

Title	Diagnose faults in manual transmissions on light vehicles		
Level	4	Credits	2

Purpose	<p>This unit standard is intended for people in the automotive repair industry.</p> <p>People credited with this unit standard are able to diagnose faults in manual transmissions on light vehicles.</p>
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Classification	Motor Industry > Automotive Transmission Systems
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Available grade	Achieved
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Prerequisites	Class 1 driver licence.
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Guidance Information

- 1 It is recommended that people hold credit for Unit 920, *Demonstrate knowledge of light vehicle manual and semi-automatic transmission construction and operation* 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;
The Official New Zealand Road Code.
- 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.
Light vehicle refers to classes MA, MB, MC, MD, MD1, MD2 and NA as specified in the Vehicle equipment standards classifications at <https://www.nzta.govt.nz/vehicles/vehicle-types/vehicle-classes-and-standards/vehicle-classes/>.
Manual transmission refers to either an inline transmission or a transaxle unit.

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, it is essential that the practical assessment evidence is obtained in the workplace under normal workplace conditions.

Outcomes and performance criteria

Outcome 1

Diagnose faults in manual transmissions on light vehicles.

Performance criteria

- 1.1 Transmission test data is obtained in order to perform tests.
- 1.2 The level and condition of the transmission oil are checked, visually and by feel, and any problems are noted.
- 1.3 Details of the fault are obtained from the customer and noted.
- 1.4 Transmission is checked for leaks, and any leaks are noted.
- 1.5 Clutch operation and gear selection are tested with the vehicle stationary and the engine running, and any problems are noted.
- Range may include but is not limited to – manual and electronic shift actuation.
- 1.6 The vehicle is operated to reproduce the fault symptoms and to test the operation of the clutch and transmission in each of the gears under various road conditions. Details of conditions when the symptoms occur are noted.
- Range conditions – hilly and level terrain, different road surfaces, accelerating, decelerating, cruising, under different transmission temperatures;
operation – shift quality, vibration, bearing noise, gear noise, chatter at idle, gear balk, clutch drag, clutch shudder, clutch noise, clutch slip, clutch grab.
- 1.7 The test results are analysed to determine the probable causes of any faults found.

Replacement information	This unit standard and unit standard 24318 replaced unit standard 959.
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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 February 2008	31 December 2022
Review	2	27 May 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.