

<b>Title</b>	<b>Demonstrate knowledge of competition race vehicle steering and suspension systems to suit motorsport events</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>4</b>

<b>Purpose</b>	This theory-based unit standard is for people who work in a motorsport environment. People credited with this unit standard are able to demonstrate knowledge of steering and suspension systems used on competition race vehicles.
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<b>Classification</b>	Motor Industry > Vehicle Steering and Suspension
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<b>Available grade</b>	Achieved
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**Guidance Information**

- 1 Legislation and publications relevant to this unit standard include but are not limited to – Hazardous Substances and New Organisms Act 1996, Health and Safety in Employment Act 1992, MotorSport New Zealand regulations, *New Zealand MotorSport Manual No 33*.
- 2 The MotorSport New Zealand regulations (motorsport regulations) and the *New Zealand MotorSport Manual* (motorsport manual) are available from the MotorSport New Zealand website <http://www.motorsport.org.nz/>. The Motorsport Manual is subject to frequent amendment, and any amendments will take precedence for assessment purposes, pending the review of this unit standard.
- 3 Definitions  
*Company requirements* refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – company specifications and procedures, work instructions, manufacturer specifications, product quality specifications, and legislative requirements.  
*Service information* may include but is not limited to – technical information of a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions and specifications; technical terms and descriptions; and detailed illustrations. This can be accessed in hard copy or electronic format and is normally sourced from the manufacturer.
- 4 This standard has been developed for use by the sectors of motorsport aligned with MotorSport New Zealand. Due to its requirements, it is not intended or suitable for use on motorcycles.

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of steering systems used on competition race vehicles.

#### Performance criteria

- 1.1 Steering system requirements for motorsport events are described in accordance with motorsport regulations.
- Range condition, operation of main components, repairs or modifications, steering wheel conformability, steering locks.
- 1.2 Steering system components used on competition race vehicles are described in accordance with the service information.
- Range manual and power rack and pinion, steering boxes, power steering cooler, remote reservoir;  
racing steering wheels, quick release steering wheel hubs;  
steering columns, supports, universal joints, shaft bearings.
- 1.3 Steering system race inspection requirements are described in accordance with motorsport regulations.
- Range security, damage, no binding, compliance.
- 1.4 Directional bias adjustment of steering is described in accordance with company and event circuit requirements.
- 1.5 Steering geometry considerations for event circuit requirements, handling, and optimal tyre performance are identified in accordance with company requirements.

### Outcome 2

Demonstrate knowledge of suspension systems used on competition race vehicles.

#### Performance criteria

- 2.1 Suspension system requirements for motorsport events are described in accordance with motorsport regulations.
- Range component condition, repairs or modifications.

2.2 Suspension components used on competition race vehicles are described in accordance with service information.

Range includes but is not limited to – chassis components – bushings, members, suspension bearings and joints, race application shock absorbers, air shock absorbers, tie rods, wheel hubs; chassis reinforcement – tie bars, strut rods, sway bars, traction bars, trailing arms; springs – leaf, coil-over kits, struts, lowering kits, mono-shock and spring system, torsion bar.

2.3 Suspension system race inspection requirements are described in accordance with motorsport regulations.

Range security, damage, compliance.

**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	25 June 2007	31 December 2020
Review	2	26 April 2018	31 December 2020

<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>.