



# HYDROFIRE ΕΠΕ

Buildings - Industry - Marine – Waterworks  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



Instruction Manual  
Self-contained Compressed Air Operated Breathing Apparatus  
Model: RHZK





# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



## Foreword

Please read the whole directions carefully before using Self-contained Compressed Air Operated Breathing Apparatus, in order to skillfully master its performance, principle and use method. Only when the which is operated properly, it can performance well; and only when the which is maintained constantly, it can work and prolong its service life. So it is very important to use the Self-contained Compressed Air Operated Breathing Apparatus properly and maintain constantly.

As the renewal of Self-contained Compressed Air Operated Breathing Apparatus is very fast, the instruction manual will be revised with the renewal. We will not give the further notice about the details of revision.



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



## Contents

Chapter 1	General	
1	Introduction.....	
2	Main performance index.....	
Chapter 2	Structure and technical note	
1	Structure.....	
2	Technical note.....	
2.1	Cylinder .....	
2.2	Cylinder valve.....	
2.3	Pressure reducer .....	
2.4	Alarm whistle.....	
2.5	Backboard .....	
2.6	Pressure gauge .....	
2.7	Supply valve .....	
2.8	Full face mask .....	
2.9	Medium pressure pipe and quick connector.....	
2.10	Breathing-Air.....	
Chapter 3	Checking before use .....	
Chapter 4	Instruction for use .....	
Chapter 5	Dispose after use .....	
Chapter 6	Check and maintenance	
1	Routine check.....	
2	Routine Maintenance.....	
3	Attention .....	
Chapter 7	Fault deflection and solution.....	
Chapter 8	Complete ser .....	
Chapter 9	Transportation and storage .....	
Chapter 10	spare parts .....	



# HYDROFIRE ΕΠΕ

Buildings - Industry - Marine – Waterworks  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



## Chapter 1 General

### 1 Introduction

#### 1.1 Main application

RHZK Self-contained Compressed Air Operated Breathing Apparatus (hereunder shortened as the Apparatus) is a new model of self-supporting open respirator, which is widely used in fire-fighting, chemistry industry, vessels, petroleum industry, smelt, mine and transportation. It is a high-performance respiratory protective device designed for fireman and special-trained person to perform fire fighting, rush to deal with an emergency and rescue when trapped in the atmosphere with smoke, poisonous gas, hot vapor and/or hypo-oxygen.

#### 1.2 Standard

The products are in accordance with IMO RES MSC.98(73)、EN137:2006

#### 1.3 Application scope

a. the atmosphere that is polluted by smoke, poisonous gas or/and hot vapor, or in the hypo-oxygen situation.

b. In the atmospheric environment of  $-30^{\circ}\text{C} \sim +60^{\circ}\text{C}$  temperature,  $0 \sim 100\%$  relative humidity and  $0.7\text{bar} \sim 1.25\text{bar}$  atmosphere pressure.

### 2 Main performance index

Table 1

Model	Working pressure (bar)	Volume (L)	Air Deposit (L)	Duration (min)	Alarm Pressure (bar)	Weight (Kg)	Packing Size (mm)
RHZK5/30	300	5	1500	40-50	50-60	≤12	770×325×520
RHZK6/30	300	6	1800	50-60	50-60	≤16	770×325×520
RHZK6.8/30	300	6.8	2040	50-60	50-60	≤12	770×325×520

## Chapter 2 Structure and Technical Note

### 1 Structure (See Figure 1)



# HYDROFIRE ΕΠΕ

Buildings - Industry - Marine – Waterworks  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)

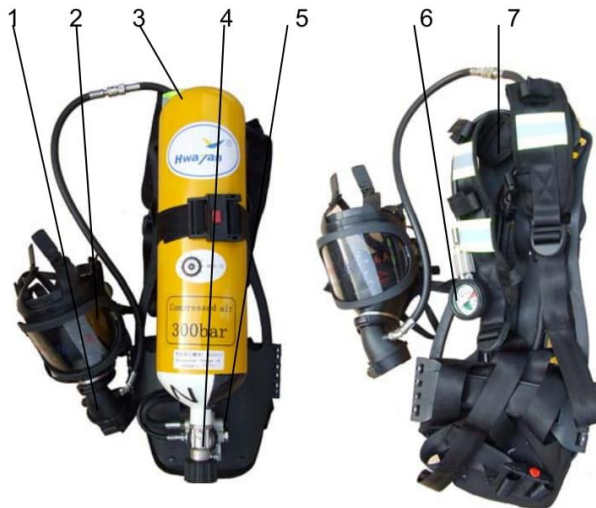


Figure 1- Structure

1-Supply valve    2-Full face mask    3-Cylinder    4-Cylinder valve  
5-Pressure reducer    6-Pressure gauge    7-Backboard

## 2 Technical note (See Figure 1)

### 2.1 Cylinder (See Figure 2)

There are two types of cylinder: steel cylinder and carbon fiber composite cylinder. The cylinder volumes are 5L, 6L and 6.8L, rationed working pressure for three volumes are all 300bar.

The carbon fiber composite cylinder is of light weight, big volume and long lifetime.

And carbon fiber composite cylinder shall avoid scratch in order not to break the carbon fiber when using. The cylinder cannot be used any more once the scratch is found. The user shall check the validity of the cylinder before using, and it is forbidden to use when it is expired. 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



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



regulation of authority. The service time of steel cylinder is 12 years and the carbon fiber composite cylinder is 15 years.



Figure 2 Cylinder

## 2.2 Cylinder valve

Cylinder valve is designed for opening and closing the gas source. It is equipped with over-pressure protective diaphragm. When the inside pressure exceeds rationed working pressure over 25% or so, the pressure will be released automatically.

The cylinder valve has been subject to air-tightness test by nominal working pressure after installed and every connection is proved to be air-tightness. It is not allowed to disassemble the cylinder valve randomly. If it needs to be disassembled for repair, 300bar air pressure test should be taken after being reassembled.

To ensure sufficient gas-supply, the handle wheel of cylinder valve should be turned more than two circles when using.

## 2.3 Pressure reducer

The function of pressure reducer is to reduce 300bar high pressure air into(6.5±2)bar medium pressure air for the wearer. In addition, the pressure reducer is also equipped with medium pressure safety valve and Residual pressure alarm.

### a. Technical parameter



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



- (1) Input pressure: 300bar
- (2) Inside pressure:  $(6.5 \pm 2)$ bar
- (3) Output pressure:  $(6.5 \pm 2)$ bar
- (4) Maximum outflow:  $\geq 300$ L/min
- (5) Start pressure of Safety valve: 10bar~12bar

## b. Safety valve

Safety valve is so designed for avoiding the damage caused by the direct outflow of high pressure air which has not been reduced as the pressure reducer does not work properly (such as pressure reducer spring, diaphragm or valve was broken down). Under normal conditions, safety valve is closed when the inside pressure is not more than 8.5bar. When pressure reducer does not work well and the inside pressure goes too high; the safety valve will open to release air automatically. The pressure reducer must be detected and repair timely when such malfunction occurred.

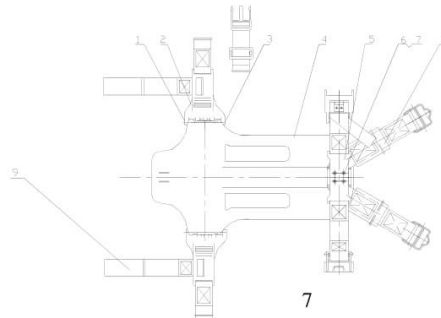
## 2.4. Alarm Whistle

the alarm whistle will make alarming sound not less than 90dB to warn the user to escape from the accident spot immediately when the air left is about 50bar~60bar, which can be used for about 5~7 min.

## 2.5 Backboard

Backboard is consisted of back supporting, left waist belt, right waist belt, left and right shoulder belts and cylinder fixed racks.

See the structure of backboard in Figure 3.





# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



Figure 3-Structure of backboard

1-Nut M5    2-Left waist belt    3-Screw    4-Back supporting    5-Cylinder fixed racks  
6-Bolt M5×12    7- Nut M5    8-Left and right shoulder belts  
9-Right waist belt

a. Back supporting

The back supporting is the basic part of the back board, which is made of high-intensity plastic material, with strong loading capacity. There is a mat fitted in the waist part, which is soft and comfortable to touch with the body directly when wearing. The back supporting is so designed to put the main weight of the whole set on the buttocks according to the physical feature of back body, it is helpful to strengthen the moving capability of the arm.

b. Left and right waist belts

Waist belts fasteners and connectors are made of high-intensity plastic material which is advanced at present by injection molding, so they have good flexibility and intensity. The waist belts can be adjusted freely and conveniently.

c. Left and right shoulder belts

Shoulder belts are widened and lined with sponge rubber cushion which can well distribute the pressure of shoulders bearing. The two ends are consisted of stainless steel rings which make the adjustment of belts more simply and conveniently.

d. Cylinder fixed racks

Cylinder fixed racks are consisted of bracket, adjusting belts and locking buckle. bracket and locking buckle are made of high-intensity plastics by injection molding. Locking buckle is equipped with self-locking device, which is tight and firm.

## 2.6 Pressure gauge

Pressure gauge which is movable, easy to be read at multi-angle, the data can be read clearly, and it is water-proof and luminous features.





# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



## 2.7 Supply valve

Supply valve's exhalation end is connected with full face mask, and the inhalation end connects with medium pressure pipe. Supply valve can supply air to user and the air flow is over 300L/min. when inhaling, the diaphragm moves downward and press the open lever, thus the piston is open and supply the air flowing. When exhaling, the diaphragm moves upward until it is stopped by the upper cover, the heavier breathing, the bigger the switch opens and the more the gas-supplied; and it will close automatically when breathing stops. The gas supplied according to breathing needs, which achieved positive-pressure gas supply open the exhaling valve at the function of spring . The exhaled gas is released to the atmosphere through the exhaust valve of full face mask.

See chapter 4of the procedures to connect the supply valve to the air breathing apparatus

## 2.8 Full face mask

The part which connects with face of full face mask is made of silicon rubber, it is flexible, comfortable and fits the face well, the transparent window is made of high-intensity engineering plastics, with wide-vision sphere structure, high strength and wide vision. And it is equipped with high-efficiency microphone, the wearers can communicate with each other in close distance .The full face mask is in accordance with EN136-1998

## 2.9 Medium pressure pipe and quick connector

The medium pressure pipe is consisted by medium pressure pipe A and medium pressure pipe C. the one that connects with Pressure reducer is medium pressure pipe A, while the one that connects with the supply valve is medium pressure pipe C. medium pressure pipe A and C are connected by quick connector. See Figure4.

## 2.10 Breathing-Air

The air charged in the cylinder conforms to EN12021 requirements.



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



## Chapter 3 Checking before use

1. Check transparent window, belts, sealing parts, inhalation valves and exhalation valves of full face mask and check the connections of supply valves and face mask if it is well . Every part must be clean without dirt or polluted by acid, alkali, oil or any harmful material, and transparent window must be clean.
2. Check the supply valve if it can be opened or closed freely, and if the connection is firm with median pressure pipe.
3. Check the pressure gage if it can indicate the pressure data normally.
4. Check the backboard if it is complete and the seam of belts is fine.
5. Check the cylinder's components if they are firmly fixed and the connection of cylinder and pressure reducer is firm and tight.
6. Open the cylinder valve, with the rising of pressure inside the pipes and the pressure reducing system, short sounds will be heard made by the alarm; when the cylinder valve is completely opened, the inside pressure should be at a range of 300bar(20°C).
7. Check the air-tightness of the apparatus. Open cylinder valve for 2min, then turn-off the valve, observe the value shown on the gage for 1min, the drop pressure should be not more than 20bar.
8. Check if the full face mask and supply valve matched well. Press the rubber cap of the supply valve to shut off the supply vane, as shown in Figure 6, open the cylinder valve, wear the full face mask and breathe, then the supply valve shall be open automatically; when exhaling or stopping inhaling, "sizz" sounds ( sound of air supplying ) shall not be heard.
9. The above-mentioned tests should be taken regularly according to the actual conditions. The above-mentioned tests should be taken monthly when The apparatus is standby.

## Chapter 4 Instruction For Use

- a. Connect the quick connector of supply valve to medium A pipe , and lock the quick connector firmly , see Figure 4



# HYDROFIRE ΕΠΕ

Buildings - Industry - Marine – Waterworks  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



Figure 4



Figure 5



Figure 6

b. Press down the rubber cap of demand valve ( see Figure 6) make the demand valve in the close condition.



Figure 7



Figure 8

c. Connect the supply valve to the full face mask, as Figure 7.

d. Put the apparatus on the back ( cylinder valve should be at downwards ), adjusting the shoulder belt and waist belt as per individual demands. Which should be comfortable and firm.( see Figure 8)

e. Turn on the cylinder valve anticlockwise , see Figure 9

f. User can breathe normally after wearing the face mask, see Figure10



Figure 9



Figure 10

g. Breathe deeply for 2~3times after wearing the mask(not required to tighten up the bands), the wearer shall feel comfortable and there shall be not sound



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,

Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



of “sizz” when exhaling or stopping breathing. Then tighten up the mask bands to fit the mask, forehead and face well and make sure it is air-tightness.

When putting on the mask, don't over-tighten up the bands, as long as the face shall feel comfortable. After the mask well fits the forehead and face and make sure it is air-tightness, then breathe deeply, the inhalation valve of supply valve should be opened automatically.

h. Loose the bands of face mask, separate the fire helmet from the mask, take down the mask and shut off the inhalation valve of supply valve at the same time. Take off the apparatus and shut off cylinder valve.

### **Attention:**

- a. Once hearing the alarm, stop the work in dangerous zone and escape as soon as possible.
- b. Pressure gage is fixed on the shoulder belts so that the remained air inside cylinder can be observed any time.
- c. Don't pull out quick connector till cylinder valve is shut off and the remained air inside pipes is completely released.

### **Chapter 5 Dispose after use**

The used Apparatus should be restored to standby state, and manage as follows:

1. Take off the mask, wash the mouth and nose harness and the part which touches wearer's face and head with neutral or weak alkaline disinfectant, then clean these parts with water finally, dry the unit in air.
2. Take off the cylinder from backboard, wipe the oil and dirt off from the equipment and examine if there's any part damage.
3. Charge the cylinder.
4. Connect the charged cylinder to the pressure reducer which fixed on the backboard.
5. Examine the respirator according to the requirements “Testing before Use”
6. Instruction of charging cylinder and notices



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,

Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



- (1) Shut off cylinder valve and take off the cylinder from the backboard.
- (2) Connect cylinder to the output connector of air compressor. check cylinder's hydrostatic pressure testing date and if there is any scratch or cut on the cylinder surface, or any malfunction on the cylinder valve. Do not use the cylinder when any defective is found unless it is repaired and examined to be qualified.
- (3) Open cylinder valve, switch on the power of air compressor, and charge the cylinder to 300bar(20°C).
- (4) Cool the cylinder in air and re-charge it to 300bar. Don't over-charge the cylinder.
- (5) Shut off the cylinder valve, release the remained air inside pipes, and take off the cylinder from the charging device.
- (6) Install cylinder in backboard or stored in suitable place .

## **Chapter 6 Check and maintenance**

### 1. Routine check

#### 1.1 Air-tightness test of whole set

Shut off the inhalation valve of supply valve, open cylinder valve for 2min, then shut off the valve; observe the reading on the gauge for 1min, the drop pressure must be not more than 20bar. If the drop is over 20bar in 1min, air-tightness test should be taken to all the parts and connectors respectively.

#### 1.2 Alarm pressure

Open the cylinder valve firstly, when the reading on the gage is up to 70bar shut off the valve, observe the gage decreasing until the alarm sounds, the alarm pressure should be at the range of 50bar~60bar. If the alarm pressure goes out of the range, the alarm device must be taken off and every part must be checked. The part must be replaced when any defective is detected.

#### 1.3 Match testing of supply valve and full face mask

Shut off inhalation valve, wear the mask and open cylinder valve, the sound of "sizz" can be heard when inhaling. When exhaling or holding breathe, air



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



supply should be stopped and there's no sound of "sizz". Such shows the well matching of supply valve and the mask. If the air supply continues or/and the sound of "sizz" can be heard, it shows that the supply valve does not fit the mask well. In this case, supply valve and full face mask must be taken complete examination, or the valve and mask must be replaced until the matching test is qualified.

#### 1.4 check the air-tightness of the supply valve

Press the rubber cap of the supply valve to set it in the "off" state, and open the cylinder valve of the apparatus, there shall not be sound of "sizz" made by air flowing out.

1.5 Check the aging state of the rubber cap and plastics pieces of the supply valve periodically according to the using conditions.

1.6 Check the air pressure inside the cylinder, which shall be not less than 300bar (20°C) ; When the pressure is less than 300bar, the cylinder shall be recharged, but shall not exceed certain value.

※Note: The air pressure inside the cylinder will be changed if the temperature outside is changed. It is normal that the pressure inside the cylinder is lacked under a low temperature or the pressure is high due to a high temperature. The air pressure inside the cylinder is 300bar at the normal temperature. Please check the table 2 as follows (approximation)

Table 2

temperature	Air pressure inside the cylinder ( bar)	temperature	Air pressure inside the cylinder (bar)
-30°C	250	20°C	300
-20°C	260	30°C	310
-10°C	270	40°C	320
0°C	280	50°C	330
10°C	290	60°C	340

## 2 Routine Maintenance



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



## 2.1 Cylinder and cylinder valve

(1) . The air cylinder shall be protected from crash, scar, and knock; shall avoid high-temperature roasting, frozen, and exposure; Repair the surface if the

painting is peeled off to prevent from corrosion on the outside wall of cylinder.

(2). Cylinder shall be taken water pressure test once every five years. Only when it passes the examination, can it be put into use. If there is any specified requirement in local government , then specified requirement should be complied with .

(3). Don't use up the air in the cylinder. The remained pressure in the cylinder shall be at least 0.5bar.

(4). the whole set shall be subject to air-tightness test under 300bar after the cylinder valve is disassembled for maintenance.

## 2.2 Pressure Reducer

Do not disassemble the pressure reducer at random. The chamber pressure and safety valve of the pressure reducer shall be retested, if the safety valve is leaking.

## 2.3 Full face mask

When the apparatus is not for use , the full face mask shall be stored into packing box without any pressure. And the face mask packing box shall be stored in clean and dry warehouse. Which is Forbidden to be left in the sunshine or be polluted by poisonous gas or dirt.

## 2.4 Supply valve

It's forbidden to disassemble supply valve under normal conditions, It shall be reassembled and tested according to the exact prototype after being repaired, the supply valve should avoid crash, damage, high temperature roasting, frozen and exposure under sunshine.

## 3 Attention

(1) Keep the apparatus at dry, clear, and easy-reached place, avoid exposure



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



under sunshine in case any aging.

- (2) Never touch with grease or other corrosive liquid.
- (3) A series of instructions for reservation, maintenance and utilization shall be set up for the Apparatus.
- (4) The air cylinder shall not be charged with oxygen, to avoid explosion.
- (5) The apparatus shall be subject to overall examination every month.
- (6) The apparatus shall not be used as diving respirator.
- (7) The pressure gauge shall be corrected once every year.
- (8) The compressed air for breathing must be clean, meeting the requirements as follows:
  - CO: no more than 15 ppm
  - CO<sub>2</sub>: no more than 500 ppm
  - Oil: no more than 0.5 mg/m<sup>3</sup>
  - Water: no more than 35 mg/m<sup>3</sup>

## Chapter 7 Identification and Solutions to Malfunction

Table 3

Problems	Causes	Solution
Leakage at connections of cylinder valve and pressure reducer	Thread connector loosen or abrasion of O-ring	Tight the knob of pressure reducer or O-ring washer
Leakage in the connector of cylinder valve and cylinder	Abrasion or aging of O-ring washer	Replace O-ring washing
Pressure gauge out of work	(1)leakage of the pressure gauge (2)pipe blocked (3)leakage of high-pressure pipe (4)Leakage in the connection of the high-pressure pipe and the pressure gauge	(1)Replace the pressure gauge (2) unblock the pipeline or replace the (3)Replace the sealing washer





# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
 END OF AG. PANTELEIMONOS Str. (ELEONAS)  
 GR-12241 EGALEO,  
 Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



Leakage in the connector of supply valve and mask		The sealing washer polluted and blocked or damaged	Clean or replace the sealing washer
Leakage of full face mask		Aging colloid or loosen connection	Replace the full face mask or tight connections
Supply valve	Bad air-tightness	(1) O ring damage of connections (2) sealing valve seat is not flexible (3) the rubber of the valve seat is damage	(1). replace the O rings (2). disassemble and clean the valve the O rings of valve rod and coat \ silicon grease (3). replace the valve seat
Others Back supporting, waist belt, shoulder belt, fastener etc		Damaged	Repair or replace them

The above malfunctions shall be maintained at the service station with professional capability, The apparatus can be used again after maintenance.

## Chapter 8 Complete set

### Complete set:

1 RHZK Self-contained Compressed Air Operated Breathing Apparatus	1 set
2 Plastic Storage box	1pc
3 Outside packing Carton	1pc
4 Documents	1 set
5 Spare part	1 set

## Chapter 9 Transportation and Storage

### 1. Transportation

The apparatus is not allowed to suffer raining and exposure, and do not put the apparatus together with any oil , inflammable or corrosion substances , which should be handled with care.

### 2. Storage

The apparatus should be stored in dry and warm room , the room temperature is 5°C-40°C, the relatively humidity is less than 80%

There is no corrosive material in the room with more than 1.5m distance to



# HYDROFIRE ΕΠΕ

**Buildings - Industry - Marine – Waterworks**  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
GR-12241 EGALEO,  
Tel.: +30 210 3412 749-750 Fax: +30 210 3412 406  
[www.hydrofire.gr](http://www.hydrofire.gr), email: [info@hydrofire.gr](mailto:info@hydrofire.gr)



heat source. which should not be exposure under sunshine directly.

## Chapter 10 Spare Parts

Spare parts are as shown in the table 5 as below.

Table 5

No	Code No.	Specification	Quantity
1	10104601	Nylon washer	1
2	10104602	Nylon washer	1
3	10104603	Pressure gage washer	2
4	10202042	O-ring 18×2.8	2
5	10202026	O-ring 11.2×2.65	2
6	10202005	O-ring 2.8×1.8	4
7	10202012	O-ring 6×1.5	4
8	10202015	O-ring 7.3×1	2
9	10202020	O-ring 10×1.8	4
10	10202023	O-ring 11×1.5	4
11	10202053	O-ring 24×2.9	2
12	10202060	O-ring 30×2	2