

Title	Demonstrate knowledge of direct and alternating current electric motors used in forklifts and their repair procedures		
Level	4	Credits	3

Purpose	<p>People credited with this unit standard are able to describe: direct and alternating current (dc and ac) electric motors used in forklifts, and speed control systems in dc and ac electric motors used in forklifts.</p> <p>They are also able to demonstrate knowledge of repair procedures for forklift dc and ac electric motors and speed control systems.</p>
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Classification	Motor Industry > Automotive Electrical and Electronics
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Available grade	Achieved
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Guidance Information

- 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.
- Performance of the outcomes of this unit standard must comply with the following: 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.
- 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.

5 Range

This unit standard may include but is not limited to the following dc and ac electric motor types – series wound, shunt wound, compound wound; evidence of required of a minimum of one motor type.

Outcomes and performance criteria**Outcome 1**

Describe dc and ac electric motors used in forklifts.

Performance criteria

1.1 The construction and operating characteristics of dc and ac electric motors used in forklifts are described.

Range armature windings, field windings, brush gear, commutator, electrical circuit, current-torque characteristics, reverse rotation.

Outcome 2

Describe speed control systems in dc and ac electric motors used in forklifts.

Performance criteria

2.1 Methods of speed control in speed control systems are described.

Range supply voltage speed control and ancillary equipment, field weakening.

Outcome 3

Demonstrate knowledge of repair procedures for forklift dc and ac electric motors and speed control systems.

Performance criteria

3.1 Suitable tools and equipment used for repairing and testing motors are described.

3.2 Safety precautions to take against high voltage systems are explained.

3.3 Removing and replacing a motor from a forklift are described.

3.4 Procedures for dismantling and reassembling the motor are described.

3.5 Cleaning and inspecting procedures are described.

Range inspecting procedures include – wear and damage.

3.6 Testing procedure to diagnose speed control faults is described.

Replacement information	This unit standard and unit standard 24118 replaced unit standard 2339.
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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
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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.