TUXING 6.8L carbon fiber tank

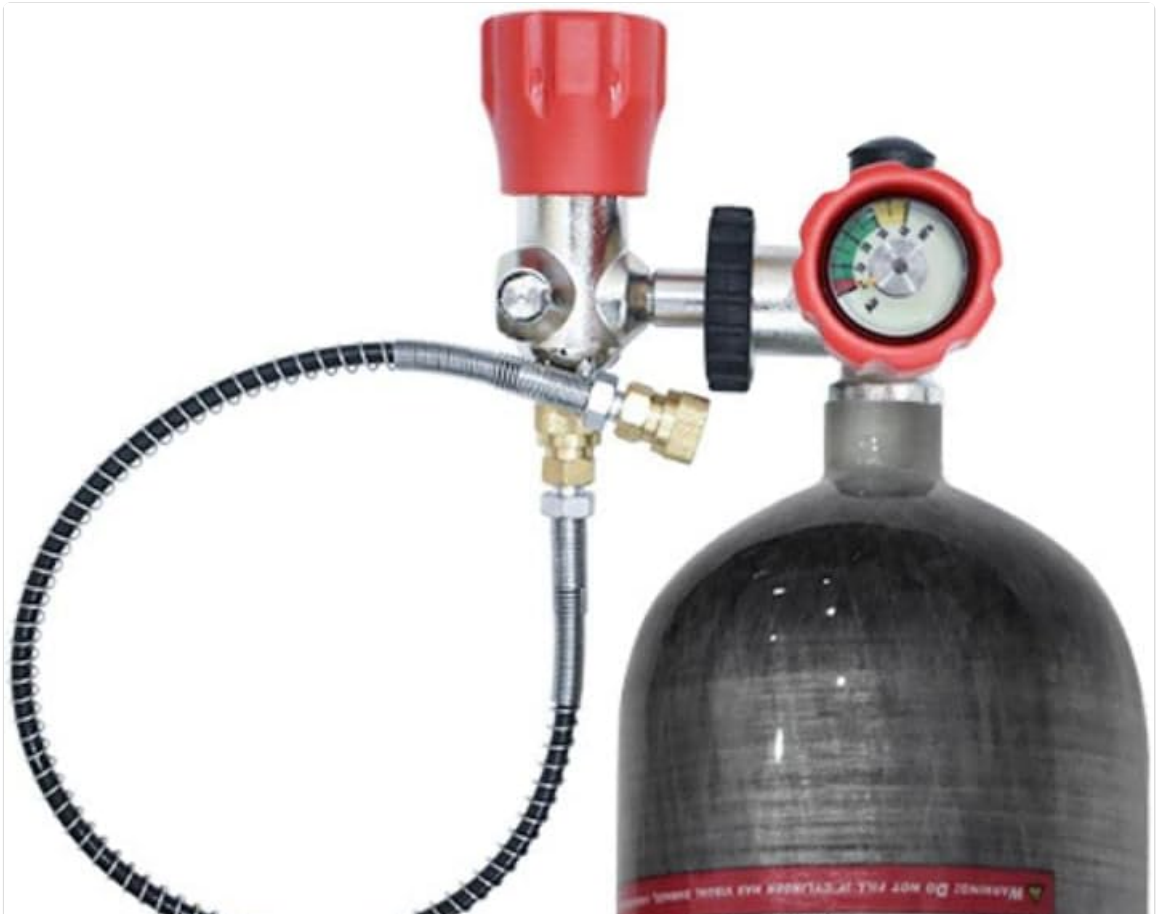
TUXING 6.8L Carbon Fiber HPA Tank Instruction Manual

Model: 6.8L Carbon Fiber Tank

1. Introduction

Thank you for choosing the TUXING 6.8L Carbon Fiber HPA Tank. This high-pressure air (HPA) tank is designed for various applications requiring a reliable and lightweight air source, including PCP air guns, paintball charging, emergency respirators, and diving. Constructed with an AL6061 aluminum alloy liner and full-wrapped carbon fiber, it offers superior strength, corrosion resistance, and a long service life of 15 years.

This manual provides essential information for the safe and effective use, setup, operation, maintenance, and troubleshooting of your TUXING HPA tank. Please read it thoroughly before initial use and retain it for future reference.



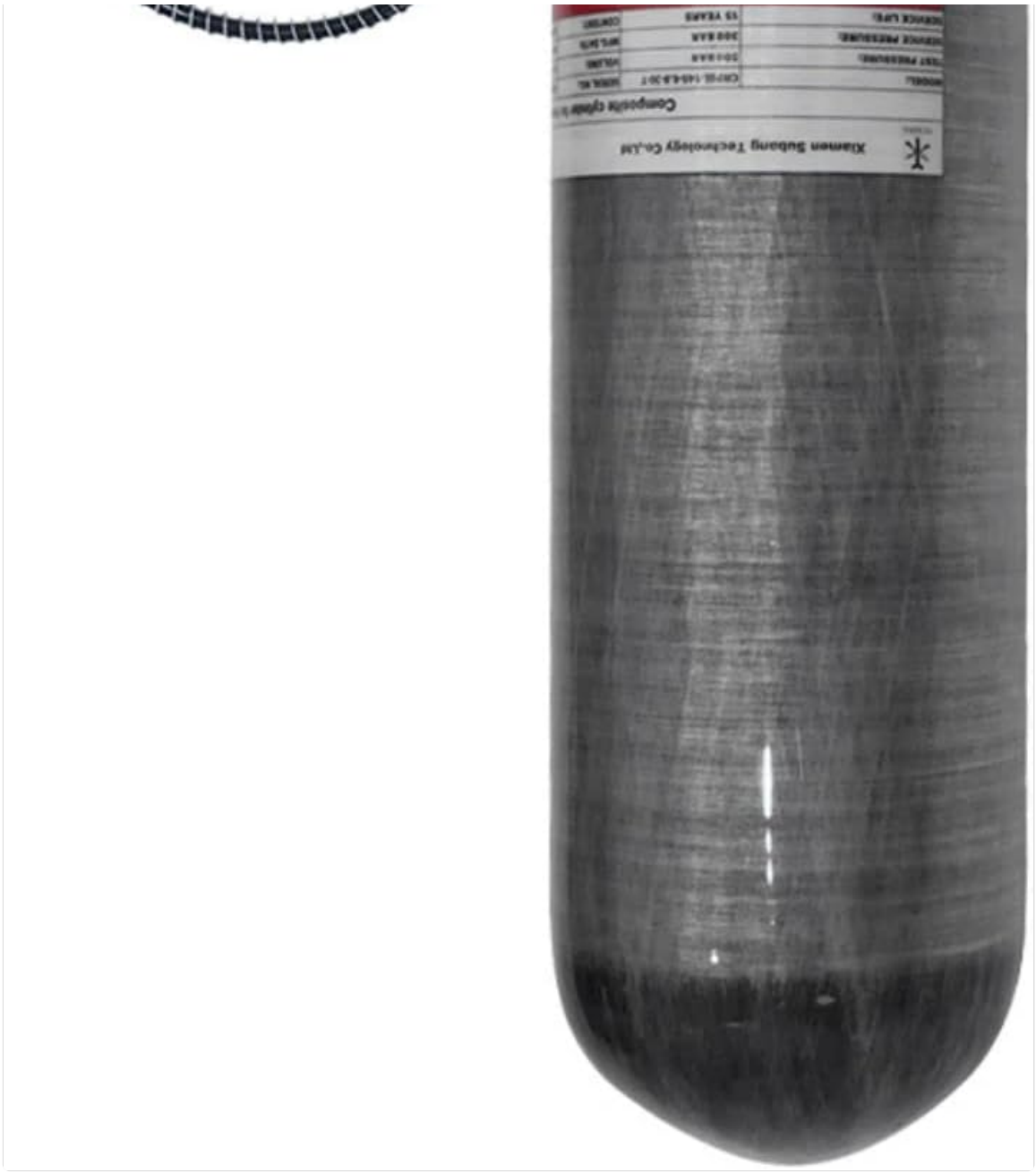


Image 1.1: TUXING 6.8L Carbon Fiber HPA Tank with valve and filling hose.

2. Safety Guidelines

WARNING: Failure to follow these safety instructions can result in serious injury, death, or property damage.

- **High Pressure Hazard:** This tank operates at extremely high pressures (up to 4500 PSI / 300 BAR). Always handle with extreme caution.
- **Professional Filling Only:** Only fill this tank at certified HPA filling stations or with appropriate, properly maintained high-pressure compressors designed for this purpose. Do not attempt to fill with unapproved equipment.
- **Do Not Overfill:** Never exceed the maximum service pressure of 4500 PSI (300 BAR) indicated on the tank. Overfilling can cause catastrophic failure.
- **Inspect Before Each Use:** Before each use, visually inspect the tank for any signs of damage, cracks, dents,

corrosion, or leaks. Do not use a damaged tank.

- **Temperature Limits:** Do not expose the tank to extreme temperatures. Avoid direct sunlight for prolonged periods and do not store near heat sources.
- **Avoid Impact:** Protect the tank from drops, impacts, or any mechanical damage.
- **Valve Handling:** Always open and close the tank valve slowly and carefully. Rapid opening can cause sudden pressure surges.
- **Hydrostatic Testing:** This tank requires periodic hydrostatic testing every 3 years to ensure its integrity. Refer to local regulations and the tank's markings for re-test dates. The service life is 15 years.
- **Ventilation:** When filling or discharging air, ensure adequate ventilation.
- **Children and Pets:** Keep the tank and associated equipment out of reach of children and pets.
- **Modifications:** Do not modify the tank or its valve in any way. Unauthorized modifications can compromise safety.

3. Product Overview and Components

Your TUXING 6.8L Carbon Fiber HPA Tank system typically includes the following components:

- **Carbon Fiber Tank:** The main pressure vessel, constructed with an AL6061 aluminum alloy liner and full-wrapped carbon fiber.
- **Tank Valve:** Controls the flow of high-pressure air into and out of the tank. Features a pressure gauge to monitor internal tank pressure.
- **Filling Hose/Station:** (Included with some packages) A high-pressure hose with appropriate connectors for filling the tank from a compressor or larger air source, and for connecting to your PCP air gun or paintball marker.
- **O-rings/Seals:** Spare seals for maintaining airtight connections.

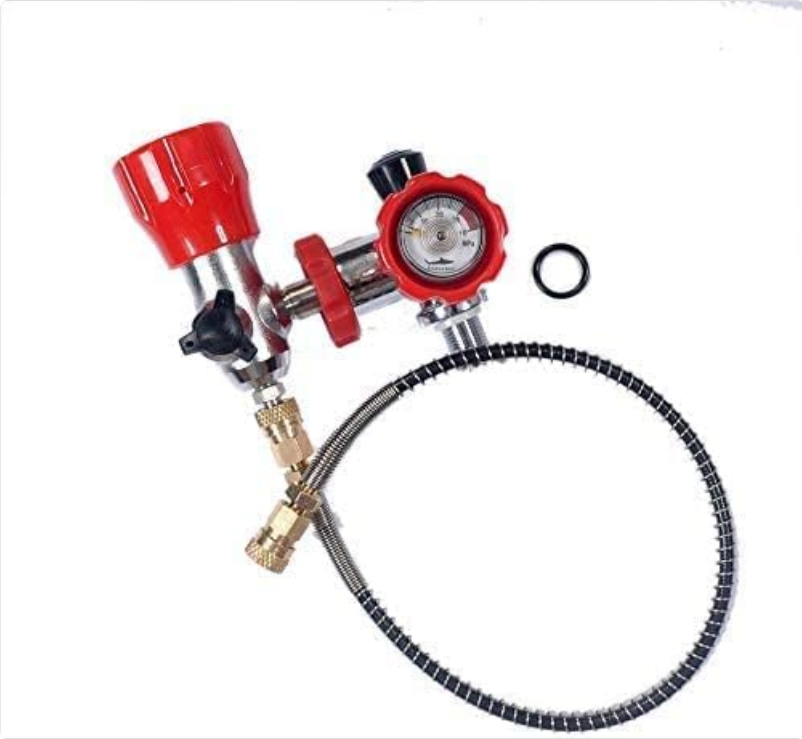


Image 3.1: Detailed view of the tank valve and filling hose assembly.

Product Structure

The tank's robust construction ensures durability and safety:

- **AL6061 Aluminum Alloy Liner:** Provides the core structural integrity.
- **Carbon Fiber Full-Wrapped Winding:** Enhances strength and reduces weight significantly compared to traditional steel cylinders.
- **Glass Fiber Over-Wrapped Winding:** Adds an additional layer of protection and structural reinforcement.
- **Epoxy Coated External Surface:** Provides corrosion resistance and a smooth finish.

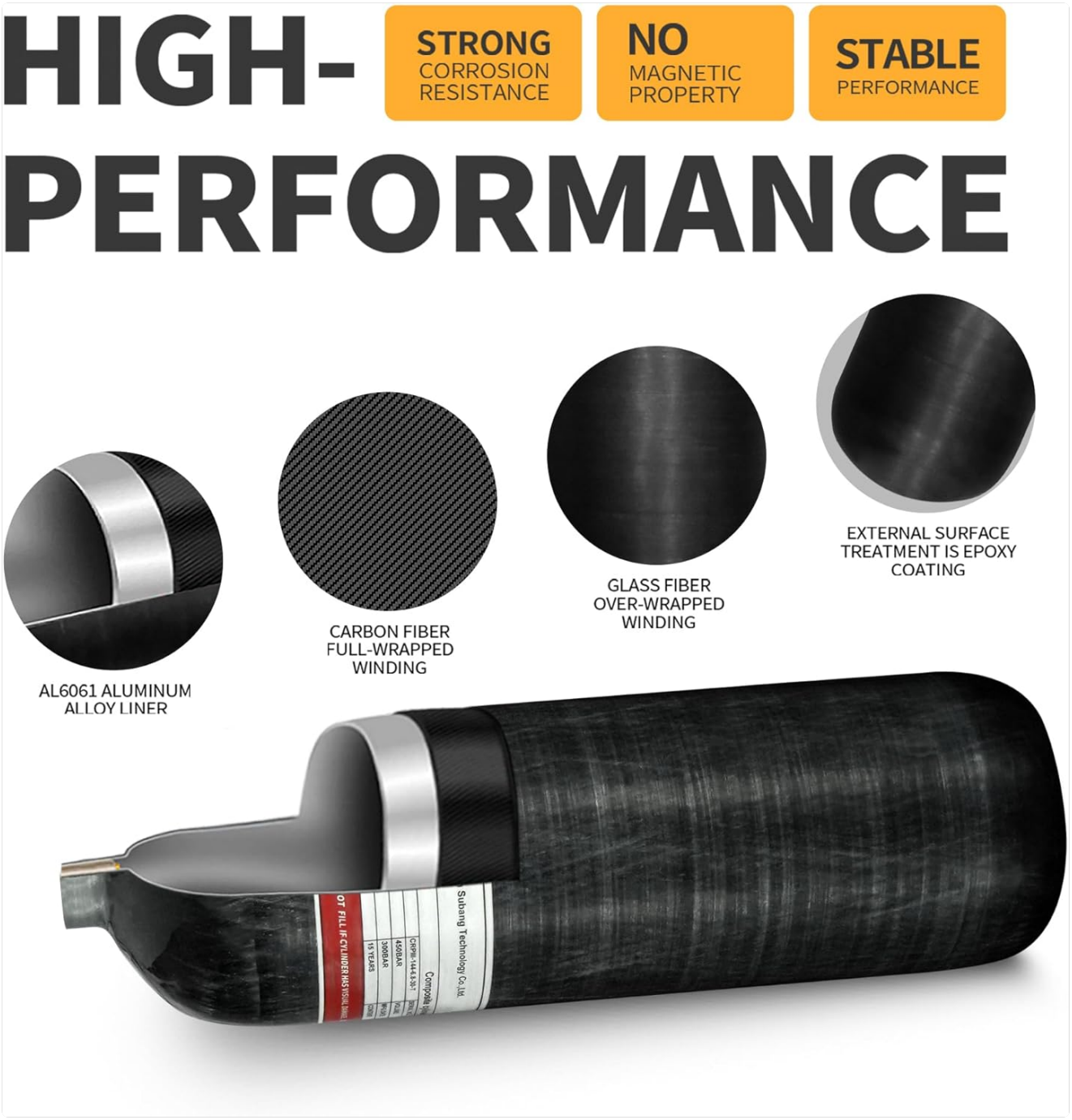


Image 3.2: Cross-section diagram illustrating the multi-layer construction of the HPA tank.

4. Setup Instructions

Follow these steps to prepare your TUXING HPA tank for use:

1. **Unpacking:** Carefully remove all components from the packaging. Inspect for any shipping damage. Note: Cylinders and valves may be sent in two separate packages.
2. **Valve Attachment (if separate):** If the valve is not pre-installed, ensure the tank is empty and depressurized. Carefully screw the valve onto the tank's M18x1.5 thread. Hand-tighten first, then use an appropriate wrench to secure it firmly, but do not overtighten. Ensure an O-ring is properly seated to create an airtight seal.
3. **Initial Inspection:** Before first use, perform a thorough visual inspection of the tank and valve for any defects, damage, or loose connections.
4. **Connect to Filling Station:** Attach the filling hose from your high-pressure air compressor or filling station to the tank valve's inlet port. Ensure all connections are secure and leak-free.

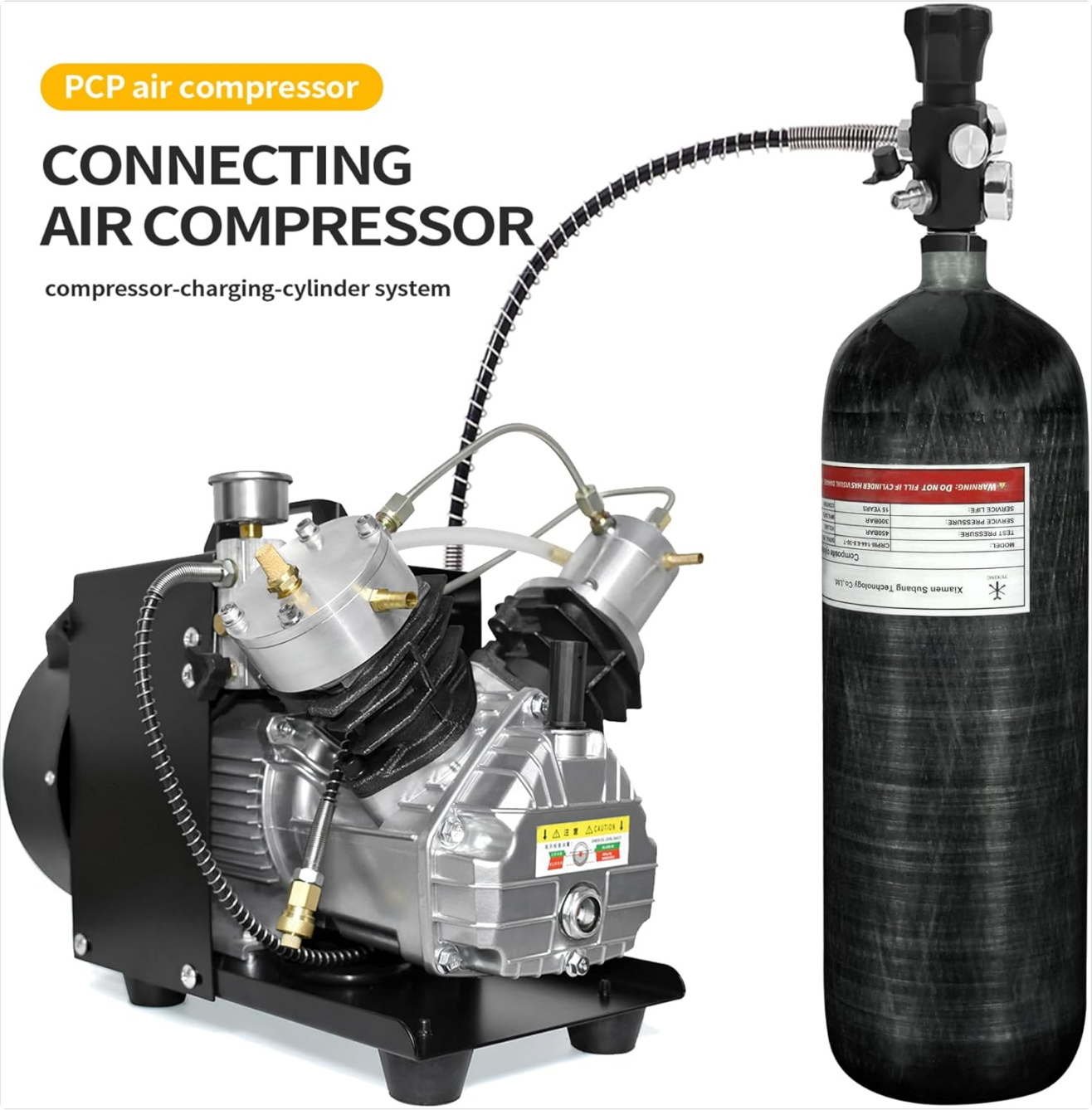


Image 4.1: HPA tank connected to a compressor for refilling.

5. Operating Instructions

5.1 Filling the Tank

1. **Ensure Safety:** Always wear appropriate eye protection. Ensure the tank is placed on a stable surface in a well-ventilated area.
2. **Connect:** Connect the tank to a certified high-pressure air compressor or filling station as described in the Setup section.
3. **Open Valve Slowly:** Slowly open the tank valve.
4. **Start Compressor:** Begin the filling process according to your compressor's instructions.
5. **Monitor Pressure:** Continuously monitor the pressure gauge on the tank valve.**DO NOT EXCEED 4500 PSI (300 BAR).**
6. **Stop Filling:** Once the desired pressure (up to 4500 PSI) is reached, stop the compressor.
7. **Close Valve:** Slowly close the tank valve completely.
8. **Bleed System:** Carefully bleed the pressure from the filling hose/compressor system before disconnecting the tank.
9. **Disconnect:** Once the system is depressurized, disconnect the tank.

5.2 Using the Tank with Devices (e.g., PCP Air Gun, Paintball Marker)

1. **Connect:** Attach the appropriate filling adapter or hose from your device to the tank valve's output port. Ensure connections are secure.
2. **Open Tank Valve:** Slowly open the tank valve to allow air to flow into your device. Monitor your device's pressure gauge.
3. **Fill Device:** Fill your device to its recommended operating pressure. Do not overfill your device.
4. **Close Tank Valve:** Once the device is filled, slowly close the tank valve.
5. **Bleed Adapter:** If your adapter has a bleed valve, slowly open it to release pressure from the hose before disconnecting.
6. **Disconnect:** Disconnect the device from the tank.

6. Maintenance and Storage

- **Regular Inspection:** Periodically inspect the tank and valve for any signs of wear, damage, or corrosion. Pay close attention to the neck, threads, and valve body.
- **Cleanliness:** Keep the tank and valve clean and free from dirt, dust, and moisture. Use a damp cloth for cleaning; avoid harsh chemicals.
- **O-Ring Replacement:** Regularly check O-rings for wear and replace them as needed to ensure airtight seals.
- **Hydrostatic Testing:** The tank requires hydrostatic re-testing every 3 years from the date of manufacture or last test. This is crucial for safety and compliance. Do not use a tank past its re-test date without proper

certification.

- **Service Life:** The design service life of this tank is 15 years. After this period, the tank should be retired from service, regardless of its last hydrostatic test date.
- **Storage:** Store the tank in a cool, dry, well-ventilated area, away from direct sunlight, heat sources, and corrosive materials. Ensure the valve is closed and protected from impact. Store with a small amount of pressure (e.g., 100-200 PSI) to prevent moisture ingress, but never store fully pressurized for extended periods unless specifically required by application.

7. Troubleshooting

Problem	Possible Cause	Solution
Air Leak from Valve/Connections	Loose connection, damaged O-ring, faulty valve.	Tighten connections. Inspect and replace O-rings. If valve is faulty, seek professional repair or replacement.
Tank Not Filling	Valve not fully open, filling hose blocked, compressor issue, incorrect connection.	Ensure valve is open. Check filling hose for obstructions. Verify compressor operation. Re-check all connections.
Pressure Gauge Malfunction	Gauge damaged, debris in gauge port.	Do not use if gauge is suspected to be faulty. Seek professional inspection or replacement of the valve assembly.
Tank Overheating During Filling	Rapid filling, insufficient cooling from compressor.	Fill slowly. Ensure compressor cooling system is functioning correctly. Allow tank to cool down before continuing.

For issues not listed here or if troubleshooting steps do not resolve the problem, contact TUXING customer support or a certified HPA technician.

8. Technical Specifications

Feature	Specification
Model Name	6.8L Carbon Fiber Tank
Capacity	6.8 Liters
Service Pressure	30 MPa / 300 BAR / 4500 PSI
Hydrostatic Test Pressure	50 MPa / 500 BAR (Can reach 50Mpa)
Bottle Screw Thread Size	M18x1.5

Feature	Specification
Liner Material	AL6061 Aluminum Alloy
Fiber Material	Carbon Fiber
Outer Material	Carbon Fiber
External Surface Treatment	Epoxy Coated
Design Working Life	15 Years
Re-Test Period	3 Years
Actual Volume	6.8 L
Actual Weight	4.1 KG
Length	537 mm
Outer Diameter	157 mm
Certifications	CE Approved (Not DOT Approved)

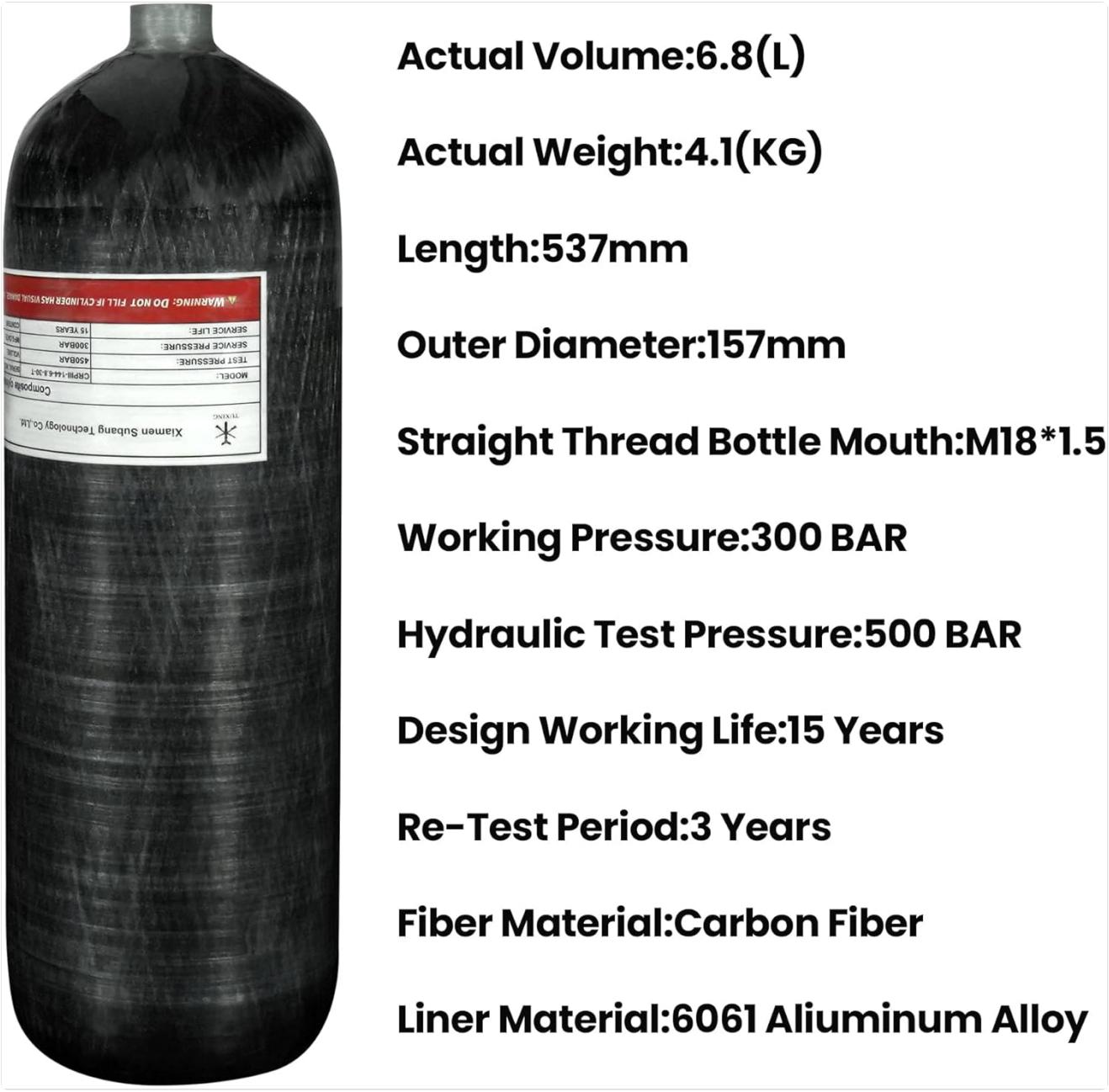


Image 8.1: Visual representation of key technical specifications.

9. Warranty and Support

For warranty information, technical support, or service inquiries, please contact TUXING customer service through your point of purchase or visit the official TUXING website. Please have your product model number and purchase date available when contacting support.

Always refer to the manufacturer's official channels for the most up-to-date warranty terms and support procedures.