

MPV TECHNICAL SPECIFICATIONS

	UD40	UD60
ENGINE		
Type	Normally aspirated	Nissan Diesel FE 6B
Design	In-line 4 cylinder	In-line 6 cylinder
Displacement	4 617 cc	6 925 cc
Maximum power	90kW @ 2 500 rpm	125 kW @ 3 000 rpm
Maximum torque	304 Nm 1 500 rpm	451 Nm 1 600 rpm
Fuel type	Diesel	Diesel
Cooling	Liquid, pump driven circulation	Liquid, pump driven circulation
MAIN TRANSMISSION		
Type	Nissan Diesel RS 5R50A	Nissan Diesel MHS 61A
Number of gear	5 Forward and 1 reverse	6 Forward and 1 reverse
REAR AXLE		
Maximum load	5 500 kg	6 800 kg
FRONT AXLE		
Maximum load	2 800 kg	3 600 kg
STEERING BOX		
Type	Power assisted	Power assisted
BRAKES		
Front and rear	Vacuum / Hydraulic	Air / Hydraulic
Parking brake	Mechanical	Spring brakes on rear axle
Auxiliary	Exhaust	Exhaust
SUSPENSION		
Type	Beam axles with leave spring	Beam axles with leave spring
Springs	Semi-elliptic steel leave springs	Semi-elliptic steel leave springs
Shock absorbers	Single action telescopic	Dual action telescopic
WHEEL BASE		
Wheel base	3 350 mm	3 450 mm
Turning circle	12.6 m	13.6 m
Track width front	1 655 mm	1 775 mm
Track width rear	1 540 mm	1 675 mm
ELECTRICAL SYSTEM		
Battery	2 x 12V 60 Ah - 24V	2 x 12V 65 Ah - 24V
FUEL CAPACITY		
Tank	100 litres	100 litres
VEHICLE DIMENSIONS		
Overall length	5 795 mm	6 295 mm
Body width	2 000 mm	2 150 mm
Overall height	2 150 mm	2 250 mm
Ground clearance	200 mm	210 mm
Approach angle	27°	28°
Departure angle	19°	13°
VEHICLE MASS		
Un-laden	5 400 kg	6 400 kg
Gross vehicle mass	7 000kg	10 400 kg
VEHICLE PERFORMANCE		
Maximum speed	105 km/h	113 km/h
Fuel range	600+ km	600+ km
Climbing ability	24 %	24 %
Wading depth	500 mm	500 mm
Step climbing	200 mm	200 mm
0 - 60 km/h	26 sec	15 sec
0 - 80 km/h	43 sec	27 sec
0 - 100 km/h	95 sec	53 sec
80 - 100 km/h	44.3 sec	20.5 sec
Double lane change (ISO 3888)	55 km/h	60 km/h
VAULT CAPACITY		
	3.82m ²	4.87m ³

BALLISTIC PROTECTION LEVEL UD40 & UD60

R4 5.56 x 45mm ball at 30m
 Standard M16, 5.56 x 45mm ball at 30m
 Upgradeable to 7.62 x 54mm API

Note : Details and specifications are subject to change without prior notice.



INDUSTRIES(Pty)Ltd

33 Industry Road / PO Box 1200

Clayville Ext 4

Olifantsfontein, RSA, 1665

Tel : +27 (0) 11 316 4161

Fax : +27 (0) 11 316 4786

Contact Person : Graham Preston

UD40

FULL SPECIFICATIONS

UD60



CASH IN TRANSIT UD40/UD60



NISSAN DIESEL SA (PTY) LTD

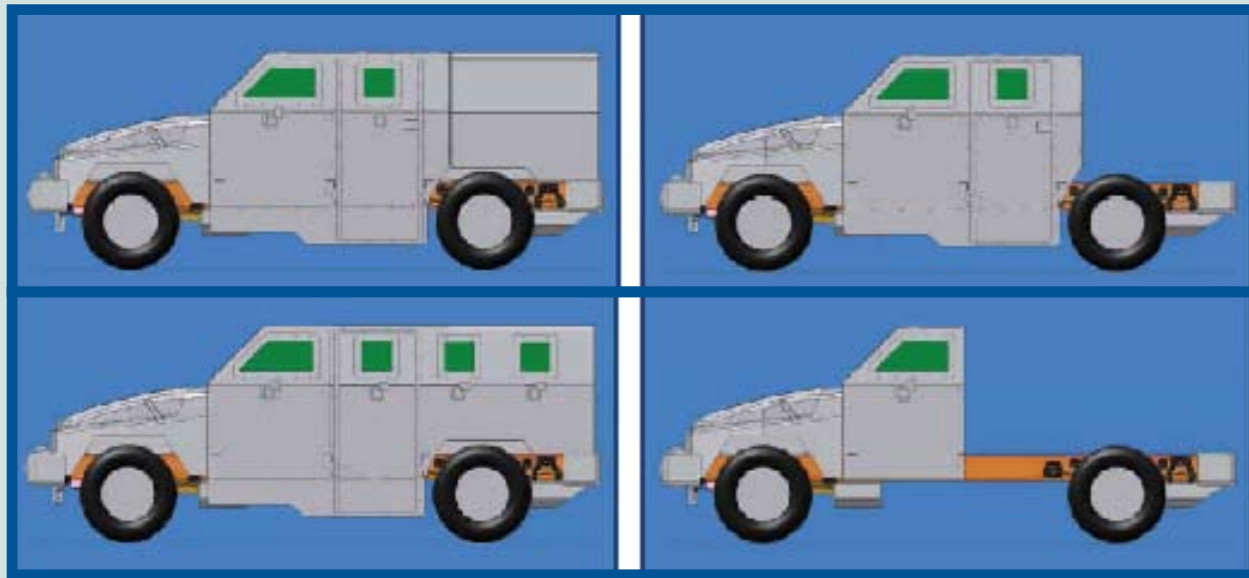


INTRODUCTION

The MPV (Multi Purpose Vehicle) was designed and built in the Republic of South Africa.

The vehicle was specifically developed for the ever increasing need of a modular, upgradable, protected vehicle for the local as well as international Cash in Transit market. The CSIR developed this MPV concept with TFM Industries and Nissan Diesel SA engineers. Nissan Diesel's service and spares infrastructure offers efficient service and parts availability, linked to their proven drive line components.

Utilizing a Nissan Diesel chassis and monocoque body, the modular design lends itself to a wide application in the protected market requirement. Various armour options are offered. Unique to the offering is a removable outerskin to be replaced by ceramic appliqué armour to stop AP ammunition. This makes the scope for upgradability much bigger. Different layouts are also available to cater for various other applications in the commercial armour market.



The critical performance criteria in the development of the MPV covered some of the following:

Reliability

The CIT industry is one that requires a high kilometer travelled capability with minimal operational down time. Linked to this operation costs should be as low as possible (cents per kilometer). This was a major element in choosing the UD40 chassis. The choice of the chassis was based on Nissan Diesel's experience in similar high cycle industries with this vehicle range.

Other important criteria in choosing Nissan to partner the project where:

- Normally aspirated engine-less electronic components to service.
- Standard drum brakes to reduce the maintenance cost and simplicity in serving versus hi-tech braking systems.
- Lower speeds to minimize the effects of high speed damage and accident potential.
- Original manufacture commitment to support the vehicles through national dealer network.
- Price acceptance of the donor drive train.
- Well balanced loading on the axle for an armoured vehicle.
- Upgradability.

The current fleet is experiencing a low R1.00 per kilometer average cost for maintenance. This is dependant on driver training and operational conditions.

Ballistic Capability

When procuring armoured vehicles with a capital write off life of between 5 and 7 years, serious considerations must be given to potential growth in Ballistic Protection as threat levels increase. The level chosen must offer effective protection of personnel and the asset transported over this capital write off period. It was for this reason that TFM decided to use a standard Stanag specification which gives protection against 5.56 x 45mm. The impact velocities @ zero degree are 940 to 960 meters per second at target.

Our cash in transit industry has shown that the threat level of AK47 is short lived. M16 and R4 became the threat level soon after some of our competitors had marketed their up-armoured cabs on CIT vehicles. Although the MPV does offer protection from side blast and standard hand grenade under the floor, it is not designed as a mine resistant vehicle.

The exact blast requirement needs to be specified before we can confirm acceptance should this be a requirement.

Capsule life cycle cost

The MPV UD40 is designed to be up-gradable. In real terms the operational life of the chassis dependant on distance travelled would be between 5 and 7 years. Once this target life is achieved, the entire body capsule can be removed from the original chassis and be re-mounted on a new chassis.

This opportunity offers savings on fleet replacement of up to 2 thirds of the purchase price.

This ability reduces future capital outlays.

This up grading advantage can be carried out many times in the life of the capsule.

Ballistic Up-grade Ability

As and when the threat level moves to Armour Piercing (API). The MPV is up gradeable. The unit is already designed to allow the current capsule to be mounted on the heavier Nissan UD60 chassis and drive train.

This is a 10 tonne GVM vehicle giving the increased power plant requirements and axle loadings to cater for the increased weight associated with API armour requirements. The additional appliqué armour can be fitted to the existing capsule. The major advantage is again cost containment.

Standard Configuration

The MPV offers various variants of the interior lay out.

Standard Features offered in the standard design

- Single entry to minimize compromising of the vault area in the event of an attack.
- Single entry door, pneumatically opened by the driver by means of an air cylinder linked to specific software housed in the vault area.
- Interlocking is pneumatically operated between the outside door and the vault door. As such the vault cannot be opened if the side door is open.
- Both the vault and the outer door are pneumatically locked.
- In addition both the main door and vault door are equipped with a manual safety lock.
- The standard unit is fitted with Protector run flat tyre bands which allows the vehicle to be driven with deflated tyres.
- Dual air-conditioning system is standard to the driver and crew area.
- Internals are lined with durable heavy duty carpeting and a soft roof lining.
- Two escape hatches are positioned in the drivers side window and capsule roof.
- Electric rear mirrors are standard
- Six concealed gun ports are positioned strategically to give 360° field of fire. The advantage of a concealed gun port is that the safety on the crew is protected as generally operators will use these to give ventilation and discard waste. This insures the integrity of the capsule.
- A drivers parcel port that is controlled by a gas stay allows the driver to pay road toll fees. The gas stay insures that the port is normally closed unless opened for its designed intention.
- All seats are equipped with 4 point safety harness.
- Two fire extinguisher are fitted as standard.
- The entrance gives a working height of 1,7 m to allow easy handling of cash canisters into the vault area.
- A standard FM radio and CD player are fitted as standard.
- Additional lighting is offered as standard to the drivers and crew area as well as the vault.
- Three weapon holders are fitted into the capsule.
- Seating for up to 4 crew plus a driver.
- Two spare wheels are offered as standard.
- Total payload is 1.5 ton.
- Ballistic glass is resisto-lite 33 mm fully gasketed with an inside anti-spaulding layer.
- Four working lights are fitted to the rear side and back of the vehicle.
- Front spot lights are fitted in the front bumper.

Optional extras available dependent on operational requirements

- Pepper gas.
- Poly urethane dispenser positioned in the vault operated by the driver or by a tilt sensor in the control unit to protect the asset if under attack.
- Hutchinson type run flats.
- Biometric fingerprint readers to gain access to vault area.
- Fire suppression systems.
- Automatic tyre inflation systems.
- CCTV/DVR camera systems.
- Satellite tracking systems.
- Interfaces can be supplied to allow fitment of specific drop safes.