

Title	Create and measure automotive series-parallel circuits, and calculate values of power in automotive circuits		
Level	3	Credits	2

Purpose	People credited with this unit standard are able to: create automotive series-parallel circuits using resistors and calculate voltage and current distribution for an automotive application; and calculate values of power in an automotive circuit.
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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 30571, *Demonstrate knowledge of the principles and testing of 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 Information on automotive electrical principles can be found from: training providers, industry and/or manufacturer courses; vehicle workshop manuals; automotive

electrical and electronic textbooks (contact a local book retailer, school or polytechnic library or the public library lending service).

Outcomes and performance criteria

Outcome 1

Create automotive series-parallel circuits using resistors and calculate voltage and current distribution for an automotive application.

Range physically assembled from components, drawing a diagram.

Performance criteria

1.1 Automotive circuits are created with three and four resistors.

1.2 The voltage across each resistor in an automotive circuit is calculated and measured.

Range using Ohm's Law, using test instruments.

1.3 The current through each resistor in an automotive circuit is calculated and measured.

Range using Ohm's Law, using test instruments.

Outcome 2

Calculate values of power in an automotive circuit.

Range series circuit, parallel circuit, series-parallel circuit.

Performance criteria

2.1 Values of power are calculated for an automotive circuit using correct formula and showing correct multiples and sub-multiples of the unit

Range given any two of – voltage, current, or resistance values; mega, kilo, milli, micro.

Replacement information	This unit standard, unit standard 24130, unit standard 24131, and unit standard 24132 replaced unit standard 5464.
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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	25 January 2008	31 December 2022
Review	2	25 March 2021	N/A

Consent and Moderation Requirements (CMR) reference

0014

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.