Horstman

Horstman Hydrostrut®

The hydro-pneumatic suspension uses high-pressure nitrogen gas and an integral oil damper and provides for an easy path to ride height and wheel station load adjustment. Compact and providing excellent ride this is a superior selection for 4x4, 6x6 and 8x8 vehicles compared to coil or leaf spring, conventional shocks or air bag technology.

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Product Overview

Developed by Horstman in the late 1980s for tracked vehicle and wheeled applications, Hydrostrut® was designed from the outset to eliminate the need for a separate spring by combining the gas spring into the damping unit. This allows the vehicle designer to overcome internal packaging constraints in the case of torsion bars or external packaging constraints in the case of coil springs.

The hydro-pneumatic suspension uses high-pressure nitrogen gas and an integral oil damper. Robust environmental seals make the Hydrostrut® a sealed module suitable for robust environments. The rising spring rate of compressed gas provide a natural progressive end stop to travel and reduce shock loads into the chassis and crew. Separate bump stops can be eliminated or significantly reduced in size and cost.

Horstman provides the world's widest range of Hydrostruts®, together with ride height and semi-active options. Proven in Spz Puma, M-777 howitzers, and a wide variety of 4×4, 6×6 and 8×8 wheeled combat vehicles such as the AMV, PARS and Terrex, Horstman has continuously upgraded Hydrostruts® with the latest in ride height control and semi-active damping technology.

Feature	Benefit
Single unit combines spring and damper	Low weight an size compared to separate shock+coil or air bag+compressor. The rising spring rate of compressed gas provide a natural progressive end stop to travel and reduce shock loads into the chassis and crew. Separate bump stops can be eliminated or significantly reduced in size and cost.
Supports wheeled or tracked vehicle suspensions	Efficient packaging space of Hydrostrut® allows use with road arms, MacPherson struts or short / long arm suspensions.
Independent suspension mounted externally	Simplified installation & repair; damaged units can be replaced more easily than bent or seized torsion bars
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 (or) ability to increase ground clearance for IED blast reduction or extra floor armour
Integrated system approach with self-contained gas	Hydrostrut® allows different spring rates at each wheel station using a single part number allowing different vehicle variants in a fleet to have optimized ride quality. Simpler than a torsion bar system which needs separate road arms, bump stops, dampers, torsion bar attachments and protective tubes. Upgrade path to ride height, lockout and semi active damping

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Horstman Defence Systems Limited Locksbrook Road | Bath | BA1 3EX | UK
T. +44 1225 423111 | **E.** information@horstmangroup.com | www.horstmangroup.com
A member of ADS