

<b>Title</b>	<b>Repair complex system faults on a vehicle or machine</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	People credited with this unit standard are able to repair complex system faults on a vehicle or machine.
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<b>Classification</b>	Motor Industry > Automotive Workshop Engineering
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<b>Available grade</b>	Achieved
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### Guidance Information

1 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 and legislative requirements. This includes the knowledge and use of suitable tools and equipment.

2 Legislation, regulations and industry standards relevant to this unit standard include but are not limited to the:  
Health and Safety at Work Act 2015.

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.

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.

*High voltage* refers to voltages above 60 V.

*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.

4 Competency under this unit standard does not entitle the learner to legally perform prescribed electrical work. Any prescribed electrical work must be undertaken by a person who has been registered and licensed under the Electricity Act 1992. Prescribed electrical work is defined in [Schedule 1 of the Electricity \(Safety\) Regulations 2010](#).

5 Range

*Complex system faults* may include – faults within multiple systems, intermittent faults, faults caused indirectly by the effect of external systems or caused through system repairs.

*Machines* may include – forklifts, earth moving equipment, grader equipment, loaders, dozers, tractors, agricultural equipment, dump trucks, prime movers; electric machines including – forklift, walk-behind pallet, ride-on pallet, reach truck, order picker, counterbalance truck, turret truck.

*Vehicle or machine systems* may include – engine management, body control, braking, steering and suspension, driveline, mechanical engine, auxiliary, pneumatic, hydraulic, electrical and electronics, accessory or high voltage systems.

Evidence is required for repairing at least one complex fault in four different systems, each on a different vehicle or machine.

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## Outcomes and performance criteria

### Outcome 1

Repair complex system faults on a vehicle or machine.

### Performance criteria

- 1.1 Repair solution is determined from diagnostic test results.
- 1.2 Fault is repaired.
- 1.3 System is tested to ensure the fault is repaired.
- 1.4 Repair report is compiled.

Range may include – diagnosis, repair method, labour time, estimate or quotation.

<b>Replacement information</b>	This unit standard and unit 33131 replaced unit standard 10102.
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<b>Planned review date</b>	31 December 2027
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 January 2023	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 Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council [qualifications@hangaarorau.nz](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.