

TYRE PRESSURE CONTROL SYSTEMS

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Introduction

- What is a Variable Tyre Pressure System
- Benefits of VTPS
- Variable Tyre Pressure Scheme
- Useful Documents



Variable Tyre Pressure System

- Also known as Central Tyre Inflation (CTI) Systems
- Originally developed for military use.
- A system of air tanks and hoses link vehicles air compressor to the tyres.
- Tyres can be partially deflated and inflated while the vehicle is in motion.
- System is controlled from the cab using preset pressure points.
- The system will automatically increase pressure as speed increases.



Trailer Wheels with VTP / CTI



Drive Axle with VTP / CTI



Side View of truck with VTP/CTI



VTP / CTI Valve Control Unit



VTP / CTI Cab Control Unit



Benefits of VTP / CTI

- Lengthens footprint of tyre on the road, thus reducing the effective stresses and risk for deformations in the road structure (Roadex Benefits and Savings, 2012)
- Reduces pressure under the wheels, particularly at depths up to 150mm with effects still being measured at 248mm depth. At 389mm depth the effect was minimal. (Stynie Wood Demonstration Project, Roadex 2012)
- A number of trials have shown reduced impact on low-volume roads when VTP / CTI is used
- Maintains correct tyre pressures at all times.
- Maintains equal pressure for twin tyre systems.



Benefits of VTP / CTI

- Manufacturers also claim the system offers better mileage performance, comfort, and transmission of traction and braking as tyres are at optimum pressure settings.
- There are claims for extended tyre life and reduced tyre damage.
- VTP / CTI system is not the solution for all issues, but is part of the answer.



VTP / CTI Scheme

- 40% grant-aid per unit
- Scheme will operate in 3 month tranches
- First tranche will close in January 2017.
- CTI to be fitted to all axles except front steering axle
- Must use wither twin or “maxi” tyres. Use of “super single” tyres not permitted.
- Must be installed by authorised agent / distributor.
- A truck equipped with a CTI must have visual and audible alarms that alert the driver when the vehicle’s speed exceeds the safe operational speed specified by the tyres manufacturer or vehicle manufacture.



VTP / CTI Scheme

- A CTI System must start inflating the tyres automatically within one minute of the onset of a continuous over speed alarm indication.
- A truck operating with a CTI must have visual and audible alarms that alert the driver when tyres pressures fall by more than 20 psi (138kPa) below any programmed pressure setting.
- Systems must have pre-set (programmed) settings that are determined by qualified personal following tyres manufacturer's recommendations for the vehicle's tyres, loads and speeds.



VTP / CTI Scheme

- Scheme documents are available at:
<http://www.agriculture.gov.ie/forests/forests/grantsandpremiumschemes2015-2016/>

Useful documents

- Tyre Pressure Control on Timber haulage vehicle – some observations on a trail in Highlands, Scotland – ROADEX III
- ROADEX benefits and savings – achieving more with less
- Niinisalo and Ivalo traction Demonstration Projects, Finland – ROADEX
- Stynie Wood Demonstration Project, Mosstodloch, Scotland - ROADEX
- Tread softly – Lower impact vehicles for timber haulage
Timber Transport Forum, Scotland
- www.roadex.org

THANK YOU FOR YOUR ATTENTION

