

Title	Make up and install electronic circuitry and components in a vehicle or machine		
Level	5	Credits	5

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the component to be installed in the electrical system of a vehicle or machine; plan the vehicle or machine's electrical circuitry to install the component; and make up and install the circuitry.
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Classification	Motor Industry > Automotive Electrical and Electronics
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Available grade	Achieved
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Guidance Information

- 1 It is recommended that people hold credit for Unit 30558, *Test and repair automotive electrical circuits* 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 Alteration of existing electrical circuits may void vehicle or machine manufacturer's warranty where one exists. Enquiries should be made to the manufacturer's representatives before assessment against this unit standard.
- 7 **Range**
This unit standard includes but is not limited to – timers, dwell extenders, engine shutdown systems, and voltage control units.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the component to be installed in the electrical system of a vehicle or machine.

Performance criteria

- 1.1 The function and operation of the component are identified.
- 1.2 Voltage and current requirements of the component are determined.
- 1.3 The importance of circuit protection and loading requirements is established.
- Range** protection of vehicle's and/or machine's electrical system, compatibility of component.

Outcome 2

Plan the vehicle or machine's electrical circuitry to install the component.

Performance criteria

- 2.1 The vehicle's or machine's existing electrical capabilities are determined.
- Range** may include – battery power supply, total current draw, charging, wiring and circuit protection, vehicle and/or machine use.
- 2.2 Similar circuits in the vehicle's or the machine's electrical system are analysed to determine if they can be adapted for the component's capabilities.
- 2.3 A logical circuit is designed to comply with the component and customer requirements and the vehicle's or the machine's electrical system.
- 2.4 A wiring diagram is drawn to comply with the functions and requirement of the component and the vehicle or the machine.

Outcome 3

Make up and install the circuitry.

Performance criteria

- 3.1 The circuitry is made up and installed.
- 3.2 The circuit is tested to ensure that the added and/or changed component operates, and that the electrical requirements of the vehicle or the machine are not compromised.

Planned review date	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	9 November 1993	31 December 2022
Review	2	4 October 1996	31 December 2022
Review	3	26 February 1999	31 December 2022
Review	4	16 December 2004	31 December 2022
Review	5	25 March 2021	N/A

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

Comments on this unit standard

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