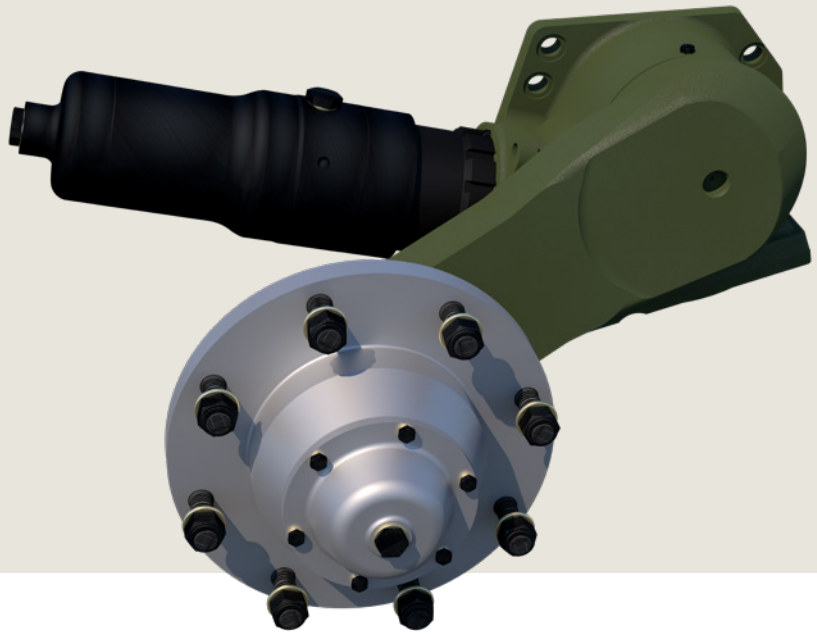


## SUSPENSIONS

# Hydrogas®

/ Suspension Type

**High Pressure Nitrogen Gas**



Developed by Horstman in the 1980s for a range of vehicles, Hydrogas® was designed from the outset to replace torsion bars and provided a revolutionary increase in cross-country mobility.

This allowed the vehicle designer to overcome the internal packaging constraints, vulnerability to mine blast and crew exposure to the fragmentation that all result from torsion bars.

The hydro-pneumatic suspension uses high-pressure nitrogen gas and an integral oil damper. Robust environmental seals make the Hydrogas® a sealed module suitable for robust environments.



### Reference Vehicles

- Challenger MBT
- CrARRv
- AS90
- Terrier
- K9/K10

# Hydrogas®

## Features

- Torsion bars removed from the inside of vehicle
- Rising Rate Spring and improved damping
- Independently mounted external suspension
- Lower vehicle height / survivability
- Integrated system approach saves mass

## Benefits

Additional space for equipment, ability to have a floor mounted emergency escape hatch. Reduced fragmentation effects from secondary projectiles from mine blast or IED blast.

Hydrogas® get stiffer closer to the ends of travel and so reduces shock loads on the crew and vehicle. Crew comfort improves, absorbed power reduces and vehicles can drive faster.

Damaged units can be replaced more easily than bent or seized torsion bars.

Ability to lower the turret basket and reduce the height of the vehicle gives improved survivability (lower silhouette). The saving of the hull side armor is typically 100-500 kg.

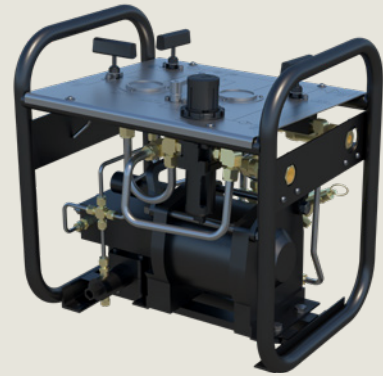
Simpler than a torsion bar system which needs separate road arms, bump stops, dampers, torsion bar attachments and protective tubes; eliminates the need for multiple torsion bar spring rates as wheels individually adjusted by gas pressure to suit payload or performance.

## Options

- Selectable damping
- Variable damping, up to full hydraulic lockout
- Dual spring / secondary volume

## Accessories

- Charging kit – Hydrobooster™
- Electronic Control Unit (ECU)
- Wheel hub, light weight wheels, wear guards, bump stops



## Trusted Partner.

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