SCBA USING MANUAL

Model: RHZK 6.8 SCBA BRAND SUPER SAFETY

STANDARD : EN14593 -1 : 2005 , EN 137:2006 TYPE 2 EN12245 EN12245

WARNING: Only close observance of the instruction laid out in this booklet can guarantee safe use of the apparatus and perfect service. Breathing apparatus must be employed by specially trained people under supervision of person well aware of its limits of application and of the laws in being.

1. Application Field

Positive pressure air breathing apparatus is designed for the use in fire fight application chemical industry, metallurgy, mines, petrol industry, rescue operation,

maintenance works and polluted area wherever there is or may be oxygen deficiency. It protects users from toxic gas, particles and mist, word in environment with less oxygen content than 17%, or fog caused by fire accident.

2. Product Description

Positive pressure are breathing apparatus is composed of the following part

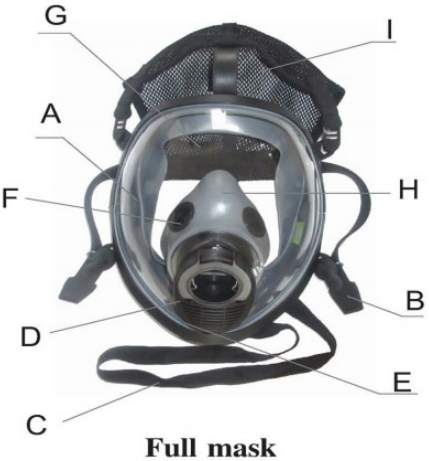
①Full mask
②Demand valve
③Pressure reducer and safety valve
④Pressure gauge and warning device
⑤Back plate assembly with harness
⑥Medium pressure hose
⑦Cylinder

Air is compressed in the cylinder (pressure of 30Mpa). Compressed air is reduced to (0.75±0.15) MPa through the pressure reducer, and led to medium pressure hose. Then it is reduced in pressure again through the demand valve and provided to user through full mask.
The outside toxic gas or particles can not get inside because the pressure inside the mask is always higher than the atmospheric pressure. Thus the tightness of the face mask is guaranteed.

2.1 Full Mask

Full mask is specially designed for Asian face, ensuring comfort and good seal that provides an efficient tightness.

A. Round visor, anti-fog and harden treated; wide vision scope, excellent optical property and good light penetration;
B. Flame resistant head band, safely fixed;
C. Flame resistant fixing band, adjustable length;
D. Pluggable structure for demand valve connector, quick connection to demand valve;



Full mask

E. Exhalation valve, safe and protective for the valve;
F. Inhalation valve, safe and protective;
G. Sealing part, made of high quality flame resistant silicone elastomer;
H. Nose and mouth cover ,made of high quality silicone elastomer, lower carbon dioxide inhaled into mask;
I. High effective sound transmitting film;
J. Flame resistant meshy hood, safe and comfortable.

2.2 Demand Valve

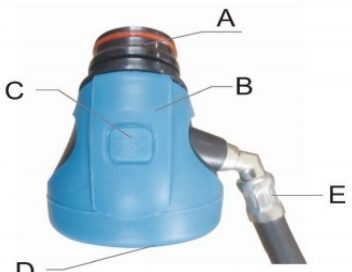
The demand valve provides air to the wearer depending on the air breathing need of the water. It ensures a higher air pressure inside the face mask than the outside pressure.

The demand valve can be manually switched off thanks to the switcher (C) on the top of the valve, and then no air is provided to the face mask. The demand valve is automatically switched on at the first inhalation of the wearer.

At the central bottom of valve, there is a manual control air supply button (D) to be used to:

- Switch on the demand valve manually;
- Gave an additional breath of the wearer feels supply deficiency. Besides, it can release the remaining air inside the medium pressure hose which is more convenient for test and disassembly of the quick connector.

A. Pluggable structure for demand valve connector, safe and convenient;
B. Clipper-built appearance;
C. Manual control switcher, easy to switch on;
D. Manual control air supply button;
E. Medium pressure inhalation hose.



Demand valve

2.3 Pressure Reducer

The pressure reducer is made of brass with anticorrosive coating. Compressor air is reduced in pressure by the pressure reducer to (0.75 ±0.15) MPa. Pressure reducer delivers a constant and stable pressure during the life time of the cylinder. Pressure reducer is connected to:

- Cylinder;
- Medium pressure hose which is connected to demand valve and providing air;
- High pressure hose which is connected to pressure gauge.


Pressure reducer

2.4 Safety Valve

Safety valve locates on the pressure reducer. When medium pressure is over high,the safety valve switches on automatically to release air,and switches off after medium pressure reduces to normal value.

It is regulated in the norm GA124-2004 “Fire Fighting Positive Pressure Air Breathing Apparatus” that, opening pressure and fully exhausting pressure of safety valve should be within 110% to 170% of maximum designing output pressure of pressure reducer; and the closing pressure of safety valve is no less than maximum designing output pressure. That is:

Safety valve opening pressure and fully exhausting pressure (0.99-1.53) MPa
Safety valve closing pressure: ≥0.09MPa.

Pressure gauge and warning device

2.5 Pressure Gauge and Warning Device

The scale of pressure gauge is (0-40) MPa. The gauge connects to pressure reducer through high pressure hose. Fluorescent material is used in dial plate, which enables the pressure value to be read clearly in dark. The watchcase takes high anti-impact material, with rubber protective cover, to be water proof, shock proof and anti-dust. The warning device locates on the high pressure hose near pressure gauge, which actuates the audible warning when cylinder pressure drops to (5.5±0.5) MPa. From the beginning of the warning, the user has to leave the polluted area immediately, and then plug a new cylinder if needed.

Buckle

2.6 Back plate assembly with harness

Back plate assembly includes back plate, harness, waist, belt, buckle, pressure reducer holder and cylinder tightening belt. Injected with flame resistant plastic and carbon fiber material, the back plate is compact, light, high mechanical resistant, and anti-impact. It is designed to fit human body's back, notably regarding ergonomics and comfort. All the components of the back plate assembly are fire retardant treated.

Rescue Connector

2.7 Medium pressure hose

The medium pressure hose is linked to the pressure reducer and to the demand valve. It is made from flame resistant rubber, The explosion pressure is 4MPa, more than 4 times of maximum output pressure from pressure reducer.

2.8 Cylinder and cylinder valve

The is made from fully wrapped carbon fiber reinforced aluminum lined. With 6.8L's capacity, it ensures 1hours of moderate activity in real use.

3. Operation Sequence

3.1 Cylinder Connecting

The assembly can accept one cylinder with maximum capacity for 12L, or two 6.8L cylinders. For two cylinders, there needs to be double cylinder holder and two inhalation mouths, and the length of the tightening belt should be increased.

A) Cylinder valve is well closed;
B) Put the cylinder into the groove of the central back plate, and connect firmly the cylinder to pressure reducer;
C) Fasten the belt buckle of the cylinder.

3.2 Demand valve connecting

Snap the medium pressure demand valve and the reducer hoses together.

Connector is securely locked. To disconnect when the hose is under pressure. Press button on the demand valve to avoid air leaks when donning the set.

3.3 Quick check before use (before use, the following sequences should be followed to avoid danger)

A) Pressure of compressed air in the cylinder:

With valve fully opened, the value of pressure gauge is 30MPa, under 30MPa and 20℃. Otherwise, the effective using time will be shortened.

B) Air-tightness of cylinder:

It is regulated in the norm GA124-2004 that when open and close the pressure gauge, pressure drop on the gauge should be no more than 2MPa within One minute.

C) Warning system:

- Close the demand valve ;
- Open cylinder valve to fill the hose with air, and then close it;
- Open demand valve manual control button, vent the air off slowly with band palm and observe the value change of pressure gauge;
- The warning system start working when the pressure gauge shows (5.5±0.5) MPa.

3.4 Donning the set

A) Adjusting the back plate

Set the shoulder straps at maximum length; don the set and pull down the straps tips until the back plate rests comfortably on the user's back.

Fasten waist belt, and pull the free end of belt till the desired tension and comfort.

B) Donning the mask

Hold the mask by one hand till fully fit with the face, and pull the headband by the other band to cover the head; pull the band till full fit and comfort.

Plug the demand valve into the mask and inspire. If is impossible to breathe and mask fully fits the face, then the mask is well air-tight. It is necessary to avoid the facial hair

Between mask and face for fully fit.

3.5 During use

When in use check from time to time the pressure gauge and plan the work load to suit the air left in the cylinder. With a 6.8L cylinder the breathing apparatus can last for 10 minutes after the warning has started. Then the user must leave the polluted area immediately.

In case of emergency, extreme condition or the user needs extra air supply, the manual

Control button can be opened to release bigger flow of air supply.

3.6 After use

A) Close the cylinder valve;

B) Disconnect demand valve from the mask, and the excess air will be vented off;

C) Unfasten waist belt and slide back the shoulder straps;

D) Place the set and cylinder up, on a clean surface.

4.1 Cleaning and disinfecting

A) Harness on back plate can be removed for cleaning and disinfecting;

B) During washing, lukewarm water and neutral detergent should be used; The concentration and duration of use should follow the instruction of the detergent.

C) Corruption from detergent to components of breathing apparatus should be avoided: organic solvent will damage rubber or plastic parts.

D) After cleaning and disinfecting, all components should be aired under 15℃ to 30℃. Any heat radiation source should be avoided like sunshine, drying machine, heater etc. Compressed air is recommended for use for airing of key components like pressure reducer and medium pressure hose, to remove the potential humidity.

4.2 Testing

Test to the breathing apparatus is needed after each cleaning and maintenance.

If the film of demand valve or any rubber parts shows damage or aging (being sticky, hardened or crinkled), it should be changed immediately.

Low pressure air-tightness test and demand valve static positive pressure test must be done in accordance with norm GA124-2004.

4.3 Storage

Only after cleaning, disinfecting, checking, maintaining and recording, breathing apparatus can be stored in non-dust, shady and cool place under room temperature, and away from sunshine, heat source, humidity and corrosive substance.

Storage temperature has to be within 15℃ to 30℃ and the environment needs to be dry. Besides, breathing apparatus should be kept in cases of good tension resistance.

Staffs without special training are forbidden to step in the storage room.After storage and before each use, make sure that working environment will not damage products property and test to all the components has been done. It is strictly forbidden for users to disassembly or misuse the equipment.

4.4 Transportation

Breathing apparatus should be kept in the original package or transportation case, and no special requirement is needed. Please also follow the storage instruction.

5. Maintenance, Test and Record

5.1 Requirement on test: Please see the table below

Part	Activity	1	2	3	4	5	6
Complete Set	Cleaning			/			
Complete Set	Function, tightness		/	/		/d	
Complete Set	Back plate check	/					
Demand Valve	Cleaning			/			
Demand Valve	Disinfecting					/c	
Demand Valve	Membrane check					/c	
Demand Valve	Membrane replacement						/a
High pressure connector	Testing pressure (pressure gauge)					/	
High Pressure Connector O-ring	Replacement					/c	
Pressure Reducer	Revision				/		
Cylinder	Testing						/d
Full mask	Cleaning			/c			
Full mask	Testing					/	

In the above table:

1: Before allowing the use; 2: Before use; 3: After use; 4: Every six months; 5: Annually; 6: Every there years.

a) The set been used; b) Other breathing apparatus; c) After use in corrosive areas or in extreme ambient conditions; d) In accordance with national regulations.

Warning:

Every time the value is disassembled/assembled from/to the cylinder for maintenance and/ or testing, the value shall be changed. Please refer to the specific information notice that comes with the cylinder or to the label of composite cylinder.

After the replacement of any part whatsoever it is mandatory to perform all checks on function and pneumatic tightness.

5.2 Daily Maintenance Record

Please see the table below:

Name	Date	Head Band			Cylinder Valve			Pressure Reducer			Demand Valve			Mask		
		Disinfect/Cleaning	Eyrballing	Parts Change	Disinfect/Cleaning	Eyrballing	Parts Change	Disinfect/Cleaning	Eyrballing	Parts Change	Disinfect/Cleaning	Eyrballing	Parts Change	Disinfect/Cleaning	Eyrballing	Parts Change

6. Common Faults and Measures

Warning: The positive air breathing apparatus is essential for user's life, thus the staff in charge of maintenance must receive special training from manufacturer and d=get quali8fication accordingly.

Component	Faults	Possible Cause	Measures
High pressure parts	Air leakage at connection points	1.Connection untight	Fasten again
		2.Demange of sealing parts	Replace sealing parts
Warning Device	No warning under (5.5±0.5)MPa	1.Position change of warning whistle	Readjust position of whistle
		2.whistle blocked or dirty	Clean the whistle
Pressure Reducer	Air leakage at soft hose connection	Damage of O-ring	Replace O-ring
	Air leakage at safety valve	1.Damage of high pressure sealing	Replace damaged parts
		2.Air leakage of valve	Replace for new one
Cylinder Valve	Air leakage at hand wheel	1.Damage of sealing	Replace sealing parts
	Close non-tihghtly or	1. Damage of valve core	Replace valve core

	air non-smoothly	due to too much pressure	
		2.Damage of main valve body	Replace main body
	Air leakage at cylinder neck	Damage of O-ring	Replace O-ring
Demand Valve	Air deficiency	Maybe cylinder calve not full open	Fully open the valve
	Abnormal air supply or supply while unconnected to mask	Inner struction facult	1.Send back to manufacturer
			2. Repair by special trained person

Only reserves the right to explain and modify this instruction.