



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AURB311401A Restore a bicycle**

**Release: 1**

## AURB311401A Restore a bicycle

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	<p>This unit of competency describes the skills and knowledge required to restore a used or vintage bicycle to fully functioning or original condition, where possible.</p> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.</p>
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### Application of the Unit

<b>Application of the unit</b>	<p>This unit applies to individuals who undertake the restoration of a bicycle in a bicycle retail, service and repair environment.</p> <p>It requires the ability to research technical data and use tools and equipment to repair, recondition and replace components to restore a bicycle as close as practicable to its original condition.</p> <p>Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and assessing second hand parts for serviceability and suitability.</p>
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### Licensing/Regulatory Information

Refer to Unit Descriptor

### Pre-Requisites

<b>Prerequisite units</b>	

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	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 performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify requirements	1.1. Check and confirm customer requirements in accordance with workplace procedures 1.2. Research original bicycle components and specifications and access information 1.3. Source suppliers and determine availability of original bicycle parts 1.4. Source second hand parts and assess for suitability and serviceability 1.5. Check tooling and equipment for availability and conformity with specifications and safe condition
2. Inspect bicycle	2.1. Prepare work area and set up equipment and materials 2.2. Inspect bicycle systems and components for faults and worn or damaged components using visual, aural and tactile inspections and measurements 2.3. Compare conditions found with original bicycle specifications and customer requirements 2.4. Identify restoration, replacement and repair options for bicycle components, including outsourcing 2.5. Document and cost restoration items and obtain customer approval in accordance with workplace procedures
3. Restore bicycle	3.1. Select and use tooling and equipment in accordance with occupational health and safety (OHS) requirements 3.2. Dismantle bicycle, inspect and tag components 3.3. Perform restoration operations on components using personal safety equipment and precautions to protect others in the workplace 3.4. Outsource work as required, such as replating and repainting 3.5. Reassemble bicycle and operate restored bicycle through its full range, noting test results, including non-conformity 3.6. Check restored bicycle components, complete adjustments and prepare unit for delivery
4. Complete work and clean up	4.1. Clean and store portable tooling and equipment in approved designated areas 4.2. Complete workplace records, customer file and warranty information as required by enterprise

ELEMENT	PERFORMANCE CRITERIA
	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 restore a bicycle, test the unit 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 conduct research and interpret technical information and specifications
- numeracy skills to the level required to correctly complete tests and measurements to determine safe assembly and operation
- problem-solving skills to the level required to assess bicycle condition and determine repair, replacement and restoration options
- team skills to the level required to work effectively and cooperatively with others to optimise workflow and productivity

#### Required knowledge

Required knowledge includes:

- bicycle terminology
- application of mechanical principles
- classification of bicycle systems and identification of system components
- purpose and requirements of bicycle systems and their compatibility with each other
- manufacturer and/or component supplier specifications
- classification of accessories and fittings
- assembly procedures
- testing procedures and adjustment methods
- selection, checking and use of tooling and equipment

**REQUIRED SKILLS AND KNOWLEDGE**

- Australian standards applicable to bicycles
- applicable commonwealth, state or territory legislation, regulations, standards and codes of practice, including OHS, personal safety and environment, relevant to restoring bicycles
- organisational policies and procedures, including quality requirements, reporting and recording procedures, and work organisation and planning processes, related to restoring bicycles

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<p>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.</p>	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Assessors must be satisfied that the candidate can competently and consistently:</p> <ul style="list-style-type: none"> <li>• observe safety procedures and requirements</li> <li>• communicate effectively with others involved in or affected by the work</li> <li>• select methods and techniques appropriate to the circumstances</li> <li>• dismantle, inspect and tag bicycle components</li> <li>• restore, repair and rebuild a range of bicycle components</li> <li>• replace components with appropriate new or serviceable second hand parts</li> <li>• reassemble, test and adjust bicycle without damage to components or tooling and equipment</li> <li>• present bicycle for delivery to customer in compliance with workplace requirements and Australian standards.</li> </ul>
<b>Context of, and specific resources for assessment</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.</li> <li>• Assessment is to comply with relevant regulatory requirements, including specified Australian standards.</li> <li>• Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</li> <li>• The following resources should be made available: <ul style="list-style-type: none"> <li>• a bicycle for restoration</li> <li>• equipment, hand and power tools appropriate to restoring bicycles</li> <li>• technical specifications and standards</li> <li>• workplace documentation.</li> </ul> </li> </ul>
<b>Method of assessment</b>	<ul style="list-style-type: none"> <li>• Assessment must satisfy the endorsed Assessment Guidelines of this Training Package.</li> </ul>

<b>EVIDENCE GUIDE</b>	
	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Assessment methods must be by direct observation of tasks and include questioning on Required Skills and Knowledge to ensure its correct interpretation and application.</li> <li>• Assessment may be applied under project-related conditions (real or simulated) and require evidence of process.</li> <li>• 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.</li> <li>• Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.</li> </ul>
<b>Guidance information for assessment</b>	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

<b>RANGE STATEMENT</b>	
<p>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.</p>	
<b>Bicycles</b>	<p>Bicycles may include:</p> <ul style="list-style-type: none"> <li>• those with and without gears, and with lever operated brakes</li> <li>• children and adult models of different heights</li> <li>• mountain, road, hybrid, touring, BMX, track and trials models</li> </ul>
<b>Tooling and equipment</b>	<p>Tooling and equipment may include:</p> <ul style="list-style-type: none"> <li>• hand tooling</li> </ul>



<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• hand-held power tooling</li> <li>• floor stands, workbench, jigs and air tooling</li> </ul>
<b>Restoration methods</b>	<p>Restoration methods may include:</p> <ul style="list-style-type: none"> <li>• dismantling, inspection and tagging of components</li> <li>• repair and rebuilding of components, including frame, wheels and rims, gears, brakes, drivetrain, suspension and steering systems</li> <li>• reassembly of bicycle</li> <li>• fitting and manual adjustments of repaired and replacement components and accessories</li> <li>• measuring, screwing, bonding, clamping, filing, riveting and drilling</li> <li>• replating and repainting</li> <li>• greasing and lubrication</li> <li>• torque settings</li> </ul>
<b>Testing</b>	<p>Testing of the restored bicycle is to confirm:</p> <ul style="list-style-type: none"> <li>• safe operation</li> <li>• stable handling, turning and steering</li> <li>• no failure in parts of the bicycle</li> <li>• no loosening or misalignment of seat, handlebars, controls or reflectors</li> <li>• no loss of components or accessories</li> </ul>
<b>Information/documents</b>	<p>Information/documents may include:</p> <ul style="list-style-type: none"> <li>• hardcopy and electronic media</li> <li>• verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets (MSDS), diagrams or sketches</li> <li>• safe work procedures related to restoring bicycles</li> <li>• regulatory/legislative requirements pertaining to bicycle safety</li> <li>• engineer's design specifications and instructions</li> <li>• organisation work specifications and requirements</li> <li>• instructions issued by authorised enterprise or external persons</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• Australian standards</li> </ul>
<b>OHS requirements</b>	<p>OHS requirements are to be in accordance with applicable commonwealth, state or territory legislation and regulations, and organisational safety policies and procedures, and may include:</p> <ul style="list-style-type: none"> <li>• personal protective equipment and clothing</li> <li>• safety equipment</li> <li>• first aid equipment</li> <li>• hazard and risk control</li> <li>• elimination of hazardous materials and substances</li> <li>• manual handling, including shifting, lifting and carrying</li> <li>• emergency procedures</li> </ul>
<b>Legislative requirements</b>	<p>Legislative requirements are to be in accordance with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice, and may include:</p> <ul style="list-style-type: none"> <li>• award and enterprise agreements</li> <li>• industrial relations</li> <li>• Australian standards</li> <li>• Australian Design Rules</li> <li>• confidentiality and privacy</li> <li>• OHS</li> <li>• the environment</li> <li>• equal opportunity</li> <li>• anti-discrimination</li> <li>• relevant industry codes of practice</li> <li>• duty of care</li> </ul>
<b>Environmental requirements</b>	<p>Environmental requirements may include</p> <ul style="list-style-type: none"> <li>• waste management</li> <li>• noise</li> <li>• dust</li> <li>• clean-up management</li> </ul>
<b>Quality requirements</b>	<p>Quality requirements may include:</p> <ul style="list-style-type: none"> <li>• regulations, including Australian standards</li> <li>• internal organisational quality policies and procedures</li> <li>• enterprise operations and procedures</li> </ul>

**RANGE STATEMENT**

<b>Organisational policies and procedures</b>	<p>Organisational policies and procedures may include:</p> <ul style="list-style-type: none"> <li>• quality policy and procedures, including Australian standards</li> <li>• OHS, sustainability, environment, equal opportunity and anti-discrimination</li> <li>• manufacturer specifications and industry codes of practice</li> <li>• safe work procedures</li> <li>• reporting and recording procedures</li> </ul>
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**Unit Sector(s)**

<b>Unit sector</b>	Bicycle
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**Co-requisite units**

<b>Co-requisite units</b>		

**Competency field**

<b>Competency field</b>	
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