

**AURKTJXX1 Remove, inspect and fit
earthmoving and off-the-road tyres**

AURKTJX11 Remove, inspect and fit earthmoving and off-the-road tyres

Modification History

Release	Comment
Release 2	Updates to Application, Range of Conditions, Performance Evidence, Knowledge Evidence, and Assessment Conditions
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to remove, inspect and fit earthmoving and off-the-road (OTR) tyres to construction and mining vehicles. It involves removing the tyre from the rim, identifying and controlling risks, inspecting the tyre, assembling the wheel and rim, recommending required repair action, inflation, deflation, and preparing the tyre, wheel and rim assembly for use or storage.

It applies to those who fit tyres to wheel and rim assemblies of not less than 600 mm (24 inches) nominal diameter and classified as off-the-road or earthmover tyres.

Licensing, legislative, regulatory, Australian standards or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Unit Sector

Technical - Wheels and Tyres

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Assess and control risks	1.1 Identify and control hazardous conditions in the work environment 1.2 Identify and apply safety requirements to control hazardous tyre, wheel and rim assembly conditions, noting points where safety checks are required

ELEMENTS	PERFORMANCE CRITERIA
	<p>1.3 Obtain and interpret emergency procedures and be prepared for fires, accidents and emergencies</p> <p>1.4 Identify hazards and environmental issues, assess potential risks, and implement control measures in line with workplace policies</p>
2. Prepare to remove tyre from wheel or rim	<p>2.1 Obtain and interpret manufacturer procedures original equipment manufacturer (OEM) specifications, workplace procedures, and applicable standards for earthmoving and off-the-road tyres</p> <p>2.2 Obtain, interpret, clarify and confirm work requirements</p> <p>2.3 Plan sequence of work, noting points where safety checks are required</p> <p>2.4 Select and wear personal protective equipment required for the work activity</p> <p>2.5 Coordinate and communicate planned activities with others at the site as per work requirements</p> <p>2.6 Identify tyre, wheel and rim components</p> <p>2.7 Select and inspect tools and equipment according to manufacturer instructions and workplace procedures</p> <p>2.8 Prepare, clean and inspect tyre, wheel and rim assembly for damage, wear, corrosion, foreign material, cracks, and compatibility of component</p>
3. Deflate and remove tyre from wheel or rim	<p>3.1 Isolate, jack, raise and support vehicle according to workplace procedures</p> <p>3.2 Deflate tyre according to manufacturer instructions and workplace procedures</p> <p>3.3 Verify appropriate deflation of tyre in line with workplace procedures and OEM requirements</p> <p>3.4 Apply workplace procedures for the safe removal and purging of hazardous fill substances</p> <p>3.5 Remove tyre according to workplace procedures and without causing component damage or injury</p>
4. Inspect tyre, wheel or rim and recommend repair and replacement actions for unserviceable components	<p>4.1 Clean and visually inspect tyre, wheel or rim for serviceability and compatibility for application according to workplace procedures and OEM specifications</p> <p>4.2 Record and report inspection findings according to workplace procedures</p> <p>4.3 Document recommended repair and replacement actions and report to relevant personnel according to workplace procedures</p>
5. Fit tyre to wheel or rim	<p>5.1 Access and interpret workplace procedures and OEM specifications for fitting tyres</p>

ELEMENTS	PERFORMANCE CRITERIA
	5.2 Assess need for tyre additive and nitrogen and add where required 5.3 Fit tyre according to workplace and manufacturer procedures 5.4 Perform post-fit inspections of tyre, wheel and rim assembly according to workplace procedures to confirm correct assembly, component compatibility, serviceability, and correct seating of components prior to inflation
6. Inflate tyre	6.1 Identify and apply tyre inflation safety procedures 6.2 Inflate tyre for transport, storage or use according to workplace procedures and manufacturer specifications 6.3 Monitor tyre, wheel and rim assembly during inflation according to workplace procedures
7. Complete work processes	7.1 Perform final inspection to ensure work meets workplace requirements and OEM requirements 7.2 Prepare tyre, wheel and rim assembly for use or storage according to workplace procedures 7.3 Inspect and store tools and equipment according to workplace procedures, tagging or reporting where necessary 7.4 Complete workplace documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Reading skills to:	<ul style="list-style-type: none"> read and interpret: <ul style="list-style-type: none"> written information in workplace procedures, manufacturer instructions, and work health and safety (WHS) requirements relating to removing, inspecting and fitting earthmoving and off-the-road (OTR) tyres charts, lists, drawings and other applicable documents.
Writing skills to:	<ul style="list-style-type: none"> document inspection findings and recommend repair and replacement actions engage with workplace documents.

Oral communication skills to:	<ul style="list-style-type: none"> ask questions to clarify inspection observations, instructions and procedures report inspection results brief team and customers
Numeracy skills to:	<ul style="list-style-type: none"> read and interpret metric and imperial systems of measurement read and interpret mathematical information, including charts and drawings use specialist tools and measuring equipment, including: <ul style="list-style-type: none"> gauges and pressure regulators pressure testing tools.
Digital literacy skills to:	<ul style="list-style-type: none"> use workplace computerised technology and tools relating to the removal and refitting of earthmoving and OTR tyres.
Planning and organising skills to:	<ul style="list-style-type: none"> plan and prioritise own work to achieve required outcomes plan appropriate risk controls to minimise risks before, during and after the tyre fitting process.
Self-management skills to:	<ul style="list-style-type: none"> select and use appropriate equipment, materials, processes and procedures recognise own limitations when selecting and using tools and equipment and seek timely advice.
Problem-solving skills to:	<ul style="list-style-type: none"> seek information and assistance as required to solve problems identify tyre, wheel and rim assembly condition and performance match tyres to wheel and rim assemblies and vehicle type.
Teamwork skills to:	<ul style="list-style-type: none"> work alongside other team members in a work environment, including those fulfilling other roles, such as riggers, dogmen, mechanics, tyre fitters, drivers and site operators.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Safety requirements must include:	<ul style="list-style-type: none"> those prescribed under applicable standards, work health and safety (WHS) Acts and regulations, and workplace policies and procedures isolation procedures inflation and deflation procedures hazard control manual-handling techniques personal protective clothing and equipment using tools and equipment
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	<ul style="list-style-type: none"> • working with hazardous substances, including: <ul style="list-style-type: none"> • nitrogen gas • chemicals • hydraulic pressure • compressed air • polyurethane resin (PUR) tyre fill • tyre additive
Tools and equipment must include:	<ul style="list-style-type: none"> • tyre handling equipment • bead seaters and breakers • rim and wheel assembly stands • inspection stands • hand tools • inflation and deflation tools and pressure gauges • lock ring catcher • mufflers • pneumatic tools • hydraulic tools • power tools • soft face hammers • support stands or jacks • torque tools • tyre levers • wire brushes • air compressors • gauges
Hazardous conditions must include:	<ul style="list-style-type: none"> • changing and unstable ground conditions • dust • sparks from use of grinders • hard, soft or uneven ground conditions • line of fire during inflation of tyre, wheel or rim assembly • noise • vehicles/pedestrians/machinery/other personnel within the workplace • handling of tyres, rim components and assemblies
Hazardous tyre and wheel or rim conditions must include:	<ul style="list-style-type: none"> • damage • wear • corrosion • foreign material • cracks • heat damage, including pyrolysis • compatibility of rim components

	<ul style="list-style-type: none">• hazardous fill substances, including nitrogen gas, calcium chloride and polyurethane resin (PUR)• under- or over-inflated tyre
Rim and wheel component assemblies must include:	<ul style="list-style-type: none">• adaptor rings and plates• bolts• cleats• nuts• reducers• spacer bands• studs• washers• wedge bands• wedges

Unit Mapping Information

Supersedes and is equivalent to AURKTJ011 Remove, inspect and fit earthmoving and off-the-road tyres

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURKTJX11 Remove, inspect and fit earthmoving and off-the-road tyres

Modification History

Release	Comment
Release 2	Updates to Application, Range of Conditions, Performance Evidence, Knowledge Evidence, and Assessment Conditions
Release 1	New unit of competency.

Performance Evidence

The candidate must demonstrate they can perform the following according to the standards defined in the elements, performance criteria and foundation skills of this unit.

The candidate must demonstrate removing, inspecting, and refitting industrial earthmoving and off-the-road (OTR) tyres following safe workplace procedures on three of the following wheel and rim assemblies:

- split wheel or rim assembly
- three-piece wheel or rim assembly
- five-piece wheel or rim assembly
- seven-piece double gutter wheel or rim assembly
- eight-piece wheel or rim assembly

The candidate must demonstrate they can perform the work using at least two of the following tyre handling equipment:

- crane
- earthmoving and OTR tyre handle
- forklift-mounted tyre handler
- grab truck
- loader-mounted tyre handler

In undertaking the above, the candidate must:

- locate and interpret required documentation, policies and procedures
- complete workplace documentation, including:
 - risk assessments
 - work health and safety (WHS) documentation
 - workplace tyre change documentation.
- mitigate site and task hazards, including one of the following hazardous substances:
 - chemicals
 - hydraulic pressure
 - compressed air

- nitrogen gas
- polyurethane resin (PUR) tyre fill
- tyre additive
- identify tyre profile and matching requirements
- identify and control hazardous conditions in tyre, wheel and rim assemblies, including:
 - damage
 - wear
 - corrosion
 - foreign material
 - cracks
 - heat damage, including pyrolysis
 - compatibility of components
 - hazardous fill substances
 - mechanical release of stored energy
- deflate tyre and remove from wheel or rim without causing component damage
- clean and inspect tyre, wheel or rim assembly for serviceability
- inspect mounting components and fasteners for cleanliness, damage, wear, corrosion, foreign material and cracks
- fit tyre to wheel or rim and conduct post-fit inspection
- inflate tyre, monitoring tyre, and wheel or rim assembly throughout
- undertake post-work inspection and complete work processes

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to remove, inspect and fit earthmoving and OTR tyres, including:
 - manufacturer specifications
 - applicable standards
 - workplace policies and procedures
 - tyre placards and markings
- applicable standards, including Australian standards relevant to removing, inspecting and fitting earthmoving and OTR tyres, wheels and rim assemblies:
 - AS 4457.1 Earth-moving machinery - Off-the-road wheels, rims and tyres - Maintenance and repair Part 1: Wheel assemblies and rim assemblies
 - AS 4457.2 Earth-moving machinery - Off-the-road wheels, rims and tyres - Maintenance and repair Part 2: Tyres
- work health and safety (WHS) requirements, including statutory regulations, codes and standards relevant to removing, inspecting and fitting earthmoving and OTR tyres, including procedures for:

- deflating and inflating tyres
 - cold inflation tyre pressure
 - gauge pressure
 - overinflation and underinflation
- managing risks and hazards associated with working with stored energy, including:
 - air pressure
 - assembly explosion
 - explosions, blasts and ruptures
 - force of explosions and blasts
 - mechanical release of stored energy
 - noise
 - projectiles, flying debris or components
 - tyre blowing off the rim
- establishing exclusion zones
- manual handling
- overheating and heat damage, including pyrolysis
- using a Mechanical Interference Device (MID)
- using a Mechanical Retention Device (MRD)
- wearing the correct personal protective equipment (PPE)
- workplace procedures required for removing, inspecting and fitting earthmoving and off-the-road tyres, including:
 - documentation procedures
 - establishing serviceability of tools and equipment
 - housekeeping procedures, including:
 - disposal of excess materials
 - examination of tools and equipment
 - identification, tagging and isolation of faulty equipment
 - storage of equipment
 - hazard identification and risk control methods, including:
 - operating indoors, outdoors, underground, and at nighttime
 - overhead obstructions
 - working on unstable ground
 - moving mobile plant
 - falling or dropped objects
 - crushing or trapping
 - projectiles
 - rupturing wheel components
 - inflation and deflation, including pre- and post-checks
 - pre-removal inspection
 - ballast identification, types and application

- tyre fill identification, types and application
- tyre fill adding/removal methods
- types and applications of tyre additives
- suitability of the wheel or rim to the tyre
- serviceability requirements relating to tyres, wheels and rims
- crack testing for rim components
- procedures relating to removing earthmoving and OTR wheel and rim assemblies, including:
 - methods for undoing fasteners
 - methods for handling earthmoving and OTR wheel and rim assemblies
 - one-piece wheel and rim
 - rim or hub-mounted multi-piece rim
 - split wheel
 - wheel and rim and components, including identification and matching criteria
- procedures relating to fitting and refitting earthmoving and OTR tyres, including:
 - check correct assembly
 - identified compatible components
 - identified serviceable condition
 - manufacturer tolerance checks
 - post-fitting inspection
 - rim and component tolerance checks
- earthmoving and OTR vehicle tyres, wheels and rim assembly information including:
 - types and classifications of earthmoving and OTR tyres, rims and wheel assemblies
 - types of mounting systems, tools and equipment for removing and fitting earthmoving and OTR wheel and rim assemblies
 - workplace tyre management systems, including:
 - paper-based tyre management systems
 - digital tyre management systems
 - identifying tyre pressure monitoring systems in assemblies

Assessment Conditions

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the earthmoving and off-the-road tyres that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- a workplace or simulated workplace that reflects workplace conditions - where simulation is used, it must reflect real working conditions by modelling industry operating conditions and contingencies, as well as using suitable facilities, equipment and resources
- repair orders and workplace instructions relating to removing, inspecting and fitting earthmoving and OTR tyres, wheels and rim assemblies
- WHS requirements, including statutory regulations, codes and standards relevant to removing, inspecting and fitting earthmoving and OTR tyres
- manufacturer specifications and procedures or equivalent documentation to remove, inspect and fit earthmoving and OTR tyres
- applicable standards, including Australian standards relevant to removing, inspecting and fitting earthmoving and OTR tyres, wheels and rim assemblies:
 - AS 4457.1 Earth-moving machinery - Off-the-road wheels, rims and tyres - Maintenance and repair Part 1: Wheel assemblies and rim assemblies
 - AS 4457.2 Earth-moving machinery - Off-the-road wheels, rims and tyres - Maintenance and repair Part 2: Tyres
- workplace procedures relevant to removing, inspecting and fitting earthmoving and OTR tyres
- tyre handling equipment, including two of the following:
 - crane
 - earthmoving and OTR tyre handle
 - forklift-mounted tyre handler
 - grab truck
 - loader-mounted tyre handler
- earthmoving and OTR tyres, wheels and rim assemblies of not less than 600mm (24 inches) nominal diameter
- tyre, wheel and rim assembly specifications and workplace instructions
- tools and equipment required for removing, inspecting and fitting earthmoving and OTR tyres
- personal protective clothing and equipment required for the activities described in the performance evidence

The assessment must:

- be demonstrated in the workplace or in a simulated environment that reflects workplace conditions
- be conducted in a safe environment
- be assessed in compliance with relevant policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed
- confirm consistent performance can be applied in a range of relevant workplace circumstances

Assessor requirements

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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