

Title	Demonstrate knowledge of wiring and wiring diagrams used in automotive circuits		
Level	3	Credits	2

Purpose	People credited with this unit standard are able to demonstrate knowledge of wiring and wiring diagrams used in automotive circuits.
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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 Evidence presented for assessment against this unit standard must be consistent with safe work 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.
- 2 Legislation, regulations and/or industry standards relevant to this unit standard may include:
 - Health and Safety at Work Act 2015;
 - Land Transport Rule: Heavy Vehicles 2004, Rule 31002;
 - Land Transport Rule: Vehicle Repair 1998, Rule 34001;
and any subsequent amendments and replacements.
- 3 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 information such as 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 refer to 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 work practices.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of wiring used in automotive circuits.

Performance criteria

- 1.1 Wiring types and sizes, their means of identification, and a common use for each type are identified.
- Range number of strands, strand diameter, current capacity, colour coding;
types include – shielded, un-shielded, ribbon, single and multi-core, braided, multiplexing, fibre optics, flexible printed circuit boards.
- 1.2 Current ratings for wiring used singly, and when used in a harness, are identified.
- 1.3 Procedures for repairing wiring are described.
- Range single wires and wiring harnesses, connectors, insulation, heat shrink;
crimping/solderless, soldering, cleaning, security and protection.
- 1.4 Voltage systems in vehicles, and their impact on wiring, are described.
- Range 12 and 24 volt systems, high voltage hybrid vehicle applications.
- 1.5 The use of distributed architecture combining electronic modules with power distribution blocks located throughout a vehicle as a means of optimising wiring is identified.
- 1.6 Automotive wiring standards for vehicles are identified.
- Range may include – Deutsches Institut für Normung e.V. (DIN) Standards, Society of Automotive Engineers (SAE).

Outcome 2

Demonstrate knowledge of wiring diagrams used in automotive circuits.

Performance criteria

- 2.1 Types of wiring diagrams used for automotive circuits are identified.
- Range block diagrams, schematic diagrams.
- 2.2 The uses of colours and letters to identify circuits are described.
- 2.3 The use of symbols to denote components, connectors, and wires located within an automotive wiring diagram is described.

Replacement information	This unit standard and unit standard 24106 replaced unit standard 899.
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Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 January 2008	31 December 2018
Review	2	21 April 2016	31 December 2023
Review	3	24 March 2022	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 Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.