

ML5070GQS Aircraft Potable Water Service Truck (Fuel-powered Type)



Wuxi Minglan Honest Technology Co., Ltd.

1. Product Introduction

The ML5070GQS Aircraft Potable Water Service Truck is a dedicated airport ground support equipment used to supply drinking (potable) water to aircraft. The vehicle is modified based on a Qingling Class II chassis and is equipped with a large-capacity water tank, enabling potable water service for various types of aircraft.

2. Product Features

2.1 The vehicle adopts a Qingling Class II chassis, featuring excellent maneuverability, lightweight chassis structure, and high reliability.

2.2 Equipped with a standard driver's cab, providing a wide field of vision.

2.3 Fitted with a large-capacity water tank to meet the potable water supply requirements of multiple aircraft.

2.4 The entire water supply system is manufactured using safe and hygienic materials.

2.5 The water supply pipeline is equipped with a safety valve; when the pipeline pressure exceeds a preset value, automatic pressure relief is activated to ensure the safety of the aircraft water supply system.

3. Product Standards

- IATA AHM-910 – Basic Requirements for Aircraft Ground Support Equipment
- IATA AHM-913 – Basic Safety Requirements for Aircraft Ground Support Equipment
- IATA AHM-970 – Technical Specifications for Self-Propelled Aircraft Potable Water Service Vehicles
- ISO 45001:1976 – Aircraft – Requirements for Potable Water Quality
- GB 1187-1981 – Water Hose for Water Delivery
- GB 1589-2004 – Overall Dimensions, Axle Loads and Mass Limits for Road Vehicles
- MH/T 6014-2018 – Aircraft Potable Water Service Vehicle

4. Main Performance Specifications

Item		Specifications
Chassis	Manufacturer	Qingling Isuzu (Chongqing) Automobile Co., Ltd
	Model	QL1070BUKAY
Engine	Manufacturer	Qingling Isuzu (Chongqing) Engine Co., Ltd.
	Model	4KH1CN6LB
Potable Water Tank Capacity (L)		4000
Water Supply Flow Rate (L/min)		120
Water Supply Pressure (MPa)		0.25~0.35
Curb Weight (kg)		3520
Overall Dimensions (L × W × H) (mm)		6985×1900×2290
Maximum Speed (km/h)		80
Working Platform Lifting Height (mm)		400~2900

5. Main Structure and Configuration

The ML5070GQS Aircraft Potable Water Service Vehicle mainly consists of the chassis assembly, potable water tank, water supply system, electrical system, and elevating working platform.

5.1 Chassis Assembly

1) Qingling Class II chassis equipped with an Isuzu diesel engine. The cab is fitted with a heating and air-conditioning system and power steering.

5.2 Potable Water Tank

1) The potable water tank is constructed from food-grade stainless steel plates.

2) The interior of the tank is equipped with baffle plates, which effectively reduce the impact and sloshing of the contained medium during vehicle operation, thereby ensuring vehicle stability and safety.

3) The longitudinal bottom and top of the tank are designed with an arc-shaped structure, which facilitates complete drainage of the liquid inside the tank. All weld seams and joints are smooth and even.

- 4) The potable water tank is equipped with a maintenance manhole. The manhole cover provides reliable sealing performance and a simple locking mechanism.
- 5) The tank is fitted with a level indicator, which clearly displays the liquid level inside the tank.
- 6) The upper part of the tank is equipped with a vent port.
- 7) The tank is mounted to the chassis via shock absorbers and is securely fastened. No relative movement occurs between the tank and the chassis during vehicle operation.
- 8) Two water filling inlets with strainers are installed on the top of the potable water tank. The filler caps are provided with reliable sealing measures and a simple locking device.
- 9) A drain valve is installed at the bottom of the potable water tank.
- 10) The top outer surface of the potable water tank is covered with anti-slip strips.

5.3 Water Supply System

The water supply system consists of a water pump, piping system, and water filling couplings.

- 1) Water pump: A stainless steel corrosion-resistant centrifugal pump driven by a hydraulic motor is adopted. A drain valve is installed at the lowest point of the pump casing.
- 2) Piping: The water supply piping system is made of safe and hygienic food-grade stainless steel materials. The water filling hose is a food-grade rubber-fabric reinforced hose. In addition, a stainless steel safety valve is installed in the piping system to protect the aircraft water tank from damage. The water supply pressure is adjustable within the range of 0.25–0.35 MPa.
- 3) Equipped with standard water filling couplings.
- 4) A resettable mechanical flow meter is installed.

5.4 Electrical System

The electrical system consists of two parts:

- 1) Chassis electrical system (including original chassis lighting, instruments, and other electrical components).
- 2) Dedicated control system for the aircraft potable water service vehicle, including controls for the elevating working platform, water pump start/stop operation, and auxiliary lighting control for the modified vehicle components.

5.5 Rear Working Platform

The rear working platform consists of an elevating platform, a water hose reel box, and a ladder assembly.

- 1) Elevating platform: The load capacity is 150 kg. The platform guardrails are made of stainless steel tubes, and the floor is constructed from aluminum alloy anti-slip checker plates.
- 2) Water hose reel box: The potable water filling hose leading to the elevating platform is stored in a hose storage box at the rear of the vehicle, enabling automatic retraction.
- 3) Ladder assembly: It consists of a structural frame with aluminum alloy checker plates laid on the surface, facilitating operators to access the water tank for maintenance and operation.

5.6 Safety Protection Devices

- Equipped with a reversing buzzer alarm device.
- The working platform is equipped with an anti-collision safety switch to prevent contact with the aircraft during platform lifting.
- The working platform is equipped with an emergency engine shutdown button; in case of emergency, pressing the button will stop the engine.
- The working platform is equipped with an emergency lowering unloading valve.

List of Special Tools and Spare Parts

No.	Item	Unit	Qty.	
1	Spare Wheel (Tire and Rim)	Set	1	
2	8 kg Fire Extinguisher	Set	1	
3	Vehicle-Mounted Tool Kit	Jack	Set	1
		Wheel Wrench	Set	1
		Warning Triangle	Set	1
		Adjustable Wrench	Set	1
		Slip-Joint Pliers	Set	1
		17-22 Double Open-End Wrench	Set	1
		12-14 Double open-end wrench	Set	1
		8-10 Double Open-End Wrench	Set	1
		Slotted/Phillips Screwdriver	Set	1
		Crank handle	Set	1
		Handle	Set	1
		Pry Bar	Set	1
4	Fan Belts (3 pcs)	Set	1	
5	Engine Oil Filter Element	Set	1	
6	Diesel Fuel Filter Element	Set	1	
7	Engine Air Filter Element	Set	1	
8	Hydraulic Oil Filter Element	Set	1	
9	Lift Cylinder Seal Kit	Set	1	
10	Fuse	Set	5	
11	Toggle Switch	Set	2	
12	Wheel Chock	Set	2	
13	Water Hose Coupling	Set	1	