



Australian Government

AURHTD004 Carry out heavy vehicle wheel alignment operations

Release: 1

AURHTD004 Carry out heavy vehicle wheel alignment operations

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes 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 and wheel alignment, and completing workplace processes and documentation.

It applies to those working 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.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Heavy Vehicle

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Carry out wheel alignment pre-checks	1.1 Job requirements are determined from workplace instructions 1.2 Alignment pre-check information is sourced and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Alignment pre-checks of vehicle wheels, steering and suspension condition are carried out according to manufacturer specifications, workplace procedures and safety requirements 1.5 Faults are identified and reported according to workplace procedures as necessary
2. Carry out vehicle wheel alignment activities	2.1 Vehicle wheel alignment specifications are sourced and interpreted 2.2 Wheel alignment measuring equipment is connected to vehicle according to manufacturer specifications and workplace procedures 2.3 Wheel alignment is carried out without causing damage to components or systems, and readings are recorded 2.4 Corrective adjustments are carried out according to workplace procedures and safety requirements, and within manufacturer specifications 2.5 Wheel alignment is re-checked to confirm accuracy of adjustments 2.6 Post-adjustment wheel alignment readings are recorded and reported according to workplace procedures
3. Complete work process	3.1 Final inspection is made to ensure work is to workplace expectations and vehicle is presented ready for use 3.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 3.3 Tools and equipment are checked and stored according to workplace procedures 3.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

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

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	- interpret safe operating procedures for wheel alignment equipment from workplace signs and procedures and manufacturer specifications - interpret information from manufacturer specifications and workshop literature when seeking vehicle wheel alignment specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting findings, making recommendations, and recording vehicle pre-alignment checks and pre- and post-wheel alignment readings.
Numeracy skills to:	- measure steering and suspension system components and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications - understand measurements in metric and imperial units of measurement and angles in degrees.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use precision measuring wheel alignment equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	work health and safety (WHS), occupational health and safety (OHS) requirements, including procedures for raising and supporting heavy vehicles or machinery.
---	---

Unit Mapping Information

Equivalent to AURHTD3004 Carry out wheel alignment operations (heavy vehicle)

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for AURHTD004 Carry out heavy vehicle wheel alignment operations

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- align the wheels on at least three different heavy vehicles, in which the work must involve measuring, recording and adjusting the following angles to manufacturer specifications:
 - camber
 - caster
 - king pin inclination (KPI)
 - toe (toe-in and toe-out)
 - toe-out on turns.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to heavy vehicle wheel alignment operations, including procedures for raising and supporting heavy vehicles or machinery
- application, purpose and operating principles of 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
- wheel alignment equipment types, application and operation
- 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

Assessors must satisfy NVR/AQTF assessor requirements.

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.

Links

Companion Volume implementation guides are found in VETNet -

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

Companion Volume implementation guides are found in VETNet -

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