



Australian Government

AURBTR103 Retrofit electric drivetrain systems to bicycles

Release: 1

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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 retrofit and modify bicycles with electric drivetrain systems. This unit involves preparing for the task, selecting the tooling, carrying out the retrofit and modification procedures, performing post-modification testing, and completing workplace processes and documentation.

The unit applies to those working in the bicycle industry, including those working in sales, service and repair.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Bicycle Technical – Electrical and Electronics

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 retrofit system	1.1 Determine job requirements from workplace instructions 1.2 Access and interpret retrofit information, manufacturer specifications, and codes of practice 1.3 Analyse retrofit options and select those required by the circumstances 1.4 Identify hazards and manage risks associated with the work 1.5 Identify, select and check retrofit tools and equipment for serviceability
2. Dismantle system	2.1 Dismantle required components of bicycle according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage

ELEMENTS	PERFORMANCE CRITERIA
	to components or system 2.2 Recover all additional parts of bicycle not required for refit and store for customer
3. Retrofit system	3.1 Access and interpret technical information relating to electric drivetrain system and the donor bicycle being retrofitted 3.2 Carry out electric drivetrain system modification procedures according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Test system for electrical and mechanical functionality according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.4 Calibrate computer control system according to local regulations, laws and manufacturer specifications and workplace procedures 3.5 Carry out post-modification testing according to workplace procedures and check test results to confirm system performance is operating to manufacturer specifications, resolve reported pre-modification issues, and confirm no other faults are present
4. Complete work processes	4.1 Make final inspection to ensure work meets workplace and customer specifications, and present components ready for use 4.2 Clean work area, dispose of waste and non-recyclable materials, and collect and store recyclable material 4.3 Completes workplace 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	- Matches retrofit options and bicycle specification numbers to kit specifications, workplace instructions, bicycle and component part lists, and code of practice requirements - Interprets readings on digital and analogue testing equipment - Measures output and speed, uses basic mathematical

SKILL	DESCRIPTION
	operations including addition and subtraction • Calculates deviations and tolerances from manufacturer specifications.
Oral communication	• Listens to workplace instructions and asks questions to clarify job requirements.
Reading	• Interprets text, symbols and diagrams relating to retrofit and modification information from manufacturer specifications, and workplace instructions and procedures • Interprets key requirements of Australian automotive code of practice relating to retrofitting and modifying bicycles with and electric drivetrain.
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes.
Technology	• Uses specialist bicycle tools and equipment in line with workplace procedures.

Unit Mapping Information

New unit.

Links

Companion Volume Implementation Guide is found on VETNet -

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