



Australian Government

AURBTJ2002 Service bicycle wheels and hubs

Release 1

AURBTJ2002 Service bicycle wheels and hubs

Modification History

Release	Comment
Release 1	Replaces AURB218267A Service bicycle wheels and hubs Unit code updated to meet policy requirements Reference to OHS legislation replaced with new WHS legislation

Unit Descriptor

Unit descriptor	This unit of competency describes the skills and knowledge required to inspect, and safely remove/refit bicycle wheels and service wheel hubs. It requires the ability to understand specifications and use specialist tools and equipment. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.
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Application of the Unit

Application of the unit	This unit applies to individuals who undertake the removal and fitting of bicycle wheels and servicing of wheel hubs in a bicycle retail, service and repair environment. Work requires individuals to demonstrate some judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect bicycle wheel and hub	1.1. Check customer requirements and intended use of the unit in accordance with workplace procedures 1.2. Research bicycle wheel and hub service requirements and check specifications 1.3. Inspect bicycle wheel and hub for faults and worn or damaged components by visual, aural and tactile inspections and measurements 1.4. Compare conditions found with bicycle wheel and hub specifications and customer use requirements 1.5. Identify service options for bicycle wheel and hub in accordance with workplace procedures
2. Prepare for service of bicycle wheel and hub	2.1. Plan service sequence, including post-service testing and checking process 2.2. Determine availability of tooling and equipment 2.3. Select tooling, equipment and materials to meet job requirements and check for good working order 2.4. Set up work area
3. Remove bicycle wheel, service hub and refit wheel	3.1. Remove bicycle wheel and perform service operations according to plan 3.2. Use personal safety equipment and precautions to protect others in the workplace 3.3. Handle and use tooling and equipment in accordance with workplace health and safety (WHS) requirements 3.4. Check customer requirements and perform bicycle wheel service prior to refitting 3.5. Operate serviced bicycle wheel and hub through full range, noting test results, including non-conformity 3.6. Check serviced bicycle wheel and hub, complete adjustments and alignments, and prepare unit for delivery
4. Complete work and clean up	4.1. Store portable tooling and equipment in approved designated areas 4.2. Update workplace records, customer file and warranty information as required by enterprise 4.3. Clean up work area and dispose of waste in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- technical skills to the level required to safely use tooling and equipment to remove and refit a range of bicycle wheels and service hubs, perform tests and make adjustments
- communication skills to the level required to confirm work requirements and specifications, to communicate effectively regarding work requirements with supervisor, other workers and customers, to report work outcomes and problems and to relate to people from a range of social, cultural and ethnic backgrounds and of varying physical and mental abilities
- literacy skills to the level required to understand information related to work orders, including common industry terminology, plans and safety procedures, prepare reports and interpret technical information and specifications
- numeracy skills to the level required to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- problem-solving skills to the level required to identify technical and procedural problems to avoid planning, scheduling problems and time and material wastage
- team skills to the level required to work effectively and cooperatively with others to optimise workflow and productivity

Required knowledge

Required knowledge includes:

- bicycle anatomy and terminology
- manufacturer and/or component supplier specifications
- classification of bicycle wheels and hubs and identification of system components
- purpose and requirements of a bicycle wheel as a suspension, steering and braking component
- purpose and requirements of a bicycle wheel hub and their relationship to suspension, wheels, drivetrain, frame and braking
- materials and processes used in torque measurement and adjustment of wheels
- wheel removal and refitting procedures and techniques
- material used in bicycle wheel hubs
- wheel hub servicing procedures and techniques
- use of tooling and equipment
- Australian standards applicable to bicycles
- applicable commonwealth, state or territory legislation, regulations, standards and codes of practice, including WHS, personal safety and environmental, relevant to removal, refitting and servicing of bicycle wheels and hubs
- organisational policies and procedures, including quality requirements, reporting and recording procedures, and work organisation and planning processes, related to removal, refitting and

REQUIRED SKILLS AND KNOWLEDGE

servicing of bicycle wheels and hubs

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently:

- observe safety procedures and requirements
- communicate effectively with others involved in or affected by the work
- select methods and techniques appropriate to the circumstances
- complete preparatory activity in a systematic manner
- remove and refit a range of bicycle wheel configurations to manufacturer/component supplier specifications
- identify wear or faults in bicycle wheel hubs
- service bicycle wheel hubs to manufacturer/component supplier specifications
- test bicycle wheels and hubs to manufacturer/component supplier specifications
- present bicycle for delivery to customer in compliance with workplace requirements.

Context of, and specific resources for assessment

- The application of competency is to be assessed in the workplace or a simulated environment that reflects as far as possible the actual working environment.
- Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.
- Assessment is to comply with relevant regulatory requirements, including specified Australian standards.
- Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
- The following resources should be made available:
 - a range of bicycle frames, wheels and hubs
 - equipment, hand and power tools appropriate to removing and refitting wheels and servicing hubs
 - technical specifications and standards
 - workplace documentation.

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of this Training Package.

EVIDENCE GUIDE

	• Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of Required Skills and Knowledge. • Assessment methods must be by direct observation of tasks and include questioning on Required Skills and Knowledge to ensure its correct interpretation and application. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	Assessment processes and techniques must be culturally sensitive and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Bicycles

Bicycles may include:

- those with and without gears, and with lever operated brakes
- children and adult models of different heights
- mountain, road, hybrid, BMX, track and trials models

Wheels and associated components

Wheels and associated components may include:

- spoked, disk and tri-spoked wheels
- conventional, clincher, tubular, aero, deep dished and composite material wheel rims
- quick release, Allen head and nut wheel fasteners
- vertical and horizontal frame lugs

Bicycle wheel hubs

Bicycle wheel hubs may include:

- disk, drum and coaster, and internal foot brake hubs
- loose ball, cage and roller bearings
- hub lubricants

Tooling and equipment

Tooling and equipment may include:

- hand tooling
- hand-held power tooling
- floor stands, workbench and wheel jigs

Materials

Materials may include:

- a range of bicycle wheels and hubs
- parts suitable for use in wheels and hubs
- lubricants
- cleaning materials

Testing

Testing is to confirm:

- safety and efficiency
- stable handling, turning and steering
- no failure in parts of the bicycle

Information/documents

Information/documents may include:

- verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material

RANGE STATEMENT	
	safety data sheets (MSDS), diagrams or sketches • safe work procedures related to removing, fitting and servicing bicycle wheels and hubs • regulatory/legislative requirements pertaining to bicycle safety • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian standards
WHS requirements	WHS requirements are to be in accordance with applicable commonwealth, state or territory legislation and regulations, and organisational safety policies and procedures, and may include: • personal protective equipment and clothing • safety equipment • first aid equipment • hazard and risk control • elimination of hazardous materials and substances • manual handling, including shifting, lifting and carrying • emergency procedures
Legislative requirements	Legislative requirements are to be in accordance with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice, and may include: • award and enterprise agreements • industrial relations • Australian standards • Australian Design Rules • confidentiality and privacy • WHS • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care
Environmental requirements	Environmental requirements may include: • waste management • noise • dust • clean-up management
Quality requirements	Quality requirements may include:

RANGE STATEMENT

	• regulations, including Australian standards • internal organisational quality policies and procedures • enterprise operations and procedures
Organisational policies and procedures	Organisational policies and procedures may include: • quality policies and procedures, including Australian standards • WHS, sustainability, environment, equal opportunity and anti-discrimination • manufacturer specifications and industry codes of practice • safe work procedures • reporting and recording procedures

Unit Sector(s)

Unit sector	Bicycle
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Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Wheels and Tyres
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