

Title	Demonstrate knowledge of heavy vehicle and trailer wheel alignment procedures		
Level	4	Credits	5

Purpose	This theory-based unit standard is for people in the automotive heavy repair industry. People credited with this unit standard are able to demonstrate knowledge of: wheel alignment pre-checking procedures for heavy vehicles and trailers; test methods for heavy vehicle wheel and axle alignment faults; and correction procedures for heavy vehicle wheel and axle alignment faults.
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Classification	Motor Industry > Vehicle Steering and Suspension
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Available grade	Achieved
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Guidance Information

- 1 Recommended for entry: Unit 883, *Check and adjust vehicle front and rear wheel alignment*, or demonstrate equivalent knowledge and skills.
- 2 Legislation relevant to this unit standard includes but is not limited to – Health and Safety in Employment Act 1992.
- 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.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of wheel alignment pre-checking procedures for heavy vehicles and trailers.

Performance criteria

- 1.1 Safe working practices when checking the heavy vehicle and trailer are identified in accordance with legislative requirements.
- Range personal safety, safety of others, vehicle safety, workshop safety, environmental safety, tools and equipment safety.
- 1.2 The importance of obtaining customer information prior to diagnosing faults is explained as an aid to the diagnosis of alignment faults.
- 1.3 Visual inspection procedures of heavy vehicle and trailer suspension systems prior to road testing are described in accordance with service information.
- Range includes but is not limited to – vehicle height, steering linkages, suspension joints, air bags and air supply system, 5th wheel and king pin, turntables, towing couplings.
- 1.4 Inspection requirements for tyre wear and tread wear patterns are identified in accordance with tyre service information.
- Range includes but is not limited to – application of vehicle, type of loading, type of road surface, tyre faults, tyre pressures, misalignment faults, suspension faults, service conditions.
- 1.5 Symptoms that could indicate faulty wheel alignment are identified in accordance with service information.
- Range includes but is not limited to – vehicle and/or trailer tracking and/or pulling to left or right, steering wheel position incorrect, steering not self centring, excessive road shock, wander and instability, tyre squeal and scuffing on turns, excessive body sway.
- 1.6 Conditions and driving methods required to isolate alignment faults are identified in accordance with company requirements and service information.
- Range includes but is not limited to – vehicle and/or trailer loaded and unloaded, when cornering, uneven road surfaces, under braking and acceleration, tight turning circle, vehicle speed, weather conditions.

Outcome 2

Demonstrate knowledge of test methods for heavy vehicle wheel and axle alignment faults.

Performance criteria

2.1 Safe working practices are identified when testing the vehicle and trailer in accordance with legislative requirements.

Range personal safety, safety of others, vehicle safety, workshop safety, environmental safety, tools and equipment safety.

2.2 Inspection procedures for vehicle and trailer steering components to establish that they are within manufacturer wear limits are described in accordance with service information.

Range includes but is not limited to – steering shafts, drop arms, second steer drop arms, drag links, track rods, tie rods, springs, spring shackles and mountings, equalisers, torque rods, air bags and air bag height control.

2.3 Inspection and testing procedures to locate alignment faults in couplings are described in accordance with service information.

Range includes but is not limited to – 5th wheel and 5th wheel king pin, turntables and towing couplings, self-steer axles.

2.4 Methods of checking axle and wheel alignment on a heavy vehicle and trailer are described in accordance with service information.

Range includes but is not limited to – using wheel alignment machines, tape measures and strings, plumb bobs and grid methods.

Outcome 3

Demonstrate knowledge of correction procedures for heavy vehicle wheel and axle alignment faults.

Performance criteria

3.1 Safe working practices are identified when repairing alignment faults on a vehicle and trailer in accordance with legislative requirements.

Range personal safety, safety of others, vehicle safety, workshop safety, environmental safety, tools and equipment safety.

3.2 Repair methods for axle and wheel alignment faults are described in accordance with service information.

Range includes but is not limited to – shimming, adjusting and replacing worn components.

Replacement information	This unit standard was replaced by unit standard 31934.
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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	23 February 1999	31 December 2021
Revision	2	16 April 2003	31 December 2021
Review	3	25 January 2008	31 December 2021
Review	4	26 September 2019	31 December 2021

Consent and Moderation Requirements (CMR) reference	0014
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.