

Diagnose suspension failure on a heavy vehicle and repair components

Level 4

Credits 6

Purpose This unit standard is for people in the automotive heavy repair industry. People credited with this unit standard are able to identify and diagnose heavy vehicle suspension system failure, and repair suspension system components.

Subfield Motor Industry

Domain Vehicle Steering and Suspension

Status Registered

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Entry information Prerequisite: Class 2, 3, 4, or 5 driver licence (if road testing the vehicle).

Recommended: Unit 24432, *Demonstrate knowledge of heavy vehicle suspension systems and identifying suspension failure*, or demonstrate equivalent knowledge and skills.

Replacement information This unit standard and unit standard 24432 replaced unit standard 2315.

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>.

Special notes

- 1 Legislation and publications relevant to this unit standard include but are not limited to – Health and Safety in Employment Act 1992; Traffic Regulations 1976; Land Transport Rules: Heavy Vehicles 2004, Rule 31002; Vehicle Repair 1998, Rule 34001; Vehicle Standards Compliance 2002, Rule 35001/1; *The Official New Zealand Road Code*, Land Transport New Zealand.
- 2 Land Transport Rules are produced for the Minister of Transport by Land Transport New Zealand. These rules are available online at <http://www.landtransport.govt.nz/rules/>.
New Zealand Road Code information can be obtained from the following website <http://www.landtransport.govt.nz/roadcode>.
- 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.
Heavy vehicle refers to a motor vehicle that is of Class MD3, MD4, ME, NB, NC, TC or TD; or has a gross vehicle mass that exceeds 3500 kg and is not of a class specified in the Table of vehicle classes as listed from Land Transport New Zealand website <http://www.landtransport.govt.nz/publications/infosheets/infosheet-1-10.html#classes>.
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.
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.
- 4 For this unit standard, it is essential that the practical assessment evidence is obtained in the workplace under normal workplace conditions.
- 5 Road testing of heavy vehicles should only be undertaken by people holding the appropriate licence class or endorsement for the vehicle. For performance criterion 1.3, the candidate is required to accompany the driver to observe any suspension faults if they do not hold the appropriate licence to drive the vehicle themselves.

Elements and performance criteria

Element 1

Identify and diagnose heavy vehicle suspension system failure.

Performance criteria

- 1.1 Safe working practices are observed throughout the task in accordance with legislative requirements.
- Range personal safety, safety of others, vehicle safety, workshop safety, environmental safety, tools and equipment safety.
- 1.2 Suitable tools and equipment are selected and used that enable faults to be diagnosed and repaired in accordance with service information.
- 1.3 The vehicle is arranged to be road tested in compliance with the Road Code. Any suspension faults observed are noted in accordance with company requirements.
- Range may include but is not limited to – handling, noise, ride quality and height, suspension reaction control; springs, mountings, struts, ball joints, bushes, bolts, rivets, pins; wear, cracks, fractures, bends, sag, security.
- 1.4 Faulty components in the suspension system are identified in accordance with service information.
- Range may include but is not limited to – springs, mountings, struts, ball joints, bushes, bolts, rivets, pins; wear, cracks, fractures, bends, sag, security.
- 1.5 From the condition of the faulty components, a diagnosis of the likely cause(s) is made with reference to manufacturer specifications. The conclusions are recorded in accordance with company requirements.
- Range may include but is not limited to – overloading, improper loading, improper handling, contributing mechanical causes.

Element 2

Repair suspension system components.

Performance criteria

- 2.1 Safe working practices are observed throughout the task in accordance with legislative requirements.
- Range personal safety, safety of others, vehicle safety, workshop safety, environmental safety, tools and equipment safety.

- 2.2 The faulty component(s) is returned to full serviceability, and a recommendation made to remedy any contributing causes, in accordance with service information.
- Range replace with approved replacement parts, repair, adjust.
- 2.3 The suspension is checked in its loaded and unloaded condition and any remaining faults are rectified in accordance with service information.
- 2.4 Where replacement components may alter steering geometry, arrangements are made for steering angles to be checked and adjusted in accordance with company requirements.

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.

Comments on this unit standard

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