

Check and adjust vehicle front and rear wheel alignment

Level 3

Credits 4

Purpose This unit standard is for people in the automotive repair industry. People credited with this unit standard are able to carry out a pre-alignment check on a vehicle, check the steering angles of the front and rear wheels, and rectify incorrect front and rear wheel alignment.

Subfield Motor Industry

Domain Vehicle Steering and Suspension

Status Registered

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Entry information Prerequisite: appropriate driver's licence for the vehicle being driven.

Recommended: Unit 24026, *Demonstrate knowledge of motor vehicle wheel alignment*, or demonstrate equivalent knowledge and skills.

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; Land Transport Rules: Steering Systems 2001, Rule 32003/1; Vehicle Repair 1998, Rule 34001; Vehicle Standards Compliance 2002, Rule 35001/1; *The Official New Zealand 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.

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 alignment equipment means industry approved alignment equipment that is 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.

Elements and performance criteria

Element 1

Carry out a pre-alignment check on a vehicle.

Performance criteria

1.1 Safe working and driving practices are observed throughout the task in accordance with legislative requirements.

Range personal safety, safety of others, equipment and vehicle safety.

1.2 Information regarding vehicle steering symptoms and related alignment problems is obtained from the customer and recorded for an analysis of the fault(s) in accordance with company requirements.

1.3 Road test is performed to isolate steering faults in accordance with the Road Code.

Range may include but is not limited to – flat road, left hand corner, right hand corner, area to stop and restart, bump, dip.

- 1.4 Faulty vehicle steering symptoms are identified and noted in accordance with company requirements.
- Range may include but is not limited to – vehicle tracking and/or pulling to one side, steering wheel position incorrect, wheel shimmy, vibration and shake, abnormal noises, steering light and heavy, excessive road shock, braking instability, poor returnability of the steering wheel, wander and instability, tyre squeal and/or scuffing on turns, excessive body sway, memory steer, bump steer, torque steer.
- 1.5 Visual inspection of a vehicle for steering faults is completed in accordance with service information and Land Transport Rules.
- Range may include but is not limited to – tyre condition, vehicle height, steering linkage, ball joints, wheel bearings, bushes, struts and shock absorbers, chassis damage, brakes dragging and leaking, constant velocity (CV) joints and boots, steering box adjustment and centralisation, rack and pinion adjustment and centralisation.

Element 2

Check the steering angles of the front and rear wheels.

Range camber, caster, steering axis inclination (SAI), toe, toe-out on turns.

Performance criteria

- 2.1 Safe working practices are observed throughout the task in accordance with legislative requirements.
- Range personal safety, safety of others, equipment and vehicle safety.
- 2.2 The vehicle is prepared for measuring the steering angles in accordance with service information.
- 2.3 Suitable alignment equipment is selected and used to enable all steering angles and measurements to be checked in accordance with vehicle manufacturer specifications.
- 2.4 Steering angles and measurements are checked in accordance with service information, and the need for adjustment is determined by comparison of the results with the vehicle specifications.

Element 3

Rectify incorrect front and rear wheel alignment.

Performance criteria

3.1 Safe working practices are observed throughout the task in accordance with legislative requirements.

Range personal safety, safety of others, equipment and vehicle safety.

3.2 Faulty components causing incorrect alignment are repaired and/or replaced in accordance with service information.

3.3 Incorrect wheel alignment angles and measurements are adjusted in accordance with service information and company requirements.

3.4 Front and rear wheel alignment specifications are within the vehicle manufacturer tolerances.

3.5 The road test confirms that the vehicle's steering and tracking complies with Land Transport Rules.

Range may include but is not limited to – over the same test route as for the pre-alignment check, all steering related problems previously noted during the pre-alignment check rectified.

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.