

<b>Title</b>	<b>Service multiple lead-acid battery installations on vehicles, machines or units</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>3</b>

<b>Purpose</b>	<p>This unit standard is intended for people in the automotive industry.</p> <p>People credited with this unit standard are able to: determine the serviceability of lead-acid batteries; replace lead-acid batteries on vehicles, machines or units; charge multiple lead-acid batteries; carry out an emergency start; and repair or replace battery cables and terminals.</p>
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<b>Classification</b>	Motor Industry > Automotive Electrical and Electronics
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 It is recommended that people hold credit for Unit 30572, *Demonstrate knowledge of vehicle or machine batteries* before being assessed against this unit standard.
- 2 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, and company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 3 Performance of the outcomes of this unit standard must comply with the following: Health and Safety at Work Act 2015.
- 4 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- 5 Definitions
 

*Company requirements* refer to instructions to staff on policy and procedures that are available in the workplace. These requirements may include – company policies and procedures, work instructions, product quality specifications and legislative requirements.

*Service information* refers to technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.

*Suitable tools and equipment* means industry approved tools and equipment that are recognised within the industry as being the most suited to complete the task in a professional and competent manner with due regard to safe working practices.

- 6 For this unit standard, it is essential that the practical assessment evidence is obtained in the workplace under normal workplace conditions.
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## **Outcomes and performance criteria**

### **Outcome 1**

Determine the serviceability of lead-acid batteries.

#### **Performance criteria**

- 1.1 The batteries are inspected visually and all physical defects are identified and reported to the supervisor.
- 1.2 The state of charge of each battery is determined and compared to the battery manufacturer specifications.
- 1.3 Battery manufacturer test procedures are followed.

### **Outcome 2**

Replace lead-acid batteries on vehicles, machines or units.

#### **Performance criteria**

- 2.1 Batteries are selected for the particular application.  
  
Range includes but is not limited to – 12v and 24v systems.
- 2.2 The batteries are disconnected and removed, ensuring that the electrical system and any electronic memories are protected, and any systems are re-established.
- 2.3 The batteries are positioned and connected.  
  
Range series, parallel, secured properly.

### **Outcome 3**

Charge multiple lead-acid batteries.

#### **Performance criteria**

- 3.1 The batteries are prepared for charging.  
  
Range batteries cleaned, electrolyte topped-up, secured properly.
- 3.2 The batteries are connected to the charger.
- 3.3 The batteries are fully charged.

**Outcome 4**

Carry out an emergency start.

**Performance criteria**

4.1 Batteries are connected to an emergency starting device in a manner that ensures that the risk of explosion and component damage is eliminated.

Range two of the following emergency starting devices – portable starting pack, spike resistant jumper leads and slave batteries, replacement batteries.

4.2 The engine is started, run until warm, and then stopped.

4.3 Batteries are disconnected from the emergency starting device in a manner that ensures that battery explosion and damage to electrical and electronic circuits do not occur.

4.4 The engine is restarted and run, to ensure the starting system functions.

**Outcome 5**

Repair or replace battery cables and terminals.

**Performance criteria**

5.1 Battery cables are inspected, any faults are identified, and a decision is made whether to repair or replace based on feasibility of repair.

5.2 A battery cable is repaired or replaced to restore full serviceability.

5.3 A new battery cable and terminals are selected for a specified application, and the cable is fitted.

Range may include – main supply cable, earth strap, inter-battery link.

<b>Planned review date</b>	31 December 2025
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	29 October 1993	31 December 2022
Review	2	4 October 1996	31 December 2022
Review	3	26 February 1999	31 December 2022
Review	4	21 September 2007	31 December 2022
Review	5	25 March 2021	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0014
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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**Comments on this unit standard**

Please contact MITO New Zealand Incorporated [info@mito.org.nz](mailto:info@mito.org.nz) if you wish to suggest changes to the content of this unit standard.