

FLM5180GQXBYBEV

High-pressure Cleaning Truck

FULONGMA GROUP CO., LTD.

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INTRODUCTION

1. Overview

FLM5180GQXBYBEV electric high pressure cleaning truck adopts BYD1180D8HBEVD1 chassis and has two independent high and low pressure cleaning systems. The high-pressure cleaning system includes front-cleaning spray bars, single-point flushing nozzle, hand-held spray guns and reels and other operating devices. The low-pressure cleaning system includes front duckbill flushing nozzles, central side flushing nozzles, rear sprinklers, rear high water spray gun. In addition, the product can be equipped with operating devices such as rear upper sprayer, rear bottom sprayer, low-pressure single-point flushing nozzle, widen platform, and left and right side watering according to user needs.



Front



Rear



Left

2. Functions

This product has two cleaning system: high pressure cleaning and low-pressure cleaning. The high-pressure cleaning system includes a front-cleaning spray bar, a hand-held spray gun, and a single-point flushing nozzle. The low-pressure cleaning system includes front duckbill flushing nozzles, central side flushing nozzles, rear water sprayer, and rear water spray gun.

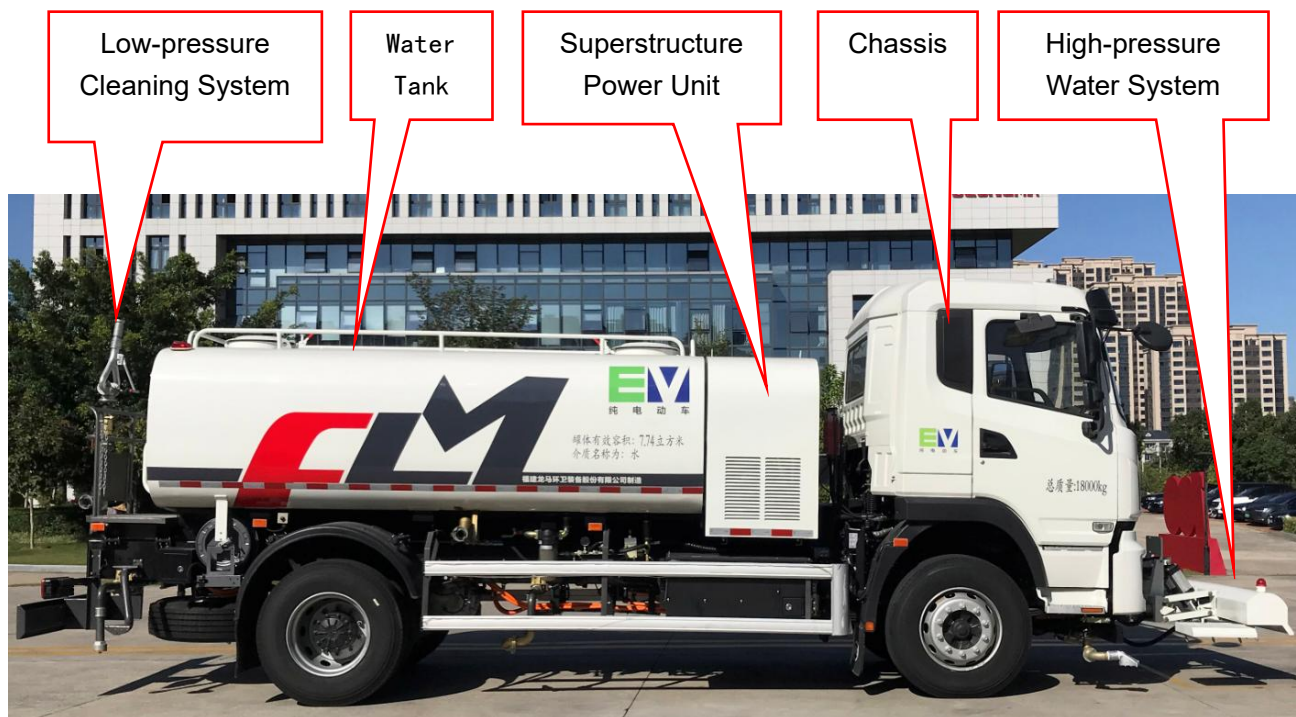
The front cleaning spray bar in the high-pressure cleaning system can be used to clean stubborn stains and sticky filth on squares and roads. The hand-held high-pressure spray gun can be widely used to clean general equipment including product bodies. The single-point flushing device can be used for cleaning. Realize the rotation in the left and right directions, which is used to clean the sewer and stubborn filth.

The front duckbill flushing nozzles, the middle side flushing nozzles and the rear sprinkler in the low-pressure cleaning system can be used for flushing and watering operations in roads, squares and other places. Water cannons are suitable for remote flushing and watering.

3. Applications

This truck can be widely used in the cleaning operations of urban roads, highways, squares and ports and docks, as well as the watering operations of green belt plants. Optional rear top spray and rear bottom spray systems are available for dust suppression. The optional left and right side watering device can water the greening on the left and right sides of the road. Optional automatic water cannon device to achieve remote flushing, sprinkling and watering. The vehicle has various functions, and one vehicle can be used for multiple purposes.

4. Structure



4.1 Chassis

Chassis: It is modified with BYD1180D8HBEVD1 chassis produced by BYD which has strong power and strong bearing capacity.

Motor: BYD-3425TZ-XS-A motor is used, rated power 150kW, rated speed 1910r/min.

4.2 Water Tank

The total volume of the water tank is 9.86m³, and the effective volume is 7.74m³. The volume of the water tank is large and the continuous working time is long. The water tank adopts the finite element analysis method to optimize the design, and has passed the strict reliability test. The inside of the water tank adopts the professional anti-corrosion coating of epoxy coal tar paint to ensure the anti-corrosion effect.

4.3 Power & Transmission

The power system of the whole vehicle adopts the superstructure motor to drive the high-pressure water pump, and the chassis motor drives the self-priming two-stage centrifugal pump. The two sets of waterway systems can be used alone or in combination to clean road surfaces with different levels of pollution.

4.4 High-pressure Cleaning System

High-pressure water pump: The plunger pump of famous manufacturer is used, which has high efficiency and good reliability. The rated working pressure of the pump is 10MPa, and the rated flow is 142L/min.

Front cleaning water spray bar: it has a simple and elegant appearance, the cleaning width is not less than 3m, and it can be rotated left and right. If there is an obstacle ahead, the left and right spray bar can be retracted inwards, and then automatically return to the normal position when passing it.

Single-point flushing device: It can realize left and right rotation, and can be used to clean stubborn filth on roads.

High-pressure cleaning reel: When in use, it can be directly connected with a quick connector, and the reel comes with a 20m water hose which can be used for body cleaning, road cleaning and other operations.

4.5 Low-pressure Cleaning System

Low-pressure water pump: The self-priming two-stage centrifugal pump of Hangzhou WLOONG is adopted, which has high transmission efficiency and good reliability. The rated working speed of the pump is 1380r/min, the rated flow is 50 m³/h, and the head is 110m.

Front duckbill flushing nozzle: It's controlled by pneumatics, suitable for flushing road surfaces and curbs, and the flushing direction can be adjusted within the range of 360° left and right and 360° up and down.

Central side flushing nozzle: There are conical nozzles on the left and right in the middle, which can perform two-way flushing, all controlled by pneumatics. The nozzle can be adjusted 360° left and right, 360° up and down, and the flushing width is not less than 24 meters.

Rear sprinkler: The rear sprinkler is opened and closed by pneumatic control. When two nozzles are turned on at the same time, the spraying width shall not be less than 16 meters.

Rear water spray gun: The water spray gun is an aluminum long-range water gun. It is installed at the rear of the vehicle, with flexible operation and a wide range of working angles. It can be used to spray objects of various heights and remove some difficult-to-clean stains.

The water spray gun can be rotated 360°, and the gun body can be tilted up and down. Rotate the adjustment sleeve at the front of the gun body forward and reverse to adjust the spray shape (column or mist) of the water gun. The water spray gun is controlled by a manual ball valve, with a range of not less than 50 meters, and also has an auxiliary fire-fighting function.

4.6 Control

The vehicle adopts a control mode that combines electrical control and manual control. The front cleaning spray bar, the guardrail cleaning device, the single-point flushing device in the high-pressure waterway, and the front duckbill nozzles, the central side flushing nozzles, and the rear sprinklers in the low-pressure waterway system are all controlled by the control box in the cab.



The hand-held spray gun is turned on and off by electric control, and its control box is located on the right rear side of the vehicle.



5. Main Specifications

Items	Specifications
Chassis Model	BYD1180D8HBEVD1
Chassis Model Manufacturer	BYD Auto Industry Co., Ltd.
Battery Type/Model/Manufacturer	Lithium iron phosphate battery battery/C15FHE/Shenzhen BYD Lithium Battery Co., Ltd. (single), Shanwei BYD Automobile Co., Ltd. (assembly)
Battery Capacity (kWh)	217.6
Battery System Density (W·h/kg)	130.8
Driving Motor Model	BYD-3425TZ-XS-A
Driving Motor Rated Power/Rotation Speed/Torque (kW/r/min/N.m)	150/1910/750
Driving Motor Peak Power/Rotation Speed/Torque (kW/r/min/N.m)	180/5000/1500
Driving Motor Type & Cooling Method	Permanent magnet synchronous motor, water cooling
Range (km)	250
Dimension (L×W×H) (mm)	Type-A (High-pressure Cleaning Truck): 9220×2530×3065
	Type-B (Water Truck): 8160×2530×3065
	Type-C (Water Truck with Front Automatic Water Cannon): 8600×2530×3065
GVW (kg)	18000
Curb Weight (kg)	Type-A: 10130 Type-B and C: 9830

Payload (kg)	Type-A: 7740 Type-B and C: 8040
Top Speed (km/h)	85
Wheelbase (mm)	4500
Passengers	2
Front/Rear Overhang (mm)	Type-A (High-pressure Cleaning Truck): 2500/ 2220
	Type-B (Water Truck): 1440/ 2220
	Type-C (Water Truck with Front Automatic Water Cannon): 1880/ 2220
Approach/Departure Angle (°)	14/13
Tank Volume (m³)	7.74
Sprinkler Pump Model	65QZB-50/110N (WLOONG)
Sprinkler Pump Flow (m³/h)	50
Sprinkler Pump Head (m)	110
Rear Water Gun Range (m)	≥50
Sprinkling Width (m)	≥16
Flushing Width (m)	≥24
Air Conditioning	Warm/Cold
Type-A (High-pressure Cleaning Truck) Configuration	
Superstructure Motor Model/Manufacturer/Rated Power (kw)	WR510-01025/ Fujian Wanrun /30 WR510-01055/ Fujian Wanrun /45
Superstructure Motor, Electric System Waterproof Level	IP67
High-pressure Water Pump Model	PT40 (PINFL)
High-pressure Water Pump Pressure (MPa)	10
High-pressure Water Pump Flow (L/min)	142

Front Cleaning Bar Function	With automatic obstacle avoidance function, it can swing 30° left and right
Cleaning Width (m)	≥3
Speed Limiter	The high-pressure water pump adopts a one-button switch operation, and the speed of the high-pressure water pump has been debugged before leaving the factory, which can avoid human misoperation

6. Advantages

No.	Advantages	Descriptions
1	Outstanding Performance	The model adopts a modular design, and can be equipped with various devices such as water suction, left and right side watering, rear and upper sprayer, and lower sprayer to achieve multiple uses in one truck, and has a high cost performance.
2	Good Quality	The tank body is made of Q235B material, and stainless-steel tank body (SUS304) is also optional. The interior adopts a wave-proof board buffer structure, and the bottom frame adopts a frame structure, which ensures the overall structural strength and rigidity.
3	Safe & Reliable	This product pays attention to the safety of use. The special design of protective devices and warning lights can effectively prevent various safety problems during operation.
4	User-friendly Experience	The driver can complete various operations in the cab, and can switch the working state of the product according to the road conditions. The water tank is equipped with a low water level alarm system, which can realize the automatic alarm protection function and prevent the water pump from being damaged due to lack of water.

5	Easy Maintenance	The water pump, pipeline and water valve are all equipped with the function of draining water to prevent the product from being damaged by freezing and cracking in a low temperature environment.
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7. Working Devices

No.	Items	Descriptions
1	Front Duckbill Nozzle	
	Functions	It is used for flushing of roads, squares and other places.
	Structure & Characteristics	Controlled by a pneumatic system, it is suitable for flushing road surfaces and curbs, and the flushing direction of the nozzle can be adjusted.
2	Central Side Flushing Nozzle	
	Functions	It is used for flushing of roads, squares and other places.
	Structure & Characteristics	Flushing width: $\geq 24\text{m}$ There is a nozzle on the left and right for two-way flushing, both controlled by a pneumatic system. By adjusting the angle of the two connecting flanges, the nozzle angle can be adjusted arbitrarily.

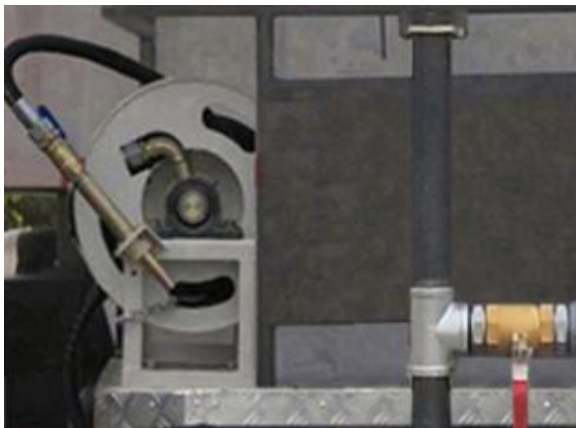
3	Rear Sprinkler	
	Functions	It is used for flushing of roads, squares and other places.
	Structure & Characteristics	Sprinkling width $\geq 16\text{m}$ Controlled by a pneumatic system.
4	Rear Spray Water Gun	
	Functions	For remote flushing and auxiliary firefighting operations, it can be rotated in all directions.
	Structure & Characteristics	Range $\geq 50\text{m}$ Controlled by a manual ball valve, the water gun can rotate 360° left and right, and can be tilted up and down. Rotate the adjustment sleeve at the front of the gun body forward and reverse to adjust the spray shape (column or mist) of the water flow.
5	Front Spray Bar	

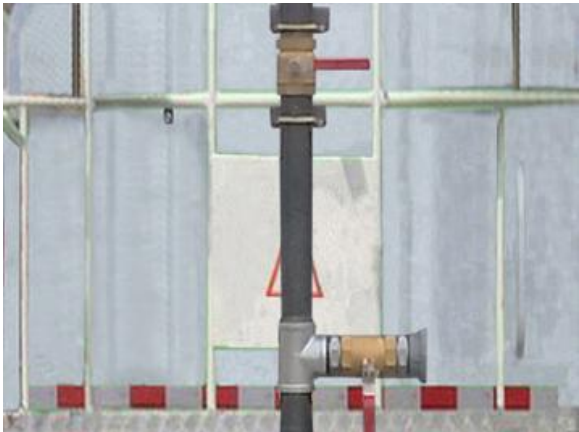
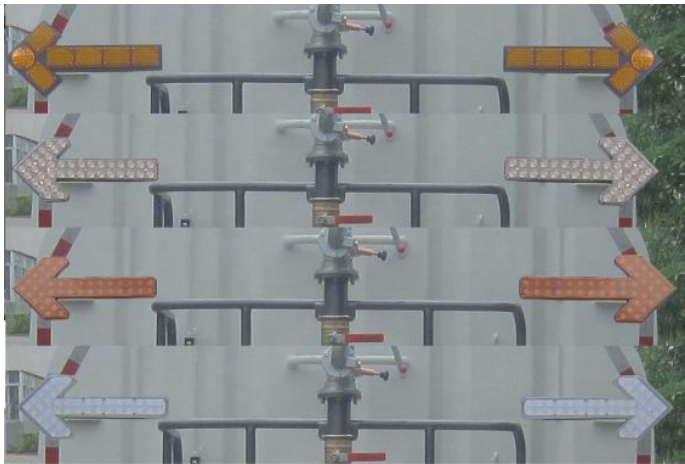
	Functions	It can be used to clean stubborn stains and sticky objects on squares and pavements.	
	Structure & Characteristics	Flushing width $\geq 3\text{m}$ Left and right yaw angle: $\pm 15^\circ$ The cylinder controls the water circuit breaking, up and down lifting, left and right rotation and side spray bar deployment.	
6	Right Guardrail Cleaning		
	Functions	When the vehicle is driving, high-pressure cleaning can be performed on the curb, guardrail base, and road guardrail.	
	Structure & Characteristics	The water circuit is controlled by the cylinder to break, and the angle can be adjusted to realize the yaw in the up, down, left and right directions.	
7	Single-point Flushing Nozzle		
	Functions	The fixed-point cleaning device can realize the rotation in the up, down, left and right directions, which is convenient for clearing the road surface stains at a fixed point.	
	Structure & Characteristics	The water circuit is controlled by the cylinder to break, and the push-pull flexible shaft controls the rotation in the left	

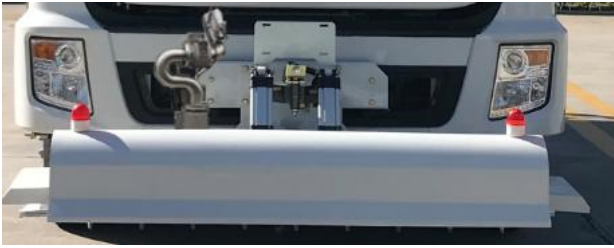
		and right directions.
8	Hand-held Water Spray Gun	
	Functions	For truck cleaning, road cleaning and other operations.
	Structure & Characteristics	Cleaning pressure: 8MPa The reel comes with a 10m water hose.

8. Optional Selected

No.	Items	Descriptions
1	Upper Sprayer	
	Functions	Dust reduction, heatstroke prevention and cooling operations.
	Structure & Characteristics	Located at the top and rear end of the water tank, it is equipped with a stainless steel spray nozzle, which has a good effect of dust reduction and cooling.
2	Bottom Sprayer	
	Functions	Dust reduction, heatstroke prevention and cooling operations.

	Structure & Characteristics	Located on the rear bumper, equipped with stainless steel spray nozzles, with large spray flow and good dust reduction and cooling effect.
3	Left & Right Watering Nozzle	
	Functions	Water the green belt.
	Structure & Characteristics	There are 8 lotus spray heads on the left and right, located on both sides of the top of the water tank, and the angle of the spray heads can be adjusted.
4	Water Spray Gun	
	Functions	Can be used for truck wash, cleaning.
	Structure & Characteristics	Equipped with a 10-meter hose reel, located on the rear work platform.

5	Widen Platform	
	Functions	It can be operated by two people on the rear platform.
	Structure & Characteristics	It is located at the rear of the tank, and the area of the rear platform is enlarged.
6	Rear Indicator	
	Functions	Different types of arrow lights are optional.
	Structure & Characteristics	Customers can freely choose according to their needs.
7	Left Automatic Water Cannon	
	Functions	For remote flushing and auxiliary firefighting operations, it can be rotated in all directions.
	Structure &	Realize in-cab control, easy to operate.

	Characteristics	
8	Right Automatic Water Cannon	
	Functions	For remote flushing and auxiliary firefighting operations, it can be rotated in all directions.
	Structure & Characteristics	Realize in-cab control, easy to operate.