MARS SAFETY™ INTERNATIONAL

FIREFIGHTING EQUIPMENT

Self-Contained Breathing Apparatus for Firefighting (SCBA)

(MED/SOLAS Approved)

Model: RHZK6/30 **IMPA: 330424**

Technical Specifications

- **Cylinder Volume:** 6L
- **Working Pressure Of Air Cylinder:** 300bar (30MPa)
- **Air Cylinder Material:** Steel
- **Air Deposit:** 1800L
- **Usage Time:** 50-60mins, Estimated based on air consumption of 30L/min-Light work
- **Export Pressure (Pressure Reducing Valve):** 0.65±0.2MPa
- **Gas Valve (Pressure Reducing Valve):** >300L/min
- **Inhalation Resistance:** ≤500ba
- **Exhalation Resistance:** ≤700ba
- **Exhalation Resistance (30L/min):** ≤687ba
- **Opening Pressure (Gas Valve):** ≤980ba
- **Opening Pressure (Relief Valve):** 1.0-1.2MPa
- **Alarm Pressure:** 5.5±0.5MPa
- **Weight:** ≤21kg
- **Packing Size:** 710mm x 430mm x 290mm

Certifications

- **Approval:** DNV certificate
- **Regulations/Testing Standards:** SOLAS 74 as amended, Regulation II-2/10 & X/3, 2000 HSC Code 7, FSS Code 3, IBC Code 14, IGC Code 14, IMO Res. MSC.339(91) in conjunction with IMO MSC.1/Circ.1499, EN 137 (2006), EN 136 (1998) including AC (2003) and ISO 23269 2:2011

Manufacturer

火星船舶

Dongtai Martian Ship Equipment Co., Ltd.

100% QUALITY ASSURED
MARS SAFETY™ INTERNATIONAL
MARS SAFETY INTERNATIONAL PTE LTD

MARINE SAFETY ESSENTIALS We Offer On-Board Firefighting And Marine Safety Essentials

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FIREFIGHTING EQUIPMENT

Anatomic Back Frame & Harness System

Pressure Reducer (First Stage Regulator) & Air Cylinder Handwheel Connector (G5/8 Thread)

Anti-Fog Positive Pressure Full Face Mask With Head Net & Visor

Product Features

- MED/SOLAS approved positive pressure self-contained compressed air operated breathing apparatus, suitable for shipboard firefighters (maritime use only).
- 6L volume provides 50-60 minutes of breathable air, estimated based on air consumption of 30L/min-Light work.
- Equipped with a warning whistle that emits a sound of no less than 90dB when the air pressure in the cylinder reaches 50-60bar (5.5±0.5MPa), alerting the user when approximately 16% of the air remains in the cylinder.
- Equipped with a **Demand Valve** that provides air only when inhaled, ensuring efficient air usage. Comes with 'ON' and 'OFF' buttons that allow the user to start or stop the air supply as needed. By using these buttons, user can halt the air supply and disassemble the demand valve from the face mask while the cylinder valve remains open. After reassembling the demand valve and face mask, user can resume breathing, which will allow the negative pressure inside the face mask to trigger the demand valve to open and supply air again.
- Composed of an anatomic back frame with harness for perfect and easy donning.
- Packed in heavy duty plastic carrying case with high impact resistance that protects the product.
- Manual for use and maintenance is supplied with the product.

Important Note: This product is not a diving apparatus. It is strongly recommended that the apparatus is used by well-trained personnel and not by untrained users.

Add-On Accessories (Separate Order)

Electronic Audible & Visual Alarm

Air Cylinder Pressure Tester

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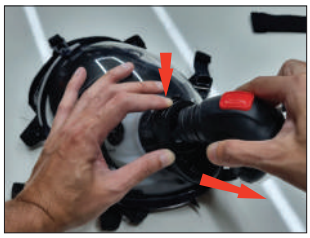
Quick Inspection Before Use (RHZK6/30 & RHZK6.8/30)

Note: Every Self-Contained Breathing Apparatus is packed in ready for use condition. However, a brief check is strongly recommended, to ensure the good operating condition of the equipment before use.
To conduct this test, the next steps are to be followed:



(1) Hold down the Lock Button on the face mask and detach the Second Stage Regulator.

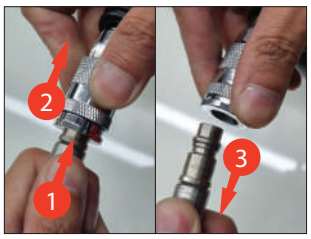
(2) Ensure the air supply is close by pressing the red **'OFF'** button on the Second Stage Regulator.

(3) **System Leak Tightness Check:** Open the cylinder valve (Clockwise direction) until you hear the whistle and observe the gauge reading stabilize. The pressure reading should always be at or above 80% of the rated filling pressure (300bar), typically ranging from **240 to 300bar**. The reading may vary by ±10% depending on the ambient temperature.

Once pressure gauge stabilizes, close the cylinder valve (Anti-Clockwise direction) and monitor the pressure gauge for 60 seconds. If the pressure drop after 60 seconds is 20bar or less, this indicates system is leak-tight.

(4) **Demand Valve Operability Check:** Place mouth on the Second Stage Regulator and inhale to verify functionality of the demand valve.

As you inhale, the air pressure will drop, triggering the whistle to sound. When the whistle activates, check that the pressure gauge reads approximately 50bar.



(5) When pressure gauge indicator becomes Zero, detach the Second Stage Regulator from the First Stage Regulator by the quick connector.

(6) Inspect the Second Stage Regulator's O-ring, visor, and sealing edges are in proper condition and free from damage.

Once done, Hold down the Lock Button and assemble the Second Stage Regulator with face mask.

(7) **Face Mask Leak Tightness Check:** Don the assembled face mask on your head. Then, plug the tube entrance with your finger and inhale.

The face mask should deform towards your face as a sign of leak tightness.

(8) Doff the face piece and reassemble the Second Stage Regulator and the First Stage Regulator by the quick connector.

The Self-Contained Breathing Apparatus is now readily checked and it can be either used or packed for storage.

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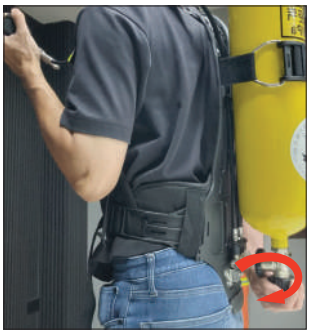
Donning Instructions (RHZK6/30 & RHZK6.8/30)

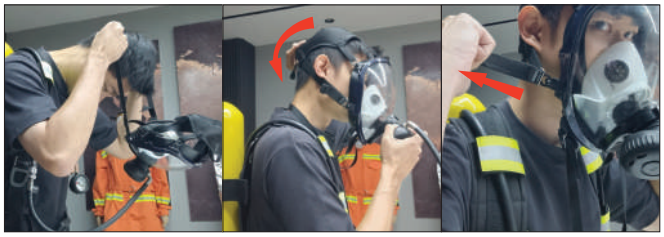
Note: After conducting the 'Quick Inspection' as strongly recommended, follow the donning methodology as described below:

(1) **Putting On Apparatus:** Don the apparatus like you wear a jacket. Make sure no harness or hose is twisted. Adjust the shoulder straps for a tight but comfortable fit. Close the buckle of the waist belt and fasten the strap in a comfortable way.

(2) Ensure the air supply is close by pressing the red **'OFF'** button on the Second Stage Regulator.



(3) **Turning On Air Supply:** Open the cylinder valve (Clockwise direction) until you hear the whistle and observe the gauge reading stabilize. The pressure reading should always be at or above 80% of the rated filling pressure (300bar), typically ranging from **240 to 300bar**. The reading may vary by ±10% depending on the ambient temperature.



(4) **Putting On Face Mask:** Place the lower strap over your head. Position the face mask on your face to fit the sealing edge and place the head-net over the head. Tighten the side straps to achieve a tight and comfortable fit. Do not over tighten as this can distort the face seal.

Inhale to triggering the demand valve to open and supply air, or by pressing the **'ON'** button.

(6) **Ambient Air Breathing:** Hold down the Lock Button on the face mask and detach the Second Stage Regulator. Then, press red **'OFF'** button to halt air supply. Now user can breathe from the environment to save air supply.

By reassembling the Second Stage Regulator back on the face mask, user can inhale to trigger the demand valve to open and supply air again.

(5) **Face Mask Seal Check:** While breathing, take a breath and hold it. Feel the air flow stopping, then insert your finger in the face mask seal.

This action should force the on-demand valve to provide steady flow again. Remove the finger and allow the face mask to seal again.

(7) **Supplementary Air Flow:** Pressing the **'ON'** button on the Second Stage Regulator will temporary increases air supply (450L/min), this is helpful if user experiences difficulty breathing due to injury in critical situations.

Important Note: Use only when needed, usage will decrease the usage time of air cylinder.

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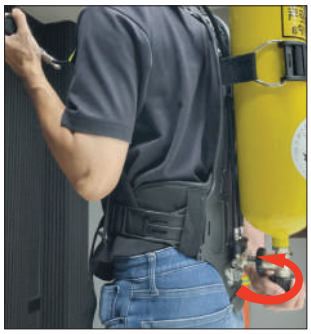
Doffing Procedures (RHZK6/30 & RHZK6.8/30)

Note: If the air is less than 80% of the rated filling pressure (≤240bar), the cylinder needs to be refilled.



(1) Before doffing, check how much air is left and **Close** the cylinder valve (Anti-Clockwise direction).

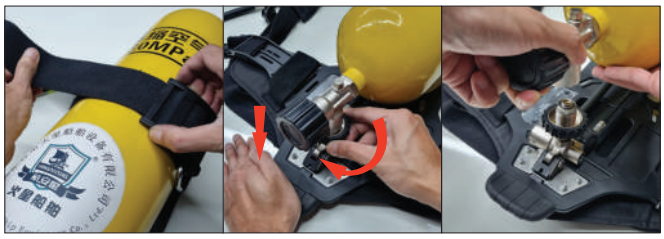
(2) Push the buckles outward to release the head net straps. Remove the face mask.

Press the **'ON'** button on the Second Stage Regulator to vent out any remaining air inside the medium-pressure hose.

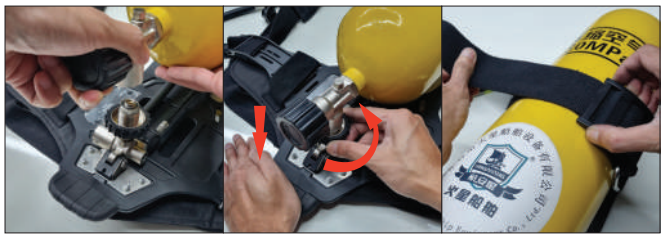
(3) **Removing Apparatus:** Unbuckle the waist belt, release the shoulder straps and carefully remove the apparatus. Set the apparatus down gently on the ground or table, avoid dropping it.

Replacing Air Cylinder (RHZK6/30 & RHZK6.8/30)

Note: In case the cylinder's remaining filling pressure is less than 80% of the rated filling pressure (≤240bar).



(1) **Removing Air Cylinder:** Open up the velcro webbing. Press down on the leveling pad with one hand while using the other hand to turn the handwheel connector (Clockwise direction), unscrewing it until the cylinder is detached from the apparatus. Lift up and remove the cylinder.



(2) **Installing Air Cylinder:** Carefully slot charged cylinder into connector. Press down on the leveling pad with one hand while using the other hand to turn the handwheel (Anti-Clockwise direction), screwing the cylinder firmly onto the apparatus. Close up the velcro webbing to secure.

After Use Procedures (RHZK6/30 & RHZK6.8/30)

Note: After every use, the apparatus must be cleaned and inspected visually for damages. When all components are thoroughly dry, the apparatus can be inspected before assembling and pack for storage. Processes of decontamination, disinfection, washing, inspection, and maintenance must be recorded.

For detailed cleaning and inpection instructions, please **Refer** to the next page.

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Cleaning, Disinfecting, And Drying

Note: Attention must be paid to concentration and reaction times. Do not use organic solvents, such as Acetone, White Spirit, Trichloroethylene or similar. Do not immerse the apparatus in water. After cleaning, dry it thoroughly and inspect before storage. For every component of the apparatus, follow instructions below:

- Use a brush or sponge moistened with warm soapy water to clean the back frame, shoulder straps, waist belt, and cylinder Velcro webbing. Rinse thoroughly with fresh water and allow it to dry completely in a clean, well-ventilated area, away from direct heat and sunlight.
- Wipe down the cylinder, cylinder valve, and first and second stage regulators using a cloth dampened with hot water. Then, dry them with a clean cloth.
- Clean the face mask following the next steps:
  (1) Thoroughly clean the face mask using warm fresh water (maximum temperature 43ºC) and neutral soap (PH=7).
  (2) Rinse the mask thoroughly with fresh water.
  (3) Gently shake the mask to remove any excess water. Thoroughly dry the face mask by wiping it with a cotton cloth or clean gauze.
  Important Note: Do not use ginned cotton.
  (4) Use a cotton cloth dampened with 70% isopropyl alcohol to wipe and disinfect the sealing edges of the face mask.
  (5) Allow it to sit in a clean, dry, well-ventilated area, away from direct heat and sunlight, to let the alcohol evaporate.

Visual Inspection And Servicing

Visual Check:

- Conduct a visual check on the apparatus for external damages wear and material fatigue.
- Don the apparatus and check shoulder straps and waist belt by fastening and loosening them. Doff the apparatus.
- Ensure face mask visor, sealing edge, head net and rubber straps are in good condition.
- Visually check the Second Stage Regulator for wear or broken parts. Ensure that the 'ON' and 'OFF' buttons work well.
- Remove the cylinder and open the cylinder valve for the remaining air to be released. Then recharge it in 300bar pressure.

Steps For Charging Air Cylinder:

Important Note: Air quality should conform to EN12021. Before charging the cylinder make sure that it conforms to national standards, features original test date and test mark of manufacturer, and the test date of the next Hydraulic test has not been exceeded. The hydraulic test should be conducted every five years after the manufacturing date of the cylinder.

(1) Open the cylinder valve.
(2) In the charging port of the cylinder valve connect a G5/8 handwheel of charging hose.
(3) Set the filling pressure of the compressor at 300bar to charge the cylinder.
(4) 24 hours after charging, assemble to apparatus.
(5) Press the **'OFF'** button on the Second Stage Regulator, open the cylinder valve for 15 sec and close it again to check the cylinder pressure, the First Stage Regulator, and the whistle operation.
Important Note: Charging can induce an increase in temperature resulting in an incomplete charge.
(7) At ambient conditions, the gauge needle should indicate approximately 300bar pressure. If needed, perform a 'Boost' charge. If the pressure remains around 300bar and steady for 20 seconds, press the **'ON'** button on the Second Stage Regulator to release the air. If the pressure does not stay steady for 20 seconds, inspect for the cause of the leakage.
(8) Once the cylinder is fully charged, close the cylinder valve and then release the pressure from the charging hose. After venting, disconnect the charging hose from the charging port.
(9) Place the unit back into the suitcase, the equipment is now ready for use.

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Storage

- The apparatus should be stored in a clean, dry environment, away from direct heat, dust, sunlight, extreme cold, and harmful chemicals. It must not be compressed during storage.
- Storage temperature must be between 15ºC to 30ºC.

Note: When the apparatus is positioned for immediate use, it must be ensured that the environment will not compromise the product's functionality, and all components should undergo additional testing. Our company does not guarantee equipment damaged due to user disassembly or misuse.

Important Note: This product is intended for use exclusively by well-trained personnel who adhere strictly to the Manufacturer's instructions. Misuse of the breathing apparatus can result in injury or even death. Untrained individuals are not permitted to use the apparatus under any circumstances, whether for safety or training purposes. If anything is unclear, do not use the equipment and contact a Mars Safety International Pte Ltd representative for clarification.

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