



Australian Government

AURBTR101 Inspect and service electric power-assisted bicycles

Release: 1

AURBTR101 Inspect and service electric power-assisted bicycles

Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge required to inspect and service electric power-assisted bicycle systems and components. The unit involves preparing for the work, selecting and using specialist tools and equipment, inspecting the bicycle condition, interpreting manufacturer specifications, performing routine maintenance and testing on electric bicycle components, and completing workplace processes and documentation.

The unit applies to those working in the bicycle retail, service and repair industry. Electric power-assisted bicycles are throttle and pedal assist sensor (PAS) bicycles with 250 watts rated power at the wheel.

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

Unit Sector

Bicycle Technical - Electrical and Electronic

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to inspect and service electric power-assisted bicycle	1.1 Determine job requirements from workplace instructions 1.2 Access and interpret manufacturer specifications and workplace procedures 1.3 Select and check tools and equipment for serviceability 1.4 Identify hazards associated with the work and manage risks 1.5 Prepare work area and plan service sequence to avoid damage to bicycle, minimise waste and use time efficiently
2. Inspect bicycle	2.1 Inspect condition of bicycle for faults and worn, non-serviceable or damaged parts according to workplace

ELEMENTS	PERFORMANCE CRITERIA
	procedures 2.2 Identify bicycle components needing repair, replacement or maintenance according to manufacturer specifications 2.3 Report inspection findings, and identify and confirm service options and techniques for required repairs or adjustments
3. Service bicycle	3.1 Carry out routine servicing and maintenance of bicycle according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.2 Carry out post-service testing and operation checks on serviced bicycle according to manufacturer specifications, and make adjustments as required 3.3 Report results and quality issues to authorised personnel as required
4. Complete work processes	4.1 Clean bicycle, conduct final inspection to ensure work meets workplace expectations, and confirm bicycle is ready for use 4.2 Clear work area and dispose of or recycle materials according to workplace procedures 4.3 Complete documentation according to workplace procedures

Foundation Skills

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

SKILL	DESCRIPTION
Learning	Locates required sources of information efficiently.
Numeracy	- Completes measurements to test electric power-assisted bicycle against manufacturer specifications - Identifies and calculates electric power-assisted bicycle settings and adjustments.
Oral communication	Asks questions to clarify instructions and requirements.
Problem solving	Identifies technical and operational faults and defects, quality issues and potential problems associated with electric power-assisted bicycles.
Technology	Uses specialist bicycle tools and equipment in line with workplace procedures.

Unit Mapping Information

Supersedes and is equivalent to AURBTR001 Service electric power-assisted bicycles.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for AURBTR101 Inspect and service electric power-assisted bicycles

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Performance Evidence

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

- inspect and service at least three different electric power-assisted bicycles in which the work for each bicycle involves:
 - battery testing and charging
 - checking operation of controller
 - checking wiring
 - checking connectors at motor plug
 - testing brake cut-outs, throttle and pedal assist sensor (PAS).

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:

- work health and safety (WHS) requirements relating to inspecting and servicing electric power-assisted bicycles, including procedures for:
 - manually handling bicycles
 - identifying workplace hazards
 - using tools and equipment, including personal protective equipment (PPE)
- environmental requirements, including procedures for disposing of waste materials
- electric power-assisted bicycle terminology
- operating principles of electric power-assisted bicycles, including:
 - throttle response
 - power and performance
 - pedal assist function
 - throttle function
- function of electric power-assisted bicycle components specified in the range of conditions

- types and use of tools and equipment used to inspect and service electric power-assisted bicycles
- techniques and processes for inspecting and servicing electric power-assisted bicycles, including:
- identification of electric power-assisted bicycle components and specifications, including:
 - hub motor
 - motor connectors and plugs
 - electric controllers
 - battery
 - selection and checking of personal protective equipment
 - fault identification
- bicycle measuring techniques
 - adjustment techniques
 - battery testing and charging
 - checking operation of controller, wiring, and connectors at motor plug
 - testing procedures, including:
 - brake cut-outs
 - throttle
 - pedal assist sensor
- servicing options, including:
 - on- and off-site servicing
 - servicing and adjusting components
 - upgrading components.

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 electric power-assisted bicycles that they have serviced, e.g. service 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:

- bicycle workplace or simulated workplace, including location to test bicycles
- workplace instructions detailing job requirements
- workplace procedures relating to the service of electric power-assisted bicycles
- electric power-assisted bicycle manufacturer specifications
- PPE required to service electric power-assisted bicycles
- three different electric power-assisted bicycles requiring service and maintenance

- tools and equipment appropriate for servicing electric power-assisted bicycles.

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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