



Australian Government

**AURKTJ112 Remove, inspect and fit
earthmoving and off-the-road wheel and
rim assemblies**

AURKTJ112 Remove, inspect and fit earthmoving and off-the-road wheel and rim assemblies

Modification History

Release	Comments
1	This unit of competency was first released in AUR Automotive Retail, Service and Repair Training Package Release 9.0.

Application

This unit describes the performance outcomes required to remove, inspect and fit earthmoving and off-the-road (OTR) wheel and rim assemblies and fasteners for fitment. It involves assessing and controlling risks, preparing for the task, removing, inspecting and refitting wheel and rim assemblies, inflating the tyre and completing workplace processes and documentation.

It applies to those who fit wheel and rim assemblies of equal to or greater than 600 mm (24 inches) nominal diameter. The tyres must be classified as off-the-road, earthmover or industrial tyres.

Licensing/Regulatory Information

Licensing, legislative and certification requirements that apply to this unit can vary between States, Territories, and industry sectors, and must be sourced from state jurisdictions prior to applying the unit.

Pre-requisite unit(s)

No prerequisite units.

Competency field(s)

N/A

Unit sector(s)

Technical - Wheels and Tyres

Elements and Performance Criteria

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Elements	Performance Criteria
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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Assess and control risks	1.1 Identify hazards and control risks in the work environment according to workplace procedures 1.2 Identify and control hazardous wheel and rim assembly conditions, noting points where safety checks and controls are required 1.3 Obtain and interpret emergency procedures and be prepared for fires, accidents and emergencies
2. Prepare to remove wheel and rim assembly from vehicle	2.1 Obtain and interpret Original Equipment Manufacturer (OEM) instructions and specification, workplace procedures, safety information and applicable standards for earthmoving and OTR tyres 2.2 Obtain, interpret, clarify and confirm work requirements 2.3 Plan sequence of work, noting points where safety checks and controls are required 2.4 Select and wear personal protective clothing and equipment required for work activities 2.5 Coordinate and communicate planned activities with others at the site as per work requirements 2.6 Select and inspect tools and equipment according to OEM specification and workplace procedures 2.7 Identify wheel and rim assembly type, fastening system and handling equipment required to complete work activity 2.8 Clean wheel and rim assembly, and inspect visually for damage, wear, corrosion, foreign material, cracks and compatibility of components to assess potential health and safety threats according to workplace procedures
3. Remove wheel and rim assembly from vehicle	3.1 Isolate, raise and support vehicle according to workplace procedures 3.2 Deflate tyre before removal of fasteners and from vehicle according to workplace procedures, OEM requirements and Australian Standards 3.3 Verify appropriate deflation of tyre in line with workplace procedures, OEM requirements and Australian Standards 3.4 Remove tyre, wheel and rim assembly according to workplace procedures and without causing component damage or injury 3.5 Apply workplace procedures for transport and storage of wheel and rim assembly

4. Inspect mounting surfaces and fasteners	4.1 Visually inspect mounting components, fasteners and surfaces for damage, wear, corrosion, foreign material and cracks according to OEM specification and workplace procedures, and discard damaged fasteners 4.2 Record and report findings according to workplace procedures
5. Fit wheel and rim assembly	5.1 Compare condition of wheel and rim assembly against OEM specification and ensure it is suitable for application, managing non-conformance as per workplace procedures 5.2 Assess cleanliness of mating surfaces, and clean where required 5.3 Fit tyre, wheel and rim assembly using handling equipment according to workplace procedures 5.4 Check positioning and alignment of wheel and rim assembly prior to fastening 5.5 Vertically mount wheel and rim assembly in accordance with workplace procedures 5.6 Apply wheel and rim assembly tightening sequence and torque settings according to OEM specification and workplace procedures
6. Inflate tyre	6.1 Identify and apply tyre inflation safety procedures and establish exclusion zones prior to inflating tyre 6.2 Assess need for nitrogen and add where required 6.3 Inflate tyre according to workplace procedures and OEM specification 6.4 Monitor tyre, wheel and rim assembly during inflation according to workplace procedures 6.5 Verify inflation pressure according to workplace procedures and OEM specification
7. Complete work processes	7.1 Lower vehicle according to workplace procedures 7.2 Re-check wheel and rim fastener torque settings according to workplace procedures and OEM specification 7.3 Check wheel and rim assembly clearances according to OEM specification 7.4 Perform final inspection to ensure work meets workplace requirements 7.5 Inspect and store tools and equipment according to workplace procedures, tagging or reporting where necessary 7.6 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 not explicit in the performance criteria.

Skill	Description
Reading skills to:	• read and interpret: ○ written information in workplace procedures, OEM instructions, and Work Health and Safety (WHS) requirements relating to removing, inspecting and fitting earthmoving and OTR wheel and rim assemblies ○ charts, lists, drawings and other applicable documents.
Writing skills to:	• document inspection findings and recommended repair actions. • engage with workplace documents.
Oral communication skills to:	• follow oral instructions • ask questions to clarify observations, instructions and procedures • report inspection results • brief team and customers.
Numeracy skills to:	• read and interpret metric and imperial systems of measurement • use specialist tools and measuring equipment, including: ○ gauges ○ pressure testing tools • read and interpret mathematical information, including charts and drawings.
Digital literacy skills to:	• use workplace computerised technology and tools relating to removing and refitting earthmoving and OTR wheel and rim assemblies.
Planning and organising skills to:	• 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:	• 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:	- seek information and assistance as required to solve problems - identify tyre condition and performance - match wheel and rim assemblies to tyres and vehicle type.
Teamwork skills to:	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 may include:	- those prescribed under applicable standards, Work Health and Safety (WHS) Acts and regulations, and workplace policies and procedures - isolation procedures - hazard control - manual-handling techniques - personal protective clothing and equipment - use of tools and equipment - working with dangerous or toxic substances: - chemicals - compressed air - nitrogen gas - polyurethane resin (PUR) tyre fill - tyre additive.
Hazardous conditions may include:	- line of fire during tyre inflation - rupture of wheel and rim assembly - noise - vehicles/pedestrians/machinery/other personnel within the workplace.
Hazardous wheel and rim assembly	wheel and rim component defects

conditions may include:	• tyre defects • other conditions may include: • blocked or damaged valves • cracks • corrosion • cuts and damage • distortion • dislodged components • foreign material • heat damage • leakage • mechanical damage • structural damage • under- or over-inflated tyre • valve gear • wear.
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Unit Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
AURKTJ112 Remove, inspect and fit earthmoving and off-the-road wheel and rim assemblies	AURKTJ012 Remove, inspect and fit earthmoving and off-the-road wheel and rim assemblies	Updated Application, Elements, Performance Criteria, Range of Conditions, Performance Evidence, Knowledge Evidence, and Assessment Conditions.	Equivalent

Assessment Requirements for AURKTJ112 Remove, inspect and fit earthmoving and off-the-road wheel and rim assemblies

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1	This unit of competency was first released in AUR Automotive Retail, Service and Repair Training Package Release 9.0.

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 remove, inspect and refit three industrial earthmoving and OTR wheel and rim assemblies on at least two of the following:

- disc wheel
- demountable rim
- divided wheel

The candidate must demonstrate they can perform the work using one of the following earthmoving and OTR tyre handlers at least once:

- vehicle loading crane fitted with a tyre handler attachment
- forklift-mounted tyre handler
- loader-mounted tyre handler

In undertaking the above, the candidate must:

- follow safe working procedures
- locate and interpret required documentation, policies and procedures
- apply appropriate control measures to mitigate hazardous conditions in work environment and hazardous tyre, wheel and rim assembly conditions
- use raising and supporting equipment to raise vehicle in accordance with workplace procedures
- deflate tyre safely and in accordance with workplace procedures
- remove tyre, wheel and rim assembly in accordance with workplace procedures
- transport and store tyre, wheel and rim assembly
- clean and inspect tyre, wheel and rim assembly, fastener and hub for serviceability
- check and confirm the following prior to fastening:
 - component compatibility

- tyre, wheel and rim component serviceability
 - correct assembly of wheel and rim assembly
- fit tyre, wheel and rim assembly, including using the correct:
 - isolation procedures
 - alignment
 - tightening sequence
 - torque settings
 - inflation process and pressure
- inflate tyre, establishing an exclusion zone and in accordance with workplace procedures
- monitor tyre, wheel and rim assembly throughout inflation of tyre
- safely lower vehicle
- undertake post-work inspection and complete work processes, including storage of tools and equipment
- complete workplace documentation, including:
 - relevant risk assessments
 - tyre, wheel and rim assembly change documentation.

The above work must be performed on tyres fitted to wheel and rim assemblies of equal to or greater 600 mm (24 inches) nominal diameter and classified as OTR, earthmover or industrial tyres.

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:
 - OEM specification
 - applicable standards
 - workplace policies and procedures
 - tyre placards and markings
- applicable standards for removing, inspecting and fitting earthmoving and OTR wheel 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

- WHS requirements, including statutory regulations, codes and standards relevant to removing, inspecting and fitting earthmoving and OTR tyres, wheels and rim assemblies
 - inflation and deflation of tyres
 - hot and cold inflation tyre pressure
 - gauge pressure
 - overinflation and underinflation
 - control measures to manage hazards related to falling tyres and assemblies, and crushing risks
 - risks and hazards associated with working with stored energy, including:
 - explosive or forceful separation of tyre, wheel or rim components
 - noise
 - loose or improperly secured wheel and rim assemblies
 - mechanical or uncontrolled release of stored energy, including
 - hydraulic pressure
 - pneumatic pressure
 - tyre ruptures or bursts
 - zipper failure
 - projectiles, flying debris or components from wheel and rim assemblies
 - wheel and rim disassembly
 - establishing exclusion zones
 - manual handling
 - using a Mechanical Interference Design (MID)
 - using a Mechanical Retention Design (MRD)
 - wearing the correct personal protective clothing and equipment
- workplace procedures required for removing, inspecting and fitting earthmoving and OTR wheel and rim assemblies, including:
 - documentation procedures
 - establishing serviceability of tools and equipment
 - identification, tagging and isolation of faulty equipment
 - hazard identification and risk control methods, including:
 - falling or dropped objects
 - hydraulic tooling
 - moving mobile plant
 - operating indoors, outdoors, underground, and at nighttime

- overhead obstructions
 - pneumatic tooling
 - torque tooling
 - working on unstable ground
- pre-removal inspection
- raising, supporting and lowering procedures for mining, construction and industrial vehicles that include soft ground support procedures and systems
- inflation and deflation of tyres
- identifying tyre pressure monitoring systems (TPMS) in assemblies
- measuring and applying the required torque to wheel or rim fasteners
- removal procedures of earthmoving and OTR wheel and rim assemblies:
 - pre-removal inspection for damage
 - removal methods for disc wheels, demountable rims and divided wheels
 - removal of wheel fasteners and retaining components
 - handling earthmoving and OTR tyre, wheel and rim assemblies
- fitting procedures of earthmoving and OTR wheel and rim assemblies:
 - methods for fitting disc wheel, demountable rims and divided wheels
 - fitting wheel fasteners and retaining components
 - post-fitting inspection
 - OEM tolerance checks
 - retentioning/retorquing the wheel assembly
- earthmoving and OTR vehicle tyres, wheels and rim assembly information including:
 - types and classifications of earthmoving and OTR tyres, wheels and rim assemblies
 - types of retaining systems for earthmoving and OTR wheel and rim 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 OTR tyres, wheels and rim assemblies that they have worked on, e.g. work 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
- work orders and workplace procedures 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 tyre, wheel and rim assemblies
- OEM specification and procedures or equivalent documentation to remove, inspect and fit earthmoving and OTR wheel and rim assemblies
- applicable standards and guidance notes, 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
- earthmoving and OTR tyre handling equipment, including two of the following:
 - vehicle loading crane fitted with a tyre handler attachment
 - forklift-mounted tyre handler
 - loader-mounted tyre handler
- earthmoving and OTR wheel and rim assemblies
- earthmoving and OTR fitting components and fasteners, including:
 - bolts
 - cleats
 - diffuser discs
 - lock rings
 - nuts
 - O-rings
 - reducers
 - rim/wheelbase
 - spacer bands
 - studs
 - TPMS sensors
 - valves, valve stems, valve extensions

- washers
 - wedge or cleat retaining systems
- tools and equipment appropriate for removing and fitting earthmoving and OTR wheel and rim assemblies, including:
 - hand tools
 - inflation and deflation tools and pressure gauges
 - jacks
 - mufflers
 - pneumatic tools
 - hydraulic tools
 - power tools
 - soft face hammers
 - support stands
 - torque tools
 - tyre levers
 - wire brushes
- tyre, wheel and rim assembly specification and workplace instructions
- vehicles with earthmoving and OTR wheel and rim assemblies
- 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.

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

Link

Companion volumes, including implementation guides, are found on the national training register - <https://training.gov.au/training/details/AUR>.