



Australian Government

AURETH016 Diagnose and repair complex faults in battery electric vehicle powertrains

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with the Automotive Retail, Service and Repair Training Package Version 7.0. Newly created unit.

Application

This unit describes the skills and knowledge required to diagnose and repair complex faults in battery electric vehicle (BEV) powertrains. It involves confirming the existence of a fault, developing a diagnostic testing strategy, diagnosing the cause of fault, carrying out the repair, performing post-repair testing and completing workplace processes and documentation.

It applies to the skills and knowledge required of individuals who work in the automotive service and repair industry and apply battery electric vehicle safety procedures.

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

Pre-requisite Unit

AURETH101 Depower and reinitialise battery electric vehicles

Unit Sector

Electric Technical – Hybrid Vehicle and Battery Electric Vehicle

Elements and Performance Criteria

ELEMENT	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 diagnose and repair complex faults in battery electric vehicle powertrains	1.1 Identify job requirements from workplace instructions 1.2 Identify information required for diagnostic activity from customers and supervisors 1.3 Assess diagnostic options, source testing strategy and identify cause of fault according to workplace and

	<p>manufacturer procedures</p> <p>1.4 Identify hazards and environmental issues associated with diagnostic and repair activity, assess potential risks and implement control measures according to workplace policies and procedures</p> <p>1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures</p>
<p>2. Diagnose complex faults in battery electric vehicle powertrains</p>	<p>2.1 Implement diagnostic tests according to testing strategy, manufacturer and workplace procedures, and workplace health and safety requirements</p> <p>2.2 Analyse diagnostic test results and identify cause of fault</p> <p>2.3 Confirm and report cause of fault according to workplace procedures</p> <p>2.4 Develop and report recommendations for necessary repairs according to workplace procedures</p>
<p>3. Repair complex faults in battery electric vehicle powertrains</p>	<p>3.1 Identify information required for repair activity</p> <p>3.2 Identify tools, equipment and materials required for repair activity and establish serviceability according to workplace procedures</p> <p>3.3 Isolate rechargeable energy storage system (RESS) service plug or manual service disconnect and depower vehicle high voltage (HV) RESS according to manufacturer specifications</p> <p>3.4 Carry out repairs according to workplace and manufacturer procedures, manufacturer specifications, workplace health and safety and environmental requirements</p> <p>3.5 Reconnect RESS service plug or manual service disconnect and repower vehicle HV RESS</p> <p>3.6 Carry out post-repair testing according to workplace and manufacturer procedures, workplace health and safety and environmental requirements</p>
<p>4. Complete work processes</p>	<p>4.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use</p> <p>4.2 Clear work area and dispose of or recycle materials according to workplace procedures</p> <p>4.3 Complete documentation according to workplace procedures</p>

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	<ul style="list-style-type: none"> efficiently locates required sources of information
Numeracy	<ul style="list-style-type: none"> matches electrical components and part identification numbers to workplace instructions, vehicle, machinery and component part lists, and manufacturer specifications interprets vehicle electrical measurements and readings measures voltage, current and resistance and uses mathematical operations calculates deviations from manufacturer specifications
Reading	<ul style="list-style-type: none"> organises and interprets technical information from workplace procedures, manufacturer procedures and manufacturer specifications interprets text, symbols and wiring diagrams in information relating to electrical system testing and repair equipment from manufacturer specifications and workplace instructions and procedures
Writing	<ul style="list-style-type: none"> legibly and accurately fills out workplace documentation when reporting work performed and recording parts and material used
Oral communication	<ul style="list-style-type: none"> clarifies instructions
Planning and organising	<ul style="list-style-type: none"> plans own work requirements prioritises actions to achieve required outcomes ensures tasks are completed within workplace timeframes
Technology	<ul style="list-style-type: none"> uses specialised diagnostic equipment

Unit Mapping Information

Newly created unit.

Links

Companion Volume Implementation Guide is found on VETNet -

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