

# CASSPIR Mk-I

**THE MECHEM SPECIFICATION CASSPIR Mk-I ARMoured PROTECTED PERSONNEL CARRIER**



The **CASSPIR Armoured Protected Personnel Carrier (APC)** is a leader in its class bringing high technology and battle proven effectiveness together to provide one of the safest landmine resistant personnel carriers in the world.

The CASSPIR APC use to be defended by its crew using their personal weapons and a gunner fired a roof or front mounted LMG from inside this completely armor protected vehicle. However, these vehicles have served their purpose in war and are now applied in an opposite roll as humanitarian demining work platforms and personnel carriers.



Double cab 4x4 after landmine exploded



Casspir MkI with fitted Steelwheels after landmine exploded

## General

A CASSPIR Mk-I has proven landmine resistance that allow a crew of twelve plus, driver and co-driver, to be transported safely in landmine ridden areas.

The vehicle has robust front impact resistance with external components protected against heavy brush, and foliage often found in combat areas.

Access to the vehicle is through pneumatically operated double doors at the rear of the hull. The external pneumatic switch for door operation can be isolated from inside the vehicle. A roof hatch is provided above the driver's seat.

Low noise levels make internal communication easy.

All seats are fitted with safety belts. The driver's seat is adjustable offering most drivers extremely good visibility.

Stringent testing to internationally approved standards and modern manufacturing methods (including 8 years of combat in the toughest battle environments and climate in the world) have made the CASSPIR Mk-I APC the most advanced personnel carrier of its type.

The hull shape ensure limited damage should a landmine be detonated by a wheel. Under normal conditions modular replacement repair of components will have the CASSPIR back and running in approximately twelve hours.

Bullet resistant glass and a welded armor hull will resist small arms fire as well as landmine blasts protecting not only its personnel but all vital automotive components housed inside the hull.

All MECHEM specification CASSPIR MK-I models are fitted with later model turbocharged diesel engines. This gives a MK-I similar power and performance capabilities as the Mk-II and Mk-III models.

The CASSPIR suspension consists of heavy duty leaf springs with heavy duty double action shock absorbers. Check straps limit the maximum axle movement allowed by the leaf spring suspension.

Brake systems (including an exhaust brake) used on MECHEM Specification CASSPIR Mk-I's further enhances on- and off-road handling characteristics. This together with a differential lock, selectable 4 wheel drive and tremendous axle movement give the CASSPIR Mk-I a go-anywhere capability in off-road conditions.

A basic CASSPIR APC Mk-I comes with the following equipment fitted as standard:

- 200 liter drinking water tank.
- 2 Spare wheels.
- Tarpaulin Cover for Roof Opening –(Steel Cover and Air-conditioning is optional)
- Front and Rear Tow Hitch.
- 2 Fire Extinguishers Onboard.
- Tow Bar Mounted On Roof Side.
- Dual Fan Ventilation.

## Repair

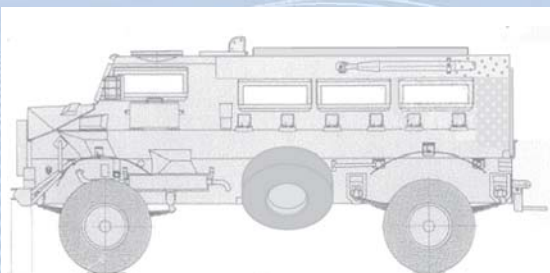
The CASSPIR Mk-I has been designed to ensure that the cost of repair of mine damaged vehicles remains within reasonable cost limits.

The degree of mine protection is such that repair costs are highly favorable compared to cost of purchase of a new vehicle. Interchangeability of components and protection given to vital and expensive components make the CASSPIR series very economical in mine clearing operations.

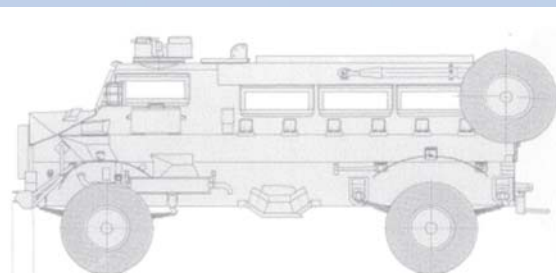
## Maintenance

Although all vital components are well protected they are easily accessed. Routine maintenance can be carried out under field conditions. (i.e. The braking system is modular and contained within a single compartment.)

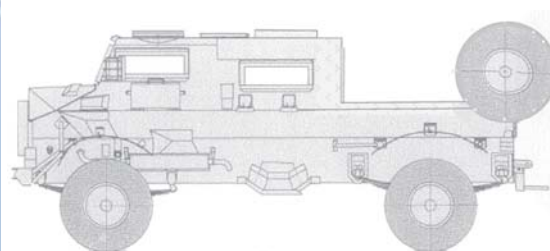
Apart from the shell which is landmine resistant, external components are also protected against blast and bush Impact. Special features are; Blast proofing of the battery box, engine sump drain, front differential and transfer case protection. Magnetic fuel cap is in a blast proof protector.



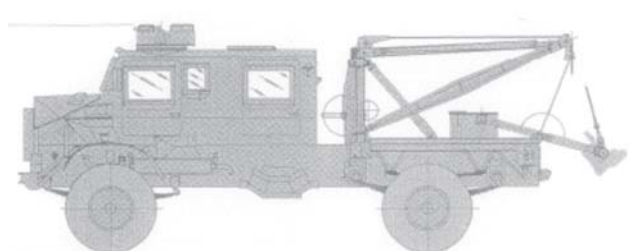
MK-I PROTECTED PERSONNEL CARRIER



MK-II & III PROTECTED PERSONNEL CARRIER



CASSPIR-S PROTECTED LOG CARRIER



15-Tonne PROTECTED RECOVERY

# SPECIFICATIONS FOR THE CASSPIR MPV

## TECHNICAL SPECIFICATIONS

### PROTECTION LEVELS

Hull	Small Arms on Window Glass 7,62 x 51 mm NATO Ball
No of 7 kg Blast Type Landmine	Under Center Hull: 2
No of 7 kg Blast Type Landmine	Under Any Wheel: 2

### CREW AND PERSONNEL

#### CAPACITY

Crew	1 Driver + 1 Co-driver
Personnel	12

### ENGINE

Type	ADE 352T
Description	Water-cooled, direct injection, 4-stroke, turbo charge, diesel
Number of cylinders	6 in-line
Displacement	5 675 cm <sup>3</sup>
Output	124 KW at 2 800 r/min
Torque	520 Nm at 1 700 r/min

### AIR FILTERING SYSTEM

Type	Donaldson FHG/12/0276 Double dry paper element
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### TRANSMISSION SYSTEM

#### CLUTCH

Type	Single plate, dry disc clutch
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### GEARBOX

Type	Manual 5 speed forward (all synchromesh) with reverse
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### TRANSFER CASE

Type	Two speed
Operation	Pneumatic

### DRIVE AXLES (Mercedes Benz) (MB)

Front	Single reduction, palloid drive, and steering axle
Rear	Single reduction, hypoid drive axle with different lock

### STEERING SYSTEM

#### STEERING BOX

Type	Ball and nut, hydraulic power assisted
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### BRAKING SYSTEM

#### SERVICE BRAKE

Type	Dual circuit, air assisted hydraulically operated drum brakes on front and rear axles
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### EMERGENCY BRAKE

Type	Air-operated spring-loaded chamber with mechanical effect in rear axle drum
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## SUSPENSION

Type Semi-elliptical leaf spring front and rear.  
Telescopic double acting oil filled shock absorbers. Front and rear.  
Front axle articulation limited by check straps.

## WHEELS

Tyres Cross ply multi purpose 14.00 x 20 x 18 ply rating  
Run Flat Inserts (RFI) Optional  
Tyres pressures Paved Road: 500 KPa  
Off-road: 310 KPa

## ELECTRICAL SYSTEM

Type 28V Negative Earth

## DIMENSIONS MASS AND PERFORMANCE

Wheel Base 4 200 mm  
Wheel Track Front: 2 100 mm  
Rear: 2 060 mm  
Overall length 6 900 mm  
Overall height 3 125 mm  
Overall width 2 450 mm  
Overhang Front: 1 234 mm  
Rear: 1 436 mm  
Angle of approach 46°  
Angle of departure 40°  
Hump radius 2 820 mm  
Ground Clearance Front: 330 mm  
Rear: 360 mm  
Turning Circle 17 meters

## THEORETICAL PERFORMANCE

### MAXIMUM ROAD SPEED (Km/h)

1st gear	High range	11
	Low range	7
2nd gear	High range	21
	Low range	13
3rd gear	High range	36
	Low range	23
4th gear	High range	60
	Low range	39
5th gear	High range	84
	Low range	54

## VEHICLE MASS AND PERMISSIBLE LOADS

Unladen Vehicle 9 480 Kg  
Payload 1 400 Kg  
Total 10 880 Kg  
Load Distribution Front axle: 5 145 Kg  
Rear axle: 5 735 Kg  
Permissible Gross - Vehicle Mass 14 000 Kg

(GVM)

Permissible Gross - Combination 22 000 Kg

Mass (GCM)

# CASSPIR-S



**CASSPIR-S** is a shortened version of the battle proven “CASSPIR” Mine Protected Personnel Carrier (MPV) that was designed by **MECHEM** more than 21 years ago.

Retaining all the proven technology and battle proven characteristics of the CASSPIR MPV, **MECHEM (Pty) Ltd** now offers the CASSPIR-S with the following additional features:

- Reduced weight allows opportunity to add ballistic protection for enhanced crew protection as required.
- Smaller crew capsule (driver plus 7) ensures smaller EFP target.
- Smaller turning circle ensures much better maneuverability.
- Enhanced power to weight ratio.
- Improved fuel efficiency.
- External load body.
- Protected roof (with option for AC).

## STANDARD FEATURES

CASSPIR-S retains the following “tried and tested” CASSPIR (MPV) features:

- Excellent rough terrain mobility.
- Simplicity and easy maintenance and repair.
- Availability of off-the-shelf spares.
- Efficient mine protection.
- Efficient ballistic protection against small arms fire and shrapnel.
- Gun ports allow crew/occupants to efficiently protect themselves from inside the vehicle (using standard assault rifles).
- Quick and cost efficient repairs following damage as a result of landmine blast.
- Machine gun cupola for co-driver for efficient protection/convoy protection.
- Six months unconditional guarantee on re manufactured vehicles.