

PM50/G1 foam fire truck

Technical specifications



(The picture is for reference only, the actual product shall prevail)

Weave:		Audit:		Approve:	
Sign:					
Release	October 23, 2023				



Version number: official version

Date:	
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1. Product overview and characteristics

PM50/G1 foam fire truck is a multi-functional main battle vehicle that combines the functions of a water collection tank fire truck and a foam fire truck. The product uses water to mix with a Class B foam system, which greatly improves fire extinguishing efficiency. It is widely used in fighting fires in urban buildings, residential buildings, shopping malls, etc., and is the first choice for dispatch vehicles.

[Product Advantages & Highlights]

1. Strong bicycle combat ability

The Mercedes-Benz Arocs 1833E6 chassis with a single-row cab has a rated engine power of 241kW, strong power, safe and reliable quality; With a multi-crew independent crew room, the total number of crew members reaches 2+3+4 people, which is suitable for centralized projection of fire combat formations.

2. The fire protection system is convenient and fast to operate, and the safety is high

Set a variety of one-click fire operation buttons to greatly improve the efficiency of fire protection operations.

3. Intelligent self-receiving water supply function

Intelligent anti-tank technology, the water injection port can be automatically opened and closed according to the height of the tank level, which not only effectively eliminates the occurrence of tank rise accidents, but also realizes continuous and uninterrupted water supply and fire extinguishing. It can automatically control and adjust the engine speed and pump working pressure; Automatically control the pressure of the outlet flow and carry out automatic water supply operations according to the set constant pressure or flow.

4. Centralized control of fire protection system

The operation of the vehicle fire protection system is concentrated

at the rear of the vehicle, and there is a rear force take-off combination button and an LCD screen for easy operation.

2. Main technical parameters of the vehicle

project		unit	parameter	Tolerance range
Dimensional parameters	Dimensions (length×width× height)	mm	8560×2510×3720	The announcement shall prevail
	wheelbase	mm	4500	—
Driving performance parameters	The number of passengers in the cab	persons	2+4+3	—
	Engine power rating	Kw	241	National VI emissions
	curb weight	medicinal history	11225	The announcement shall prevail
	Full load quality	medicinal history	16800	The announcement shall prevail
	specific power	kW/t	≥14.2	—
	Maximum speed	km/h	95	The announcement shall prevail

	Approach angle		°	13	—
	Leaving the corner		°	11	—
	Maximum climb		%	30	—
Liquid capacity	water		medi cal hist ory	4400	The test report shall prevail
			medi cal hist ory	500	
Fire performance	Fire pump	Model	—	CB10/60-50FBU	—
		Rated flow rate	L/s	60	The test report shall prevail
		Rated pressure	MPa	1.0	
		Water diversion time	s	≤60	
parameters	water cannon	Model	—	PL10/64-8500-02	—
		Rated flow rate	L/s	48	The test report shall prevail
		Rated pressure	MPa	≤1.0	
		range	m	≥70	
	Fire cannon	Model	—	PL10/64-8500-02	—
		Rated flow rate	L/s	48	The test report shall prevail
		Rated pressure	MPa	≤1.0	
		range	m	≥60	

	The swing range of the gun head	Turning angle	°	≥270	—
		Pitch angle	°	≤-7~≥+45	—

3. Main configuration of vehicles

Vehicle Name	PM50/G1 foam fire truck
Vehicle chassis	
Chassis model	Arocs 1833E6
Drive form	4×2
motor	Model Number: OM470LA. 6-60; Displacement: 10. 677L; Rated power/speed: 241kW/1600r/min; Maximum torque/speed: 1700N•m/1100r/min; Emission standard: National VI; Inline-six four-stroke direct-injection water-cooled electronically controlled engine with fuel preheat.
Gearbox	Mercedes-Benz 12-speed fully automatic transmission, intelligent shifting.
Power take-off	Chassis original imported gearbox side power take-off
Electrical system	Generator: 28V/120A; Battery: 2×12V/170A. h, battery box with lock.
Fuel tank	290L, with fuel filter, fuel tank cover with lock.
Urea tank	60 liter urea tank
tyre	Front axle: 315/80 R22.5, radial wire tires, 2 in total; Rear axle: 315/80 R22.5, radial wire tires, 4 in total; Spare tire: 1 (with the car).

cab	<ol style="list-style-type: none"> 1. Mercedes-Benz Arocs standard short cab, 2 occupants, hydraulic lifting and flipping device; 2. The driver's air suspension is adjustable seat, the co-pilot can fold the seat, and each seat is equipped with a three-point seat belt; 3. Electric windows, electric heated rearview mirrors, front lower mirrors, right blind mirrors, central locking, wide-angle rearview mirrors on both sides; 4. Cab heating system, air conditioning system, intelligent maintenance system; 5. Radio with USB interface, reversing alarm device.
Braking system	<ol style="list-style-type: none"> 1. Independent dual-circuit brake system, front and rear disc brakes, automatic adjustment of brake clearance, and alarm prompt when the brake lining needs to be replaced; 2. Auxiliary function of standing hill start (anti-slip); 3. Auxiliary braking: compression auxiliary braking in the engine cylinder; 4. Electronically controlled spring-loaded handbrake; 5. Brake pipeline with dryer; 6. Intelligent braking system, standard ABS brake anti-lock device, ASR anti-side slip system, standard EBS electronic brake system and ESP electronic body stability system.
Separate crew compartment	
Separate crew compartment	<ol style="list-style-type: none"> 1. Capacity: 3+4 people, equipped with 4 special seats for fire fighting (can carry air respirators); 2. The main body is an all-aluminum alloy structure with high-grade flame retardant material interior; 3. Equipped with high-power overhead air conditioning and multi-functional intercom system;

	4. Anti-slip pedals for getting on and off the car.	
Fire hydraulic system		
Fire tank	material	PP polymer plastic tank (optional replacement of stainless steel tank);
	Plate thickness	The bottom and side panels are 20mm, and the rest is 15mm
	Liquid capacity	Water: 4400kg; Class B foam: 500kg.
	The format of the anti-swing plate mesh in the tank is set with vertical and horizontal anti-swing plates.	
	The top of the tank is equipped with a manhole with a diameter of 450mm, a tank lid with a quick opening/locking device, and a sewage outlet and ball valve at the bottom of the tank.	
	The tank is equipped with a liquid level display; There is a filter from the water tank to the water pump inlet, which is easy to clean and maintain.	
	Water tank filling facilities: 2 water inlet pipes (DN80) for filling water into the water tank, pipe teeth (DN80) light alloy material interface and stuffy cover; 1 pump to fill the water tank pipe DN80 with control valve.	
Fire pump	Foaming liquid discharge facility: 1 foaming liquid discharge pipeline (DN40), equipped with ball valve DN40.	
	Brand: Hill; Model: CB10/60-50FBU; cast iron housing, copper impeller, stainless steel impeller shaft; Bare pump: 60L/s @ 1.0MPa; Truck pump: 60L/s @ 1.0MPa.	

Fire cannon	Brand: Elke; Model: PL10/64-8500-02; Naked cannon parameters: 64L/s@1.0MPa; Vehicle gun parameters: 48L/s@1.0MPa.																				
Class B foam system	Negative pressure type fully automatic, XCMG self-made, the mixing ratio is infinitely adjustable, the adjustable range is 1%-10%; It is equipped with DN50 independent foam suction interface, equipped with DN50 interface and stuffy lid.																				
Fire pipeline system	1 DN150 suction port connected to the suction pipe, interface, filter, stuffy cover; 1 water inlet from the water tank to the pump DN125. 1 pipeline DN65 with water pump filling the water tank. 4 DN80 water outlets with water outlet valves and DN80 interfaces and stuffy covers are distributed on both sides. It is equipped with a proportional mixer, water and foam pipeline whole process cleaning system.																				
Fire interface configuration	<table border="1" data-bbox="446 1260 1341 2010"> <thead> <tr> <th data-bbox="446 1260 695 1327">interface</th><th data-bbox="695 1260 906 1327">specification</th><th data-bbox="906 1260 1092 1327">valve</th><th data-bbox="1092 1260 1341 1327">location</th></tr> </thead> <tbody> <tr> <td data-bbox="446 1327 695 1522">Water is sucked out of the pump</td><td data-bbox="695 1327 906 1522">1×DN150</td><td data-bbox="906 1327 1092 1522">With a stuffy cover</td><td data-bbox="1092 1327 1341 1522">Rear side of the car body</td></tr> <tr> <td data-bbox="446 1522 695 1695">Pressure out of water</td><td data-bbox="695 1522 906 1695">4×DN80</td><td data-bbox="906 1522 1092 1695">Globe valve (antifreeze type)</td><td data-bbox="1092 1522 1341 1695">Both sides of the car body</td></tr> <tr> <td data-bbox="446 1695 695 1868">Upper Gun Interface (Valve)</td><td data-bbox="695 1695 906 1868">1×DN80</td><td data-bbox="906 1695 1092 1868">Pneumatic valves</td><td data-bbox="1092 1695 1341 1868">Appropriate location</td></tr> <tr> <td data-bbox="446 1868 695 2010">The tank is pumped to suck</td><td data-bbox="695 1868 906 2010">1×DN125</td><td data-bbox="906 1868 1092 2010">Pneumatic valves</td><td data-bbox="1092 1868 1341 2010">Appropriate location</td></tr> </tbody> </table>	interface	specification	valve	location	Water is sucked out of the pump	1×DN150	With a stuffy cover	Rear side of the car body	Pressure out of water	4×DN80	Globe valve (antifreeze type)	Both sides of the car body	Upper Gun Interface (Valve)	1×DN80	Pneumatic valves	Appropriate location	The tank is pumped to suck	1×DN125	Pneumatic valves	Appropriate location
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	water			
	Pump to tank to fill with water	1×DN65	Pneumatic valves	Appropriate location
	Fill the tank with water	2×DN80	It comes with a stuffy cover	Both sides of the car body
	Water tank discharge	1×DN40	Manual valve	Appropriate location
	External suction foam	1×DN50	Manual valve with stuffy cover	Appropriate location
Waterway interface form: inner buckle type or snap type (fast) can be selected It is recommended to use the inner buckle connector in cold areas.				
 				
Electrical control system				
Pump chamber control system	modular XCMG control panel; Equipped with a 10-inch color LCD display, it can display the opening status of each control valve and pipeline, display the real-time pressure, flow rate and mixing ratio of the fire protection system, display the real-time liquid level of the water tank and foam tank, display the real-time speed of the engine and fire pump, and have the function of self-diagnosis of faults;			

	<p>Set up a variety of one-key operation modes such as one-click water pumping and one-click foam to greatly improve the efficiency of firefighters.</p>
Sirens and lights	<p>Installed siren and amplification device in the cab, power: 100W;</p> <p>a 1.8m long row of red strobe warning lights is installed at the front end of the top of the cab;</p> <p>Both sides of the body are equipped with flashing warning lights.</p>
Sign lights and lights	<p>The car body is equipped with safety side marker lights, rear profile lights, and yellow turn signals on both sides;</p> <p>There are lights in the pump room and equipment box.</p> <p>The side and rear of the car body are equipped with external lights to ensure night operation.</p>
Automatic charging device	<p>The battery can be charged with 220V mains, and the charging plug will automatically fall off when the fire truck starts.</p>
Imaging system	<p>Equipped with a driving monitoring system (navigation, driving record, reversing image integrated)</p>
Main structural parts and others	
equipment box and pump room	<p>Material and structure: all aluminum alloy material, aluminum alloy welded frame + aluminum alloy flat plate.</p> <p>Roller shutter doors: all equipment compartments and pump rooms are equipped with locking roller shutter doors.</p> <p>Flap pedal: Locked with mechanical spring and locking pin.</p> <p>Equipment layout: Utilization of internal space and equipment layout principles:</p> <p>(1) All equipment is placed to ensure that the team members do not interfere with each other when the battle unfolds;</p>

	<ul style="list-style-type: none"> (2) Place equipment according to the frequency of use and the weight and shape of the equipment; (3) Place equipment according to the logical relationship between combat formation and equipment use; (4) Place equipment scientifically according to human behavior.
Subframe	<p>It is welded with high-strength steel and has frame-type subframe design technology to improve the stability and service life of the vehicle, increase the maintenance space, and make the vehicle easy to maintain.</p>
Other configurations	
Optional configuration	<ol style="list-style-type: none"> 1. Optional in the cold area of the north: pump room insulation and heating device; 2. Vehicle spray self-protection system; 3. Electric ladder frame; 4. 360° surround view monitoring system (navigation, driving record, reversing image, reversing radar integrated).

4. Description of main components

1. Fire protection system

The fire protection system adopts imported American Hill fire pump, and is equipped with a negative pressure automatic foam system, which can be applied to all kinds of foam. Imported American Elk manual fire cannon with foam gun head. The whole vehicle is controlled by pneumatic valves, which can effectively improve the efficiency of fire protection operations.

2. Fire tank

The tank is made of polymer PP material, which has super anti-corrosion ability, suitable for all kinds of harsh water quality, and the anti-corrosion ability is much greater than that of stainless steel. At the same time, it is lightweight and easy to maintain.

3. Electrical system

The vehicle control adopts CAN bus technology: it is equipped with a controller, LCD monitor, and a quick operation button for the fire protection system, which can realize one-click control of fire protection operations.

4. Hoardings and equipment boxes

The body as a whole is made of all-aluminum alloy, the internal equipment box is made of aluminum plate, and there are aluminum alloy roller shutter doors outside; The arrangement of the equipment box follows the ergonomic principle, the fixed arrangement of the equipment is compact and reasonable, the equipment is easy to access, the equipment box is equipped with automatic lighting, and there is a drainage hole.

5. Main configuration table

serial number	Part name	Supplier
1	chassis	Daimler AG, Germany
2	Fire pump	American Hill
3	Fire cannon	Elk, USA
4	Fire fluid tank	XCMG Fire Protection
5	Foam system	XCMG Fire Protection

6. Random spare parts and packing list

1. Fire truck spare parts list

serial number	Name, specification and model	unit	quantity	remark
1	Fuse 50A	piece	1	
2	JQ201S-PL0 Relay 24V30A	piece	1	
3	Fuse 10A 5×20	piece	2	

4	Fuse 15A 5×20	piece	2	
5	20A 5×20 fuse	piece	2	

2. Fire truck accompanying tools

serial number	Name, specification and model	unit	quantity	Remarks
1	Cassette Fire Hose 16-80-20	volume	8	
2	16-65-20 Cassette Fire Hose	volume	8	
3	DC switch water gun QZG3.5/7.5	item	2	
4	Deflected DC Spray Water Gun QLD6.0/8I	item	2	
5	Foam Tube Gun QP8/0.7Z (DN65 Cassette Mount)	item	2	
6	KXK65 (Inner Buckle)/80 (Female) Special-shaped Interface	item	2	
7	KJK80 (male)/65 (female) medium voltage cassette reducer	item	4	GB/T3452. 1- 2005
8	FJ150 male/80 male× 2-1.6 two water collectors	item	1	GB/T3452. 1- 2005
9	FIII80 雄/65 雌×3-2.5 三分水器	item	2	GB/T3452. 1- 2005
10	Suction pipe wrench FS150	item	2	GB/T3452. 1- 2005
11	Hook head wrench 78-85	item	1	GB/T3452. 1- 2005
12	Rubber hammer JFRC-12	item	1	GB/T3452. 1- 2005
13	Ground hydrant wrench FS450	item	1	
14	Underground hydrant wrench FBX800	item	1	
15	Dry powder fire extinguisher 8kg	item	1	

16	Water belt bridge protection	item	2	
17	Water hose wrapping cloth	item	8	
18	Hose hook	item	8	
19	Fire Sharp Axe GFJ815	handful	1	
20	Rechargeable portable light	piece	2	
21	Φ150×2000 suction pipe	root	4	
22	Φ150 Quick plug water filter assembly	item	1	
23	150 Male snail rings	item	1	
24	Allen wrench 3-17	cover	1	
25	Live wrench 6 inches	item	1	
26	Live wrench 12 inches	item	1	
27	Slotted screwdriver 150×6	item	1	
28	Phillips screwdriver 150×6	item	1	
29	Carp tongs 8 inches	item	1	

3. Fire truck packing list

serial number	Name	unit	quantity	remark
1	PM50/G1 product certificate	portion	1	
2	PM50/G1 Operation/Service Manual	volume	1	
3	PM50/G1 parts atlas	volume	1	
4	Fire pump instruction manual	portion	1	Purchased items come with their own
5	Fire cannon instruction manual	portion	1	Purchased items come with their own
6	Documents specified in the chassis	portion	1	According to the original

				packaging
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7. Product photos (for reference only)



