



Australian Government

AURETH101 Depower and reinitialise battery electric vehicles

Release: 1

AURETH101 Depower and reinitialise battery electric vehicles

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 depower and reinitialise battery electric vehicles (BEVs). It involves ensuring the vehicle high voltage (HV) rechargeable energy storage system (RESS) is isolated before commencing any service or repair work. It also involves calibrating vehicle systems that may need resetting once the energy storage system is reinitialised. Importance is placed in the unit on applying RESS and separated extra low voltage (SELV) electrical safety procedures.

The unit applies to those who work in the automotive service and repair industry.

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

Unit Sector

Electrical Technical – Hybrid Vehicle and Battery 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 depower and reinitialise BEV	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for servicing activity 1.3 Identify hazards associated with the work, assess potential risks and implement control measures in line with workplace policies and procedures 1.4 Identify tools and equipment required for servicing activity and establish serviceability according to workplace procedures
2. Deactivate vehicle RESS	2.1 Locate and disconnect SELV supply according to manufacturer specifications

ELEMENT	PERFORMANCE CRITERIA
	2.2 Locate and remove RESS service plug or manual service disconnect to depower vehicle HV RESS according to manufacturer specifications 2.3 Stabilise vehicle is stabilised ensure zero residual voltage according to manufacturer procedures 2.4 Secure and retain RESS service plug or manual service disconnect to prevent refitting by third party
3. Reinitialise vehicle RESS	3.1 Reconnect SELV and RESS service plug or manual service disconnect in the correct order and reactivate vehicle 3.2 Carry out diagnostic tests to ensure correct recalibration of subsystems affected by depower process according to manufacturer procedures 3.3 Check RESS and vehicle subsystems for correct operation 3.4 Report post-reactivation faults according to workplace procedures
4. Complete work processes	4.1 Conduct final inspection according to workplace procedures and confirm vehicle 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
Reading	Interprets text, symbols and diagrams in depowering and reinitialising information in manufacturer specifications, and workplace instructions and procedures
Oral communication	- Listens to workplace instructions and ask questions to clarify job requirements - Participates in verbal exchanges when depowering and reinitialising BEVs
Numeracy	Matches electrical components and part identification numbers to workplace instructions, vehicle and component part lists, and manufacturer specifications

SKILL	DESCRIPTION
	• Interprets vehicle electrical measurements and readings on digital and analogue gauges • Interprets measurements of residual voltage and high voltages relating to BEVs
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes
Problem solving	• Identifies faults in reinitialising process that need to be reported
Technology	• Uses specialised tools

Unit Mapping Information

Supersedes and is equivalent to AURETH001 Depower and reinitialise battery electric vehicles.

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 AURETH101 Depower and reinitialise battery electric vehicles

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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:

- safely depower the rechargeable energy storage system (RESS) and separated extra low voltage (SELV) system of two different battery electric vehicles (BEVs), and stabilise the vehicles ensuring that no residual high voltage (HV) is measured
- safely reinitialise each BEV's RESS and SELV system and confirm correct vehicle operation.

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:

- methods to locate and interpret information required to depower and reinitialise battery electric vehicles, including:
 - vehicle manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to depower and reinitialise battery electric vehicles, including:
 - establishing the serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures
- work health and safety (WHS) requirements relating to depowering and reinitialising BEVs, including procedures for:
 - identifying hazards and controlling risks associated with:

- working with high voltages on BEV electrical systems
- wearing jewellery while working around high electrical currents
- determining appropriate procedures for minimising risk associated with hazards, including applying electrical safety precautions when:
 - using personal protective equipment (PPE), including electrical safety gloves with 1000 volt rating and Australian standards rated HV insulating mat
 - identifying and using firefighting equipment as appropriate
 - using the 'one hand' rule
 - following live system warning tags and signs
 - depowering vehicle
 - isolating HV RESS electrical supply
 - stabilising vehicle electrical system
- requirements of AS 5732 Electric vehicle operations - Maintenance and repair
- operating principles of RESS and SELV electrical systems relevant to a range of BEVs
- purpose and operation of a range of vehicle RESS depowering and reinitialising methods.

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 BEVs that they have depowered and reinitialised e.g. repair 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:

- automotive repair workplace or simulated workplace
- PPE and safety equipment, including electrical safety gloves with 1000 volt rating and Australian standards rated HV insulating mat
- manufacturer specifications and service procedures for the BEVs being depowered and reinitialised
- AS 5732 Electric vehicle operations - Maintenance and repair
- two different BEVs as specified in the performance evidence
- electrical test equipment, including:
 - digital multimeter with Cat III 1000 volt rating
 - insulation tester
 - residual voltage tester, if specified in original equipment manufacturer (OEM) test requirements
 - scan tool
- tools, equipment and materials appropriate for depowering and reinitialising BEVs.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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