

<b>Title</b>	<b>Demonstrate knowledge of liquefied petroleum gas vehicle fuel systems</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	<p>This theory-based unit standard is intended for people in the automotive and related industries.</p> <p>People credited with this unit standard are able to demonstrate knowledge of liquefied petroleum gas (LPG) as a gaseous fuel and the associated safety practices and regulations, and the operation of an LPG fuel system and conversion requirements.</p>
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<b>Classification</b>	Motor Industry > Automotive Fuel Systems and Exhaust
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 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.
- 2 Performance of the outcomes of this unit standard must comply with the following:
  - Health and Safety at Work Act 2015;
  - Traffic Regulations 1976;
  - Land Transport Rule: Vehicle Repair 1998;
  - Land Transport Rule: Vehicle Standards Compliance 2002;
  - New Zealand Standard AS/NZS 1425:2013 *LP Gas fuel systems for vehicle engines*.
- 3 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.
- 4 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* 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.

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of LPG as a gaseous fuel and the associated safety practices and regulations.

#### Performance criteria

1.1 Safety practices associated with LPG are described.

Range includes but is not limited to – work area and involvement, vehicle suitability for installation, equipment storage, repairs to the vehicle's alternative fuel componentry, initial refuelling procedures, cylinder de-gassing.

1.2 Petrol and LPG usage are compared.

Range characteristics, engine performance, engine and associated component effects, suitability for vehicle applications.

1.3 Regulations relating to LPG installation and vehicle certification are identified.

### Outcome 2

Demonstrate knowledge of the operation of an LPG fuel system and conversion requirements.

#### Performance criteria

2.1 The layout of dual fuel and dedicated LPG fuel systems are described, and the function of each component is defined.

2.2 The operation of a fully operational dual fuel system is described.

2.3 The factors determining the economics of conversion are described.

Range includes but is not limited to – annual fuel usage, vehicle use and area of operation, conversion cost, pay-back period.

2.4 The procedure when planning the LPG equipment layout on a vehicle is described.

Range includes but is not limited to – customer requirements and usage, suitability of components to the vehicle, determining container size, type of vehicle and manufacturer design requirements relating to modifications, conversion equipment specifications.

<b>Replacement information</b>	This unit standard and unit standard 24186 replaced unit standard 953.
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<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 January 2008	31 December 2022
Review	2	29 April 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.