

Title	Diagnose and rectify faults in a marine charging and starting system		
Level	4	Credits	4

Purpose	People credited with this unit standard are able to: diagnose and repair faults in a marine charging system; diagnose and repair faults in a marine starting system; and overhaul a marine starter motor.
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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 30563, *Demonstrate knowledge of automotive charging and starting systems* 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.

Outcomes and performance criteria

Outcome 1

Diagnose and repair faults in a marine charging system.

Performance criteria

- 1.1 The engine is run, and the symptoms of the fault(s) are identified.
- 1.2 A fully serviceable battery is used before continuing other charging system tests.
- 1.3 The charging system is tested.
- 1.4 The servicing and testing procedures for solar powered systems are identified.
- 1.5 Test results are recorded, and faults are isolated.
Range wiring fault, battery supply, component fault.
- 1.6 Charging system components are removed from the engine.
- 1.7 Parts are tested, and faults are rectified.

Outcome 2

Diagnose and repair faults in a marine starting system.

Performance criteria

- 2.1 The starting system is operated, and the symptoms of the fault(s) are identified.
- 2.2 A fully serviceable battery is used before continuing other starting system tests.
- 2.3 The starting system is tested.
- 2.4 Test results are recorded, and faults are isolated.
Range wiring fault, battery supply, component fault.
- 2.5 Starting system components are tested and faults rectified.
Range may include – outboard electric start; inboard pre-engaged or inertia starter;
voltage supply circuit, voltage drop, connections, start switch, neutral switch, solenoid, starter motor engagement mechanism.

Outcome 3

Overhaul a marine starter motor.

Performance criteria

- 3.1 The starter motor is removed from the engine.
- 3.2 The starter motor unit is dismantled.
- 3.3 All parts are cleaned to enable an inspection.
- 3.4 A condition report is completed.
- Range inspecting and testing parts, identifying and recording faults, recommending repairs and replacement of parts.
- 3.5 All parts that are determined to be replaced are procured.
- Range interpreting the service information and/or parts catalogue, obtaining costs and delivery details, ordering parts.
- 3.6 The starter motor is reassembled.
- Range replacement of parts, repairs effected, clearances, lubrication.
- 3.7 The starter motor is refitted to the engine.
- 3.8 The starter is operated to ensure system is functioning.

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	31 October 1995	31 December 2022
Review	2	29 March 1999	31 December 2022
Review	3	21 September 2007	31 December 2022
Review	4	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.