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## INSTRUCTION MANUAL

### Emergency Escape Breathing Device





## 1. Introduction

### 1.1 Preface

Compressed air emergency escape breathing apparatus TH15B (shorten as the device) is self protection breathing device for Escaping from the dangerous place. Please read the instruction manual carefully before use, which can help you to escape from the emergency scene safely in effective time as long as you master the using method correctly.

The device is prohibited to use for fire-fighting, entering into oxygen-deficit and liquefied cabin, Fire fighter as well.

The user should be trained professionally before use; the device should be taken the scheduled maintenance correctly according to instruction manual.

### 1.2 Main performance Index

- a. Output pressure of pressure reducer:  $(10 \pm 2)$  bar
- b. Output Flux of pressure reducer:  $(38 \pm 2)$  L/min
- c. Opening pressure of medium safety valve: 9 bar ~ 15 bar
- d. Alarm pressure :  $\leq 10$  bar, alarm volume :  $\geq 80$  dB
- e. Rationed operation time :  $\geq 15$  min
- f. Absolute value of breathing resistance under temperature :  $\leq 500$  Pa
- g. rationed working pressure of cylinder : 210 bar
- h. Effective volume of cylinder : 3 Lt
- i. Completed weight :  $\leq 6.2$  K
- j. Package size (m m) : 520 × 150 × 250

### 1.3 Standard

Complied IMO RES MSC.98(73) FSA MSC/CIRC.849 EN1146:2005 ISO 23269-1:2008

## 2. Function description

### 2.1 Cylinder

The cylinder is made of seamless steel tube, please see the cylinder volume and rationed work pressure at Sheet 1, and see the maintenance of cylinder at Section 5.

Volume (L)	r (bar)	Air Volume(L)	Approval	Service Life
6	300	630	TPED	15 years

The high release device is designed in combination valve, which will be burst automatically while the pressure in cylinder is 25% over than rationed work pressure, the device has to be sent to manufacturer or qualified service station for maintenance.



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Turn the cylinder anticlockwise can open the device and the cylinder valve is connecting with the hood by a connection chain; don't take the hood out of the satchel if the cylinder valve is not open.

The cylinder valve is fitted with pressure gauge, the air pressure in the cylinder is shown by pressure gauge( standard pressure is 210bar at 20 °C), the user should check the value of pressure gauge regularly, the value should not be lower than standard value, or the device should be recharged in case the air is deficit.

### **2.3 Pressure reducer**

The pressure reducer is equip with the medium safety valve, when the output pressure of pressure reducer is more than max output pressure 1.1-1.7 times, the medium safety valve will release the air which can be protect the pressure reducer.

The pressure reducer is equip with the low pressure alarm whistle, when the pressure is lower than 10bar, the low pressure alarm whistle will makes noise not less than 80db, this warning the user should leave the hazard area as soon as possible and take off the hood.

Breathing hose is made of high pressure rubber hose, one side is connected with combination valve, another side is connected with hood, and the fresh air is flowed to user via rationed hole fitted in breathing hose.

Hood is combined by transparent view window, body of hood, shawl and respirator, the body of hood is made of fabric which is of anti-flaming and fire-proof, meanwhile, and neck seal is designed as well.

Inhalation valve and exhalation valve are designed in nose mask covering the nose and mouth of user, exhalant air will be released directly in order to keep the fresh air inhaled.

The satchel is package to EEBD TH15B, which is hang round the user's neck while use, it is convenient to take out the hood for use and carry the air cylinder. The simple operation sketch and instructions are printed on the satchel obviously.

Satchel is of anti-flaming and anti-static characteristic

Fluorescence material is silk screened on the satchel, EEBD TH15B can be found obviously even if located at dark place.

Pull the red pulling belt to open the satchel, which is sealed by plastic seal before opening. If the plastic seal is broken or disappeared, that means the device has been touched or used. The device should be inspected or maintained which cannot be used anymore. The neck belt should be hung on the neck while using.



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## Instruction for use

Hang the EEBD TH15B on the neck, see Fig.1.



Fig.1



Fig.2

Turn the cylinder valve anticlockwise more than one circle to open it, see Fig.2.

Hold the black grasp strap at bottom end, pull the red pulling belt then take out the hood to wear onto the head. See Fig.3 and Fig.4.

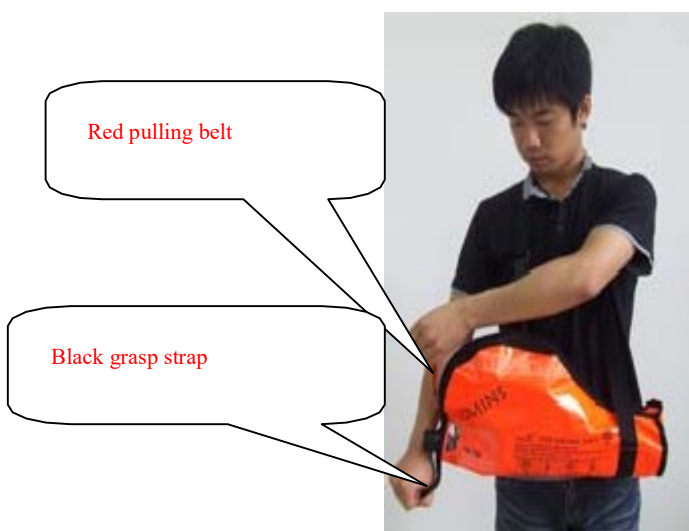


Fig.3



Fig.4



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**Attention:**

Ensure that finger nails and rings do not scratch or tear the neck seal



Put on the hood, Please put the transparent window front. Check

Put on the hood, Please put the transparent window front. Check that clothing or hair is not blocked in the neck seal. (See Fig.6)

Adjust the position of the mouth and neck mask to cover the mouth and nose fully, make sure the mask fit the face closely with stable air flowing.

Escape from hazardous area immediately after breathing normally.

**Attention:**

Remove the hood after escaping from hazardous area. When the cylinder is nearly empty and the pressure is lower than 10bar, the alarm whistle will sounds and the carbon dioxide in the hood will increase, in this case, the user should leave the hazardous area as soon as possible and take off the hood.

Once the device has been used it must be inspected and recharge. Dispose After-use.

Keep the device to stand-by status immediately after used, do as following steps :

Take off the hood together with the air supply tube and pressure reducer, clean the contaminated parts, replace the hood if the fabric was broken, replace or maintain the damage parts in time after checking.



Unload the chain, see Fig.7.



Fig.5



Fig.6

Recharge the cylinder, and the pressure should be 210bar at 20°C after charging. Push the red lock pin rightwards after charged, and turn the handwheel clockwise to of Fig.8 position. Put the bolt of one end of the chain into the groove of valve body and close the cylinder head valve.( see Fig.9 and Fig.10).



Fig.9



Fig.10

Re-install the device and put it in the satchel. Connect the chain to adapter ring, see Fig.11. The plastic sealing should pass through the eye of the satchel, then pass through the metal ring of the satchel. Finally tighten the plastic-sealing. (see Fig.12)



Fig.11

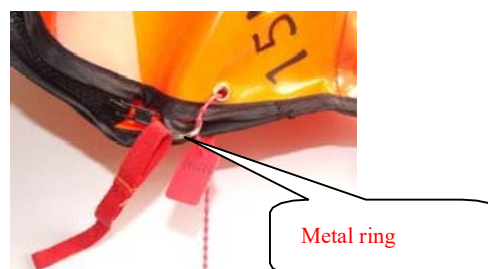


Fig.12





## Inspection and maintenance

Check the completeness of EEBD TH15B parts if there would be damaged.

Observe the pressure indicating valve to check the pressure in cylinder, which should not lower than 210 bar (20°C), air supplement while deficit,

### Attention:

The air pressure in cylinder will be altered temperature due to the function of expanding with heat and contracting with cold, it is normal that the pressure will be deficit in low temperature or excessive temperature. The pressure in cylinder is 210bar at temperature 20°C, see the relationship between temperature and pressure as Sheet 2 (approximate value for reference).

temperature	Air pressure in cylinder bar	temperature	Air pressure in cylinder bar
-30°C	160	20°C	210
-20°C	170	30°C	220
-10°C	180	40°C	230
0°C	190	50°C	240
10°C	200	60°C	250

## Maintenance

### 5.2.1 Cylinder

Avoiding collision, scratch and knocking, meanwhile avoiding roast under high temperature and refrigeration under arctic-alpine condition and rusting inside the cylinder. Painting make-up in time if the painting was fallen off.

The cylinder should be taken water pressure in principle every five years, which can be used after qualified testing. If the testing period of water pressure is shorter than five years, subject to the regulation of authority. Please fill in the inspection record after qualified water pressure testing. The used cylinder should be recharged for next usage.

### 5.2.2 Pressure reducer

Do not dismantle the pressure reducer when using, check the pressure and output when service.

### Attention

Put the device in dry place, obvious and easy to take, prevent sun direct illuminate. Oil or other corrosive liquid contact is strictly prohibited.



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Avoid weight, high temperature baking, alpine frozen and the blazing sunshine to the device. Do the appropriate training before using.

Contact with the manufacturer of the qualified service station if found any product failure, spare parts damaged for maintenance. Do not charge the oxygen to avoid accident.

Charge the air to 210bar (20°C) , after it cools, recharge to 210bar to assure the usage time. Compressed air should be clean, no detectable smell, the mainly specification as follow: CO<sub>2</sub> no greater than 500 ppm b.CO no greater than 15 ppm c.Humidity no more than 50 mg/m<sup>3</sup> d.Oil content no more 0.5 mg/m<sup>3</sup>. The device is prohibited to use for fire-fighting, entering into oxygen-deficit and liquefied cabin, Fire fighter as well.

## 6. Fault detection and solution

Malfunction	Fault cause	Solution
Air leakage of combination valve	Crack of rupture disk of Safety valve cracked, loose of screw thread of pressure cap, aged O ring.	Replace new rupture disk, Screw pressure cap Replace new O ring.
No indicating value on pressure gauge	Leakage of pressure gauge and cylinder	Replace new pressure gauge or cylinder
Air leakage of connection	Damaged or aged O ring	Replace new O ring
Damage of hood and satchel	Aged or damaged	Replace new hood and satchel.
Excess Rationed air supply	Pressure change in chamber of pressure reducer .Rationed hole blocked	Readjust the pressure reducer Replace or repair the rationed hole.

## Transportation

Package and transportation to transportable pressure container should be Complied with regulation stipulated by authority. Prohibited to be loaded with oils, inflammable material and corrosive media and placed under rain and blazing sun, which should be Handled with care. The filled cylinder should be in accordance with the road transportation rule if taking use of road transportation.

## Storage

EEBD TH15B should be stored at dry, obvious and accessible place, the relative humidity is not over than 80%, to kept from heat is far more than 1.5m EEBD TH15B should be avoided over heavy load, roast under high temperature and irradiation under blazing sun.





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## 9.Spare parts

The product is equipped with spare parts,see Sheet 4 below: Sheet 4

No.	Name and specification	Part No.	Quantity	Assembly
				Name
1	Bursting piece	11401522	1	Cylinder head valve
2	O ring 16×2.8	10202038	2	Cylinder group
3	O ring 11.2×2.65	10202026	2	Pressure reducer
4	Plastic-envelop	10104648	5	EEBD