.2 Daily checks

	Maintenance <sup>1)</sup>	Take out of service <sup>2)</sup>
Check whether the device is contaminated.	X	
Check whether the support ring is loose and is not held by the detent cams.	X	
Check whether the shoulder strap is frayed or damaged.	X	
Check whether the shoulder strap is loose on the support ring.	X	
Check whether the protective indicator window is showing scratches or cracks and the view of the cartridge or the heat indicator is restricted.	X	
Check whether the sealing tag is present or damaged. Fissure marks (white lines or cracks) are a sign that the sealing tag is damaged.	X	
Check whether the opening mechanism is unlocked or damaged.	X	
Check whether the housing has more than the permissible deformations (see appendix).	X	
Check whether the housing is open.	X	
Check whether the housing has any cracks or holes.	X	
Check whether the specified life span of the device has been exceeded.	X	
Check whether the protective indicator window is damaged.	X	



Check whether the humidity indicator (1) is turquoise. If moisture has penetrated into the self-rescuer, the humidity indicator changes from brown to turquoise. The O-ring (2) around the humidity indicator can be turquoise. However, this should not be seen as evidence that moisture has penetrated into the self-rescuer.



Check whether the color of the heat indicator (3) in the center is black. If the device was exposed to excessive heat, the color of the heat indicator changes from white to black.

Check whether many yellow fragments, the same size or larger than grains of sugar, can be shaken in the viewing window area.

- By trained persons
- Device may not be used any longer. Return device to Dräger if necessary.

If the self-rescuer has suffered unusual stress (blows, pressure, etc.), the checks mentioned should be carried out immediately.

If the indicator changes during the shift, the device can be used until the end of the shift and then must be taken out of service.

### 5 Use

#### 5.1 Using the self-rescuer

##### WARNING

##### Danger of fire and ignition!

If combustible substances (gasoline, grease, solvents, etc.) get into the self-rescuer, there is a risk of fire! Destroying the self-rescuer can result in a potential risk of ignition if the oxygen-delivering substance comes into contact with combustible substances such as charcoal.

- Use the self-rescuer only once. Previously worn devices must not be reused.

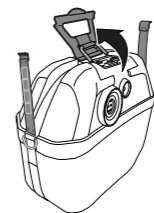
#### 5.2 Important escape rules

- Start the escape calmly, do not rush. Behave calmly. Short, quick breaths use more oxygen!
- Plan your escape route; choose the shortest way to safe ambient air!

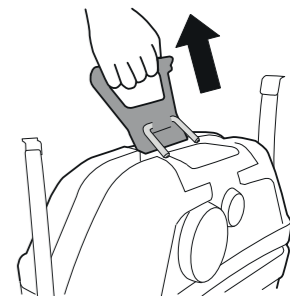
#### 5.3 Donning procedure

Donning the device incorrectly may cause a delay when using the self-rescuer in emergencies. Be sure to carry out the following steps in the described sequence.

- Pull the opener up and press it into its end position. The retaining straps then fall off by themselves.

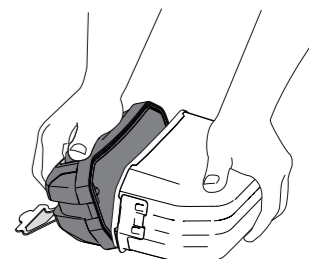


#### 2. Remove the upper part of the casing and discard it.



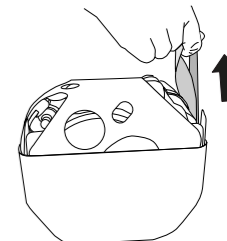
Opening can be supported as follows:

- Use the fully opened opener to lever the lid open. Or bend the housing at the sealing surface. To do this, place the device flat on the floor. Press on the edge of the upper and lower parts of the housing.



- At temperatures below +41 °F (+5 °C), facilitate opening with your feet if necessary (in the same way as in the previous point).

#### 3. Grasp the yellow loop and use it to pull the functional unit out of the housing.



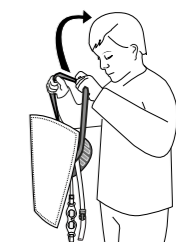
##### WARNING

##### Danger of poisoning and asphyxiation!

If the self-rescuer is pulled out of the housing by the mouthpiece, the hose or any other part, it could become damaged and will be unable to supply sufficient breathing air.

- Use the yellow loop to pull out the device. Pay attention to the direction shown when pulling out the device.


- Discard the lower part of the casing.
- Hold the functional unit so that the breathing bag points away from the body.
- If necessary, remove the helmet.
- Place the neck strap around your neck.



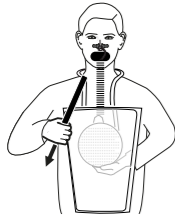
- If necessary, put the helmet on.

Quickly carry out the next steps.

- Bring the mouthpiece assembly up to your face. In doing so, the mouthpiece cap is released from the mouthpiece. The starter pin is pulled out of the starter.
- Place the mouthpiece in your mouth. Ensure that the breathing hose does not get twisted.
- Cover the mouthpiece tightly with your lips.
- Pull the nose clip apart and place it over the nostrils. The nose must be closed tightly.

 The oxygen from the starter flows into the breathing bag within 1 to 2 minutes. However, the breathing bag does not fill completely. If necessary, use your hands to help unfold the breathing bag. If the breathing bag does not fill, breathe out forcefully 2 or 3 times to fill the breathing bag.

13. Handle the functional unit as indicated, and pull on the end of the neck strap to raise the functional unit. Position the functional unit in front of your chest so that you can move your head in any direction without pulling on the mouthpiece.



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14. If necessary, remove corrective glasses.
15. If necessary, release the goggles from the functional unit and from the button strap and put them on.
16. Put the chest strap around your body and close it.
17. Tighten the chest strap.

## 5.4 During use

- Ensure that the mouthpiece is seated firmly between your teeth and lips and is tightly covered with your lips so that no contaminants from the environment will be inhaled. Do not speak under any circumstances. In case of vomiting, remove the mouthpiece from your mouth and close it with your thumb. Do not vomit into the self-rescuer! In order to ensure that no harmful air is inhaled from the environment, inhale from the self-rescuer first once the mouthpiece has been reinserted.
- The nose clip must close the nose fully, so that no contaminants are inhaled from the environment.
- The air from the self-rescuer is warm and dry. This shows that the self-rescuer is functioning correctly. A possible strange taste is normal and harmless.
- Do not damage or compress the breathing bag, otherwise vital oxygen is lost.

### 5.4.1 Changing the self-rescuer during use

If it is necessary to don a new self-rescuer, proceed as follows:

1. Tighten the chest strap of the old self-rescuer to ensure the functional unit is securely attached to your body.
2. If necessary, remove the helmet.
3. Prepare the new self-rescuer.
  - a. Pull the opener up and press it into its end position. The retaining straps then fall off by themselves.
  - b. Remove the upper part of the casing and discard it.
  - c. Grasp the yellow loop and use it to pull the functional unit out of the housing.
4. Open the quick-release buckle on the neck strap of the old functional unit. The device is held to the chest by the chest strap.
5. Continue breathing from the old functional unit.
6. Put the neck strap of the new functional unit around your neck.
7. Inhale one last time from the old functional unit.
8. Bring the mouthpiece assembly of the new functional unit up to your face. In doing so, the mouthpiece cap is released from the mouthpiece. The starter pin is pulled out of the starter.


## ⚠ WARNING

### Danger of asphyxiation!

Inhalation of toxic ambient air can cause death.

- ▶ Do not inhale the ambient air.

9. Remove the old mouthpiece and nose clip, let them drop and immediately place the new mouthpiece in your mouth. Ensure that the breathing hose does not get twisted. The rubber piece should sit between the teeth and the lips.
10. Cover the mouthpiece tightly with your lips.
11. Pull the nose clip apart and place it over the nostrils. The nose must be closed tightly.
12. Exhale into the new functional unit.

 The oxygen from the starter flows into the breathing bag within 1 to 2 minutes. However, the breathing bag does not fill completely. If necessary, use your hands to help unfold the breathing bag.

13. Inhale normally from the new functional unit.
14. Release the quick-release buckle on the chest strap of the old functional unit. Drop the old device on the floor.
15. Support the functional unit by hand and pull on the end of the neck strap to raise the functional unit. Position the functional unit in front of your chest. The functional unit must not sit too high; you must be able to move your head in any direction without pulling on the mouthpiece.
16. If necessary, release the goggles from the functional unit and from the button strap and put them on.
17. Put the chest strap around your body and close it.
18. Tighten the chest strap.
19. If necessary, put the helmet on.

## 5.4.2 End of use

Make sure that the respective usage periods of the self-rescuer are taken into account in the escape plan.

The oxygen supply is running out when breathing becomes labored and the breathing bag begins to collapse.

## 6 Maintenance

### 6.1 Cleaning

#### ⚠ CAUTION

#### Risk of material damage!

Do not open the self-rescuer for cleaning. Opened devices cannot be closed again. They are classified as used and must not be stored.

- ▶ Dispose of opened devices.

1. Remove the abrasion protection and the carrying strap from the self-rescuer and clean them in soapy water.
2. Dampen and brush down the self-rescuer. The water should be hand-hot. A gentle detergent can be used.
3. Thoroughly dry all parts at room temperature or in a drying closet (max. 45 °C).
4. Refit the abrasion protection and the carrying strap.

### 6.2 Maintenance work

The functional unit does not require any maintenance. If external parts (protective indicator window, support ring, straps) are damaged, they can be replaced or repaired by specialist personnel.

#### ⚠ WARNING


#### Functioning may be impaired!

The perfect functioning of the self-rescuer may be impaired if the device is incorrectly repaired or if genuine Dräger parts are not used for maintenance of the external components.

- ▶ Have the self-rescuer repaired only by trained persons.
- ▶ Use only genuine Dräger spare parts for maintenance.

Spare parts can be found in the spare parts list.

### 6.2.1 Replacing the protective indicator window

 If the protective indicator window needs to be replaced, the new protective indicator window should be fitted without delay. The indicator window located behind it cannot be replaced.

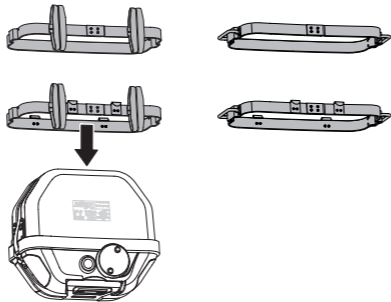
1. Unscrew the faulty protective indicator window with a face spanner (size: 35 mm).
2. Furnish the new protective indicator window with an O-ring and use a face spanner to screw it into the housing (tightening torque: 2.5 Nm).

### 6.2.2 Fitting the abrasion protection

1. Position the abrasion protection so that the center gap is located below the protective indicator window.
2. Slide the abrasion protection onto the self-rescuer.
3. Pull the fastening holes in the abrasion protection onto the hooks on the support ring.

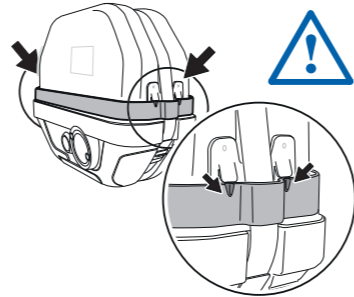
### 6.2.3 Fitting the support ring for the waist belt

1. Position the support ring so that the eyelets point toward the viewing window.



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2. Slide the support ring onto the lower part of the casing until it snaps into place.



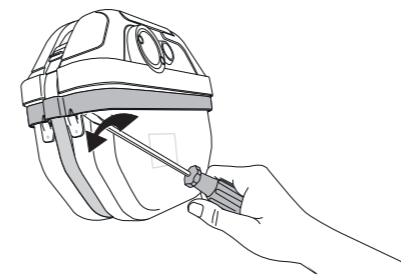
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### 6.2.4 Fitting the support ring for the shoulder strap

1. Position the support ring so that the middle seam points toward the viewing window.
2. Slide the support ring onto the lower part of the casing until it snaps into place.

### 6.2.5 Removing the support ring

1. Using a suitable soft tool, press all the detent cams against the housing, so that the support ring can be levered over the cams. Press between the support ring and the self-rescuer with the tool and remove the support ring.



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### 6.2.6 Removing the abrasion protection

1. Unfasten the abrasion protection from the hooks on the support ring and remove it from the self-rescuer.

## 7 Transport

Self-rescuers are subject to international transport regulations during transport. Suitable return packaging is available from Dräger. Unused self-rescuers are classified under:

- UN 3356 "Oxygen generator, chemical" Class 5.1, packing group II.

Used self-rescuers are classified under:

- UN 3085, Oxidizing solid, corrosive, n.o.s. (Potassium Superoxide, Potassium Hydroxide), Class 5.1, packing group I.

Please note any special regulations of the assigned carrier.

## 8 Storage

### ⚠ WARNING

#### Fire hazard!

There is a danger of fire if oxygen penetrates into an open self-rescuer.

- ▶ Do not store open self-rescuers.

The storage location must be free from shocks and vibration.

## 9 Service life

The life span begins on the delivery date, if it is engraved on the nameplate. If no delivery date is engraved, the life span begins on the date of manufacture. The self-rescuer is considered to have been put into operation no later than 1 year after the date of manufacture.

Under normal ambient conditions and in single shift operation, both worn and stored, the life span of the self-rescuers is 5 years (applies to 3709881) or 10 years (applies to 6306840). The life span is shortened by half in two shift operation.

Furthermore, the life span of the self-rescuer lapses under certain conditions (see chapter 4.2 Daily Checks) and if the instructions in these instructions for use are ignored.

The life span and the values relating to respiratory physiology (e.g., inhalation resistance and exhalation resistance) can deviate on individual use over time. Extension of the life span is not possible.

## 10 Disposal

### 10.1 General

The self-rescuer must not be disposed of as household waste. It must be disposed of in accordance with the applicable waste disposal regulations or via a suitable disposal company. Return packaging suitable for shipping is available from Dräger. The part numbers can be found in the spare parts list.

### 10.2 Disposing of the device

Dräger will take this product back at the owner's expense. During this process, Dräger will decide whether the product will be reused. For information please contact the national marketing organizations.

- Prepare damaged, opened or used up self-rescuers as follows:
  - For opened or damaged self-rescuers, trigger the starter before transporting. For unopened devices, the starter does not need to be triggered.
  - The return packaging contains a barrier bag. Pack the self-rescuer airtight inside it and pack this in the return packaging provided (see spare parts list).
- Expired or unopened self-rescuers:
  - Do not need to be packed airtight in the barrier bag and can be shipped in the return packaging provided.

Send the self-rescuer in accordance with transport regulations to the following address:

Dräger Safety AG & Co. KGaA  
Service/Produktücknahme  
Revalstraße 1  
23560 Lübeck  
Germany

Tel: +49 451 882-0

Email: recycling@draeger.com

## 11 Technical data

### General conditions

Temperature of devices ready for escape	+41 °F to +122 °F (+5 °C to +50 °C)
Ambient relative humidity	Up to 100%
Ambient pressure	10.15 psi to 18.86 psi (700 hPa to 1300 hPa)
Weight of closed device	approx. 7.72 lb (3.5 kg)

### Dimensions (W x H x D)

Without support ring, without abrasion protection	9.68 in x 8.38 in x 4.92 in (246 mm x 213 mm x 125 mm)
With support ring for shoulder strap, without abrasion protection	10.43 in x 8.38 in x 4.92 in (265 mm x 213 mm x 125 mm)

With support ring for shoulder strap, with abrasion protection	10.43 in x 8.54 in x 4.92 in (265 mm x 217 mm x 125 mm)
With support ring for waist belt, without abrasion protection	9.92 in x 8.38 in x 5.31 in (252 mm x 213 mm x 135 mm)
With support ring for waist belt, with abrasion protection	10.00 in x 8.54 in x 5.31 in (254 mm x 217 mm x 135 mm)

### Use conditions

Temperature of the inhalation air (dry, breathable air)	max. +122 °F (max. +50 °C)
Weight during use (functional unit)	5.51 lb (2.4 kg)
Dimensions during use (functional part)	7.48 in 9.45 in x 3.94 in (190 mm x 240 mm x 100 mm)

### Volume of the breathing bag

Oxy SR CAP III >15 liters

### CO<sub>2</sub> content

In the inhaling gas	<1.5 Vol% (average value)
In the inhaling gas at the end of the period of use	max. 3.0 Vol%
Oxygen capacity	CAP 3 regarding 42 CFR part 84 subpart O

### Inhalation/exhalation resistance at 35 L/min

Max. individual exhalation resistance	+0.1 psi or -0.1 psi (+7.5 hPa or -7.5 hPa)
At the end of the usage period	Σ0.18 psi (Σ13 hPa)