



Australian Government

AURHTD104 Carry out heavy vehicle wheel alignment operations

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge required to carry out heavy vehicle wheel alignment operations. It involves identifying and confirming work requirements, preparing for the work, carrying out pre-alignment inspection, performing heavy vehicle wheel alignment, and completing workplace processes and documentation.

The unit applies to those who work in the automotive service and repair industry. The wheel alignment operations include those of agricultural machinery, heavy commercial vehicles or mobile plant machinery. The unit does not apply to light vehicles, light commercial vehicles or motorcycles.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Unit Sector

Mechanical – Heavy Vehicle Technical – Steering and Suspension

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to carry out heavy vehicle wheel alignment	1.1 Identify job requirements from workplace instructions 1.2 Obtain and interpret heavy vehicle wheel alignment pre-check information 1.3 Identify hazards and environmental issues, assess potential risks and implement control measures in line with workplace policies and procedures 1.4 Identify tools and equipment required for the job and establish serviceability according to workplace procedures

ELEMENT	PERFORMANCE CRITERIA
2. Carry out heavy vehicle wheel alignment pre-checks	2.1 Test vehicle according to workplace procedures and workplace health and safety requirements 2.2 Complete vehicle wheel alignment pre-check according to manufacturer specifications, workplace procedures, and workplace health and safety requirements 2.3 Identify and report faults according to workplace procedures
3. Carry out vehicle wheel alignment activities	3.1 Obtain and interpret heavy vehicle wheel alignment information 3.2 Connect wheel alignment measuring equipment to vehicle according to manufacturer specifications and workplace procedures 3.3 Carry out wheel alignment and record readings 3.4 Carry out corrective adjustments to wheel according to manufacturer specifications, workplace procedures, and workplace health and safety requirements 3.5 Re-check wheel alignment and confirm accuracy of adjustments 3.6 Record post-adjustment wheel alignment readings according to workplace procedures
4. Complete work processes	4.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use 4.2 Clear work area and dispose of or recycle materials according to workplace procedures 4.3 Complete documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Learning	Locates required sources of information efficiently
Reading	- Interprets safe operating procedures for wheel alignment equipment from workplace signs and procedures and manufacturer specifications - Interprets information from manufacturer specifications and workshop literature when seeking vehicle wheel alignment specifications and procedures

SKILL	DESCRIPTION
Numeracy	• Measures steering and suspension system components • Uses basic mathematical operations, including addition, subtraction and understanding angles in degrees • Calculates distances, tolerances and deviations from manufacturer specifications • Understands measurements in metric and imperial units of measurement
Planning and organising	• Identifies and prepares tools and equipment to allow the job to be completed without time wastage • Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes
Technology	• Uses precision measuring equipment

Unit Mapping Information

Supersedes and is equivalent to AURHTD004 Carry out heavy vehicle wheel alignment operations.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURHTD104 Carry out heavy vehicle wheel alignment operations

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- align wheels on all steerable axles of at least three different heavy vehicles.

In the course of the above, the candidate must measure each of the following steering angles, and make adjustments where required by job specifications:

- camber
- caster
- king pin inclination (KPI)
- toe (toe-in and toe-out)
- toe-out on turns.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to carry out heavy vehicle wheel alignment, including:
 - manufacturer specifications and procedures
- workplace procedures required to carry out heavy vehicle wheel alignment, including:
 - establishing serviceability of tools and equipment
 - pre and post wheel alignment procedures
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment

- disposal of excess materials
 - recycling procedures
- workplace health and safety (WHS) requirements relating to heavy vehicle wheel alignment operations, including:
 - procedures for raising and supporting heavy vehicles or machinery
- steering geometry and wheel alignment angles, including:
 - Ackermann principle of steering
 - camber
 - caster
 - KPI
 - toe-in and toe-out
 - toe-out on turns
 - steering axis inclination
 - two wheel and twin four wheel steer
- vehicle pre-alignment inspection procedures, including:
 - analysing tyre wear
 - inflating tyre
 - adjusting wheel bearing
 - inspecting steering and suspension
 - determining wheel run-out
 - determining vehicle height
 - checking chassis and axle alignment
- types and operation of wheel alignment systems, including:
 - laser aligners
 - visual aligners
 - camera aligners
- procedures for measuring and adjusting steering angles, including:
 - camber
 - caster
 - toe-in and toe-out
 - toe-out on turns
- post-wheel alignment testing procedures for heavy vehicles.

Assessment Conditions

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the heavy vehicle wheel alignments that they have carried out, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer wheel alignment specifications
- three different heavy vehicles requiring wheel alignment
- wheel alignment equipment for heavy vehicles
- tools, equipment and materials appropriate for carrying out wheel alignment operations on heavy vehicles.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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