USER manual

EN 13794:2002

CE

0477

AS/NZS 1716:2012

CARBO

CHEMICAL OXYGEN SELF-CONTAINED SELF-RESCUER

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DEZEGA®

LIFELONG SAFETY EXPERIENCE

CONTENTS

INTRODUCTION

The manual is intended to study the purpose, design and operating principle of CARBO chemical oxygen self-contained self-rescuer (hereinafter – CARBO or the CARBO self-rescuer), the rules for its use, maintenance and disposal.

CAUTION!

Any use of the CARBO self-rescuer requires accurate knowledge and strict compliance with this USER MANUAL (hereinafter – manual). CARBO may only be used for the purpose, described in this manual. Only in this case, the self-rescuer guarantees reliable protection of the user's respiratory system in an emergency.

1. INTENDED USE

CARBO self-rescuer is a personal respiratory protection device on chemically bound oxygen with a closed breathing circuit, used for escape from irrespirable atmospheres that pose an Immediate Danger to Life and Health (IDLH). It is suitable for carrying on a shoulder belt or on the waist. The SCSR is used to protect the respiratory system during the escape when there is high density smoke from fires, a high concentration of toxic gases, or a lack of oxygen in the atmosphere.

The self-rescuer is designed for everyday carrying as well as storage at changeover stations along the escape routes.

The self-rescuer complies with the requirements of EN 13794:2002 and REGULATION 2016/425/EU (Category III).

Notified Body involved in the conformity assessment of PPE – Eurofins Product Testing Italy S.r.l., Via Courgne, n.21, 10156 TORINO, ITALY (No. 0477).

Notified Body involved in the production control of PPE – Eurofins Product Testing Italy S.r.l., Via Courgne, n.21, 10156 TORINO, ITALY (No. 0477).

EU declaration of conformity is available on the web-page www.dezega.com.

The self-rescuer satisfies the requirements of AS/NZS 1716:2012, Technical reference guide (TRG) for escape breathing apparatus for underground mining application. Registration number is indicated in the Data Sheet which is supplied with each SCSR.

The device is suitable for industries with irrespirable atmosphere, including underground use.

CARBO self-rescuer is not designed for use during the routine operations.

CARBO is ready for immediate use.

The self-rescuer has no restrictions on use related to the physiological peculiarities of the users.

2. SAFETY PRECAUTIONS

Protect SCSR from mechanical damages, which may cause destruction of the regenerative cartridge, lids and other components.

Do not store or leave the self-rescuer on operating mechanisms and equipment, as well as on heat sources. The exception is carrying the SCSR during job performance.

Open SCSR only in case of emergency (for its intended use).

Keep unsealed, used or damaged SCSRs away from liquid or solid flammable materials, fuels and lubricants.

Unsealed self-rescuers (opened, damaged) where oxygen-containing product has direct contact with air, shall be disposed in accordance with Section 14 «DISPOSAL». It is forbidden to leave unsealed (opened) self-rescuers in the mine.

DANGER!

If the self-rescuer is damaged, the oxygen-containing product can cause ignition of coal, wood or other flammable materials.

3. TECHNICAL DATA

The key specifications of the CARBO self-rescuer are listed in Table 1.

Table 1 – Key specifications of the self-rescuer

Parameter name	**Parameter value**
Rated duration[1] in accordance with EN 13794:2002 and AS/NZS 1716:2012 at lung ventilation, not less:	
- 10 l/min (waiting for help)	180 min
- 35 l/min (normal walking)	60 min
Breathing resistance (to inhalation or exhalation) during operation, max	0,75 kPa
Temperature of the inhaled gas, not more	50 ^{0}C
Volume of oxygen in the inhaled gas during the rated duration, not less	21%[2]
Maximum volume fraction of carbon dioxide in the inhaled gas, not more	3%
Average volume fraction of carbon dioxide in the inhaled gas during the rated duration, not more	1,5%
Volume of breathing bag, not less	6 L
Overall dimensions (without waist and shoulder straps or pouch), not more:	
- width	215 mm
- height	227 mm
- depth	106 mm
Weight	2,9±0,1 kg
Operating temperature	from -5 to +60 °C
Relative humidity (at +35 °C) during operation and storage	up to 100%

Information about service life, shelf life and warranty period is indicated in the Data Sheet which is supplied with each SCSR.

1. Rated duration may vary under the escape conditions depending on physical activity and physiological peculiarities of the user.
2. Short-time decrease of oxygen volume fraction in the inhaled gas down to 17% is allowed during the first two minutes after the self-rescuer activation.

4. RECOMMENDATIONS ON PRE-OPERATION INSPECTION

Before everyday use of the CARBO self-rescuer, make sure that the following components are not damaged:

- cover plate of lock lever;
- coupling straps;
- bottom and top lids;
- cartridge;

CAUTION!

If the CARBO self-rescuer does not meet at least one of the mentioned above requirements, it shall be withdrawn from the service.

- belt loops and fixators (if applicable);
- bumpers;
- moisture indicators (if installed) did not change colour to pink.

In addition to it, check the mobility of fixators before everyday use by pressing the fixators in the direction from the centre aside against the stop with both thumbs and then revert them to the original state.

Regular visual inspection of the moisture indicators (if installed) allows the user to monitor the self-rescuer operating conditions without any additional and special equipment.

Blue colour indicates normal working condition of the SCSR.

CAUTION!

If one or both moisture indicators are pink, the CARBO self-rescuer must be immediately checked on CARBOFit-400 leak testing device.

Pink colour of moisture indicator does not indicate the inoperability of self-rescuer, but necessity to check it on leak testing device CARBOFit-400.

A withdrawn self-rescuer shall be placed into the individual tightly closed plastic bag and sent to the manufacturer or an authorized local representative for making decision about its further using.

5. DESIGN

CARBO self-rescuer consists of the following components:

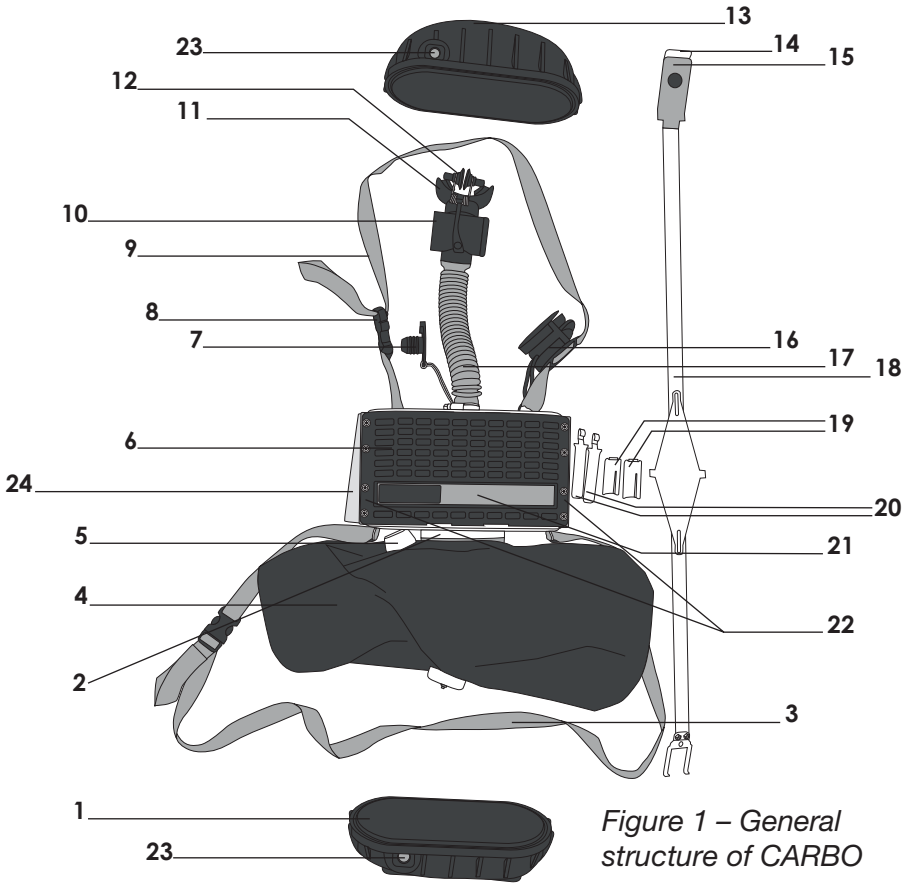


Figure 1 – General structure of CARBO

1. Bottom lid
2. Starter
3. Chest strap
4. Breathing bag
5. Relief valve
6. Regenerative cartridge
7. Mouthpiece plug
8. Quick release buckle
9. Neck strap
10. Heat and moisture exchanger
11. Mouthpiece
12. Nose clip
13. Top lid
14. Lock lever
15. Cover plate with seal
16. Antifogging protective goggles
17. Breathing tube
18. Coupling strap
19. Fixators*
20. Belt loops*
21. Pictogram of the donning procedure
22. Bumpers
23. Moisture indicators (option)
24. Heat shield

* For modification of CARBO, that is intended to use without pouch

6. CARRYING METHODS

During everyday use the CARBO self-rescuer can be worn on waist (in pouch or without) or shoulder belts.

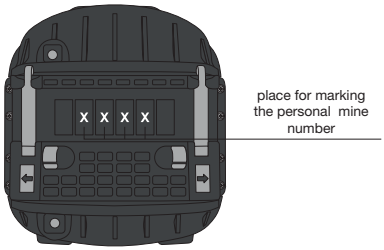
Figure 2 – Carrying methods of CARBO

Before carrying the self-rescuer during everyday use, make sure that the waist or shoulder belts are properly adjusted.

Please use Miner's Memo for correct adjustment of shoulder and waist belts for comfort and ergonomic everyday carrying.

7. RECOMMENDATIONS ON OPERATION, RECORD AND ISSUANCE

Before putting into operation, perform visual inspection and check for leakage CARBO using CARBOFit-400 device in accordance with Section 13 «SERVICE AND MAINTENANCE INSPECTION» of this manual, as well as in accordance with the CARBOFit-400 device User Manual.



There must be an appropriate unique number for deployed SCSRs and recording this information into the «Mine registration log book for self-contained self-rescuers» (ANNEX B) and marking on the rear bumper in the special lines.

*Figure 3 – Place for marking the personal mine number**

*For modification of CARBO, that is intended to use without pouch

Individual self-rescuers shall be assigned to each worker in accordance with the safety regulations in force in the country.

Reserve (non-individual) self-rescuers are recommended recording in the «Mine registration log book for reserved self-contained self-rescuers for mine workers and third-party organizations» (ANNEX C).

CAUTION!

Service life will be calculated from the date of manufacturing, indicated on the coupling strap if there is no information in «Mine registration log book for self-contained self-rescuers» and «Mine registration log book for reserved self-contained self-rescuers for mine workers and third-party organizations» or other means of legislation.

Before descending into the mine, it is necessary to take self-rescue from lamp room and perform visual check in accordance with Section 4 «RECOMMENDATIONS ON PRE-OPERATION INSPECTION».

It is recommended to store self-rescuers at issuance and changeover stations in the special DEZEGA RACKS, supplied under a separate order.

In case of everyday carrying of self-rescuer on the waist belt, it is recommended to use special mine DEZEGA WAIST BELT, supplied under a separate order.

Self-rescuer can be carried on the waist belt, using pouch.

In case of everyday carrying of self-rescuer on a shoulder, it is recommended to use special mine DEZEGA SHOULDER BELT.

Order item numbers for racks and belts are listed in the «List of optional components and parts for the CARBO self-rescuer» (ANNEX A).

It is prohibited to leave SCSR near heat-radiating devices, wash with water and use as support arrangement and for sitting, etc.

If necessary, wipe the self-rescuer with a wet cloth after everyday carrying.

8. OPERATING PRINCIPLE

When the CARBO self-rescuer lock lever is opened, starter activates automatically, causing start of oxygen release, as well as heat and moisture. Then the top and bottom lids should be removed and thrown aside. Oxygen fills breathing bag and allows user to start breathing in the first seconds after activation, before reaction of regenerative cartridge starts. Moisture released from the starter, as well as the exhaled gas mixture, containing CO_2 and moisture, initiate chemical reaction in the regenerative cartridge during which CO_2 is absorbed and O_2 released.

CARBO self-rescuer uses pendulum breathing circuit. Exhaled gas passes through the mouthpiece, heat and moisture exchanger and breathing tube into the regenerative cartridge. In the regenerative cartridge the exhaled gas is purified from carbon dioxide and enriched with oxygen. Then it comes into the breathing bag. When the breathing bag is completely filled, surplus gas is removed from breathing bag via relief valve.

When user makes an inhalation the breathing gas goes backwards: from the breathing bag through the regenerative cartridge, breathing tube, heat and moisture exchanger and mouthpiece to the user's respiratory system. At that the breathing gas passing through the regenerative cartridge is additionally purified by removing carbon dioxide and enriched with oxygen.

Oxygen enrichment and removal of carbon dioxide from the breathing gas in the regenerative cartridge is accompanied by heat emission.

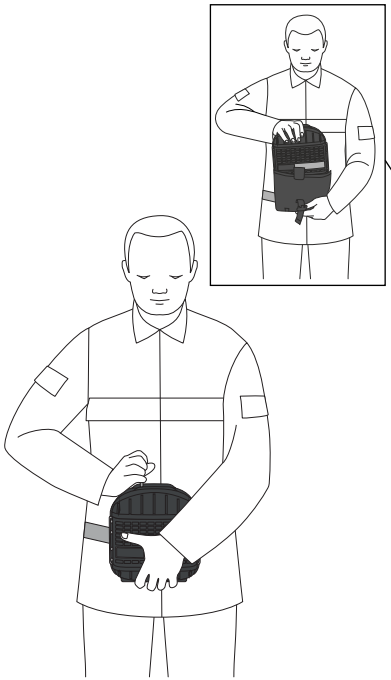
CAUTION!

Warming of the case and inhaled gas indicates normal operation of the SCSR.

9. DONNING PROCEDURE

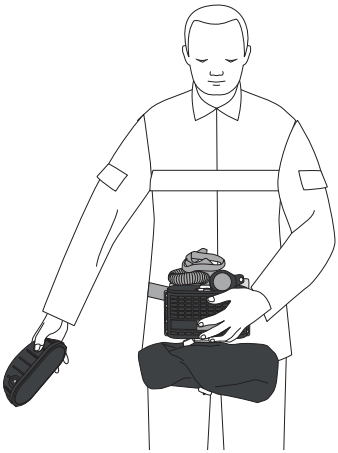
In case of emergency (explosion, fire, gas release, etc.) immediately don the SCSR.

To activate CARBO do the following:



STEP 1

- Hold your breath. Take off the safety helmet with cap lamp.
- In case of shoulder and waist carrying: move CARBO in front of you.
- In case of using of pouch: open pouch and remove CARBO from pouch.
- Hold the case of the device with your left hand. Using fingers of your right hand, tear off the lock lever of the coupling strap and lift the lever up, resting the base of the palm against the top cover. This way you remove the cover plate, which serves as a seal, and automatically activate the starter.

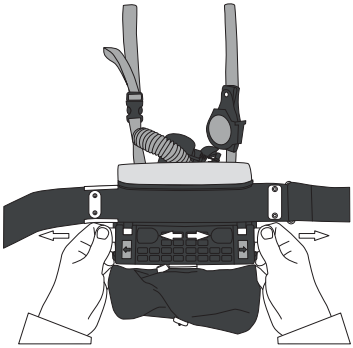


STEP 2

- In case of using of pouch: hold firmly CARBO with left hand, pressing it to your body to prevent from falling down.
- Throw the coupling strap aside. Remove and throw aside top and bottom lids.
- The breathing bag begins to fill with oxygen from the starter.

STEP 3

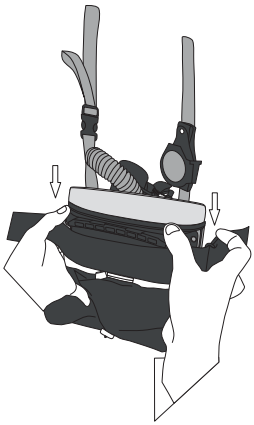
- Put on the neck strap of the self-rescuer on the neck.



STEP 4

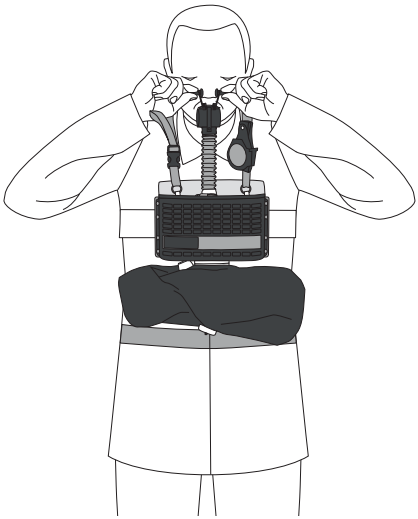
(only for modification of CARBO, that is intended to use without pouch)

- Press the fixators in the direction from the centre aside against the stop with both thumbs, pick them up with your fingers on the other side, remove and throw to the floor. Take the device by the sides and press the thumbs downward on the belt loops.
- If the self-rescuer is carried on the waist: remove the device from the waist belt by moving the bottom part of the SCSR away from you and upwards.



CAUTION!

If you cannot remove the fixators, take off the waist belt and continue to don as indicated here.



STEP 5

- Lift the self-rescuer case with your left hand by the side, placing it on your chest, and pull the free end of the neck strap up with your right hand to avoid tension of the breathing tube.
- Pull up the heat and moisture exchanger and remove it from the fixators with your right hand. The plug will be automatically removed from the mouthpiece.
- Immediately take the mouthpiece into the mouth so that its plates are between your gums and lips. Clench the tooth grips with your teeth.
- Separate the nose clip pads, place the clips over your nose to close tight both nostrils and exhale into the mouthpiece.
- Inhale and exhale through the mouth into the mouthpiece.

CAUTION!

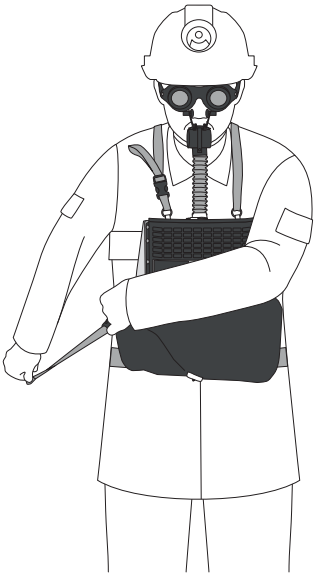
You are isolated from the ambient atmosphere.

CAUTION!

If by this point filling of the breathing bag with oxygen has not started, remove the nose clip, inhale through the nose and exhale into the mouthpiece. Repeat 2-3 times until the breathing bag is full, put on the nose clip and continue breathing in the self-rescuer.

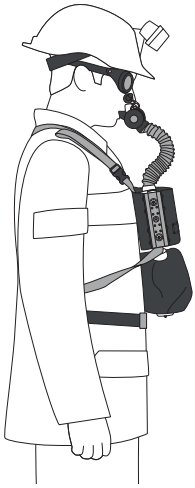
CAUTION!

Do not allow saliva to flow into the heat and moisture exchanger to avoid increase of the breathing resistance and possible decrease of the rated duration.



STEP 6

- Spread the heat shield between the case and body.
- If necessary, remove the goggles from the case on the neck strap and put them on.
- Put on the safety helmet with cap lamp.
- Adjust the neck strap to place the self-rescuer in a comfortable position:
  - if necessary, shorten the strap to place the self-rescuer higher – lift the self-rescuer case with your left hand by the side, pull the free end of the neck strap up with your right hand until you feel the weight of the self-rescuer on your neck and release it. The strap will be fixed automatically;
  - if necessary, lengthen the strap – hold the case with your left hand on the side, lift the neck strap buckle with the right hand (the self-rescuer drops down), release the buckle, adjusting the comfortable position of self-rescuer on the neck. Try to place the self-rescuer at the highest possible position on the chest to ensure freedom of motion for your head.
- Straighten the breathing bag.
- If necessary, wrap the left end of the chest strap around the back and snap the quick-release buckle to lock the self-rescuer on the chest. Tighten the chest strap.
- If the self-rescuer is carried on a shoulder: take away the shoulder strap.
- Leave the emergency area.



The total time of CARBO donning should take no more than 15 seconds.

In order to train donning procedure, please use a training SCSR CARBO-T.

10. ESCAPE RULES AFTER DONNING THE SELF-RESCUER

Leave the emergency area walking evenly. Running is not recommended, because it requires more oxygen and cause the reduction of the nominal rated duration.

Walk slower or stop in case of any breathing difficulty, recover normal breathing rhythm. Then continue walking.

Always hold the mouthpiece in your mouth, clenching the tooth grips with your teeth and ensuring that the lips and mouthpiece are in close contact.

Inhalation of warm and dry breathing gas from the regenerative cartridge is the evidence of normal operation of the self-rescuer. Unusual taste of the inhaled gas is normal and safe.

When breathing in the self-rescuer after donning, you may hear that the cartridge is emitting a sound. This does not affect the performance of the protective properties of the self-rescuer, but rather is an indication that the self-rescuer is working as it should.

When using protective goggles during escape, a short-term fogging may occur in the first minutes after donning due to the temperature drop and the peculiarities of the antifogging coating. After a few minutes, the fogging disappears and visibility is restored.

Do not squeeze the breathing bag and protect it from mechanical damages, as it may lead to oxygen loss.

DANGER!

Doffing the self-rescuer, removing the mouthpiece from the mouth or removing the nose clip before reaching a safe place is strictly forbidden, except the situations when you need to vomit or during changeover procedure.

During emergency escape, if necessary, adjust position of the self-rescuer on the neck strap, holding the case of the self-rescuer with your left hand by the side part (by grabbing the plastic parts).

CAUTION!

Do not touch the bottom and upper parts of the cartridge with your hands to prevent skin injury, caused by high temperature.

If you feel symptoms of nausea and need to remove vomit from your mouth, squeeze the breathing tube, remove the mouthpiece from the mouth and free your mouth cavity from the vomiting mass. Do not allow vomiting to flow the self-rescuer. The next inhalation and exhalation perform via mouthpiece.

Gradual heating of the self-rescuer case indicates its normal operation. By the end of the nominal rated duration, temperature of the case will be acceptable for user dressed in cotton clothes. The case temperature depends on the exertion during escape from the emergency area.

CAUTION!

The CARBO self-rescuer is intended for a single activation and use only. Reusing is not allowed.

11. CHANGEOVER PROCEDURE

If the rated duration of CARBO is not enough to leave the hazardous zone, it is necessary to perform changeover to the reserve SCSR. Reserve self-rescuers shall be kept at changeover stations.

If you need to switch to a new self-rescuer, follow the directions below:

- Take a new self-rescuer while continuing breathing with donned SCSR.
- Take off the safety helmet and lay it on the floor.
- Open the new self-rescuer, tear off the lock lever of coupling strap, continue donning in accordance with the procedure described in Section 9 «DONNING PROCEDURE» (Steps 1-2) and hold it in the left hand by gripping the side part of the cartridge.

- Take a deep breath from the self-rescuer you are using.
- Hold your breath, remove the nose clip, pull the mouthpiece out of mouth, unfasten the quick-release buckle of the neck strap of the donned self-rescuer, and the self-rescuer will fall to the floor.
- Put on the neck strap, take a mouthpiece of the new self-rescuer in your mouth, place the nose clip over your nose and follow the steps in accordance with the procedure described in Section 9 «DONNING PROCEDURE» (Steps 5,6).
- Continue escape to the place of safe.

12. TRAINING

CAUTION!

Training is obligatory. CARBO may only be used by trained users and users who complete practical training of donning and using SCSR.

Training shall comply with the established safety requirements and recommendations stated in this manual.

It is recommended to perform first training under the supervision of qualified trainers in the training centre. The training course includes studying this USER MANUAL, as well as practical training in donning the CARBO self-rescuer using the CARBO-T training self-rescuer.

Breathing skills in a self-rescuer require regular training and consolidation. Lack of training can cause panic in an unexpected situation and inhalation of gases from irrespirable atmosphere. Practical training is highly recommended. Training shall strengthen the CARBO donning skill within 15 seconds.

Practical training is performed using the CARBO-T training self-rescuer equipped with imitating cartridge.

Practical trainings shall be performed in accordance with local regulations valid in the country of use. It is recommended to perform repetitive training once every 2 years.

13. SERVICE AND MAINTENANCE INSPECTION

Storage and operation of CARBO self-rescuers do not require any special maintenance.

Maintenance of self-rescuers consists of the following types:

- daily inspection;
- periodic regular inspection by special personnel with participation of executives from ventilation and mine occupational safety services.

Daily inspection is a visual check before operation (see Section 4 «RECOMMENDATIONS ON PRE-OPERATION INSPECTION») and at the end of the working shift.

Daily inspection at the end of the working shift includes cleaning the self-rescuer from coal dust, visual inspection the integrity of the case and lids, as well as the integrity of all external components and parts.

CAUTION!

Check the presence of fixators and belt loops. If they are not in the extreme position, insert them against the end point. If the fixator or belt loop is missing, it is necessary to install a new one.

Periodic inspection of the individual self-rescuers should be performed once per 3 months, and for SCSRs, stored at changeover stations along the escape routes – every 6 months.

The periodic inspection includes:

- visual check the integrity of the case and covers, inspection the integrity of the fixators, belt loops, as well as all external components and parts;
- leaktightness check of the self-rescuers using CARBOFit-400 testing device or similar device with an excessive pneumatic pressure of 4,9±0,2 kPa. SCSRs are leaktight and suitable for using if pressure drop in the chamber of the leak testing device is lower than 400 Pa within 60 s.

DANGER!

SCSRs which did not pass the leak test, shall be immediately withdrawn from service, placed in a tightly closed individual plastic bag and sent to the nearest authorized service centre or to the nearest authorized representative for making decision about its further using.

The routine (small) repair of self-rescuers is allowed directly at the mine. Routine repair includes: replacement of the front and rear bumper, belt loops and fixators, replacement of pictograms and reflective labels.

In case of damage the pictograms with the self-rescuer donning procedure, it is recommended to replace these pictograms.

It is recommended to keep record of the dates and results of periodic inspections and the routine (small) repairs of each self-rescuer in the lamp room within their service life.

Service life of self-rescuers is guaranteed only in the case of regular technical inspections and maintenance.

14. DISPOSAL

CAUTION!

SCSR CARBO is a subject of obligatory disposal. It is strictly forbidden to burn and throw away self-rescuers in public places as well as perform disposing on your own or pass them for recycling to the incompetent organizations.

The self-rescuers should be transferred for disposal to a specialized organization with the following procedure.

Damaged self-rescuers, where the oxygen-containing product has a direct contact with air, shall be immediately delivered to the surface of the mine and «quenched». Before disposal, remove the top and bottom lids, wait until the actuating device stops releasing oxygen, disconnect the breathing bag and breathing tube. Place the cartridge in the container with water. Submerse it by branch tube upwards into the water for 5-10 cm below the water level. The quenching of the oxygen-containing product by water with gas release begins. After the end of the quenching reaction (no more gas bubbles), it is necessary to remove the plastic parts. Send these parts and the metal cartridge for disposal.

DANGER!

Water «quenching» is forbidden if such self-rescuers are polluted with fuels and lubricants.

CAUTION!

In the presence of organic pollution (including fuels and lubricants), damaged self-rescuers, in which the oxygen-containing product is in direct contact with air, can spontaneously ignite. Place such self-rescuers in a designated safe place, where they will be stored, and then disposed in accordance with the instructions from the manufacturer or the authorized local representative.

Rejected self-rescuers (due to mechanical damage, leakage, as well as devices with expired service life) and SCSRs used for their intended purpose shall be written off.

In accordance with the legislation in force and recommendations of this USER MANUAL, organizations which perform disposal should have:

- an appropriately issued license for disposal of self-rescuers and neutralization of the oxygen-containing product;
- official permission of the manufacturer.

SCSRs decommissioned for disposal shall be placed in specially designated dry rooms protected from direct sunlight, at least 1 m away from heating systems. Avoid contacts of decommissioned SCSR with water, oils or other organic liquids.

The storage rooms should be equipped with dry-powder fire extinguishers.

15. MARKING

CARBO is marked on the coupling strap, front bumper, cover plate, rear bumper, top and bottom lids with the following information:

- **On the coupling strap:**

«DEZEGA»:	trade mark;
«CARBO-60»:	designation of the self-rescuer;
«S-60MP1-NSG» or «S-60MP1-ISG»:	type identification marking. Article explanation are given in Section 18;
EN 13794:2002:	reference standard used for the design and certification of the PPE;
CE :	marking of conformity;
0477:	identification number of Notified Body involved in the control procedure according to REGULATION 2016/425/EU;
«Made in Turkey»:	inscription that indicates country of manufacturing;
«60 min»:	nominal rated duration;
«K»:	symbol that means that device uses chemical oxygen to produce oxygen and absorb carbon dioxide (KO_2 device);
«S»:	symbol that means that the self-contained self-rescuer is designed for underground use;
«SSSSS P MM YY»:	serial number, where **SSSSS** is the sequential number (consecutive number 00001-99999), **P** is the producer code (**T** is Turkey, R is Russia), **MM** is the month, **YY** is the year of manufacture;
«2,9 kg»:	weight of the self-rescuer;

- **On the front bumper:**

«DEZEGA»:	trade mark;
Reflective label with the donning procedure pictogram:	stickers that reflect light where the donning procedure is indicated;

- **On the cover plate:**

  «DEZEGA»: trade mark;

- **On the cover plate for Australia and New Zealand:**

  «Supplied by MineArc»: name of the supplier;

- **On the top and bottom lids**

  Stickers with arrows: stickers that indicate directions for removing the lids (in case of a version without moisture indicators).

Package marking includes:

- handling signs: «Fragile. Handle with care»; «This side up»; «Protect from heat»; «Keep dry»; warning sign «Do not throw»;
- basic, additional and informational inscriptions.

The lock lever of the CARBO self-rescuer coupling straps is sealed with a special plate by the original equipment manufacturer or an authorized service centre. The plate should be kept intact until the end of SCSR service life. The plate can be removed only while donning the self-rescuer.

CARBO self-rescuers with missing seal are not accepted for service and not considered as warranty case.

16. STORAGE AND TRANSPORTATION RULES

The operating organization must provide appropriate conditions for storage of CARBO self-rescuers, as recommended in the instructions given by the manufacturer.

SCSR can be stored indoors in original packaging from manufacturer at ambient temperature from -5 °C to +40 °C and up to 80% relative humidity (at temperature 25 °C).

Between the shifts, the individual self-rescuers shall be stored in the lamp room at air temperatures from +5 to +40 °C.

Self-rescuers shall be protected from direct sunlight and shall be kept at least 1 m away from heat-emitting devices.

It is forbidden to throw self-rescuers on the floor or heap them together.

Never store serviceable self-rescuers with the used ones.

Self-rescuers of collective storage shall be kept in sealed containers located along the escape routes from the hazardous zone.

Self-rescuers can be transported in the closed and dry vehicles of all types at ambient temperatures from -50 to +50 °C and at relative humidity up to 100%.

CAUTION!

During air transportation, cargo compartment of the aircraft should be airtight and heated.

Self-rescuers are transported in accordance with the rules for the carriage of goods applicable to the current type of transport.

CAUTION!

CARBO chemical oxygen self-rescuer should only be transported, stored and used in accordance with this user manual (in packaging provided by the manufacturer only). Any violations of this manual may cause failures in SCSR's operation, which can lead to a serious injury or death.

17. MANUFACTURER'S WARRANTY

The manufacturer guarantees appropriate performance characteristics of the CARBO self-rescuers while meeting of transportation, storage and operation rules described in this USER MANUAL.

The warranty period of the self-rescuer is indicated in the Data Sheet supplied with each SCSR.

The warranty does not apply to self-rescuers if there is no seal or the integrity of the cartridge, cover plate on the coupling strap, lids and other CARBO elements is disrupted due to violation of the storage and operating conditions.

The manufacturer reserves the right to change the design and technical solutions implemented in CARBO self-rescuers to improve their technical characteristics and performance properties.

18. INFORMATION FOR ORDER

Full name of the self-contained self-rescuer:

CARBO S-60MP1-ISG-EU(AU)ENAU(AU)-B(W,P)K(O) or
CARBO S-60MP1-NSG-EU(AU)ENAU(AU)-B(W,P)K(O).

The name consists of the following characters:

CARBO is the trade name of the self-rescuer;

S – self-contained self-rescuer;

60 – nominal rated duration, min;

M – application for mine

P – plastic lids and body plates;

1 – type of regenerative material – chemically bound oxygen (KO_2);

I – with moisture indicators or

N – without moisture indicators;

S – with starter;

G – with protective goggles;

EUENEU – refers to standard that the product comply with (EN 13794:2002), language of documentation English, country application - European Union or

AUENAU - refers to standard that the product comply with (AS/NZS 1716:2012), language of documentation English, country application - Australia and New Zealand;

B - carrying method on a shoulder belt (included) or

W - carrying method on a waist belt (the waist belt is not included and should be ordered separately if needed according to ANNEX A) or

P – carrying method in a pouch;

K – basic transport packaging or

O – transport packaging as dangerous cargo.

Manufacturer's information:

1. DEZEGA SP GÜVENLİK ÜRÜNLERİ SANAYİ VE TİCARET ANONİM ŞİRKETİ EGE SERBEST BÖLGESİ ZAFER SB MAH. NİLÜFER SK.NO:30 GAZİEMİR, İZMİR

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info@dezega.com

2. South Ural Respiratory Protective Equipment LLC
13 Orskoe Avenue, Gaj, Orenburg region, Russia, 462630

Tel.: +7 (35362) 4 70 42
Tel./Fax.: +7 (35362) 4 19 95

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ANNEX A

List of optional components and parts for the CARBO self-rescuer

Designation	Name
SKTB.02.CK5.00.00.006	Front bumper
SKTB.02.CK5.00.00.003	Rear bumper
SKTB.02.CK5.00.00.004	Waist and shoulder belt loop (1 pc.)
SKTB.02.CK5.00.00.005	Set of the fixators (2 pcs.)
SKTB.02.CK5.00.00.012	Pictogram with donning procedure
SKTB.02.CK5.00.00.013 SKTB.02.CK5.00.00.014 SKTB.02.CK5.00.00.015 SKTB.02.CK5.00.00.016	Set of reflective stickers
SKTB.02.KPP.00.00.000	Mine shoulder belt
AS-DWB-ENEU-K(I)-3-0,5	Mine waist belt DWB
AS-DRACK-3B00-ENEU-W-5-1	Rack for CARBO (open type, without doors, carbon steel, painted black)
AS-DRACK-3S00-ENEU-W-5-1	Rack for CARBO (open type, without doors, stainless steel)
AS-DRACK-3SF1-ENEU-W-5-1	Rack for CARBO (closed type, with blank doors and rear wall, stainless steel)
AS-UPG-15-ENEU-5-1	Leak testing device CARBOFit-400

ANNEX B

Mine registration logbook of self-rescuers

_____

(name)

Surname, first name	Personnel number, position, division	Self-rescuer number		Date			
		Plant	Mine	self-rescuer manufacture	putting self-rescuer into service	withdrawal self-rescuer from service	transfer for disposal Protocol No.
Section 1. Individual self-rescuers							
Section 2. Self-rescuers at changeover stations							
Section 3. Reserved self-rescuers							

ANNEX C

Mine registration logbook to record issuance of reserved self-rescuers for mine workers _____ and third-party organizations.

Plant number of self-rescuer	Surname, first name	Personnel number, position, enterprise (organization)	Date	
			Issuance the SCSR for carrying	SCSR return

The self-rescuer is discarded due to expiration of the specified service life under Protocol No._____dated _____