

## Service and repair wheels and tracks on land-based equipment

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### Overview

This standard covers the service and repair of wheels and tracks on land-based equipment. It includes the understanding of the types, construction, function and operation of land-based equipment employing wheels and tracks to transfer power to the ground, (e.g. track systems, wheels and tyres or ground drive systems).

This standard covers traction and the transfer of tractive power from a powered land-based vehicle to the ground through tyres or tracks including traction and tractive aids, (e.g. ballast, weight transfer, dual cage wheels, slip control or tyre track construction types and characteristics). Areas examined are tyre and track construction maintenance and repair, the capabilities and limitations of each and how traction can be improved.

This standard is for those who work in land-based engineering and is appropriate for persons working under supervision.

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### Performance criteria

You must be able to:

1. remove and replace wheel/track assemblies and their related components from land-based equipment
2. dismantle, assess and reassemble wheeled/tracked systems and their running gear for serviceability in accordance with manufacturers' guidelines
3. service/repair and reinstate wheeled/tracked systems
4. adjust, attach or remove **aids** to achieve stability and greater tractive effort
5. recognise and rectify **faults** relating to wheels, tyres, tracks and traction

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### Knowledge and understanding

You need to know and understand:

1. the types, construction and operating principles of wheeled and/or tracked systems and their running gear
2. the methods of dismantling, servicing/repairing and reassembling wheeled and/or tracked systems and their running gear
3. the **types, construction and applications** of wheels, tyres tracks and tractive aids
4. the **implications of weight** distribution/transfer/ballast, on tractive performance
5. the implications of **legislative and/or legal responsibilities** on wheeled or tracked equipment
6. the **relationships** between driven axles and tractive power
7. how to carry out physical checks to confirm inter-axle mechanical ratios and the suitability of tyre combinations

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**Glossary**

**aids** to achieve stability and greater tractive effort e.g. tyre pressure, dual wheels, cage wheels, liquid ballast and weights

**faults** relating to tyres, tracks and traction e.g. torque wind up, tyre creep, slippage, vibration and bouncing, punctures

**implications** of weight distribution/transfer/ballast, on tractive performance e.g. excessive slip, slip control, ground pressure, stability, tyre pressures dual, cage wheels, liquid ballast, weights and variable loads (fertiliser spreader, extending arms, tankers)

**legislative and/or legal responsibilities** e.g. axle/tyre/gross loadings, escort vehicles, police notification and road or bridge restrictions

**relationships** between driven axles and tractive power e.g. PTO driven axles, land drive, inter axle ratios and correct tyre combinations for four-wheel drive vehicles with unequal size drive wheels

**types, construction and applications** of wheels, tyres tracks and tractive aids e.g. size, ply rating, load index, speed rating, orientation, pressure/tension, ballasting, use of inner tubes

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