

<b>Title</b>	<b>Describe heavy vehicle and machine transmissions and diagnosis</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>6</b>

<b>Purpose</b>	People credited with this unit standard are able to describe heavy vehicle and machine transmissions and diagnosis.
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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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### Guidance Information

- 1 It is recommended that people hold credit for Unit 30560, *Demonstrate knowledge of clutches and manual transmissions*, 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, company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 3 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the Health and Safety at Work Act 2015 and any subsequent amendments or replacements.
- 4 **Definitions**  
*Company requirements* refers 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.  
*Heavy vehicle* may include a motor vehicle that is of Class MD3, MD4, ME, NB, NC, TC or TD; or has a gross vehicle mass that exceeds 3500 kg and is not of a class specified in the Table of vehicle classes as listed from New Zealand Transport Agency website <https://www.nzta.govt.nz/vehicles/vehicle-types/vehicle-classes-and-standards/vehicle-classes/#Registration-classification>.  
*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.  
*Service information* may include – technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.

## Outcomes and performance criteria

### Outcome 1

Describe heavy vehicle and machine transmissions and diagnosis.

### Performance criteria

- 1.1 Manual transmission operation is described.
- Range manual, automated manual, single and multiple countershaft, power flow, lubrication, transfer case.
- 1.2 Automatic transmission operation is described.
- Range torque convertor, fluid coupling, power flow, hydraulic flow, planetary gears, clutch packs, valve body.
- 1.3 Transmission fault diagnosis is described.
- Range manual, automatic.

<b>Replacement information</b>	This unit standard replaced unit standard 2318, unit standard 2319 and unit standard 3385.
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<b>Planned review date</b>	31 December 2023
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 July 2018	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.