SpetsTechnoExport

DOZOR-B
Armoured Personnel Carrier

PURPOSE AND SPECTRE OF APPLICATIONS

The DOZOR-B armoured personnel carrier is a 4x4 armoured fighting vehicle intended to transport personnel and various loads. The vehicle can be fitted with various light weapons, communications devices, and special equipment.

The DOZOR-B armoured personnel carrier can be efficiently used by special units of the armed forces (quick reaction forces and miliary police) to carry out reconnaissance, patrolling, and peace-keeping operations, as well as being used as the main transportation vehicle under combat conditions (including NBC environment).

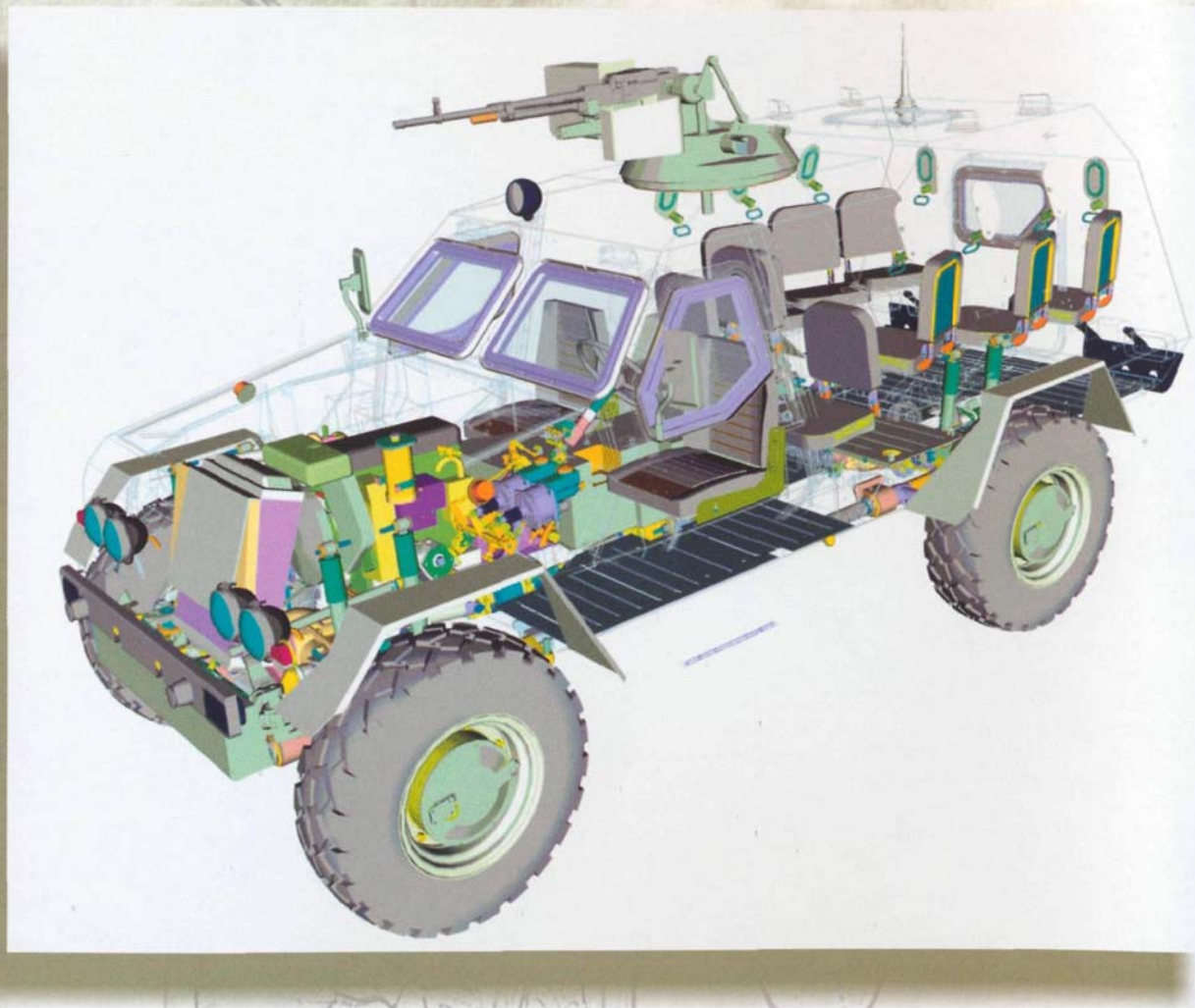
The DOZOR-B armoured personnel carrier can fulfil its functions by day and night both on hard surface roads and in cross-country.

LAYOUT

The layout of the DOZOR-B armoured personnel carrier is based on a motor car scheme, which makes it possible to ensure high cross-country capability while retaining ease of operation and safety of entering/leaving the vehicle. The bonnet-type layout provides the crew with an easy access to the power pack components, steering system, brake system, and air system for maintenance and repair.

The vehicle is divided into two main compartments: power pack compartment and crew compartment.

The power pack compartment occupies the front and central parts of the hull and is separated from the crew compartment by an air-tight vibration/noise-isolating bulkhead. The compartment accommodates the engine with its operation support systems, transmission, main elements of the steering system, air system, braking system, and components of the air conditioning system and heating system.



The crew compartment occupies the central and rear parts of the hull and is used for accommodating the crew, installing the assemblies required for operation of the crew, and placing various equipment, ammunition, and SPTA. The crew compartment is divided into the driving compartment, fighting compartment, and troop compartment.

Driving compartment

The driving compartment is located in the front part of the crew compartment and comprises the driver's station fitted with armoured personnel carrier controls, and the commander's station fitted with communications devices and navigation equipment.

Fighting compartment

The fighting compartment is located in the central part of the crew compartment and comprises the gunner's station fitted with machine gun laying and control devices. The troop compartment is located in the rear part of the crew compartment and comprises seats for troops, periscopic vision blocks, and firing ports to enable the troops to carry out observation and to fire small arms. The crew compartment also accommodates the filtering and ventilating unit and the main components of the ventilation, heating, and air conditioning systems.

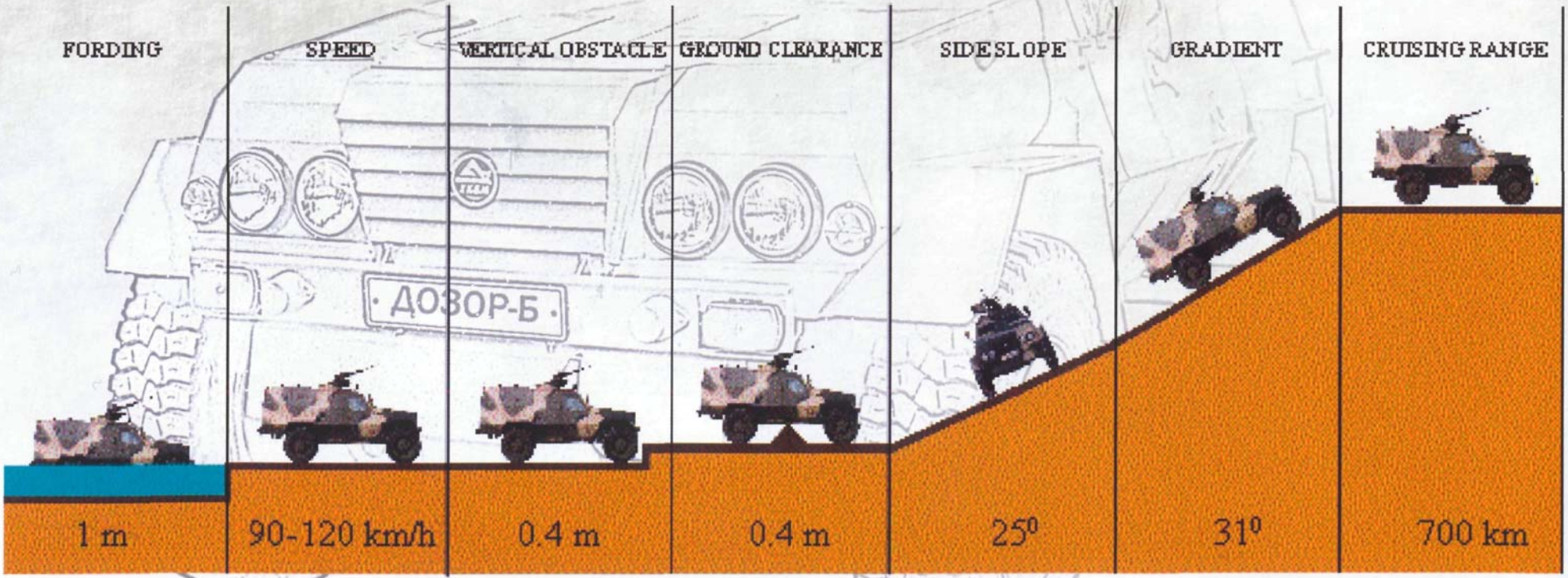
MAIN CHARACTERISTICS

Overall dimensions:	
Width (mm)	2,400
Height (mm)	2,280
Height with armament (mm)	2,650
Track (mm)	1,950
Ground clearance (mm)	400
Wheelbase (mm)	3,100
Length (mm)	5,400

Configuration	4x4
Overall weight (kg)	7,100+3%
Number of seats:	
- crew	3
- troops	8
Entry/exit into/from the crew compartment:	
- main: through the side doors or rear door	
- emergency: through the roof hatches	

The vehicle can be transported by road, by rail, by sea, and by air.

MOBILITY AND CROSS-COUNTRY CAPABILITY



PROTECTION

The armour of the armoured personnel carrier's hull provides protection of the crew, troops, and internal equipment against small arms fire, anti-tank mines, as well as radioactive dust, toxic agents, and biological warfare agents.

Dazzle painting reduces the vehicle's visual signature on the vegetation background, distorts the image of the armoured personnel carrier in order to decrease probability of its detection and to reduce the range of its detection by the reconnaissance and aiming devices.

Main protection

The hull is made of special steel and provides protection against 7.62 mm B-32 armour-piercing bullets:

- frontal part: 100 m
- side: 450 m
- rear part: 850 m

The bottom of the armoured personnel carrier is made of special steel in a cylindrical shape and provides protection against mines with blast power equal to 0.5 kg of TNT.

The armoured glass installed on the armoured personnel carrier provides protection that is identical to the protection provided by the main armour made of special steel.

Additional protection

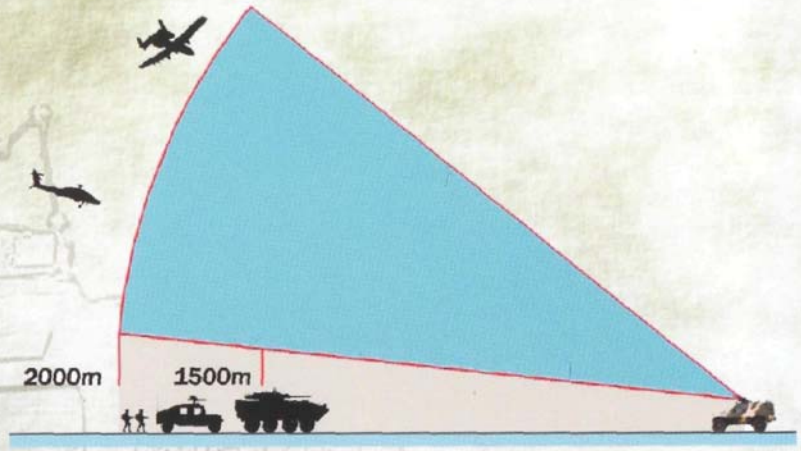
The design of the hull makes it possible to install additional protection against small arms fire and mines in the form of removable components with the total weight of up to 8,000 kg. The level of additional protection is determined by the tactical requirements of particular customers.

Filtering and ventilating unit

The filtering and ventilating unit is intended to purify the ambient air in order to remove toxic agents, radioactive dust, and biological warfare aerosols; to feed the purified air into the crew compartment; to create overpressure in the crew compartment; and to remove firing powder gases from the crew compartment.

ARMAMENT

The main armament of the DOZOR-B armoured personnel carrier is a remote-controlled anti-aircraft machine gun.



Aiming angles:

- elevation	- 3° to +68°
- azimuth	360° x n
Unit of fire	450 (3x150)

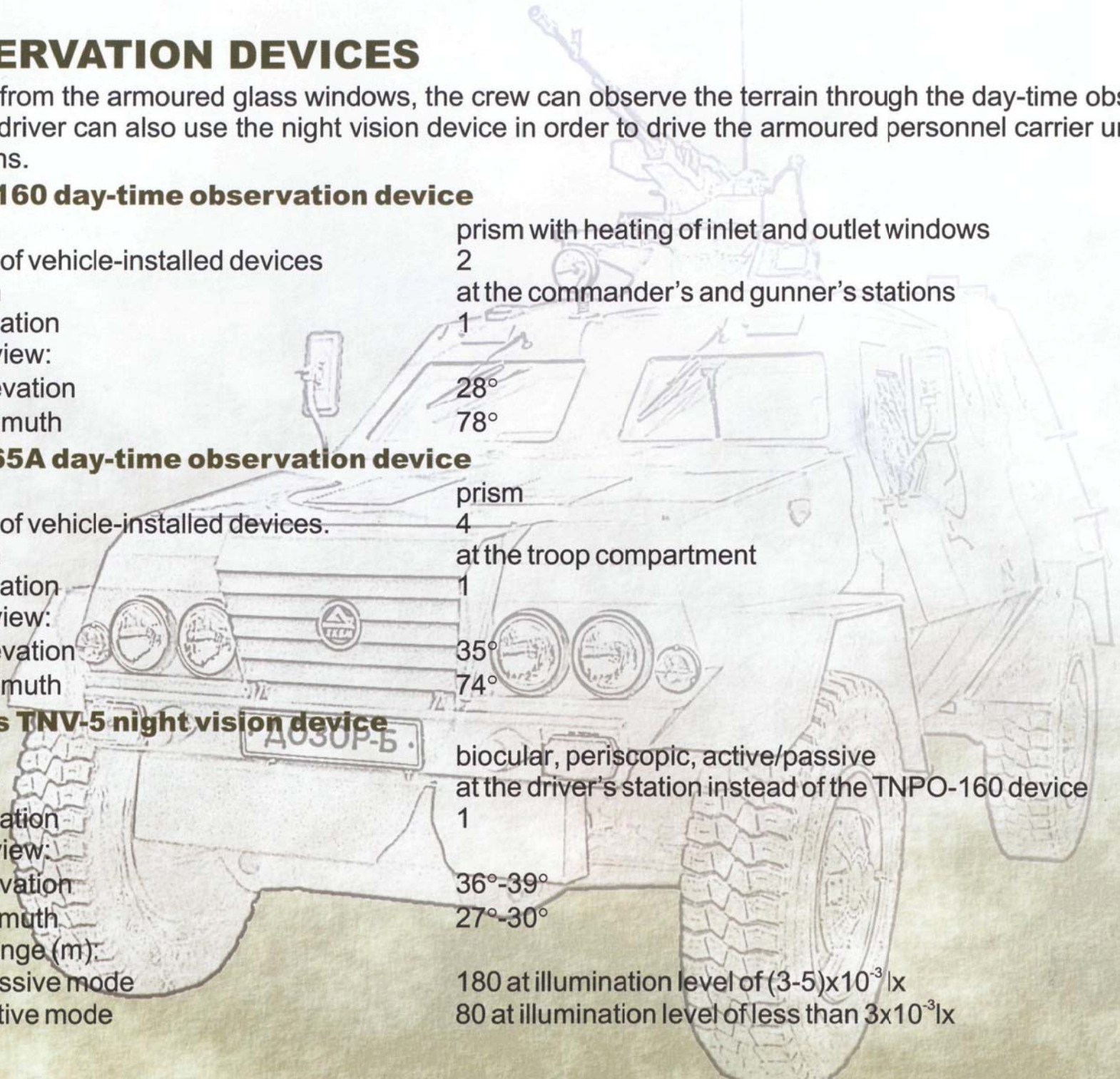
PZU-5 or PZU-7 optical monocular periscopic sight with rotating head:
- magnification: 1,2
- field of view: 50°

Machine gun:

Designation	NSVT-12.7 or KT-12.7
Calibre (mm)	12.7
Rate of fire (rpm)	700
Ammunition feed	belt

OBSERVATION DEVICES

Apart from the armoured glass windows, the crew can observe the terrain through the day-time observation devices, and the driver can also use the night vision device in order to drive the armoured personnel carrier under poor visibility conditions.



TNPO-160 day-time observation device

Type	prism with heating of inlet and outlet windows
Number of vehicle-installed devices	2
Location	at the commander's and gunner's stations
Magnification	1
Field of view:	
- elevation	28°
- azimuth	78°

TNP-165A day-time observation device

Type	prism
Number of vehicle-installed devices.	4
Location	at the troop compartment
Magnification	1
Field of view:	
- elevation	35°
- azimuth	74°

Driver's TNV-5 night vision device

Type	biocular, periscopic, active/passive
Location	at the driver's station instead of the TNPO-160 device
Magnification	1
Field of view:	
- elevation	36°-39°
- azimuth	27°-30°
Vision range (m):	
- passive mode	180 at illumination level of $(3\text{-}5)\times10^{-3}$ lx
- active mode	80 at illumination level of less than 3×10^{-3} lx

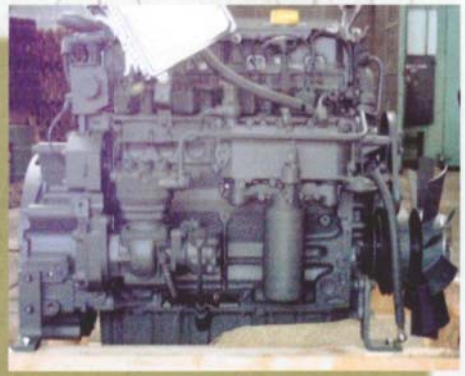
POWER PACK

The DOZOR-B armoured personnel carrier can be fitted with either IVECO 8142.38.11 engine or DEUTZ BF 4M 1013 FC engine. Each of the two is a four-stroke four-cylinder turbocharged diesel engine with intermediate cooling of turbocharged air.

ENGINE

IVECO 8142.38.11 (EURO-2)	
Operating volume (lt)	2.8
Compression ratio	19
Max output (kW (hp))	90 (122)
Engine speed at max output (rpm)	3,600
Max torque (N·m (kgf·m)	285 (29.1)
Engine speed at max torque (rpm)	1,800
Specific fuel consumption (g/kW·h (g/hp·h))	215 (158)
Starting method	by electric starter

DEUTZ BF 4M 1013 FC (EURO-3)	
Operating volume (lt)	4.76
Compression ratio	18.1
Max output (kW (hp))	140 (190.5)
Engine speed at max output (rpm)	2,300
Max torque (kW (hp))	700 (71.4)
Engine speed at max torque (rpm)	1,400
Specific fuel consumption (g/kW·h (g/hp·h)	200 (147)
Starting method	by electric starter

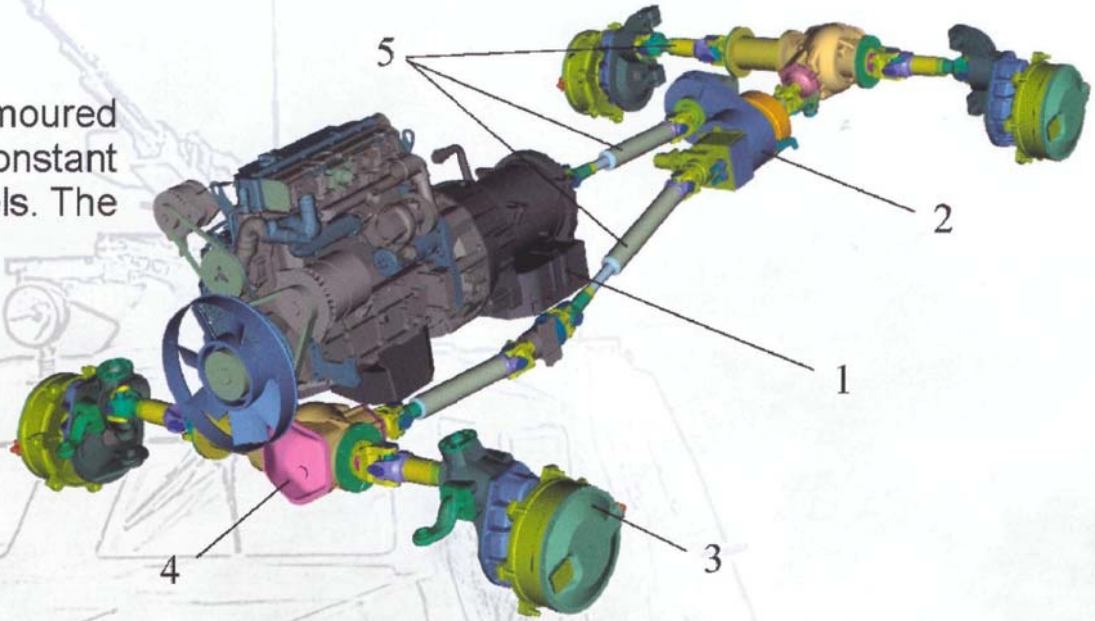


Lubricating system is forced, circulation-type, with wet crankcase.
Cooling system is liquid, closed-loop, with forced liquid circulation and fan-operated sucking of air through radiators.
Air supply system is of dry type, with replaceable filter elements.

POWER TRANSMISSION

The power transmission of the DOZOR-B armoured personnel carrier is mechanical. It provides a constant transmission of torque from the engine to all the wheels. The power transmission comprises the following:

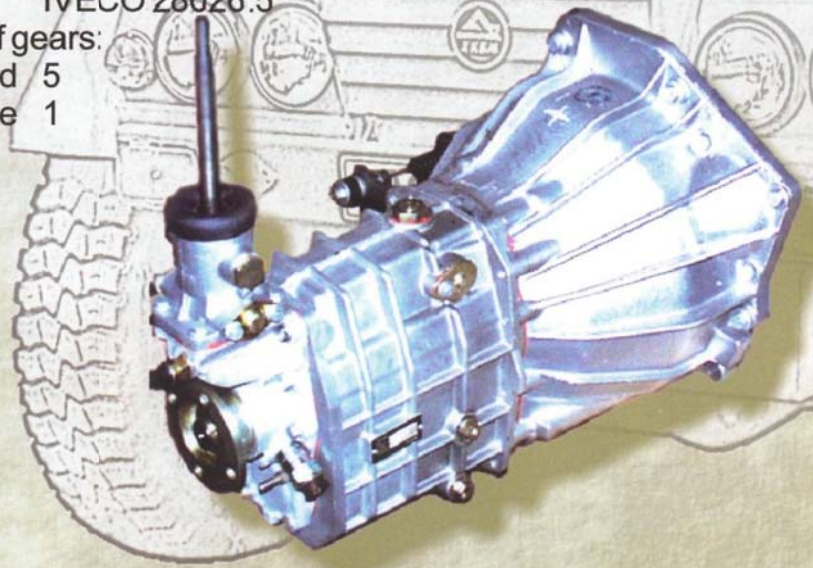
1. Gearbox.
2. Transfer box.
3. Front and rear main transmissions.
4. Wheel reducers.
5. Cardan shaft.



Gearbox

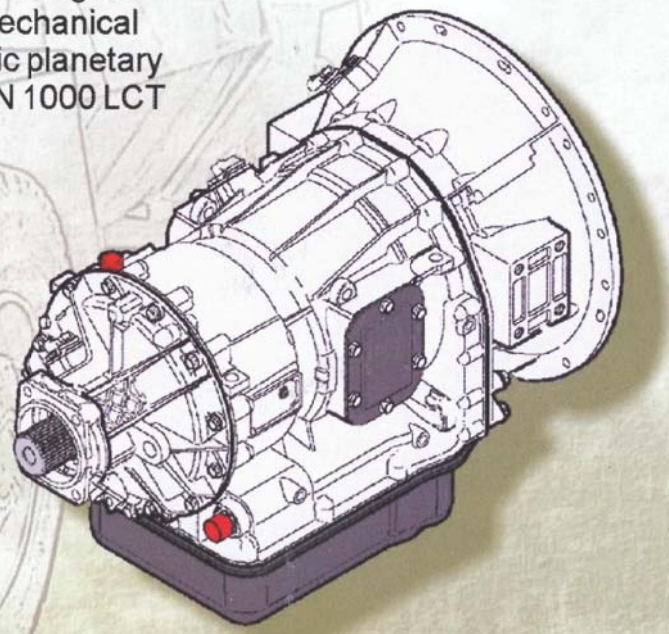
The gearbox installed together with the IVECO 8142.38.11 engine.

Type mechanical
Model IVECO 28026.5
Number of gears:
- forward 5
- reverse 1



The gearbox installed together with the DEUTZ BF 4M 1013 FC engine.

Type hydro-mechanical automatic planetary
Model ALLISON 1000 LCT
Number of gears:
- forward 5
- reverse 1

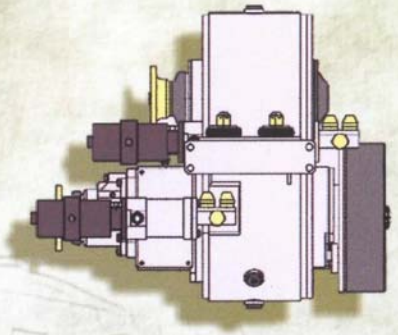


Transfer box

Type: mechanical, two-stage, providing a constant transfer of torque to both axles with inter-axle differential with forced interlocking. The drive is mechanical or electro-pneumatic.

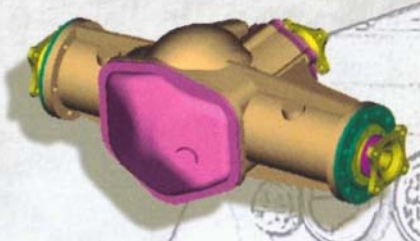
Modes of operation:

- full drive on the normal row with switched-on differential;
- full drive on the normal row with locked differential;
- full drive on the lowered row with switched-on differential;
- full drive on the lowered row with locked differential.



Main transmission (driving axle)

Type: one-stage, conical with inter-axle cam-type differential with increased friction.
Quantity: 2.

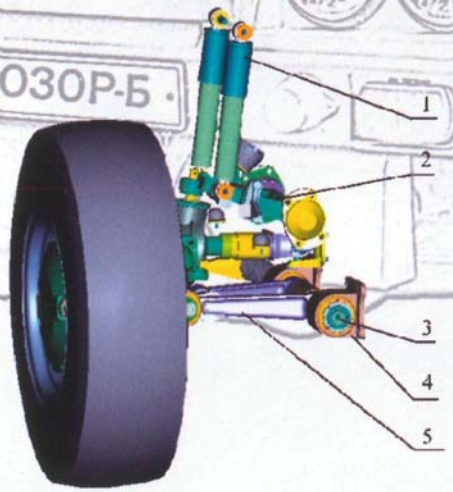


Wheel reducer

Type: one-stage, with cylindrical transmission of external engagement.
Quantity: 4.

RUNNING GEAR

1. Shock absorber.
2. Upper lever.
3. Torsion bar.
4. Lower lever bracket.
5. Lower lever.



Suspension: independent, lever-type, torsion bar, with telescopic two-side action shock absorbers.

Wheels with deep no-disassembly rim. The tyres are pneumatic, without tubes.

Designation of tyres: KORMORAN 295/80 R 22.5 D ON/OFF TL or MISHELIN XZL MPTTL 335/80 R20.

COMMUNICATIONS AND NAVIGATION DEVICES

The vehicle is fitted with external and internal communications devices. For external communications, the vehicle is fitted with the R-173M radio set and R-173PM radio receiver; for internal communications, with the AVSK-1 crew intercom system.

Radio set

Type: ultra-short wave, receiving/transmitting.
Model: R-173M.
Operating frequency range:
30,000-75,999 kHz with interval of 1 kHz.
Number of preselected frequencies: 10.
Radio coverage on rugged terrain (with a two-metre whip antenna): 20 km.

Radio receiver

Type: ultra-short wave, with frequency modulation.
Model: R-173PM.
Operating frequency range:
30,000-75,999 kHz with interval of 1 kHz.
Number of preselected frequencies: 10.
Radio coverage on rugged terrain (with a two-metre whip antenna): 20 km.

Crew intercom system

Type: telephone, with electro-magnetic chest switches.
Model: AVSK-1.
Number of parties: 4.

At customer's request, the vehicle can be fitted with communications devices made by other manufacturers.

The radio navigation equipment is intended to continuously determine the coordinates of location, the time and the vector of absolute travelling speed of the vehicle by using radio signals of the GLONASS and GPS NAVSTAR systems at any point of the globe, at any moment of time, independently of the weather conditions, to fulfil service tasks, and to indicate navigational parameters.

Type: satellite-supported.

Model: SN-3003 "Bazalt".

Mean square error:

- NAVSTAR	40 m
- GLONASS	30 m
- GLONASS/NAVSTAR	20 m

At customer's request, the vehicle can be fitted with the navigational devices made by other manufacturers.

CREW COMFORT SUPPORT SYSTEMS

Ventilation system

The ventilation system with forced air circulation is intended to supply fresh air into the crew compartment and to remove powder gases when the troops fire their small arms.

Heating system

The heating system of the liquid type provides crew comfort in cold weather due to the heating of the air in the crew compartment of the armoured personnel carrier and blowing the heated air to the window glasses.

Air conditioning system

The air conditioning system provides crew comfort in hot weather due to the cooling or ventilation in the armoured personnel carrier. The system ensures the following:

- cooling of air at ambient air temperatures of 20 to 55 degrees Centigrade;
- ventilation of air without cooling or heating it in the entire operating temperature range of the armoured personnel carrier.

SPECIAL EQUIPMENT

Central tyre inflation system

The central tyre inflation system provides automatic regulation of preselected tyre pressure and makes it possible to check and change tyre pressure from the driver's station to allow for road conditions.

When the tyre pressure decreases, this results in reducing the ground pressure, and therefore the vehicle's cross-country capability increases.

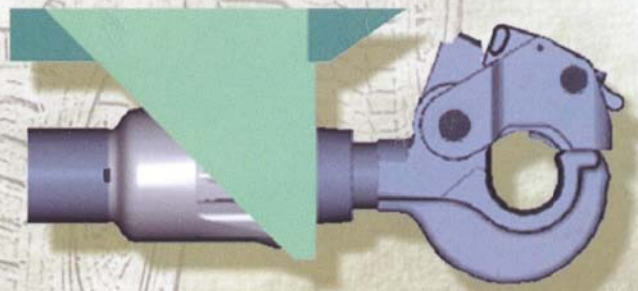
Winch

The winch is intended for self-recovery of the armoured personnel carrier, as well as for recovery of other stuck-in vehicles of the same weight class.

Winch drive: electric.
Force at the hook: 4,080 kgf.
Cable length:
- on the drum: 32 m;
- additionally in the SPTA kit: 24 m.

Coupling and towing device

The coupling and towing device with elastic damper element is intended to tow trailers (including those without brake system) with overall weight of up to 2 t.



Technical characteristics

Combat weight	6,900 kg
Crew	11 (3+8)
Configuration	4x4
Maximum speed	100-110 km/h (depending on the tyres being used)
Overall dimensions:	
- length	5 400 mm (without the winch) 5 680 mm (with the winch)
- width	2 400 mm
- height (top of machine gun cupola)	2 700 mm
Ground clearance	400 mm
Cruising range	790 km
Engine	**DEUTZ BF 4M 1013 FC (EURO -3)**, four-stroke, four-cylinder diesel engine with turbocharging and intermediate cooling of turbochargered air
Operating volume	4,76 lt
Compression ratio	18.1
Max output	140 kW (190,5 hp)
Engine speed at maximum output	2 300 rpm
Max torque	700 Nm (71,4 kg·m)
Max engine speed	2 300 rpm
Specific fuel consumption	200 g/kW·h (147 g/hp·h)
Starting device	Electric starter
Gearbox	Automatic hydro-mechanical 1000LCT

Special and additional equipment

Armament	
Type of machine gun	NSBT-12.7
Control	remote
Traverse and elevation:	
- elevation from	-3° to +68°
- traverse	360
Ammunition	450
NBC system	filtering and ventilating unit
Navigation system	satellite SN-3003 Bazalt
Air cooling system capacity	4,4 kW
Maximum vision range of infra-red night vision device	180 m
Radio ultra-short wave communication range	20 km
Winch	“COME-UP Winch” DV-15000 with towing force of 6 805 kg
Central tire pressure regulation system	remote regulation of pressure depending on terrain conditions

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