

INTRODUCTION



A medium-sized water and foam rescue and fire extinguishing vehicle marked GBA 3/16, built on a Renault D series 4x4 chassis, is an excellent solution for fire protection units. The D16 chassis is available as a chassis with double tires on the rear axle.

The D series chassis has a compact exhaust gas treatment system based on the seventh injector, catalytic converter, DPF, SCR, which guarantees the durability of the drive unit with low annual mileage. Twin tires guarantee the vehicle's reliable operation not only on paved and asphalt roads, but are also ideal when driving in forest or mountainous areas.

The intermediate frame and all-aluminum body allow for the ergonomic arrangement of the unit's special equipment. The most reliable pump on the market ensures many years of failure-free operation and parts availability even 20 years after its implementation.

CHASSIS

The medium rescue and fire-fighting vehicle is built on the chassis:

Model	Renault D16
Cabin	1+1+4
DMC	16,000 kg
Drive	4x4 (fixed)
Transmission	6+1 with SERVOSHIFT gearshift support
Engine	210 kW / EURO VI
Torque	1050 Nm in the range from 950 to 1600 rpm.
Engine capacity	7700 cm ³
Suspension	Front: reinforced parabolic leaf springs, shock absorbers on the front axle and anti-roll bar Rear: reinforced parabolic leaf springs, telescopic shock absorbers and stabilizer bar
Blockages	Differential locks: front axle / rear axle / interaxle lock
Batteries	2x185 Ah [reinforced]
Braking system	All disc brakes Electronic control of air production by APM Dehumidifier cartridge with increased durability Pneumatically controlled handbrake Retarder - exhaust brake (120 kW at 2800 rpm)
Tires	Twin tires on the rear axle, size 11 R22.5
Stock	Spare wheel without permanent mounting on the vehicle
Other	<ul style="list-style-type: none"> • Rockinger jaw towing hitch 8500 kg • Electric windows on all doors • Cruise control • Air conditioning • Mountain brake • Pneumatic driver's seat • Fog lights • Steel three-piece front bumper • The fuel tank is located outside the building • The so-called Walking gear for work in difficult terrain

CREW CAB

The chassis is equipped with a single-module crew cabin designed for 5+1 people.



Inside, as standard you can find:

- Side windows electrically lowered
- Visor
- Entrance steps lighting
- Air conditioning
- Sunroof
- Hands-free kit for your phone
- MP3 radio
- A transverse handle for holding on to the crew in the rear part of the cabin
- Lifiable rear seat with storage space for equipment
- ODO camera mount (4)*
- ODO mask shelf for the crew
- USB charger
- 12V and 24V cigarette lighter socket
- Additional pneumatic signal

[*] ODO camera mounts (4 pieces) are located in the back and equipped with two-point seat belts and a lifting headrest. The mount has a full backrest function when traveling without hearing aids.



There is a 4-inch control panel installed in the cabin, informing about the level of extinguishing agents in the tank (water + foam), the status of opening of compartments or platforms of the structure, connection to external power supply and extension of the lighting mast. In addition, it allows you to control the body lighting, the vehicle's main valve (electro-pneumatically controlled) and sprinklers divided into the front and rear of the vehicle.



As standard, the vehicle is equipped with a reversing camera with a 7-inch display in the driver's cabin, enabling efficient maneuvering of the fire truck.



Between the driver and the commander there is a table for chargers and radios equipped with an installation that protects against battery discharge, the so-called Acoguard. A pneumatic signal button is installed between the driver and the commander. The commander's station also has independent heating and lighting control via a flexible cable.



FIREFIGHTING SUPERSTRUCTURE

Type: Modular development 2.0

Intermediate frame: This is an intermediate element between the chassis and the bodywork, with an openwork structure with flexible elements that reduce the stress between the chassis and the bodywork. It is responsible for the vehicle's ability to cross axles and move in difficult terrain or overcome obstacles in built-up areas, such as high curbs. The frame is made of structural steel protected against corrosion by galvanization.



The structure is made in a 3+3+1 compartment system, which ensures maximum equipment capacity, ensuring a depth of 600 mm in each compartment.



Self-supporting structure made of aluminum profiles ensuring high anti-corrosion of the structure. Placed flexibly on an intermediate frame that reduces the transfer of stresses generated by the chassis. The modularity of the structure involves a high degree of unification of development elements and repeatability thanks to the development framework made using numerically controlled machines. The sheathing is made of aluminum sheets, the inner sheathing is anodized and the outer sheathing is varnished. Sheathing sheets are connected to the frame using gluing and riveting technology. This solution ensures ease of repair and complete failure-free operation.



This design is a proven solution and is the result of joint work with the Faculty of Mechanical Engineering of the Military University of Technology and the Military Institute of Armor and Automotive Technology. The design has the best strength to weight ratio compared to any other technology on the market.



The roof of the building is made in the form of a working platform. Finished with anti-slip checker plate. The roof structure is adapted for the work of two firefighters. The designated communication path on the roof of the vehicle is flat and guarantees safe movement even after dark thanks to built-in lighting.



A solid ladder to access the roof, mounted on the rear wall. Additional handrails at the top of the ladder to facilitate climbing and an additional full step at the top. The ladder rungs are anti-slip.



Under each compartment there are tilting platforms, including two tiltable ones in the form of vehicle wheel arches. **The design of the steps ensures their load capacity of 280 kg** . Each step has additional LED warning lighting on the edge or a gelcoat finish.



All equipment and equipment compartments are closed with water- and dust-proof shutters. Blinds and compartments are equipped with key locks. The zipper is secured with a flap to prevent dirt from entering the zipper. One key fits all locks. Each blind is equipped with a closing aid strip. The opening of each compartment is signaled in the vehicle cabin.



Do you know that ...: the structure is made of aluminum, which guarantees its complete anti-corrosion and easy repair? The composite element ages due to exposure to UV light or high temperatures, and in the event of mechanical damage, repair is only possible at the manufacturer's using its mold.

The structure of the body is designed to achieve not only a high level of ergonomics but also the greatest stability on the road. Hence the low center of gravity. Elements mounted on the roof are below the outline of the cabin to prevent damage to the equipment when moving in a forested area.

EQUIPMENT MOUNTS



As standard, the vehicle is ready for operation the moment it is picked up. It has not only all the necessary elements but also mountings for equipment in accordance with the EN1846 standard for a medium car.

The vehicle standard includes:

- Mounting for equipment according to the KG PSP standard
- Shelves made of aluminum chamber profiles

- Adjustable shelves [up-down]
- Shelves with longitudinal adjustment of equipment fastenings
- Seven plastic boxes for loose equipment
- Each equipment has individual mounting
- The equipment is additionally attached using Velcro or snap straps
- A shelf system that allows the user to change their arrangement
- Three drawers slide out and lock in extreme positions
- Drawers dedicated to heavy equipment such as hydraulics, motor pumps, generators
- Two panels slide out and lock in extreme positions
- The panels have mountings for saws and demolition equipment
- Large lockable roof box for equipment
- Fastening a two- or three-span ladder on the roof
- Sorbent box in the lower compartment
- Mounting for delivery hoses divided into the left and right sides of the vehicle for quick deployment



Example arrangement of equipment in the superstructure:



In the front part of the structure there is space for long elements that are often used during operations. There is a mount for medical equipment such as a stretcher, Kramer splints or a medical bag. The front compartment has a retractable panel with a mount for two ODO cameras and a drawer with a power generator.



From the commander's side there is, among others:

A retractable panel located in the front compartment with, on one side, a mount for demolition equipment, i.e. an axe, a crowbar, a hammer, and on the other side, a mount for a wood saw, a concrete saw, a spare chain, and fuel.



Each drawer has ergonomic handles, the hydraulic drawer allows you to assemble the entire set in one place. The drawer system allows, after some time of use, to be modified for a new set without any significant modifications.



As standard, there is a lockable equipment box on the roof measuring 2030x630x300 mm. The roof is flat so there is no risk of tripping. The standard version includes permanent mounting of the ladder, rigid towline and 110 suction hoses.



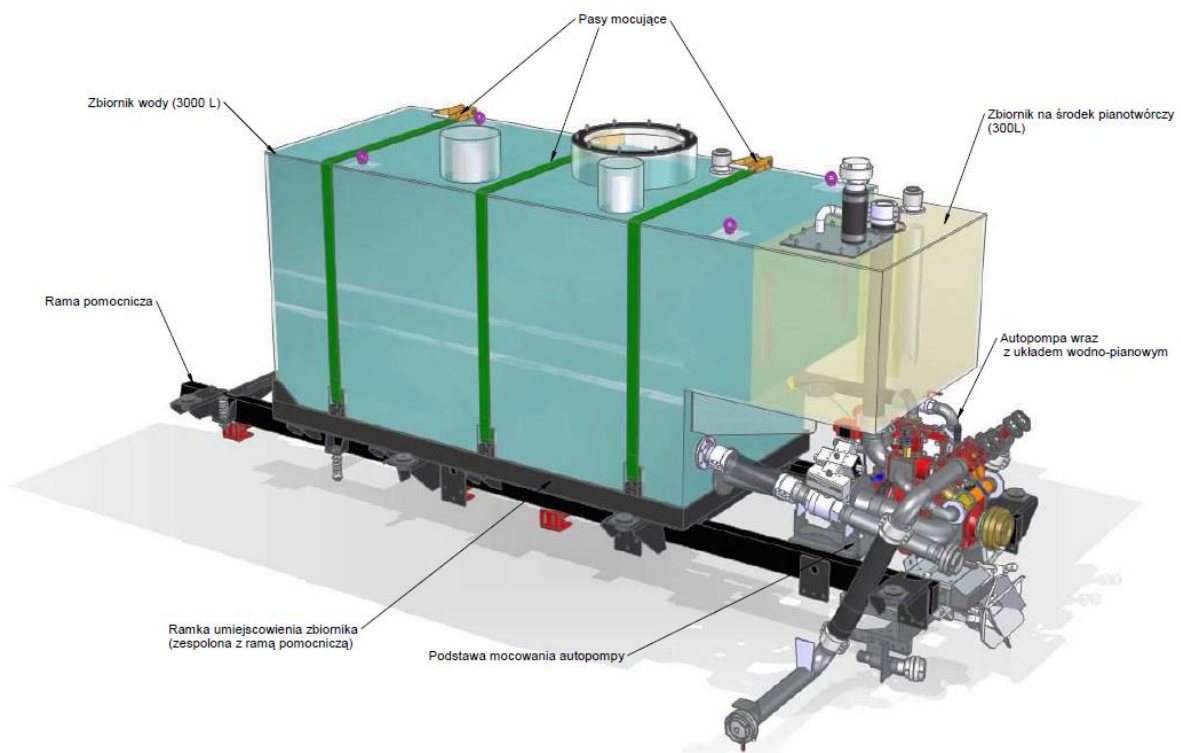
EXTINGUISHING AGENTS TANKS

The extinguishing agent tank is placed low in the structure to obtain greater stability of the fire truck. Mounting in the intermediate frame provides the best center of gravity on the market. The Renault D16 vehicle achieved a stability angle of 32 degrees, while the standard requires only 27 degrees.

Capacity: Water tank 3,000 liters (+/- 1%),
Foam concentrate tank 300 liters (+/- 1%).

Water tank with a capacity of 3,000 liters, made of corrosion-resistant composite materials, equipped with equipment enabling its safe operation, with a system protecting against water outflow while driving, adapted to a test overpressure of 20 kPa. The tank is equipped with an inspection hatch, settling tank and bulkheads protecting against water movement.

Foam concentrate tank with a capacity of 300 liters, made of composite materials resistant to corrosion and the effects of approved foam concentrates and modifiers, designed for a test overpressure of 20kPa. The location of the tank does not cause any obstacles to access to the water reservoir. The tank is equipped with a filling and emptying system.



WATER PUMP

Type: Godiva P2A 2010 dual-range car pump.
Efficiency: 2,846 dm³/min. at 8 bar suction pressure Hgs = 1.5m,
429 dm³/min. at a pressure of 40 bar.

Construction: All elements of the water and foam system are corrosion-resistant and made of stainless steel and reinforced rubber. The design of the water and foam system allows its complete drainage using two valves. A mesh is installed at the suction inlet of the car pump to prevent contaminants from entering the water. It is equipped with an automatic venting device that allows sucking in the so-called water. trokomat ensuring suction from a depth of 1.5 m in up to 30 seconds and from a depth of 7.5 m in up to 60 seconds.

Foam dispenser: ensures concentrations of 3% and 6% (tolerance +/-0.5%) over the entire pump capacity range, made of brass to ensure the greatest durability and resistance to the chemicals used.

The truck pump enables the administration of extinguishing agents through:

- two pressure heads directed to the sides of the vehicle
- one high-pressure fast attack line
- water and foam roof cannon
- four sprinklers



Refueling the extinguishing agent tank is done by:

- one hydrant cap size DN75
- one suction cap DN110
- two attachments (DN52 and DN75) for refueling the foam tank

Control panel based on the CAN bus (system description in the next section), and its location provides easy access from the ground level.



Other:

- Built-in lubrication system - oil change every 250 hours
- Trokomat based on membranes
- Control elements available from ground level (!)
- Manually changing the high pressure level on the pump
- Pump body made of hardened aluminum
- Automatic system for maintaining constant discharge pressure
- Automatic hydrant refueling system
- Independent heating of the car pump compartment

WATER AND FOAM SYSTEM

The truck pump enables the administration of extinguishing agents through:

- two pressure heads directed to the sides of the vehicle
- one high-pressure fast attack line
- water and foam roof cannon
- four sprinklers under the chassis

The pressure attachments are located in the rear, outer part of the structure, behind the flap of the working platform, which protects against the accumulation of ice and dirt on the attachment. Each attachment has individual pressure relief and drainage.



Sprinkler system installed in the chassis to limit chemical contamination zones or for fire-fighting purposes, equipped with 4 nozzles with a capacity of 50 dm³/min. each. Two sprinklers placed in front of the front axle, two sprinklers on the sides of the vehicle. Sprinklers are made of brass.



Fast attack line reel: The car is equipped with a high-pressure fast attack line with a hose length of 60 m on the reel, ending with a water and foam nozzle with adjustable capacity with short-circuit and dispersed current. The device is equipped with an adjustable drum brake, an electric hose reel drive and a crank enabling emergency hose rewinding. As standard, the vehicle is equipped with a system for blowing water from the reel after the action is finished.



Roof cannon: In the rear roof part there is a manually controlled water and foam roof cannon with adjustable capacity from 800 l/min. up to 2,400 l/min. and a throw range of 60 m. The gun is equipped with a pressure gauge and a pressure cut-off valve.



CONTROL SYSTEM

The vehicle is equipped with a control system based on the CAN system bus, which is very safe, resistant to errors, interference and reliable.

There is a 4-inch control panel installed in the compartment, informing about the level of extinguishing agents in the tank (water + foam), the status of opening of compartments or platforms of the building, connection to external power supply and extension of the lighting mast. In addition, it allows you to control the body lighting, the vehicle's main valve (electro-pneumatically controlled) and sprinklers divided into the front and rear of the vehicle.



Control panel In The car pump compartment is based on a 7-inch display equipped with 10 buttons and enabling control of:

- vehicle engine START - STOP
- minimum engine speed (function)
- vehicle engine speed controller
- water level indicator in the car tank
- foam level indicator in the tank
- pump shaft rotation speed meter
- car pump operating hours counter
- indicator light indicating the engine operating status
- pump pressure
- low pressure automatic control
- control of the hydrant refueling system
- lighting control

In addition, the most reliable pressure gauges in the pump compartment are:

- pressure gauge to indicate the pressure in the pump
- low pressure manometer
- high pressure manometer
- hydrant refueling pressure gauge



UNDERRUN PROTECTION

The basic version of the vehicle has a raised underrun beam. The beam arms are protected against corrosion by galvanization.



TOWING HOOKS

The vehicle is equipped with emergency towing hooks at the front and rear. The hooks enable the evacuation of a vehicle weighing up to 16,000 kg.



WARNING LIGHTING

A rescue and fire-fighting vehicle must be perfectly visible, which is why each vehicle of our production is equipped with 10 light points as standard, which are arranged as follows:

1. A low-profile signal beam with a length of 1520 mm with 8 LED modules on the cabin, which gives a larger illumination area than any integrated lamp.



2. Two signal lamps on the front of the vehicle and two lamps on the corner of the cabin.



3. Two signal lamps in the rear corners of the body



4. The vehicle is equipped with an emergency vehicle sound modulator with a megaphone function and a 200 W loudspeaker.
5. Additional pneumatic horn signal.

VEHICLE LIGHTING

1. External lighting of the building in the form of an IP67 class LED lamp above each compartment



2. Inside each box there is LED lighting on both sides.
3. A long-range lamp in the form of an LED beam with a power of 26,000 lumens, mounted on the front grille of the vehicle, next to the searchlight lamp mount.



4. In the rear part of the structure, above the shutter, there is a light wave located to protect activities while working on the road.



5. The vehicle is equipped with additional reverse gear lighting on the rear wall and under the cabin steps.

ELECTRICAL INSTALLATION

As standard, the vehicle is equipped with a 230V charging system with a self-disconnecting socket (with plug) and a 230/24V rectifier for charging batteries from an external source, located on the left side of the vehicle, next to the battery box (signaling the connection to an external source on the control panel in the driver's cabin).



There is a system installed in the cabin that protects against excessive battery discharge.

ELECTRIC WINCH

Electric winch with a pulling capacity of 9,979 kg and a 28 m long rope. Galvanized base with the possibility of towing with a rigid tow. The winch is protected by a composite cover.



LIGHTING MAST

Pneumatically extendable lighting mast with LED floodlights with a total luminous flux of 36,000 lm. Mast height (from the ground) when unfolded - 5.4 m. Mast control from a wired control panel. Masts from FIRECO, the largest manufacturer of lighting masts in the world.



VEHICLE WRAPPING

The vehicle comes standard with wrapping included in the price:

- contoured
- name of the unit on the door
- operational numbers on the blinds
- information about sponsors
- names of equipment items provided by the user

CERTIFICATE OF APPROVAL

The vehicle has a CNBOP approval certificate no. 5223/2024 and is manufactured in accordance with the EN-1846 standard

WEIGHT AND DIMENSIONS OF THE VEHICLE

GVW ¹	16,000 kg
GLM ²	13,990 kg
Weight reserve ³	2,010 kg (12.56%)

Height	With a two-span ladder – 3300 mm With a three-span ladder – 3286 mm
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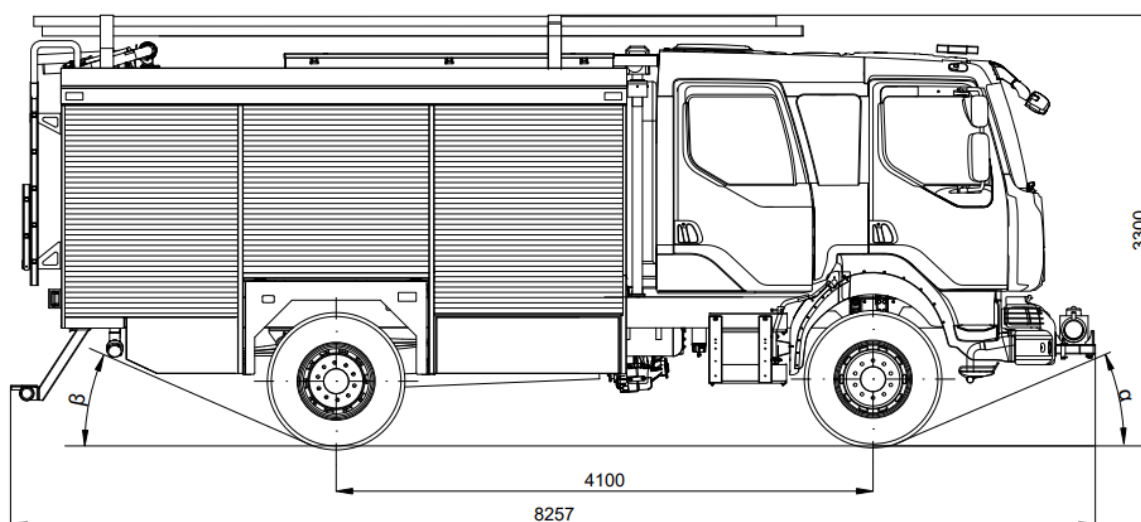
Length	8257 mm
Width	2535 mm (without mirrors)
Departure angle	25.5 °
Angle of attack	27.1 °

1) Permissible Gross Vehicle Weight

2) Maximum Actual Vehicle Weight (ready for operation with crew and equipment)

3) Difference between DMC and MMR

Drawing with the dimensions of the vehicle



* All dimensions with a tolerance of +/- 1%

If the dimensions of the garage differ from the dimensions of the car given in the offer, please contact a PS Szczeńiak representative to discuss the possibility of adapting the vehicle.

CONFIGURATION OF THE VEHICLE

The optimal version of the vehicle contains the following elements:

Renault D16 4x4 chassis 210 kW EURO-6 engine Twin tires on the rear axle Spare wheel delivered loose ODO camera mounting in the cabin (4 pcs.) Mount for ODO masks Mobile radio station Electric winch Reversing camera with 7" monitor Galvanized intermediate frame Water tank 3000 liters Foam tank 300 liters Aluminum bodywork 3+3+1 Tilt wheel arches Platforms under the blinds 5.4 m LED lighting mast 26,000 lumen beam Additional pneumatic signal 230V Rett-Box AIR charging system Pull-out drawer - 3 pieces Pull-out panel - 2 pieces	Godiva two-range pump - capacity 2800 l/min at 8 bar - capacity 400 l/min at 40 bar Two DN75 pressure heads Manual foam dispenser 3% - 6% Reel 60 m with nozzle Reel blowing system Sprinkler system under the chassis DWP16/24 stainless steel roof cannon CAN digital bus. Control panels. 7" car pump compartment Control panel 4" cabin compartment Roof box LED beam 60 mm / 8 LED modules 10 light points LED light wave Equipment mounting. Independent heating of the car pump Raised underrun beam Towing hitch for trailers Fixing equipment
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EQUIPMENT SUPPLIED WITH THE CAR

There is no specified specialist equipment in the vehicle's offer. We invite you to purchase a vehicle with equipment such as hydraulic tools, water and foam fittings, etc.

TERMS OF WARRANTY

- Terms of warranty:**
- for the chassis 12 months without mileage limit,
 - for the bodywork 12 months without engine hours,
 - for equipment 12 months.

Renault chassis can be serviced at numerous authorized service stations located throughout the country. Service activities related to the bodywork are performed, depending on needs, on our company premises or by our mobile service.

PREVIEW PHOTOS

