



Operating Manual

MSA SavOx TR / MSA SavOx Industry TR

Demonstration and Training Device



Order No. 10024577/02



The Safety Company

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1 Safety Regulations

1.1 Correct Use

The SavOx TR or SavOx Industry TR demonstration and training device is only intended for training and education purposes.

The SavOx TR is carried at the belt. The SavOx Industry TR is carried over the shoulder.

The demonstration and training device is used to practise donning and breathing in emergency situations. The demonstration and training device is NOT a respiratory protection device and must NOT be used in dangerous atmospheres.

It is imperative that this operating manual be read and observed when using the device. In particular, the safety instructions, as well as the information for the use and operation of the device, must be carefully read and observed. Furthermore, the national regulations applicable in the user's country must be taken into account for a safe use.



WARNING

This product is supporting life and health. Inappropriate use, maintenance or servicing may affect the function of the device and thereby seriously compromise the user's life.

Before use the product operability must be verified. The product must not be used if the function test is unsuccessful, it is damaged, a competent servicing/maintenance has not been made, genuine MSA spare parts have not been used.

Alternative use, or use outside this specification will be considered as non-compliance. This also applies especially to unauthorised alterations to the product and to commissioning work that has not been carried out by MSA or authorised persons.

1.2 Liability Information

MSA accepts no liability in cases where the device has been used inappropriately or not as intended. The selection and use of the device are the exclusive responsibility of the individual operator.

Product liability claims, warranties and guarantees made by MSA with respect to the device are voided, if it is not used, serviced or maintained in accordance with the instructions in this manual.

2 Description

2.1 Overview

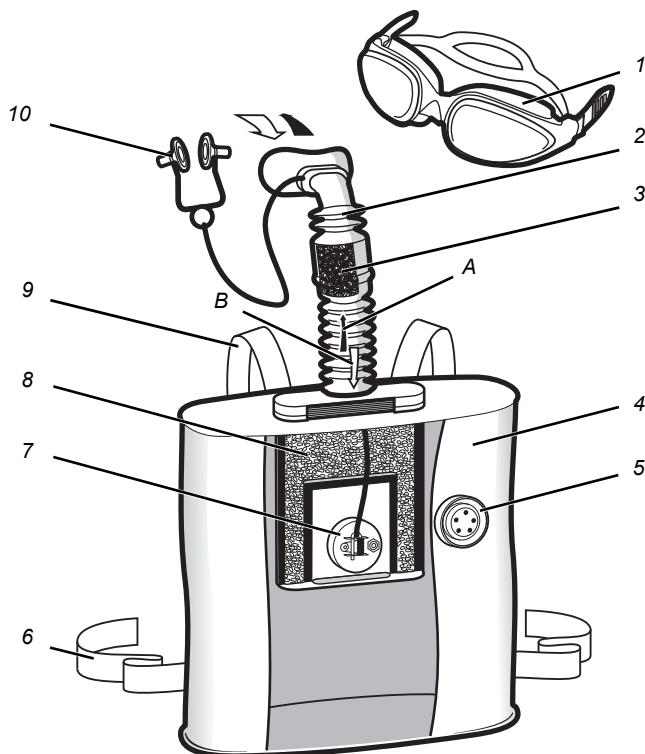


Fig. 1 Design of the device

A	Inhalation	5	Pressure relief valve
B	Exhalation	6	Waist belt
1	Goggles	7	Starter
2	Breathing tube with mouthpiece	8	Canister
3	Heat exchanger	9	Neck strap
4	Breathing bag	10	Nose clip

The device is contained in an enclosed and sealed sturdy stainless steel container.

2.2 Function

The demonstration and training device can be used for demonstration and practise of wearing and breathing without using a chemical canister. The inhalation air is taken from the ambient air and the exhalation air is expelled outside.

The demonstration and training device is comparable in size, weight, external construction, handling and breathing resistance to the emergency use devices.

To distinguish it from the emergency use devices, the demonstration and training device has marked blue.



For the demonstration and training device the breathing air is taken from the ambient atmosphere, i.e. training must be made in environments free from contamination.

2.3 Differentiating Features with regard to the Emergency Use Device

Several components of the demonstration and training device are not identical to the corresponding components of the emergency use device and are therefore marked blue or structurally modified in such a way as to highlight differences or to prevent one being confused with the other:

- Container cover with blue label
- Breathing bag made of blue material
- Canister is shorter and with blue label
- Breathing tube with mouthpiece and nose clip has holes on the upper side and is screwed into the canister with a connecting piece and thus is easily removable

2.4 Marking

The devices are classified according to EN 13794 and marked with the type [code letter] and nominal duration [minutes]. The type, nominal duration and referenced standard are marked on the device.

The device are marked as follows:

Device	Marking
	upper side
MSA	MSA AUER
SavOx TR	SavOx TR
MSA	MSA AUER
SavOx Industry TR	SavOx TR

3 Use

3.1 Carrying the Device

Carrying the SavOx TR

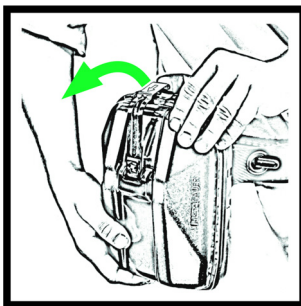
- (1) Pull the waist belt through the belt loops.
- (2) Close the belt.

Carrying the SavOx Industry TR

- (1) Clip the snap hook of the shoulder strap into the lifting eye.
- (2) Close the neck strap.

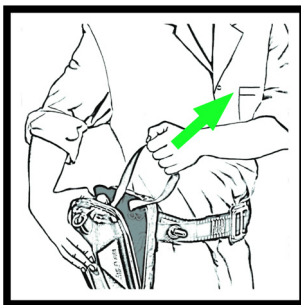
3.2 Donning the Device

Donning the SavOx TR



Opening the Container

- (1) Push the locking lever in the direction of the arrow until the seal breaks and locking device falls off.



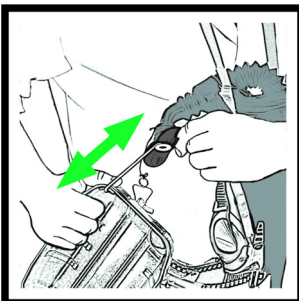
Removing the Device

- (2) Grasp container cover with one hand.
- (3) Pull out the device by the neck strap with the other hand.
- (4) Discard container cover.



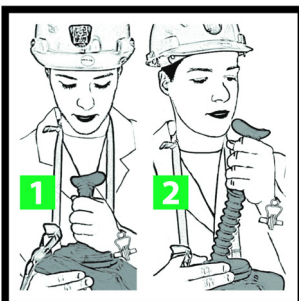
Donning the Neck Strap

- (5) Take off the protective helmet, if used.
- (6) Place the neck strap around the neck.
 - ▷ The valve of the bag must be visible on the front of the bag.
 - ▷ Do not adjust neck strap!
- (7) Put the protective helmet on.



Detaching the Device

- (8) Detach device from mouthpiece plug.



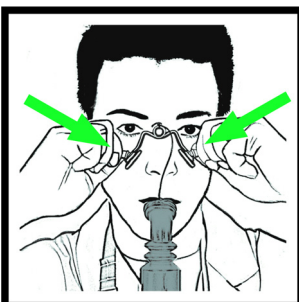
Activating the Device

- (9) Grasp breathing tube at the mouthpiece.
 (10) Fully extend the breathing tube to activate the starter.
 ▷ A drop in pull resistance indicates the starter is initiated.



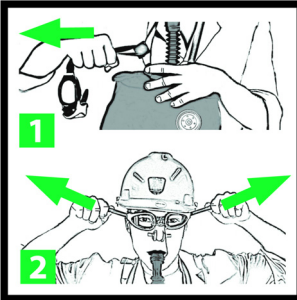
Inserting the Mouthpiece

- (11) Place mouthpiece into mouth with flange of mouthpiece between teeth and lips.
 (12) Bite down on the two lugs.
 (13) Exhale into the device.
 ▷ So the breathing bag is inflated.
 ▷ It might be necessary to unfold the breathing bag by hand.



Fit the Nose Clip

- (14) Grasp nose clip by rubber pads, pull nose pads apart and fit them onto nose.



Removing and Fitting the Goggle

Note: Goggle is on the right side of the neck strap.

- (15) Grasp the goggle strap and pull to remove the goggle from neck strap.
- (16) Fit the goggle.
- (17) Tighten goggle straps.



Adjusting the Neck Strap

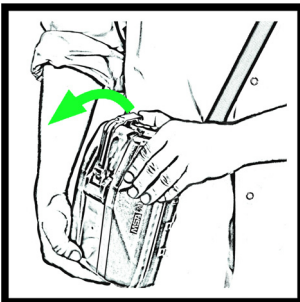
- (18) Adjust neck strap.
 - ▷ Ensure that the head is able to move freely.



Tying the Waist Belt

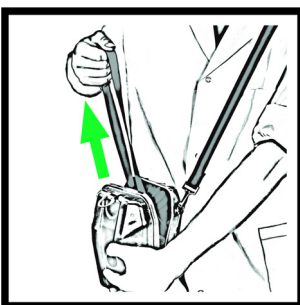
- (19) Tie waist belt and tighten with knot.

Donning the SavOx Industry TR



Opening the Container

- (1) Push the locking lever in the direction of the arrow until the seal breaks and locking device falls off.



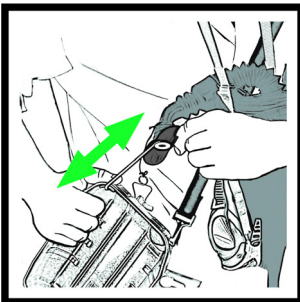
Removing the Device

- (2) Grasp container cover with one hand.
- (3) Pull out the device by the neck strap with the other hand.
- (4) Discard container cover.



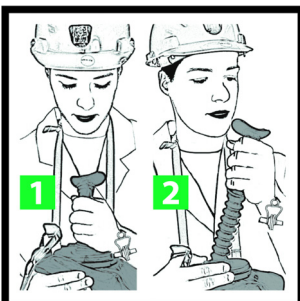
Donning the Neck Strap

- (5) Take off the protective helmet, if used.
- (6) Place the neck strap around the neck.
 - ▷ The valve of the bag must be visible on the front of the bag.
 - ▷ Do not adjust neck strap!
- (7) Put the protective helmet on.



Detaching the Device

- (8) Detach device from mouthpiece plug.



Activating the Device

- (9) Grasp breathing tube at the mouthpiece.
 (10) Fully extend the breathing tube to activate the starter.
 ▷ A drop in pull resistance indicates the starter is initiated.



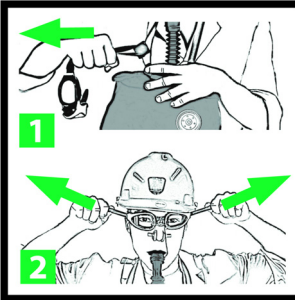
Inserting the Mouthpiece

- (11) Place mouthpiece into mouth with flange of mouthpiece between teeth and lips.
 (12) Bite down on the two lugs.
 (13) Exhale into the device.
 ▷ So the breathing bag is inflated.
 ▷ It might be necessary to unfold the breathing bag by hand.



Fit the Nose Clip

- (14) Grasp nose clip by rubber pads, pull nose pads apart and fit them onto nose.



Removing and Fitting the Goggle

Note: Goggle is on the right side of the neck strap.

- (15) Grasp the goggle strap and pull to remove the goggle from neck strap.
- (16) Fit the goggle.
- (17) Tighten goggle straps.



Adjusting the Neck Strap

- (18) Adjust neck strap.
 - ▷ Ensure that the head is able to move freely.



Tying the Waist Belt

- (19) Tie waist belt and tighten with knot.

3.3 Multiple Use

The demonstration and training device is equipped with a replaceable breathing tube so that several persons can use the same device after each other during one training session.

For this a new or cleaned and disinfected breathing tube with connecting piece has to be used (→ chapter 4.2). In addition, before another person uses the device again, it must be determined whether other components must be cleaned and disinfected.

4 Maintenance and Service

4.1 General

At the end of an exercise the demonstration and training device must be cleaned, disinfected, dried and repacked. This requires the following tasks to be carried out:

4.2 Disassembly



Unscrewing breathing tube

- (1) Unscrew breathing tube with connecting piece from canister.



Pulling out connecting piece

- (2) Pull connecting piece out of breathing tube.



If required, push out the check valve in the exhalation path with a peg or similar and fit a new valve [the valve disc must be outside].



Removing clamp

- (3) Remove clamp using special pliers.



Removing canister

- (4) Remove canister from breathing bag.

4.3 Cleaning and Disinfection

The following components must be cleaned and disinfected after use:



Clean the device before disinfecting.

- Disinfect the device.
 - Breathing tube with mouthpiece, inhalation valve, and nose clip
 - Connecting piece with check valve
 - Breathing bag with exhalation valve
 - Canister
 - Goggles
- Dry the disinfected and rinsed components [inside and outside with clean air at max. 60 °C].
- Clean case only if necessary.
- Apply a little talcum powder to the following parts after drying and prior to assembly:
 - Breathing bag [inside]
 - Breathing tube [outside]



Attention!

Thoroughly shake off excess powder!
No talcum powder inside the breathing tube!

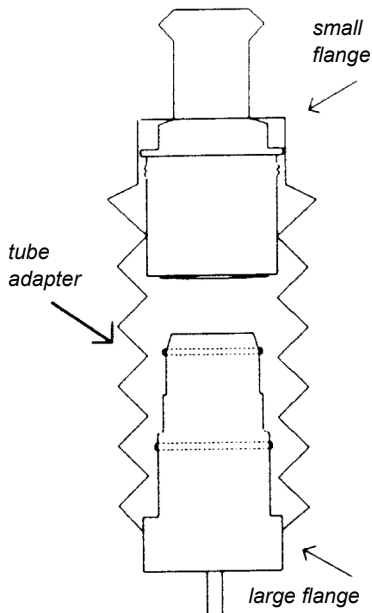
Component check

All components must be checked for damage and defects prior to assembly of the device. If required, faulty or damaged components must be replaced or supplemented. Only genuine MSA spare parts may be used.

4.4 Tightness Test of the Connection Piece

The tightness of the connecting piece is tested with the leaktester [→ chapter 5].

Test the moistened connection piece with the following procedure:



- (1) Fill in a kind of water into the connecting piece.
- (2) Remove the water by discharging.
- (3) Fix the connecting piece of the leaktester vertically.
 - ▷ Adjust check valve downwards.
- (4) Connect leaktester with adapter from bottom side to the connection piece.
- (5) Build up a positive pressure of 7 mbar at the leaktester.
 - ▷ Use the bellows of leaktester.
- (6) Close the valve and observe pressure drop.

The maximum permitted pressure drop is in 30 seconds: 1 mbar.

4.5 Assembly



Closing clamp

- (1) Place components into position and close clamp.
▷ Observe proper position of neck strap.



Connecting breathing tube and connecting piece

- (2) Perform a tightness test according to chapter 4.4.
- (3) Locate starter pin in breathing tube and locate in hole on connecting piece.
- (4) Fit connecting piece into breathing tube.



Connecting canister and breathing tube

- (5) Screw connecting piece with breathing tube into canister.
▷ Align breathing tube so that mouthpiece will be towards body when device is donned.



Positioning breathing bag

- (6) Lay breathing bag on bench with exhalation valve facing upwards.
- (7) Adjust neck strap to the maximum length.



Folding breathing bag in the middle

- (8) Fold breathing bag in the middle such that the exhalation valve is on the right side from the canister.



Folding breathing bag from the bottom

- (9) Fold breathing bag from the bottom until level with clamp.
- (10) Fold sides of tightly around canister.



Placing the device into the container

- (11) Take the long end of waist strap and wrap it around the folded bag pulling it tight.
- (12) Place the device into the container bottom and pull down to make space for breathing tube.
 - ▷ Lay the container bottom so that the straps and plug are located at the top left as you view it.



Inserting breathing tube

- (13) Push the breathing tube carefully into the free space with the mouthpiece on the left.
- (14) Insert plastic plug in mouthpiece and put it into the free space in the container bottom.
 - ▷ The mouthpiece must be placed on the left and the noseclip on the right with the spring upwards.



Folding waist belt

- (15) Adjust goggle strap to full length and attach them to neckstrap [opposite side from adjusting buckle].
- (16) Lay goggles diagonally across breathing bag next to exhalation valve with lenses facing up.



Attaching goggles

- (17) Fold neckstrap tidily over breathing tube.
- (18) Fold the buckles of the goggles between container and bag.



Inserting brass seal

- (19) Insert brass seal band into the locking hook and fix it with an adhesive strip.



Putting the cover on

- (20) Place container cover and press it carefully into place.



Attention!

No component parts must be pinched between case bottom and cover.



Closing locking clip

- (21) Locate locking hook and locking lever in their respective positions and lead end of brass seal through slot in locking lever.
- (22) Fold over ends of brass seal band and solder.

5 Ordering Information

Description	Article No.
Emergency Use Device SavOx	10023263
Emergency Use Device SavOx Industry	10107704
Demonstration and Training Device SavOx TR	10024538
Demonstration and Training Device SavOx Industry TR	10110086
Spare Parts SavOx TR / SavOx Industry TR	
Container Cover TR (2 pcs)	10144654
Container Bottom SavOx TR (3 pcs)	10144655
Container Bottom SavOx Industry TR (3 pcs)	10111564
Sealing Ring (for Container Cover) (5 pcs)	10111562
Looking Hook and Looking Lever (5 pcs)	10111588
Googles (6 pcs)	10110465
Pictogramm TR (5 pcs)	10144656
Shoulder Strap for SavOx Industry (5 pcs)	10111722
Shoulder Strap for SavOx (1 pc)	10029099
Brass Seal Band (25 pcs)	10015364
Nose Clip Cushion (10 pcs)	D1035992
Clamp (5 pcs)	10144662
Check Valve (25 pcs)	D2055731
Breathing Tube Assembly (3 pcs)	10144643
Neck Strap (5 pcs)	10111786
Breathing Bag TR with Exhalation Valve (2 pcs)	10144657
Canister SavOx TR (1 pc)	10144658
Connecting Piece TR (1 pc)	10144659
Waist Belt (5 pcs)	10144652
Canister Receptable TR (1 pc)	10144660
Starter Equipment TR (3 pcs)	10144661
Special Pliers	D1130038
Antimist Agent "klar-pilot" (100 ml)	10032164
Leak Tester (Inside)	D1118829
Leak Tester (Container)	D1118845

