

# AP50/G3 Compressed Air Foam Fire Truck Technical specifications



(The picture is a China VIA emission standard product, for reference only)

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Version number: official version

Release	Year, month, day
Date:	



## 1. Product overview and characteristics

AP50/G3 compressed air foam fire truck is a multi-functional urban 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 A and B foam system, which greatly improves the fire extinguishing efficiency. At the same time, it is equipped with power generation lighting system, traction system, rescue equipment and protective equipment. This vehicle is a multi-functional firefighting main battle vehicle that integrates various functions such as lighting, traction, rescue, and fire protection.

This product is the first dispatch vehicle for prominent public safety accidents such as urban buildings, residential buildings and shopping malls, urban traffic accidents, building collapses, earthquake disasters and personnel distress.

### [Product Advantages & Highlights]

#### 1. Strong bicycle combat ability

The China VI TGM 18.290 Bman chassis with double-row cab has a rated power of 215kw, strong power performance, safe and reliable quality, and a crew of 6 people, which is suitable for centralized delivery of fire fighting formations.

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

Fully integrated one-touch Class A compressed air foam system + automatic Class B foam system, easy and fast operation. Set a variety of one-click fire operation buttons to greatly improve the efficiency of fire protection operations.

#### 3. Safety protection settings, high degree of intelligence

The whole machine adopts a variety of safety protection devices to ensure the safety and reliability of the whole machine in the process



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of driving, rescue and fire extinguishing, and the details are thoughtful, and the multi-layer equipment box structure lighting adopts light strips to achieve the lighting status of each floor space to meet the use requirements.

#### 4. 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.

#### 5. Centralized control of fire protection system

The operation of the vehicle fire protection system is concentrated at the rear of the vehicle, and it is equipped with a rear force take-off combination button and a multi-functional LCD screen for easy operation.

## 2. Main performance parameters of the vehicle

project		unit	parameter	Tolerance range
Dimensional parameters	Dimensions (length×width × height)	mm	8900×2500×3540	The announcement shall prevail
	wheelbase	mm	4425	—
Driving	The number of passengers in the cab	person	2+4	—

performance parameters	Engine power rating		Kw	215	National VI emissions
	curb weight		medical history	10230	The announcement shall prevail
	Full load quality		medical history	15600	The announcement shall prevail
	specific power		kW/t	$\geq 13.6$	—
	Maximum speed		km/h	95	The announcement shall prevail
	Approach angle		°	21	—
	Leaving the corner		°	11	—
	Maximum climb		%	30	—
Fire performance parameters	Liquid capacity	water	medical history	4400	The test report shall prevail
		Class A foam	medical history	220	

	Fire pump	Category B foam		medical history	300	
		Model		—	CB10/60-50FBU	—
		Rated flow rate		L/s	$\geq 60$	The test report shall prevail
		Rated pressure		MPa	$\geq 1.0$	
		Water diversion time		m	$\leq 60$	
	Fire cannon	water cannon	Model	—	PL10/64-8500-02	—
			Rated flow rate	L/s	48	The test report shall prevail
			Rated pressure	MPa	$\leq 1.0$	
			range	m	$\geq 70$	
		Foam cannon	Model	—	PL10/64-8500-02	—
			Rated flow rate	L/s	48	The test report shall prevail
			Rated pressure	MPa	$\leq 1.0$	
			range	m	$\geq 60$	
		The swing range of the gun head	Turning angle	°	$\geq 270$	—
			Pitch angle	°	$\leq -7 \sim \geq +45$	—
	Compressed foam	Dry	flow rate	L/s	$\geq 3$	The test report
			range	m	$\geq 12$	

	air foam system	Wet foam	flow rate	L/s	$\geq 6$	shall prevail
			range	m	$\geq 20$	
Job perf orma nce para mete rs	capsta n	Rated pulling force		kn	50	100%~125%
		Wire rope length		m	33	—
	Liftin g lights	Ground clearance		m	$\geq 6$	The test report shall prevail
		Rising time		s	$\leq 120$	
		Drop time		s	$\leq 120$	
		Horizontal slewing angle		°	$\geq 360$	
		Pitch angle		°	$\leq -90 \sim \geq +150$	
		Horizontal slewing time		s	$\leq 50$	
		pitch time		s	$\leq 50$	

### 3. Main configuration

Vehicle Name	AP50/G3 Compressed Air Foam Fire Truck (City Fire Truck)
Vehicle chassis	
Chassis model	MAN TGM 18.290 B
Drive form	4×2
motor	型号:MAN D0836LFLBG Displacement: 6.871L; Rated power/speed: 215kw/2200rpm; Maximum torque/speed: 1150N·m/1200~1700r/min; Emission standard: National VI; Six-cylinder in-line turbocharged intercooled electronically controlled common rail injection diesel engine.
Gearbox	Manual transmission with 9 forward and 1 reverse gears.
Power take-	Chassis original imported gearbox side power take-off

off	
Electrical system	Generator: 28V/120A; Battery: 2×12V/175A. h.
Fuel tank	150L, with fuel filter, fuel tank cover with lock.
Urea tank	20 liter urea tank
tyre	Front axle: 295/80 R22.5, radial wire tires, 2 in total; Rear axle: 295/80 R22.5, radial wire tires, 4 in total; Spare tire: 1 (with the car).
cab	<ol style="list-style-type: none"> <li>1. Four-door double-row cab, number of occupants: 2+4;</li> <li>2. High comfort air spring driver's seat, co-pilot single adjustable passenger seat, front seat with three-point seat belt, driver's side with seat belt display, rear row standard with 4 air pager seats, equipped with three-point seat belt;</li> <li>3. Automatic temperature control environmental protection air conditioning system (R134A refrigerant, no freon), heating air system;</li> <li>4. Electric windows on both sides of the front row, manual windows on both sides of the rear row, electric and electrically heated rearview mirrors on both sides, electric and electrically heated wide-angle mirrors on both sides, electric and electrically heated front lower mirrors on the right, and blind mirrors on the right side;</li> <li>5. Cab central control door lock, on-board multimedia, driver's side reading light.</li> </ol>
Braking system	<ol style="list-style-type: none"> <li>1. MAN BrakeMatic electronic braking system (EBS) includes anti-lock braking system (ABS);</li> <li>2. Front axle disc brake, rear axle disc brake;</li> <li>3. Auxiliary braking: engine exhaust braking;</li> <li>4. Equipped with vehicle anti-skid system (ASR) and body</li> </ol>



	stability system (ESP);  5. Heated air dryer.	
Fire protection 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	水 4400kg+A 类泡沫 220kg+B 类泡沫 300kg
	The format of the anti-swing plate mesh in the tank is set with vertical and horizontal anti-swing plates.	
	The top of the water tank is equipped with a Φ450mm manhole, a tank lid equipped with a quick opening/locking device, and a sewage outlet and ball valve at the bottom of the tank.	
	The tank is equipped with 3 level displays; 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 tank with pipe DN65, equipped with control valve.	
	Foam tank: 1 pipeline for foaming liquid (DN40), equipped with ball valve DN40.	
Class A foam fire extinguishing	The water tank is connected to the subframe through elastic connections to reduce the impact of road bumps on the tank structure during driving.	
	Original imported American Hill compressed air foam system, including fire pump, air compressor, foam mixer, control system.	

system	
Fire pump	<p>Brand: American Hill;</p> <p>Model: CB10/60-50FBU;</p> <p>Cast iron pump casing, copper impeller, stainless steel impeller shaft;</p> <p>裸泵参数: 60L/S@1.0MPa;</p> <p>Parameters of on-board pump: <math>\geq 1.0\text{MPa}</math>, <math>\geq 60\text{L/s}</math>.</p>
air compressor	<p>Rated displacement: <math>\geq 56\text{ l/s}</math>;</p> <p>Rated pressure: <math>0.80\text{MPa}</math>;</p> <p>Form: Integrated twin screw type.</p>
Foam mixer	<p>Foam pump: the flow rate of pure foam liquid <math>\geq 0.2\text{L/s}</math>;</p> <p>Foam mixing ratio system: The mixing ratio is infinitely adjustable, with an adjustable range of 0.1%-10%.</p>
Fire cannon	<p>Brand: Elke;</p> <p>Model: PL10/64-8500-02;</p> <p>Control mode: manual;</p> <p>Vehicle parameters: <math>\leq 48\text{L/s}</math>, <math>1.0\text{MPa}</math>;</p> <p>Turning angle: <math>\geq 270^\circ</math>, pitch angle: <math>\leq -7^\circ \sim \geq +45^\circ</math>.</p>
Class B foam system	<p>negative pressure fully automatic, XCMG self-made;</p> <p>Foam mixing ratio system: the mixing ratio is infinitely adjustable, with an adjustable range of 1%-10%;</p> <p>It is equipped with DN50 independent foam suction interface, equipped with DN50 interface and stuffy lid.</p>
Fire pipeline system	<p>1 DN150 suction port connected to the suction pipe, interface, filter, stuffy cover; 1 DN125 water inlet from the water tank to the pump.</p> <p>1 pipeline DN65 for pumping water into the water tank; 4 DN80 water outlets, equipped with water outlet valves, DN80 interfaces and stuffy covers, distributed on both sides; 2</p>

	DN65A foam outlets, equipped with valve interfaces and stuffy covers, 1 on the left and right sides.			
	It is equipped with a proportional mixer, water and foam pipeline whole process cleaning system.			
Waterway control	Waterway control mode: electronically controlled pneumatic + manual emergency control			
	Control panel location: rear side of the car body			
Fire pipeline	Aluminum alloy tube			
Fire interface configuration	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
	Exit the Class A foam outlet	2×DN65	Globe valve (antifreeze type)	Both sides of the car body
	Upper Gun Interface (Valve)	1×DN100	Pneumatic valves	Pump room
	The tank is pumped to suck water	1×DN125	Pneumatic valves	Pump room
	Pump to tank to fill with water	1×DN65	Pneumatic valves	Pump room
	Fill the tank with water	2×DN80	It comes with a	Both sides of

			stuffy cover	the car body
	Put the foam opening	1×DN40	Manual valve	The rear of the car body
	Water tank discharge	1×DN40	Manual valve	The rear of the car body
	External suction foam	1×DN50	Manual valve with stuffy cover	The right side of the body
	Interface form: inner buckle type or snap type (fast) can be selected, and it is recommended to use the inner buckle interface in cold areas.			
Electrical control system				
Pump chamber control system	<p>modular XCMG control panel;</p> <p>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> <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	Installed siren and amplification device in the cab, power: 100W;			

	<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>
Tow winch	
Tow winch	<p>Brand: Melmark of the United States;</p> <p>Drive form: electric;</p> <p>Maximum traction of a single rope: <math>\geq 5000\text{kg}</math>;</p> <p>Wire rope length: <math>\geq 33\text{m}</math></p>
Lifting lighting system	
dynamo	<p>Brand: Kohler, USA;</p> <p>Rated power: 5.5Kw;</p> <p>Starting method: electric start/hand start;</p> <p>Continuous operation time: 8h.</p>
Lifting lights	<p>Shanghai Bocan LED Light (Standard)</p> <p>Power: LED light 4<math>\times</math>216W (illuminance reaches 30 meters standard, fast start)</p> <p>Shanghai Bocan LED Light (Optional)</p> <p>Power: LED light 6<math>\times</math>216W (illuminance reaches 50 meters</p>

	<p>standard, fast start)</p> <p>Telescopic light pole: electronically controlled pneumatic telescopic lamp pole;</p> <p>Light pole lifting height: <math>\geq 6\text{m}</math>.</p>
<b>Main structural parts and others</b>	
<b>equipment box and pump room</b>	Material: All aluminum alloy
	Structure: all-aluminum alloy welded frame + aluminum alloy skin
	Roller shutter door: all equipment compartments and pump rooms are equipped with locking roller blinds
	Splitting: aluminum alloy mold opening parts
	Flap pedal: Locked with mechanical spring and locking pin
	<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> <p>(2) Place equipment according to the frequency of use and the weight and shape of the equipment;</p> <p>(3) Place equipment according to the logical relationship between combat formation and equipment use;</p> <p>(4) Place equipment scientifically according to human behavior.</p>
<b>Subframe</b>	<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>
<b>Other configurations</b>	
<b>Optional configuration</b>	<p>1. Optional in the cold area of the north: pump room insulation and heating device;</p>

	<ul style="list-style-type: none"><li>2. Vehicle spray self-protection system;</li><li>3. Electric ladder frame;</li><li>4. 360° surround view monitoring system (navigation, driving record, reversing image, reversing radar integrated).</li></ul>
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## 4. Description of main components

### 1. Fire protection system

The fire protection system adopts an integrated imported American Hill PTO CAFS120/50FBU compressed air foam system, and is equipped with XCMG negative pressure automatic foam system, which can be applied to all kinds of foam. Imported Elk PL10/64-8500-02 manual fire cannon with foam 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 flat 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	German MAN
2	Fire pump	American Hill
3	Fire cannon	Elk
4	Fire fluid tank	XCMG Fire Protection
5	Compressed air foam system	American Hill
6	Tow winch	Melmark, USA
7	dynamo	Kohler
8	Lifting lights	Shanghai Bocan

## 6. Random spare parts and packing list

### 6.1. Fire truck spare parts table

serial number	Name, specification and model	unit	quantity	remark
1	Fuse 50A	piece	1	
2	JQ201S-PL0 relay 24V30A	piece	1	
3	Fuse 10A5×20	piece	2	
4	Fuse 15A5×20	piece	2	
5	20A5×20 fuse	piece	2	

### 6.2. Fire truck tools on board

serial number	Name, specification and model	unit	quantity	remark
1	20-65-20 hose	tray	10	
2	20-80-20 hose	tray	10	
3	Switch DC water gun	branch	2	



4	Class A Foam Gun (CAFS System Configuration)	branch	2	
5	No recoil water gun	branch	2	
6	Foam gun	branch	2	
7	KXK65 Buckle / 80 Female	piece	2	
8	KXK80 Buckle/80 Male	piece	2	
9	KJK65 female/80 male	piece	4	
10	2. Water collector	piece	1	
11	Three-water dispenser	piece	2	
12	Hook head wrench	piece	2	
13	Hook head wrench	piece	1	
14	Rubber hammer	handful	1	
15	Ground hydrant wrench	piece	1	
16	Underground fire hydrant wrench	piece	1	
17	Dry powder fire extinguisher	piece	1	
18	Water belt bridge protection	piece	2	
19	Water hose wrapping cloth	piece	8	
20	Hose hook	piece	8	
21	Fire sharp axe	piece	1	
22	Fire waist axe	piece	1	
23	Nailer	piece	1	
24	Fire shovel	piece	1	
25	Insulated bolt cutters	piece	1	
26	Rechargeable portable light	piece	2	
27	Suction pipe	root	4	
28	φ 150 Quick plug water filter assembly	piece	1	
29	150 male snail rings	piece	1	
30	Allen wrench 3-17	cover	1	
31	Live wrench 6 inches	piece	1	

32	Live wrench 12 inches	piece	1	
33	Slotted screwdriver 150×8	piece	1	
34	Phillips screwdriver 150×8	item	1	
35	Carp pincers	item	1	

### 6.3. Fire truck packing list

serial number	name	unit	quantity	remark
1	AP50/G3 product certificate	portion	1	
2	AP50/G3 Operation/Service Manual	volume	1	
3	AP50/G3 parts atlas	volume	1	
4	Compressed Air Foam System Instruction Manual	portion	1	
5	Fire cannon instruction manual	portion	1	
6	Documents specified in the chassis	portion	1	
7	Winch operation instructions	volume	1	
8	Generator User Manual	volume	1	
9	Lifting lighting system operation and maintenance manual	volume	1	

### 7. Product photos (for reference only)



