Driveline

Engineered Sealing Solutions for Enhanced Vehicle Mobility

Driveline Solutions

Central Tyre Inflation

One of the most significant developments for enhancing mobility for wheeled vehicles has been the introduction and adoption of Central Tyre Inflation (CTI) technology.

Achieving this optimum tyre pressure and having the ability to change it whilst in motion to suit prevailing ground conditions is realised through utilising Central Tyre Inflation Systems (CTIS).

Irrespective of vehicle use, incorrect tyre pressures have a significant negative impact on the operational capability of any wheeled vehicle. Incorrect tyre pressures contribute to increased tyre wear, increased fuel consumption and increased operator fatigue. Whilst for agricultural vehicles incorrect tyre pressure generates increased ground compaction which in turn reduces crop yield.

For military vehicles the correct and appropriate tyre pressure is a key factor in maintaining that mission critical mobility over different ground conditions. Minimising driver and crew fatigue are also key operational theatre benefits.

Click here to find out more

Benefits Include:

- ✔ Tyre life – tires could last up to 15% longer
- ✔ Operational efficiency – keep your downtime to an absolute minimum
- ✔ Fleet mobility – ensure peak performance across all terrain in all weathers
- ✔ Driver comfort – average cabin vibration levels up to 10% lower
- ✔ Fuel consumption – save between 1% and 4% on fuel costs
- ✔ Wheel slip – incorrect pressures can result in between 20% and 40% of engine power lost through tire slip
- ✔ Vehicle maintenance costs – average repair costs of just two cents per kilometre
- ✔ Impact sustained by road surface – better preservation of top 200mm of road surface
- ✔ Risk of vehicle breakdown or immobilisation – just two tire bursts in five million kilometres of CTIS-assisted travel

Facts referenced from these publications:

1. Skogforsk study (2005), analysing five million kilometres of CTIS-assisted haulage travel over a three-year period.
2. Green Truck Partnership study (2013), analysing cement tankers with and without CTIS-assisted travel over a 12-week period.
3. Collings, A. 'Tyres: make sure your pressures are right' Farmers Weekly. 23 March 2008.

Applications

Military

FTL's Central Tire Inflation components have a proven pedigree on wheeled military vehicles including; Infantry Fighting Vehicles, Armoured Personnel Carriers, Utility Vehicles, Logistics Vehicles and Support Vehicles.

- ✔ Increased vehicle mobility and safety

Agricultural

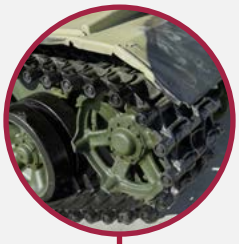
In agricultural environments, tire pressures can be adjusted to suit field operations to increase floatation and help to reduce soil compaction for; farming tractors, combined harvesters, trailers, sprayers and forage harvesters.

- ✔ Increased production
- ✔ Reduced soil compaction

Road

On/off-road vehicles can adjust their tire pressures according to the terrain surface and the load being carried. CTI is particularly suitable for HGVs, Oil and Gas trucks, forestry, construction and logistics vehicles.

- ✔ Increased driver comfort & safety
- ✔ Reduced tire wear & fuel consumption



Tracked Vehicles:
Main Battle Tanks, Infantry Fighting Vehicles, Weapons Carrier, Repair and Recovery, Armoured Engineering Vehicles, Self-Propelled Gun, Ambulance

Suspension:
Wheeled and Tracked Vehicles

Wheeled Vehicles:
Infantry Fighting Vehicle, Protected Patrol Vehicles, Command Vehicles, Reconnaissance Vehicles, Logistics Vehicles, High Mobility Vehicles

Agricultural:
Tractors, Harvesters, Planters, Crop Sprayers,

Amphibious Vehicles:
Wheeled and Tracked Variants

CTI Solutions

A key element of realising these CTI benefits to vehicle mobility are the associated CTI seals, these are the critical rotary sealing elements that facilitate transfer of air between static and rotating parts within the axle and wheel hub. FTL has been at the forefront of CTI sealing technology for more than 25 years.

Initially, our CTI sealing solutions were primarily utilised on military vehicles. However, adoption of the technology is now much wider and our CTI sealing solution are specified across a wide range of vehicle types and duties.

CTI seals are very much the unsung heroes of the technology. However, without a successful sealing solution the vehicle will not be able to realise the advantages that CTI enabling brings.

Image courtesy of Timoney Technology Limited.

Benefits Include:

- In service proven seal types and designs.
- Adaptable seal profiles to suit vehicle operational profiles.
- High sealing efficiency.
- Reduced space claim and easier design integration due to compact seal design.
- Sealing integrity, longevity of operation and reduced maintenance intervals.
- Reduced power loss from low friction seal design and materials.
- Seal temperature capability covers military and commercial requirements.
- Reduced complexity, seal styles compatible with all CTI control systems including negative pressure capabilities.

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SEALING SOLUTIONS

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