Horstman

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Horstman InArm®

# Horstman InArm®

InArm® has the lowest weight and space claim of all armoured vehicle suspension systems and provides a growth path to advanced variable damping, lock-out and ride height management systems.

## Product Overview

Developed by Horstman in the mid-1990s initially for the UK MODs Future Scout Cavalry System (FSCS) Tracer and US Army's Future Combat System (FCS) programs, InArm® is designed to eliminate the need for torsion bars and to minimize or eliminate road arm penetration of the vehicle hull.

This allows the vehicle designer to overcome the internal packaging constraints, minimize the external packaging constraints, and overcome vulnerability to mine blast and crew exposure to the fragmentation that results from torsion bars.

The hydro-pneumatic suspension uses high-pressure nitrogen gas and an integral oil damper that are all contained within the road arm. This reduces weight and space compared to other hydrop, HSU or coil solutions. Designed as the most efficient packaging space solution, InArm® provides a growth path to advanced variable damping, lock-out and ride height management systems.

# Horstman InArm®

| Feature | Benefit |
|---|---|
| Torsion bars removed from the inside of vehicle | 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 |
| Integrated system approach saves mass | Integration of damper and gas spring inside road arm minimizes space claim. Simpler than a torsion bar system which needs separate road arms, bump stops, dampers, torsion bar attachments and protective tubes. |
| Independent suspension mounted externally | Damaged units can be replaced more easily than bent or seized torsion bars. Reduced hull machining without precision alignment between left and right side of vehicle |
| Lower vehicle height / survivability | Ability to lower the turret basket and reduce the height of the vehicle gives improved survivability (lower silhouette). The saving of the hull side armour is typically 100-500kg |
| Upgrade path to advanced suspension features | Upgrade path to ride height, lockout and semi active damping |

## Options

- **Variable damping, up to full hydraulic lockout**
- **Rising rate spring as standard – dual spring / secondary volume options**
- **Ride Height, vehicle pitch (kneeling)**
- **Transport lock**
- **Active Damping**
- **Thermal compensation**

## Accessories

- **Charging kit and Nitrogen Charging – Hydrobooster™**
- **External Lockout (engineering / special role)**
- **Wheel hub, lightweight wheels, wear guards, bump stops**

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