

<b>Title</b>	<b>Diagnose and rectify faults in forklift automatic transmissions</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	<p>This unit standard is intended for people in the materials handling equipment repair industry.</p> <p>People credited with this unit standard are able to: diagnose forklift equipment automatic transmission faults; and rectify forklift automatic transmission faults.</p>
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<b>Classification</b>	Motor Industry > Automotive Transmission Systems
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<b>Available grade</b>	Achieved
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<b>Prerequisites</b>	Driver licence F endorsement.
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### Guidance Information

- 1 It is recommended that people hold credit for Unit 31227, *Describe heavy vehicle and machine transmissions and diagnosis* 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;
  - New Zealand Standard NZS/ANSI/ITSDF B56.1:2005 *Safety Standard for Low Lift and High Lift Trucks*.
- 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 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 working practices.

- 6 For this unit standard, rectification of faults does not include procedures requiring the removal and disassembly of the transmission.

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## Outcomes and performance criteria

### Outcome 1

Diagnose forklift equipment automatic transmission faults.

Range one of – clutch type, torque converter type.

### Performance criteria

1.1 The type and model of transmission are determined from service information.

1.2 The transmission fluid is checked.

Range oil leaks, type of oil, oil level, service period, oil contamination, transmission breather.

1.3 Transmission oil pressures are determined from various pressure tapping points, and the results are recorded.

1.4 The transmission is stall tested. The results are compared with manufacturer data for normal operation, and any variations are recorded.

1.5 From the information obtained in the transmission tests, any faults and their probable causes are determined and noted.

Range may include but is not limited to – no response to shift lever, shifts at too high and too low a road speed, engine overspeeds on upshift, low pump pressure in one range, low pump pressure in all ranges, transmission oil overheating, high and low stall speeds, creep in neutral, clutch slippage and adjustment, clutch disc replacement.

1.6 Faults in electronically controlled transmission change speeds are identified from fault codes read from the transmission ECU (electronic control unit), and further action is determined.

Range on-board fault code display or portable fault code scanner.

### Outcome 2

Rectify forklift automatic transmission faults.

**Performance criteria**

- 2.1 Faults found which are external to the housing are rectified.
- 2.2 Faults found occurring within the transmission housing are rectified.
- 2.3 Transmission adjustments are carried out.
- Range may include but is not limited to – inching pedal, forward/reverse lever, transmission disconnected, speed selectors, clutch.
- 2.4 The transmission oil is replaced with the type and to the level determined by the manufacturer, and the transmission is retested to ensure no faults remain.

<b>Planned review date</b>	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 February 2008	31 December 2022
Review	2	27 May 2021	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>.

**Comments on this unit standard**

Please contact MITO New Zealand Incorporated [info@mito.org.nz](mailto:info@mito.org.nz) if you wish to suggest changes to the content of this unit standard.