

Title	Remove and replace light vehicle bolt-on mechanical components		
Level	3	Credits	8

Purpose	People credited with this unit standard are able to remove and replace: engine ancillary components; a vehicle transmission assembly; a vehicle rear axle assembly; and vehicle suspension components.
----------------	--

Classification	Motor Industry > Vehicle Bodywork
-----------------------	-----------------------------------

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 Legislation and references
Performance of the outcomes of this unit standard must comply with the following:
Health and Safety at Work Act 2015.
- 2 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.
- 3 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/>.
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.
- 4 Assessment
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.

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

5 Recommended skills and knowledge

It is recommended that people hold credit for Unit 21859, *Select and use hand tools and workshop equipment for an automotive application* or demonstrate equivalent knowledge and skills.

Outcomes and performance criteria

Outcome 1

Remove and replace engine ancillary components.

Range may include – starter motor, alternator, water pump, distributor, carburettor, electronic fuel injection throttle body, inlet and exhaust manifolds, emission control devices.

Performance criteria

- 1.1 The removal and replacement procedures of engine ancillary components are identified.
- 1.2 Engine ancillary components are removed from the vehicle without damage to the components, and adjacent parts and fittings.
- 1.3 Engine ancillary components are fitted to the vehicle without damage to the components, and adjacent parts and fittings.
- 1.4 The parts fitted are checked for operation by starting and running the vehicle to operating temperature and reporting any malfunction.

Outcome 2

Remove and replace a vehicle transmission assembly.

Range manual gearbox, manual transaxle unit, clutch assembly.

Performance criteria

- 2.1 The removal and replacement procedures of transmission components are identified.
- 2.2 Transmission components are removed from the vehicle without damage to the components, and adjacent parts and fittings.
- 2.3 Transmission components are fitted to the vehicle without damage to the components, and adjacent parts and fittings.
- 2.4 The components fitted are checked to ensure the vehicle operates.

Outcome 3

Remove and replace a vehicle rear axle assembly.

Range rear axle assembly complete, differential head.

Performance criteria

- 3.1 The removal and replacement procedures of rear axle components are identified.
- 3.2 Rear axle components are removed from the vehicle without damage to the components, and adjacent parts and fittings.
- 3.3 Rear axle components are fitted to the vehicle without damage to the components, and adjacent parts and fittings.
- 3.4 The components fitted are checked to ensure the vehicle operates.

Outcome 4

Remove and replace vehicle suspension components.

Range MacPherson struts, shock absorbers, joints, rods, bush and bearing assemblies, support arms and links.

Performance criteria

- 4.1 The removal and replacement procedures of suspension components are identified.
- 4.2 Suspension components are removed from the vehicle without damage to the components, and adjacent parts and fittings.
- 4.3 Suspension components are fitted to the vehicle and adjustments carried out without damage to the components, and adjacent parts and fittings.
- 4.4 The components fitted are checked to ensure the vehicle operates.

Planned review date	31 December 2027
----------------------------	------------------

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	25 February 2008	31 December 2022
Review	4	29 July 2021	31 December 2027
Review	5	25 May 2023	N/A

Consent and Moderation Requirements (CMR) reference

0014

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.