SPECIFICATIONS

Crew:	3-6
Configuration:	4x4
Battle weight:	6,7 t
Unladen weight:	5,5 t
Payload:	1,2 t
Max. weight:	
front axle	3 t
rear axle	3,7 t
Power-to-weight ratio:	22 kW/t (141/6,7)
Length:	4 340 mm
Width:	2 370 mm
Width with the rear mirrors	2 500 mm
Height	1 950 mm
Height with antenna base:	2 330 mm
Ground clearance:	390 mm (max)
Track:	1 925 mm
Wheelbase:	2 820 mm
Angle of approach/departure:	70°/42°
Max. road speed:	120 km/h
Max. reverse speed:	25 km/h
Fuel capacity:	160 ltrs
Road range:	660 km (min)
Fording:	1,2 m
Floating capacity:	amphibious
Speed in the water:	6 km/h
Gradient:	60 %
Side slope:	40 %
Vertical obstacle:	0,4 m
Trench crossing:	0,6 m
Turning radius:	tracked 6,0 m

Engine: DEUTZ BF6M 1013 in-line 6-cylinder, water-cooled 4-stroke, turbocharged and intercooled diesel with direct fuel injection.

Transmission: RECO 606, RENK - Automatic, 6 speeds forward, 1speed backward. Single block arrangement with the alter, primary retard and descendent gear box, inter axle differential with shutter

Steering: ZF-SERVOCOM 8090 power-assisted on first axle, nut wheeled

Suspension: 2-axles with an independently suspended driving wheels and all-wheel drive, wheel suspension - trapezoidal, deflection - coiled spring, Damping of deflection - gas telescope absorber.

Brakes: Double-circle brake system has the hydraulic strengthening and hydraulic control of the disc brakes with internal cooling effected all wheels. The service brake is disc shaped, hydraulically controlled. Pressed brake pedal effects on all wheels. Retarding brake (retarder) is liquid, mechanical, integrated into the gearbox, (between the convertor and gearbox). The pressed first brake pedal position sets the retarding brake into the activity. Brake effect depends from the engaged gear. Parking brake (also as an emergency brake) internal gripper brake.

Tires: tubeless tyre MICHELIN, 11,00 R 16 XL TL, with optinal run flat inserts

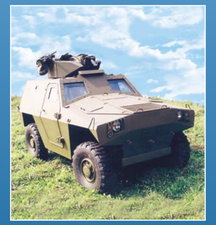
Tyre surface pressure:
pneu pressure 625 kPa =0,4-0,5 MPa on asphalt
pneu pressure 380 kPa =0,24-0,5 MPa on asphalt
pneu pressure 170 kPa =0,19-0,25 MPa on sand

Electrical system: Alternator MAGNETI MARELLI - rated power output 28V, 80 A

Battery: 2 x 12V, 180 Ah

Drinking water capacity: plastic bottle - 10 liters

Armox hardness: 500-540 HB



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ALIGATOR 4x4

LIGHT WHEELED ARMOURED VEHICLE

KERAMETAL

VOJENSKÝ OPRAVÁRENSKÝ PODNIK 027 TRENČÍN

DESCRIPTION

The vehicle ALIGATOR 4x4 is a light rapid wheeled armoured amphibious transporter. The vehicle has been designed to undertake a wide range of roles on the battlefield including reconnaissance, command and control, missile launching and police tasks. The armoured all-welded steel hull provides the crews with protection from small arms fire up to 7.62 mm armour-piercing rounds, shell fragments and against antipersonnel mines. The ballistic protection of the crew compartment could be significantly enhanced by utilization of the additional special steel or ceramic plates. The floor of the crew compartment is of double thickness to provide increased protection against mines.

The engine compartment is at the front with the crew compartment at the rear. The standard Deutz water-cooled diesel engine is coupled to a Renk automatic transmission as one exchange unit. Automatic transmission allows 6 gears forward and one gear backward.
The crew consist of the commander, driver, gunner and the vehicle can carry three other fully equipped infantry men. The commander is seated on the right with the driver on the left The driver and commander have a single-piece hatch covers which opens upwards above theirs positions.

The driver has a roof-mounted periscope for forward observation located above his seat. The commander and driver are each provided with a large bullet-proof window to their front and a door in the side that opens forwards.
In the upper part of the door there is a large bulletproof window.
All the bulletproof windows provide the same level of protection as the all-welded steel hull.
The troop compartment is at the rear and the way of entry and exit is via a larger door that opens to the left. The rear door and either side of the troop compartment are provided with a firing port and vision device. In the rear part of the roof is a single-piece hatch cover that opens towards the rear. A bank of three electrically operated smoke dischargers can be mounted in either side of the hull towards the rear.

Vehicle can be equipped with a circular low-profile cupola with a circular hatch cover that opens forwards the rear and on the front part can be mounted a 7.62 mm machine gun. Run-flat cores are fitted at the wheel discs. The central tyre-pressure regulation system enables to adjust the pressure to suit the terrain. The vehicle is airportable in various transport aircrafts and some types of helicopters.

VARIANTS

Typical roles for the ALIGATOR 4x4 family could include command post, liaison vehicle, troop carrier, reconnaissance vehicle, weapons carrier as well as vehicle for peace support operations.

ALIGATOR 4x4 Mobile command post (MCP)

Vehicle ALIGATOR 4x4 MCP is the amphibious transporter with high mobility, serving as a mobile command post on tactical level. The crew consist of the commander, two operators and driver. The vehicle allows to fulfill given tasks during the day, night and under worsened weather conditions. The crew is reliably protected from effects of the infantry weapons, hand grenades and means of mass destruction.

ALIGATOR 4x4 Police modification (PCM)

The ALIGATOR 4x4 police modification preserves the primary concept of the driving system, including the self-supporting vehicle hull. The transporter is specially adjusted to the police needs. The six crew PCM version is recognizable by the addition of four firing ports in the windshield, the vehicle sides, and the rear door and can be fitted with front mounted barricade-remover, flashing beacons, public address system and tear-gas grenade discharges.

ALIGATOR 4x4 Engineering modification (EM)

Aligator 4x4 vehicle is an engineering application of Aligator 4x4 MCP vehicle designed to perform a general and a detailed reconnaisance with a possibility of metal detection. The vehicle is amphibious with a high manoeuvrability, assigned for a transportation of persons on the roads, on terrain and on water.

Aligator 4x4 EM vehicle has got equipment enabling an engineer reconnaisance squad to meet the assigned tasks. To perform these activities the vehicle is equipped with:

- a complete set for a detailed engineer reconnaisance extended with mountaineering aids, a diving set,
- hand mine detectors,
- VMV 8 metal detector equipped with a hardened computer with an incorporated GPS and VISU geographic area information system,
- device for an automatic car stopping,
- device for a marking of detected area

VARIANTS

ALIGATOR 4x4 Observation and reconnaissance post (ORP)

The crew of the vehicle consists of commander, driver and observer-gunner.
The observation cupola MBK-2 MOWAG is equipped with day observation device and on request it could be provided with a thermal imager FORTIS for day and night operation under all weather conditions.
The observation cupola is fitted with a one - man operated, externally mounted MG 7.62 mm.
Six launcher tubes are mounted to the outside of the cupola for firing smoke or antipersonnel grenades.

ALIGATOR 4x4 Peace support operations (PSO)

The vehicle is specially designed for needs of units deployed into the Peacesupport operations under auspicies of UN or another international security organizations. The vehicle allows to perform patrol, observation and reconnaissance tasks, enables transport of personnel and material.
The crew consist of up to five personnel and driver.
The vehicle can be fitted by special observation slit on the both transporter sides, externally mounted machine gun 7.62 mm and rotary periscope observation device.

OPTIONAL EQUIPMENT

Communication equipment
Run-flat core tyres system
Power steering
Fire detection and supression system and two hand-operated fire extinguishers
Hull mounted searching lights controlled from inside by the driver or commander
2x3 electrically operated smoke grenade dischargers

NBC system
Air conditioning system
Turret MBK-2 MOWAG fitted with externally mounted MG 7.62 mm and thermal camera FORTIS
Different weapon installations in accordance to the request
Additional ballistic protection (armour or ceramic plates)
Various radio installations
Various types of day and night observation equipment for the commander and driver
Central tyre-pressure regulation system
Amphibious kit (a propeller mounted at the rear of the hull)
Self-recovery winch (30 m of cable, capacity of 3000 kg)

REMOTE CONTROLLED TURRET

Turret complete is mainly designed for modernization of BRDM vehicles. The application on another fighting vehicle is possible too.
Its solution is unmanned turret machine-gun installation, which is remotely controlled by commander/operator (sitting side by side with the driver). The aim of the control system is the maximum computer support of the operator´s combat activity.

Main functions of the turret complete

- Battlefield reconnaissance
- Firing activity on chosen target
- Vehicle terrain orientation
- Electronic map utilities
- Computer support of the operator´s combat activity
- Support C31

Composition
Modified hull of turret BRDM-2
IR camera (un cooled)
12,7 mm machine-gun NSWT
CCD TV camera – (observer)
CCD TV camera – (sight)
Laser range finder
7,62 mm coaxial machine-gun PKT
Launcher (Tube) DG – 6 pieces

Basic TTD

Target type APC detection day	3 km
Target type APC detection night	2,5 km
Turret azimuth scope	n x 360 °
Gun elevation scope	-5 to + 30 °
Angular rate scope	
azimuth 2 mrad.s^{-1} to 0,50 rad. s^{-1}	
elevation 2 mrad.s^{-1} ti 0,25 rad. s^{-1}	
Field of view day CCD TVK – O	6 x 4
Field of view day TVK-Z	1,6 x 1,2
Field of view IR camera wide	24 x 18
narrow	6 x 4

WEAPON STATION TURRET

Main features
Main features
Complete remote operation
Day/night operation
Closed hatch and head-out operation capability
Electric drives and firing
Manual emergency mode of operation
Safety firing inhibit system, Built-in test
Variety of weapons, Low silhouette
Stabilization (optional)

Technical Data
Armament (Interchangeable by the crew)
7,62 mm GPMG or 12,7 mm HMG or 40 mm AGL

Ammunition
7,62 mm GPMG: 230 rounds ready for use NATO Std. ammunition box
(option: 460 rounds ammunition box)
12,7 mm HMG: 100 rounds ready for use
(option: up to 200)
40 mm AGL: 32 rounds ready for use
(option: up to 48)

Control

Electrically controlled	nx360 deg.
High speed	1,0 rad/sec
Low speed	0,5 m rad/sec

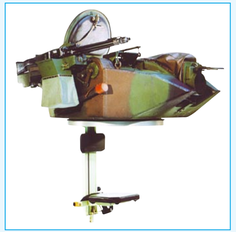
Elevation

Elevation range:	-20 deg. to + 60 deg.
High speed	1,0 rad/sec
Low speed	0,5 m rad/sec

Optics

Day sight	CCD camera
Night sight	Thermal uncooled microbolometer camera (Option: LLLTV Camera)
Display	LCD monitor

OBSERVATION CUPOLA



The main vehicle armament can consist of:

- small infantry arms of the vehicle crew
- machine gun 7.62 mm, optionally 12.5 mm, 14.5 mm or 20 mm
- the additional weapons in accordance to the request (AT rockets and anti aircraft missiles)

Although the baseline vehicles are unarmed, a variety of 7.62 mm machine guns, automatic grenade launchers, anti-tank missile systems, various forms of radars, radiolocation devices, or electrically-operated smoke grenade launchers can be mounted on the roof.
Recently developed modification has roof-mounted a one-man armoured observation cupola The cupola is fitted with a day/night thermal camera, day periscope, externally mounted 7.62 mm machine gun and smoke grenade launchers.

The observation cupola is protected against 7.62 mm NATO ballsat all distances. The machine gun can be aimed and fired from inside of the vehicle. This is provided with 400 rounds of ready use ammunition. Weapon elevation is from -12° to +20°, traverse Nx 360°,while the thermal imager has an elevation of +15° and depression of - 10°. A bank of 2x three electrically operated smoke grenade dischargers are mounted on the turret.

Thermal camera FORTIS (Forward Observation and Reconnaissance Thermal Imaging System) is a compact, high-effective portable device. It works in the fully passive infrared observation mode 8 - 12 mm. The fog and smoke does not decreases the camera performance. Artificial
camouflage of the targets by the smoke shade has only a limited result. If required, the thermal camera can be dismounted for use in the ground surveillance role..

Detector	CMT	Range of observation at standard condition (NATO target size - 293 K)	
Number of scanners	24	- detection	6 km
Observation zone	18,5° x 9,5°/ 4,5° x 2,3°	- recognition	2 km
Increasing	1,7 x / 5,4 x	- identification	1 km
		- weight	13 kg

THE AREAS THE ARMOURED CARRIER IS ASSIGNED FOR:

- mobile command posts on batalion level and on higher levels of command
- meeting reconnaisance tasks within general reconnaisance units of survey artillery, engineer and chemical corps
- weapon systems carrier (machine-gun, anti-tank rocket system, anti-aircraft rocket system, grenade launcher, mortar towing, radiolocation equipment, etc)
- provision of transportation tasks
- in signal, medical, chemical and other branches
- the fire fighting truck
- in meeting special police tasks
- border and street patrol
- short-range air defence
- facility safeguarding