

<b>Title</b>	<b>Demonstrate knowledge of vehicle steering and suspension systems</b>		
<b>Level</b>	<b>2</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	This theory-based unit standard is for people who wish to enter or are employed in the motor industry. People credited with this unit standard are able to demonstrate knowledge of vehicle steering systems, automotive suspension systems, and steering and suspension geometry.
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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 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer’s specifications, service information, company and legislative requirements (this includes the knowledge and/or use of suitable tools and equipment).
  
- 2 **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 may be accessed from the manufacturer.  
*Suitable tools and equipment* means 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 vehicle steering systems.

Range rack and pinion, recirculating ball.

**Performance criteria**

- 1.1 Components of steering systems and their positions on the vehicle are described.
- Range includes but is not limited to three of – steering wheel, steering column, steering box or rack, hydraulic pump and reservoir, linkages.
- 1.2 Manual, power-assisted, and power steering systems and steering functions are described.
- 1.3 Four wheel or all-wheel steering system layout is identified.
- 1.4 Safety and technological enhancements to steering systems are identified.
- Range includes but is not limited to three of – cushion steering wheel, collapsible column, fail safe, electronic stability and feel control, steer-by-wire systems, automatic steering (agricultural equipment), brake steering (heavy equipment), rear wheel steering.

**Outcome 2**

Demonstrate knowledge of automotive suspension systems.

Range includes but is not limited to – springs (coil, leaf, air), shock absorbers, torsion bar, sway and stabiliser bars, control arms, struts, levelling systems, motorcycle systems (including anti-dive), rubber, pneumatic, torsion bar, tyres.

**Performance criteria**

- 2.1 Kinds of suspension systems are identified.
- Range front, rear.
- 2.2 The operating principles of each suspension system are described.
- 2.3 The components of each suspension system and their positions on the vehicle and/or machine are identified.
- 2.4 Function of suspension system components is described.

**Outcome 3**

Demonstrate knowledge of steering and suspension geometry.

**Performance criteria**

3.1 Steering and suspension geometry terms are described.

Range includes but is not limited to 10 of – camber, caster, toe, toe out on turns, jounce, rebound, bump steer, steering angle inclination, included angle, scrub radius, wheelbase, tracking, thrust line and angle.

<b>Replacement information</b>	This unit standard and unit standard 24440 were replaced by unit standard 30566.
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**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	27 July 2005	31 December 2018
Review	2	21 April 2016	31 December 2020
Review	3	26 October 2017	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>.

This unit standard is expiring