



Performance in motion

Onboard Shunt Enhancer™ (OSE™)

Improve track circuit shunting





Minimize the risk of non-detection with OSE™

An industry proven solution for train detection

The Unipart OSE™ system is engineered to mitigate of 'loss of shunt' where factors including debris, rust or light axle loads can interfere with traditional signaling.

Track Circuit Failure

Track circuits affected by rust or other contaminants are not a problem for heavier trains, but lighter DMUs and alternative fuel and battery vehicles do not have enough weight to break through the insulating layer, and in certain cases this can lead to a train not being detected by the signaling system.

Improved suspension, better wheel-rail profiles and use of disc-brakes on modern vehicles also contribute to the problem, as there is less abrasion to the rail and a resulting build-up of rust or contaminants acts as an insulator to the track circuit current.

The OSE™ system

By integrating train-mounted antennas suspended on the underside of the bogie, the system provides an industry proven solution for reliable train detection, specifically engineered to overcome the common failure modes of traditional track circuits caused by rail head contamination or oxidation on low-usage lines.

The system consists of:

- Cab-mounted control unit
- Wiring harness or kit of connector parts
- Bogie mounted tuner unit with an integrated harness to run to an underbody connector
- Bogie mounted antenna manufactured from steel tubing



Endorsed by the Loss of Shunt committee

In a major milestone for rail safety, the Loss of Shunt Committee has recommended the implementation of an onboard shunt enhancement system as a solution.

The service

Unipart offers a comprehensive service including:

- Consultancy service to identify specific fleet requirements
- Customisation of the OSE™ design for each fleet
- International standards compliance (territory specific details available on request)
- Customised test and maintenance equipment
- Delivery and commissioning of complete OSE™ kits
- Training for installation and maintenance engineers
- Support and technical advice

Benefits of the Unipart OSE™

- Improved track circuit shunting when wheels and rails are rusty or have a contamination layer
- Improved safety and reliability of train detection
- Ability to operate short vehicle sets
- Reduced likelihood of costs associated with delays caused by non-shunting of circuits
- Straight-forward, simple installation
- Low-maintenance system supported by the Unipart team
- Spares and replacements available



Performance in motion

Delivering transformative solutions to global rail industry challenges

UNIPART



Scan or click
to learn more

Copyright© Unipart 05/2026

unipart.com

