

<b>Title</b>	<b>Demonstrate knowledge of fuel systems and fuel system requirements for a competition race vehicle</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>3</b>

<b>Purpose</b>	<p>This theory-based unit standard is intended for people who work in a motorsport environment.</p> <p>People credited with this unit standard are able to demonstrate knowledge of fuel systems used in a competition race vehicle, and fuel system requirements for a competition race vehicle.</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

- 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.
- Performance of the outcomes of this unit standard must comply with the following:  
Hazardous Substances and New Organisms Act 1996;  
Health and Safety at Work Act 2015;  
New Zealand MotorSport Manual <http://manual.motorsport.org.nz/>.
- 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.
- 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.  
*Fuel systems* in the context of this unit standard refers to all sub-systems and components including quick-fill fuel cells, metal tanks, tank bladders, fuel pumps, pressure regulators and by-passes, shut-off valves, roll-over valves, filters, fuel coolers, management control system, carburettor(s), injection equipment, pipes and connectors, forced air induction (turbo charging and supercharging) systems.  
*Fuel system requirements* may include but are not limited to air delivery, fuel pressure, fuel delivery volume, filtering, cooling, system suitability and capability for type of event.

*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 fuel systems used in a competition race vehicle.

#### Performance criteria

- 1.1 Components of a competition race vehicle fuel system are identified and their locations on a vehicle are described.
- 1.2 Mounting requirements for fuel systems are described.
- 1.3 Fuel tank and/or cell construction is described.  
  
Range metal construction, composite construction, baffle or surge tanks, quick-fill, bladders, valves, vents.
- 1.4 Fuel pump operation is described.  
  
Range mechanical, electric.

### Outcome 2

Demonstrate knowledge of fuel system requirements for a competition race vehicle.

#### Performance criteria

- 2.1 Legislative and regulatory compliance requirements for competition race vehicle fuel systems are identified.
- 2.2 Fuel delivery system requirements to support engine horsepower and tuning specifications are described.  
  
Range flow volume of fuel, fuel pressure, air delivery, filtering, atomisation, type and properties of fuel, fume extraction.
- 2.3 High pressure pipe, hose, and fitting requirements are identified.  
  
Range quick disconnect, unrestricted flow, mounting and security, vibration and fire proofing.

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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 June 2007	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.