SYB-30 SCSR USER GUIDE



Contents

- 3 For Your Safety
- 4 Alert Definitions
- 5 Key Terms
- 6 Liability Information
- 6 Implementing a Self-Rescuer Program
- 7 SYB-30 Device Overview
- 9 Function Description
- 10 Intended Use
- 10 Limitations on Use
- 11 Inspecting Your SYB-30
- 11 Inspection Interval
- 12 Inspection Criteria
- 15 Documentation
- 15 Practice and Training
- 16 Donning Procedure
- 21 Manual Start
- 23 Changeover
- 25 Important Escape Rules
- 25 Transport & Storage
- 26 Product Life/Service Life
- 26 Maintenance & Disposal
- 27 Technical Data

For Your Safety

Welcome

Welcome and thank you for purchasing your CSE Self-Contained Self-Rescuers (SCSRs) and putting your trust in our products. CSE is committed to safety excellence and dedicated to providing resources that assist in implementing a safe and effective SCSR program. The first step is to ensure that you're familiar with these instructions. And remember, you can reach out to your local representative or CSE at www.csecorporation.com/contact-us should you require assistance.

General Safety Statements

- ▶ If you are responsible for ensuring the safety of your workforce and/or maintenance of this product, consider enrolling in a CSE training course to establish strong product and training knowledge.
- ▶ Prior to using, carrying, or deploying this product, carefully read this User Guide.
- ▶ Only trained and competent users are permitted to use this product. CSE provides training resources and courses to facilitate preparedness and familiarity with this product.
- ► Each device is provided with a User Guide. It is intended for the product user. Do not dispose of the User Guide.
- ➤ Strictly follow the User Guide. The product user must be well practiced in the use and operation of this product prior to using or carrying and observe instructions and guidance.
- ► Follow all local and national rules and regulations and/or company policies.
- ► This product must be regularly checked/inspected to ensure safe operation See Pages 11-14 of this User Guide for inspection criteria.
- ➤ This product is designed for one escape only. Do not attempt to re-use always replace it with a new device. Never attempt to use a faulty or previously used or opened device.
- ▶ In the unlikely event of a device or component fault or failure, notify CSE immediately.



WARNING

Failure to read this User Guide thoroughly, to use the product as described, or to undergo regular training on its proper use may result in serious injury or death.

Alert Definitions

The following Alert Icons are used throughout this document to highlight important information which may require greater awareness or attention.



WARNING

Indicates a potentially hazardous situation that, if not avoided, will result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, could result in physical injury or damage to the product or environment. It may also be used to alert against unsafe practices.



NOTICE

Indicates additional information on how to use the product.

Key Terms

Carried

Any SYB-30 that has been carried by a worker or kept with them on mobile equipment.

Mobile Cached

Any SYB-30 that is stored, or cached, on mobile equipment or equipment that is subject to regular vibration or impact. While not an exhaustive list, some examples include a SYB-30 stored in/on a personal vehicle, rescue vehicle, shuttle car, train, etc.



NOTICE

This EXCLUDES units that were briefly transported on a vehicle for delivery or relocation purposes.

Fixed Cache

Any SYB-30 that is stored, or cached, in stationary storage location.



NOTICE

This INCLUDES units that are briefly placed on mobile equipment or machinery for the purpose of moving or relocating a cache to a new fixed location, so long as it is not left on the mobile equipment.

Service Life

The limit on how long a SYB-30 can remain in service, even if it passes all other inspection criteria. This limit is ten (10) years from the date of manufacture. The service life should not be confused with a guarantee or warranty.



NOTICE

Actual device lifespan and performance depends on how you handle and treat your SYB-30. Performance of in-service units may differ from technical data listed in this User Guide depending on treatment, conditions, etc.

Trained Person

A worker or professional who has either completed all authorized training and/or reviewed product literature and User Guide and can demonstrate comprehension of the material.

Operator

Typically, the organization who owns the SYB-30 and is responsible for ensuring the SYB-30 is maintained in accordance with this User Guide and applicable rules and regulations.

<u>In-Service</u>

Any device that is carried or cached (mobile or fixed), may be deployed in the event of an emergency, and has passed inspection. In-Service units must be inspected per the guidelines in this User Guide.

Out-of-Service

Any device that fails to meet the inspection criteria, or is not placed in an area where it may be deployed in the event of an emergency.

Liability Information

CSE accepts no liability if the product has been used inappropriately, not as intended, or fails to comply with rules, regulations, or guidance within this User Guide. **THE SELECTION AND USE OF THE PRODUCT ARE THE EXCLUSIVE RESPONSIBILITY OF THE INDIVIDUAL OPERATOR.**

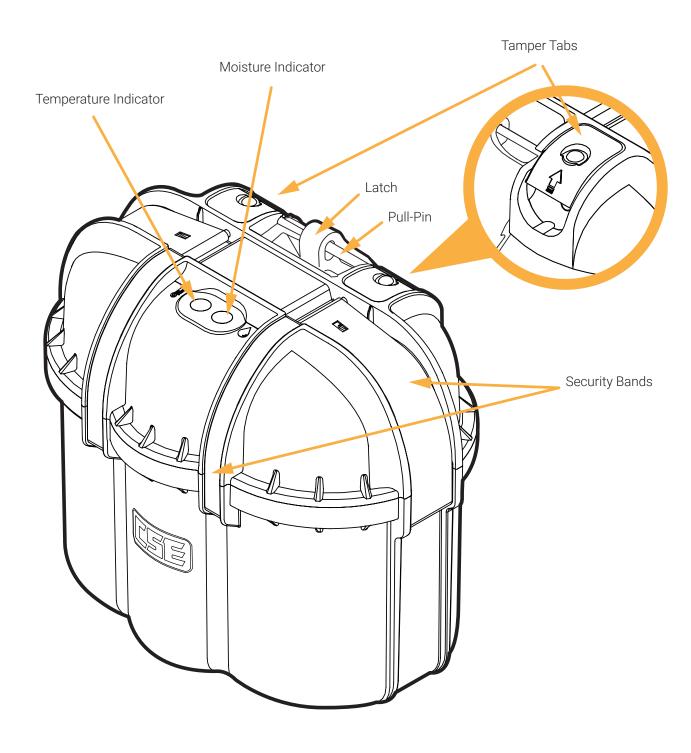
Implementing a Self-Rescuer Program

Prior to implementing an SCSR program, it is recommended that each operator and/or safety department thoroughly familiarize themselves with the product. Establish a comprehensive training program to ensure that every user is proficient in its operation and can recognize when to don the device and identify an emergency situation. Other important considerations may include:

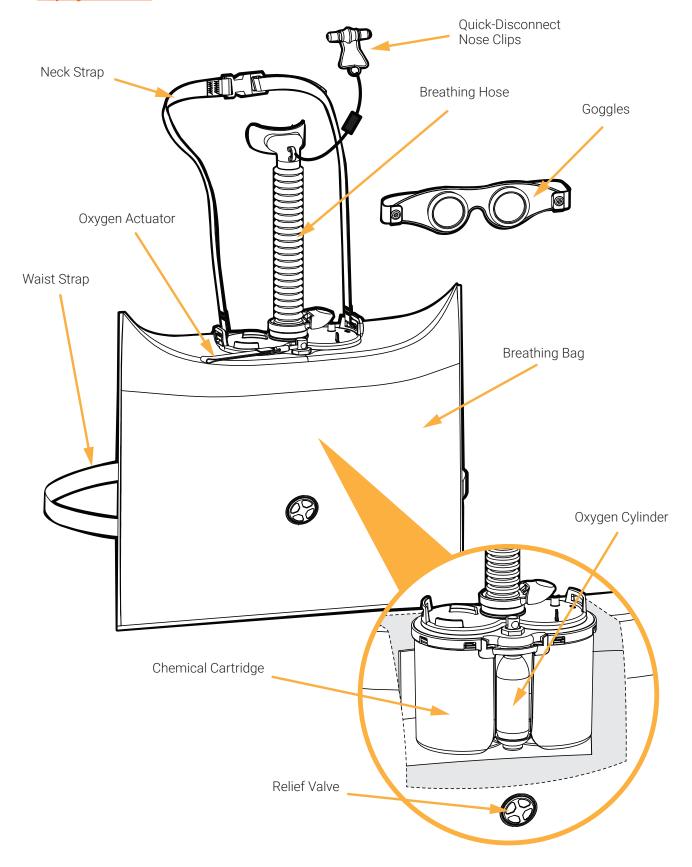
- ► Reviewing the operation or work environment to determine the appropriate selection of rated duration.
- ► Reviewing rules, regulations, and company policies regarding the provision, carrying, and storage of the device.
- ► Evaluating ergonomics and other health factors.
- ► Establishing inspection plans and resources.
- ▶ Developing appropriate escape plans and protocols for your operation.

SYB-30 Device Overview

Outer Case



Deployed Device

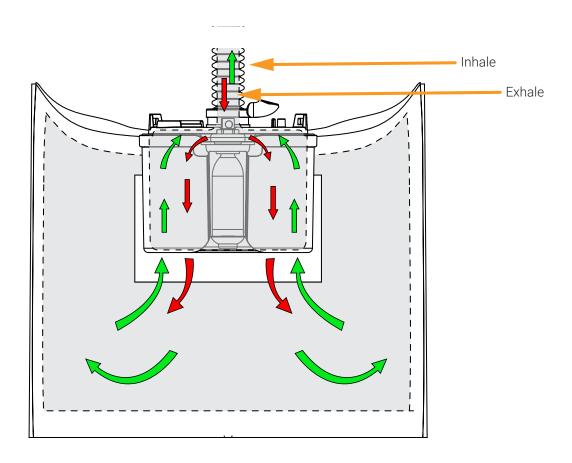


Function Description

The **CSE SYB-30** is an oxygen SCSR designed to provide the user with life-sustaining oxygen while protecting from potentially harmful gases or toxins in the ambient air.

In an emergency, the outer case is opened, and the respiratory protection device is deployed. The SYB-30 has a small supplemental oxygen cylinder which releases oxygen into the breathing bag once activated by the user. This provides an immediate source of oxygen.

Once the user places the mouthpiece in their mouth and begins to breathe, the exhaled air is pushed through the canister of potassium superoxide (KO_2) and lithium hydroxide (LiOH). The KO_2 and LiOH naturally react with moisture and carbon dioxide (CO_2) that is present in the user's exhaled breath. This causes the KO_2 to create oxygen (O_2), which can then safely be breathed. The amount of resulting oxygen depends on the intensity of breathing. Increased breaths per minute (more CO_2 , more moisture) increases the generation of oxygen, or vice versa.



When using the SYB-30, the inhaled air gradually warms up and breathing resistance slowly increases. This is normal and indicates to the user the device is operating correctly. The end of the oxygen supply is indicated by high breathing resistance or a collapsed breathing bag.

Intended Use

The **SYB-30** is an emergency escape device only. It is intended for escape from areas of smoke, poisonous or toxic gases, particulates, or oxygen depletion.



WARNING

The SYB-30 has been designed by CSE and approved as an Escape Breathing Apparatus and should only be used to escape from atmospheres Immediately Dangerous to Life and Health (IDLH).



NOTICE

It is recommended that you train workers to identify when to use this device.

Limitations on Use

The **SYB-30** is intended for users who have trained and are familiar with the operation of the device. This device is not intended for use underwater. The SYB-30 is not approved for use in chemical, biological, radiological, or nuclear (CBRN) applications. The SYB-30 is not intended to protect from poisoning through skin absorption in areas where hazardous liquids, vapors, or gases exceed permissible exposure limits (PELs). This device is suitable for those who wear dentures and/or glasses, but to a limited extent. Determine suitability by practicing with a CSE training device.



WARNING

Use training products to become familiar and comfortable with use prior to needing in an emergency, particularly where dentures or glasses are used by a worker.

Inspecting Your SYB-30

Your **SYB-30** is designed for the hazards of the work environment, but it's not indestructible. It is a life-saving device, so it is important to regularly inspect it. There are two categories of inspections:

1. Daily Pre-Shift Inspection:

▶ Performed by the user before the start of each work shift.

2. Quarterly Visual Inspection:

▶ Performed by a trained person on all carried and cached units every 90 days.



WARNING

Take the SYB-30 out of service immediately if it fails inspection or has been accidentally opened.



WARNING

Failure to perform regular inspections per the instructions in this User Guide may result in damaged/unfit devices being left in service.



WARNING

If you are unsure if your SYB-30 is safe to use or passes inspection, ask a trained person before your shift begins.



NOTICE

It is recommended that the Quarterly Visual Inspection be performed by someone other than the end-user/worker. This is a good practice to ensure an additional level of safety.



NOTICE

If the SYB-30 is stored in a warehouse and not in-service (ready for use in an emergency) then it does not need to be part of the regular inspections until ready to go into service.

Inspection Interval

	Daily Pre-Shift Inspection	Quarterly Visual Inspection
Carried	X	X
Cached		X

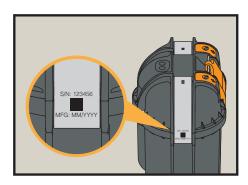
Inspection Criteria

Whether you are performing the Daily Pre-Shift Inspection or the Quarterly Visual Inspection, the following items/areas should be inspected:

1. Accessible from Pouch or Storage Container

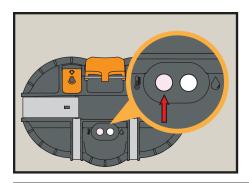
Overview	If your SYB-30 is stored in a pouch or storage container, check to be sure it safely holds your SYB-30, and that it can be easily removed if needed.	
Pass	You can easily remove SYB-30 so that you can see it on all sides.	
Fail	Fail The pouch or storage container is damaged or the SYB-30 cannot be easily removed. Replace pouch or storage container.	

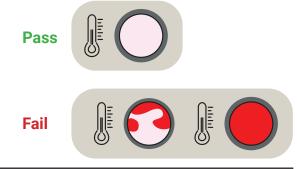
2. Date of Manufacture



Overview	Check date of manufacture (MM/YYYY), located on the security band.	
Pass	Less than 10 years from date of manufacture, until the month's end.	
Fail	More than 10 years from date of manufacture.	

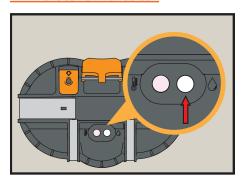
3. Temperature Indicator





Overview	Excessive temperature may damage internal components. Temperature indicator will change when exposed to excessive heat. Check color of temperature indicator.	
Pass	White / Light Pink.	
Fail	Bright red spots or completely bright red.	

4. Moisture Indicator



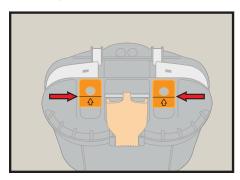


ail	



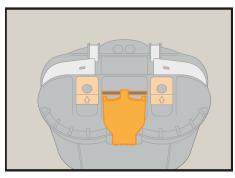
Overview	Moisture indicator will change when exposed to excessive moisture inside the case due to a breach. Check color of moisture indicator.
Pass	White.
Fail	Blue spots or completely blue.

5. Tamper Tabs



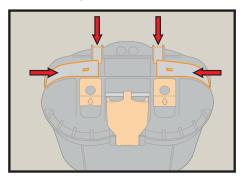
Overview	Check conditions of both Tamper Tabs.	
Pass	At least one Tamper Tab is in place and not broken.	
Fail	Both Tamper Tabs are broken or missing.	

6. Pull-Pin and Latch



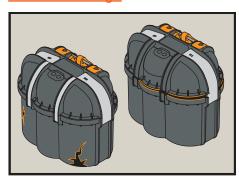
Overview	Check condition of Pull-Pin and Latch.	
	Pull-Pin is present, undamaged and accessible, and fully seated behind at least one unbroken Tamper Tab. Latch is undamaged and fully seated.	
Fail	Pull-Pin or Latch is missing, damaged, or partially removed.	

7. Security Bands



Overview	Check condition of Security Bands.	
Pass	All Security Band parts are not bent, broken, loose, or displaced.	
Fail	Any Security Band part is bent, broken, loose, or displaced.	

8. Case Damage



Overview	Check overall condition of the protective outer case.	
Pass	Undamaged or displays minor wear and tear.	
Fail	Any signs of the following: Device opening, a breach in seal, or bulging gasket Through-holes, cracks, punctures, or large dents Any signs of burns, deformations, or melting plastic Missing or damaged indicator windows	



WARNING

A SYB-30 that has been destroyed or crushed poses a potential fire hazard if internal chemical cartridge is breached and comes into contact with substances that may cause combustion. Under normal use the chemical is safely contained.



WARNING

If you are not able to complete or make a pass/fail determination on any portion of the inspection, the SYB-30 must be removed from service.



WARNING

Inspect SYB-30 immediately if subjected to unusual stress such as drops, impacts, submersion, etc.



CAUTION

If an indicator changes during your shift, remove the unit from service at the end of the shift and get a replacement.

Documentation

CSE recommends that your operation maintain documentation for each SYB-30 including the serial number, date of manufacture, and the dates and results of each inspection.



NOTICE

You are responsible for following any local, national, industry, and/or company rules and regulations on record keeping.

Practice and Training

Practice and be prepared. Regularly practice the donning and use of the SYB-30 to maintain a high level of competency and proficiency.

- ► Review company escape plans and protocols.
- ▶ Review SYB-30 inspection criteria and responsibilities with your workforce.
- ▶ Practice when and how to don the SYB-30.
- ▶ Become familiar with the operation, fit and feel of the SYB-30 prior to use in an emergency.



WARNING

Never use a SYB-30 as a training device if it has failed inspection, or has been removed from service.



NOTICE

Follow all company, industry, and government regulations regarding training requirements and frequency.



NOTICE

Donning and use of the SYB-30 is a perishable skill that should be practiced regularly.



NOTICE

CSE recommends the use of donning and expectation training devices to enhance proficiency and understanding.

Donning Procedure



WARNING

Follow the donning steps in proper order. Failure to do so may delay donning during an emergency.



WARNING

Put on the SYB-30 as soon as you see, hear, or suspect trouble. Don't wait.



WARNING

Never attempt to use a damaged SYB-30, or one that does not pass inspection, or that has been taken out of service.



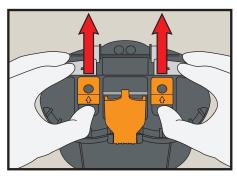
NOTICE

Fully review and train on donning instructions as described below so that they are familiar when needed in an emergency.

Before donning, remove the SYB-30 from its pouch or storage container and set on a solid, dry surface. Remove your hard hat and shine the light on the SYB-30.

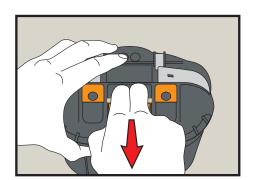
Open your SYB-30

1. Break Tamper Tabs



▶ Break both tamper tabs with your thumb or fingers by lifting straight up on the edge.

2. Remove Pull-Pin



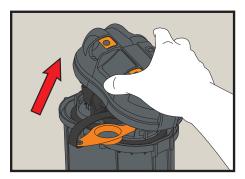
► Firmly hold case and pull pin straight out to release the security bands and latch. The security bands and latch should fall away.



NOTICE

The pull-pin may be held tightly in place. To assist opening, lay the unit flat on the floor, with donning label facing up. Hold unit against floor while pulling pin out.

3. Remove Top Case



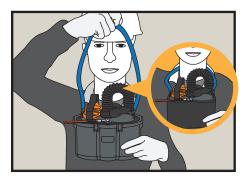
▶ Remove the top case from the device by pulling upward and discard.



NOTICE

The top case may be firmly attached. To assist opening, lay the unit flat on the floor, with donning label facing up, and press down along the seal between the case halves to flex case open.

4. Remove Self-Rescuer and Loop Around Neck



- ▶ Grab the blue neck strap and pull upward to remove from bottom case.
- ▶ Loop the neck strap around your neck. The goggles should be positioned on the right.

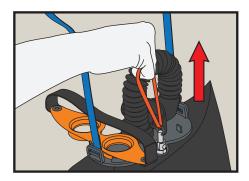


WARNING

Danger of poisoning and asphyxiation! Do not pull the SYB-30 out of the case by the breathing hose, oxygen actuator tag, or any other component. It may damage the unit or lose starter oxygen, potentially decreasing performance or rendering the unit inoperable.

Protect Airway

5. Deploy Starter Oxygen



- ► Keep plug in mouthpiece.
- ► Grab orange oxygen actuator tag on top of SYB-30.
- ▶ Pull upward firmly to start flow of oxygen into breathing bag.



NOTICE

If you lose your starter oxygen or if the breathing bag does not fill at all, open another SYB-30 if available. If no other unit is available, perform a manual start per the instructions beginning on Page 21 of this User Guide.



NOTICE

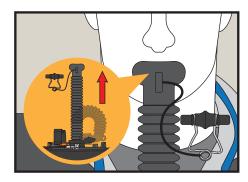
You may need to brace the SYB-30 unit while pulling up on the orange oxygen starter tag by putting your other hand on top of the unit.



NOTICE

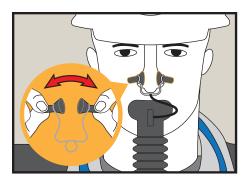
The breathing bag may remain partially folded depending on unit service time and storage conditions. If necessary, pull the corners of the breathing bag gently after deploying oxygen to help unfold the breathing bag to fully inflate.

6. Place Mouthpiece in Mouth



- ► Spit out gum or tobacco.
- ► Grip the mouthpiece and pull from the mouthpiece plug.
- ▶ Immediately place the mouthpiece in your mouth between your lips and teeth and lightly grip with teeth to secure.
- ► Exhale into the mouthpiece.

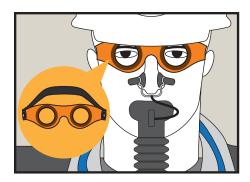
7. Apply Nose Clips



- ► Pull nose clip apart.
- ► Clamp nose shut.
- ► Breathe normally.

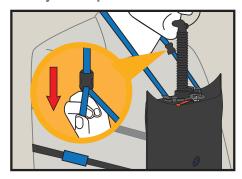
Get Ready to Go

8. Apply Goggles



- ▶ Remove the goggles from the top of the SYB-30 by gripping and pulling upward.
- ► Put goggles on.
- ▶ Need eyeglasses? Wear them over goggles and tuck side pieces under goggle straps.

9. Adjust Straps



- ▶ Tighten the neck strap as needed by pulling down on the adjustment loop on the left side.
- ▶ The SYB-30 should be high enough on your chest to be comfortable without pulling on the mouthpiece. Secure the chest strap by passing around your back and securing the hook and loop closure.



WARNING

The SYB-30 is only good for one use, do not try to start and stop and re-start.



WARNING

Don't run. Speed and hard work uses up oxygen faster.



WARNING

Do not attempt to share the SYB-30; it is designed for only one person to use.



CAUTION

Don't remove mouthpiece or nose clip, don't talk.



NOTICE

To adjust the neck strap more easily, it may be necessary to take the weight off of it by supporting the SYB-30 from underneath briefly.



NOTICE

Breathing will take some work. Heat and resistance are OK.

Manual Start

If starter oxygen escapes through mouthpiece, go to a backup plan!

- ► Grab another SYB-30.
- ▶ No other SYB-30 handy? Do a manual start.



WARNING

After manual start, SYB-30 will take several minutes to reach full oxygen production. Move and work slowly until the breathing bag stays inflated.

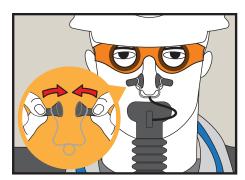


CAUTION

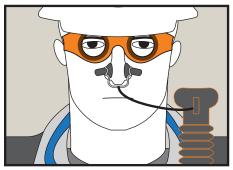
Don't try to start abandoned SYB-30.

Fill Breathing Bag

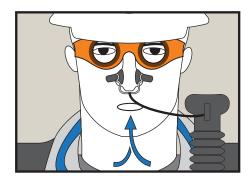
1. Clamp nose shut with nose clips.



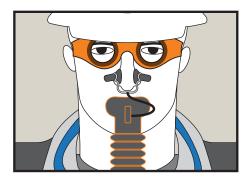
2. Take mouthpiece out of mouth.



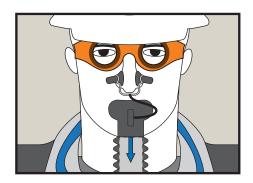
3. Inhale one deep breath.



4. Put mouthpiece back in mouth.



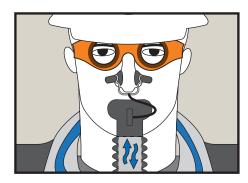
5. Exhale into mouthpiece.



Repeat 3-6 times, until bag inflates

- ► Take mouthpiece out
- ► Inhale
- ▶ Put mouthpiece in
- ► Exhale

Keep mouthpiece in mouth and breathe slowly





NOTICE

Breathing will take some work. Heat and resistance are OK.

Changeover

You may need more than one SYB-30. Plan ahead!

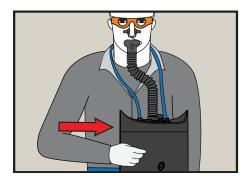
► Grab another SYB-30 as soon as you can.

Know when to change over to a second SYB-30

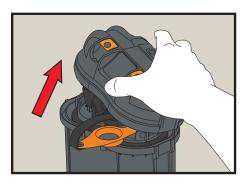
▶ When breathing gets uncomfortable: Change over!

How to change over

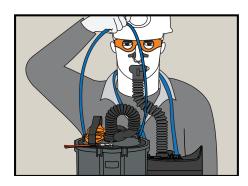
1. Slide first SYB-30 over to the left.



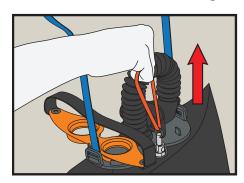
2. Open second SYB-30.



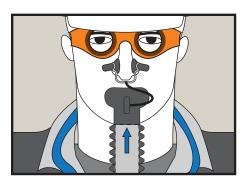
3. Hang second SYB-30 around neck.



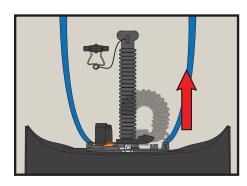
4. Pull second SYB-30 starter tag.



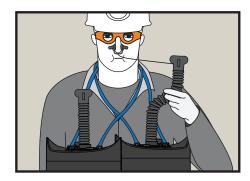
5. Take deep breath from first SYB-30. Hold breath.



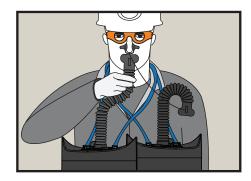
6. Pull second SYB-30 mouthpiece from plug.



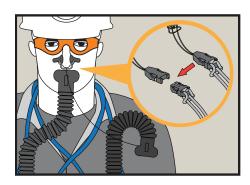
7. Spit out first SYB-30 mouthpiece.



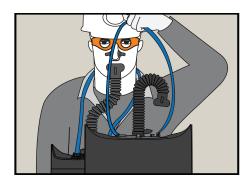
8. Put second SYB-30 mouthpiece in mouth. Exhale.



9. Unclip first SYB-30 nose clip from unit. Keep nose clamp on nose.



10. Drop first SYB-30 after second one is working.



Important Escape Rules

- ► Keep your breathing rate calm rapid breathing uses more oxygen.
- ► Remember your training and plan your escape route.
- ► Keep a tight seal around your mouthpiece, and don't attempt to breathe around it.
- ► Remember that the oxygen you breathe will slowly warm up, and may feel dry. Breathing resistance may increase. This is normal, and means the SYB-30 is working.
- ► Once you begin breathing with your SYB-30 do not remove until you've reached safety. Only remove to perform an immediate changeover to another device.
- ▶ Do not damage or compress the breathing bag, otherwise vital oxygen may be lost.



WARNING

Use SYB-30 for escape purposes only. Not to be used in firefighting, rescue work, or underwater breathing.

Transport & Storage

Transport

Oxygen Self-Rescuers are subject to international transport regulations during transport. Unused SYB-30 devices are classified under:

► UN 3356 "Oxygen generator, chemical" Class 5.1

Used self-rescuers are classified under:

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



NOTICE

Please note any special regulations of the assigned carrier, and reference applicable Safety Data Sheet. Should you have additional questions you may contact CSE customer service.

Storage

Transport and store the SYB-30 according to specified temperatures (see Technical Data, page 27). For ideal storage conditions, store in cool, dry, and temperature stable locations away from shocks and vibrations.



WARNING

Fire Hazard! Do not store open self-rescuers. Store away from petroleum products.



CAUTION

Do not store the SYB-30 outside of the temperature limits provided in the Technical Data section of this User Guide. Extreme temperatures could cause damage to internal components.

Product Life/Service Life

The **SYB-30** has a service life limited to ten (10) years, based on its date of manufacture. However, the service life is not a guarantee or warranty. How you handle and treat your SYB-30 will impact how long it remains in service.

- ▶ Under no circumstances should the SYB-30 be used or remain in service if it exceeds ten (10) years from the date of manufacture.
- ► Extension of the service life is not possible.
- ► The service life lapses if the SYB-30 does not pass/meet visual inspection requirements. See Pages 11-14 of this User Guide for inspection criteria.
- ► The lifespan and values related to respiratory function (such as inhalation and exhalation resistance) may differ from the stated values based on individual handling and treatment over time.

Maintenance & Disposal

Cleaning



CAUTION

Risk of material damage! Do not open the SYB-30 for cleaning. Opened devices are classified as used and must be removed from service.



CAUTION

Risk of material damage! Do not use cleaning agents or petroleum-based solvents to clean the SYB-30. Certain cleaners may cause damage or degrade case material.



CAUTION

Risk of material damage! Never pressure wash or submerge the SYB-30 in water.

- ► Remove from carry pouch, if applicable
- ▶ With a damp rag or non-abrasive brush, wipe the SYB-30 free of dirt
- ► Wipe dry or allow to air dry

Disposal

The **SYB-30** must not be disposed of as household waste. It must be disposed of in accordance with applicable waste disposal regulations or via a suitable disposal company. The chemical canisters contain strong alkaline, oxidizing substances (potassium superoxide, potassium hydroxide and lithium hydroxide). Refer to the safety data sheet for further information.

For more information on the disposal process or options, please contact your local representative or contact CSE at www.csecorporation.com/contact-us

Technical Data

Rated Duration*	
in accordance with AS/NZS 1716:2012	30 minutes (at 35 L/min)
Environmental Conditions	
transport and storage temperature	-29°C to 65°C (-20°F to 149°F)
operating temperature	-5°C to 65°C (23°F to 149°F)
relative humidity	0% - 100%
ambient pressure	700 to 1300 hPa
Breathing Bag Volume	
minimum	≥6L
Inhaled O ₂ Content [†]	
minimum	≥ 21% vol§
Inhaled CO₂ Content [†]	
average	≤ 1.5% vol
maximum	≤ 3.0% vol
Inhalation Temperature [†]	
maximum	≤ 55°C
Breathing Resistance [†]	
inhalation or exhalation	≤ 1.0 kPa
sum of inhalation/exhalation	≤ 1.6 kPa
Surface Temperature [†]	
maximum	≤ 85°C (185°F)
Weight (approximate)	
unopened	2.2 kg (4.8 lbs.)
deployed	1.6 kg (3.5 lbs.)
Dimensions (H x W x D, approximate)	
unopened	175 x 205 x 134 mm (6.9 x 8.1 x 5.3 in)
Service Life	
not to exceed	10 years
Approval	
AS/NZS 1716:2012 and TRG: Escape Breathing Apparatus (2020)	MDR0001005

 $[\]ensuremath{^{\star}}$ Actual duration depends on the work rate and size of the individual

[†] During the rated duration

[§] A short-term excursion no lower than 19% vol for up to 2 minutes at the start of use is permissible per AS/NZS 1716:2012



CSE Corporation

1001 Corporate Lane Export, PA, 15632 USA Tel: +1-412-856-9200

To find your local distributor go to: www.csecorporation.com/authorized-distributors