

## Demonstrate knowledge of motorcycle frame, steering, and suspension systems

**Level** 3

**Credits** 4

**Purpose** This theory-based unit standard is for people who are employed in the motorcycle repair industry. People credited with this unit standard are able to demonstrate knowledge of: motorcycle frames; motorcycle steering systems; and motorcycle suspensions.

**Subfield** Motor Industry

**Domain** Vehicle Steering and Suspension

**Status** Registered

**Status date** 25 January 2008

**Date version published** 25 January 2008

**Planned review date** 31 December 2012

**Entry information** Open.

**Replacement information** This unit standard, unit standard 24430, and unit standard 24431 replaced unit standard 2311.

**Accreditation** Evaluation of documentation and visit by NZQA and industry.

**Standard setting body (SSB)** NZ Motor Industry Training Organisation (Incorporated)

**Accreditation and Moderation Action Plan (AMAP) reference** 0014

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

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### Special notes

#### Definitions

*Motorcycle* referred to in this unit standard includes on-road and off-road motorcycles, scooters, and all-terrain vehicles (ATVs).

*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.

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## Elements and performance criteria

### Element 1

Demonstrate knowledge of motorcycle frames.

#### Performance criteria

1.1 Types of frame construction and design are described in accordance with service information.

Range construction includes but is not limited to – tubes, steel plates, pressed steel, alloys, composite;  
design includes but is not limited to – diamond frame (engine stressed), cradle frame (single and double down tube), backbone frame (monocoque), underbone frame (scooters, mopeds, small displacement engines).

1.2 Frame components are identified and their features described in accordance with service information.

Range includes but is not limited to – front-end steering head, fork clamp assembly, front forks, steering stem, handlebars, engine mounts, swing arm, mounting areas (footrests, rear brake, rear shocks, petrol tank, seat, fairing, air box, side plates).

### Element 2

Demonstrate knowledge of motorcycle steering systems.

#### Performance criteria

2.1 The components of the steering system and their function are described in accordance with service information.

2.2 Steering geometry is described in accordance with service information.

Range includes but is not limited to – steering axis, rake, caster angle, wheel alignment, chain adjustment and alignment.

### Element 3

Demonstrate knowledge of motorcycle suspensions.

#### Performance criteria

3.1 Front suspension components are identified and their features are described in accordance with service information.

Range includes but is not limited to – telescopic forks (oil and gas-oil), anti-dive, link type, ATV components, damping, adjustments.

- 3.2 Rear suspension components are identified and their features are described in accordance with service information.
- Range includes but is not limited to – swing arm, springs, shock absorbers (oil, gas, rubber).
- 3.3 Impact of deviating from machine manufacturer recommended tyre specifications is identified in terms of suspension performance and machine handling.
- Range includes but is not limited to – ply ratings, sizes, speed ratings, pressure.

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### **Please note**

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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### **Comments on this unit standard**

Please contact the NZ Motor Industry Training Organisation (Incorporated) [info@mito.org.nz](mailto:info@mito.org.nz) if you wish to suggest changes to the content of this unit standard.