



**Australian Government**

# **AURLTD106 Carry out light vehicle wheel alignment operations**

**Release: 1**

# AURLTD106 Carry out light vehicle wheel alignment operations

## 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 light vehicle wheel alignment operations. It involves identifying and confirming work requirements, preparing for the work, carrying out pre-alignment inspection, performing light vehicle wheel alignment, and completing workplace processes and documentation.

This unit applies to those who work in the automotive service and repair industry. The wheel alignment operations include those with light vehicles or light commercial vehicles. The unit does not apply to agricultural machinery, heavy commercial vehicles, mobile plant machinery 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 - Light Vehicle Technical - Steering and Suspension

## Elements and Performance Criteria

| ELEMENTS                                              | 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 light vehicle wheel alignment | 1.1 Identify job requirements from workplace instructions<br>1.2 Obtain and interpret light vehicle wheel alignment pre-check information<br>1.3 Identify hazards and environmental issues, assess potential risks and implement control measures in line with workplace policies and procedures<br>1.4 Identify tools and equipment required for the job and establish serviceability according to workplace procedures |
| 2. Carry out light vehicle                            | 2.1 Test vehicle according to workplace procedures and                                                                                                                                                                                                                                                                                                                                                                   |

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

## 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 | <ul style="list-style-type: none"> <li>Locates required sources of information efficiently.</li> </ul>                                                                                                                                                                                                                                                |
| Reading  | <ul style="list-style-type: none"> <li>Interprets safe operating procedures for wheel alignment equipment from workplace signs and procedures and manufacturer specifications</li> <li>Interprets information from manufacturer specifications and workshop literature when seeking vehicle wheel alignment specifications and procedures.</li> </ul> |
| Numeracy | <ul style="list-style-type: none"> <li>Measures steering and suspension system components</li> <li>Uses basic mathematical operations, including addition,</li> </ul>                                                                                                                                                                                 |

| SKILL                   | DESCRIPTION                                                                                                                                                                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul style="list-style-type: none"><li>subtraction and understanding angles in degrees</li><li>Calculates distances, tolerances and deviations from manufacturer specifications</li><li>Uses measurements in metric and imperial units of measurement.</li></ul>                                                 |
| Planning and organising | <ul style="list-style-type: none"><li>Identifies and prepares tools and equipment to allow the job to be completed without time wastage</li><li>Plans own work requirements</li><li>Prioritises actions to achieve required outcomes</li><li>Ensures tasks are completed within workplace timeframes.</li></ul> |
| Technology              | <ul style="list-style-type: none"><li>Uses precision measuring equipment.</li></ul>                                                                                                                                                                                                                             |

## Unit Mapping Information

Supersedes and is equivalent to AURLTD006 Carry out light 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 AURLTD106 Carry out light 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 all four wheels of:
  - one front wheel drive vehicle
  - one rear wheel drive vehicle
- while completing the above tasks, adjust all of the following steering angles:
  - camber
  - caster
  - steering axis inclination (SAI)
  - 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 light vehicle wheel alignment including:
  - manufacturer specifications and procedures
  - workplace procedures
- workplace procedures required to carry out light 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 light vehicle wheel alignment, including:
  - procedures for using air jacks
- steering geometry and wheel alignment angles, including:
  - Ackermann principle of steering
  - camber
  - caster
  - SAI
  - thrust angle
  - toe-in and toe-out
  - toe-out on turns
  - included angle
  - point of intersection
  - scrub radius
- vehicle pre-alignment inspection procedures, including:
  - analysing tyre wear
  - determining wheel run-out
  - determining vehicle height
  - checking frame alignment
- types and operation of wheel alignment systems, including:
  - laser aligners
  - visual aligners
  - camera aligners
- relationships between fault symptoms and component defects
- procedures for measuring and adjusting steering angles, including:
  - camber
  - caster
  - steering axis inclination
  - thrust angle
  - toe
  - toe-out on turns
- procedures for carrying out four-wheel alignment
- post-wheel alignment testing procedures for light vehicles including steering system reset procedures to calibrate on-board system sensors with the steering geometry.

## 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 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
- one front wheel drive light vehicle and one rear wheel drive light vehicle requiring the adjustments specified in the performance evidence
- wheel alignment equipment for light vehicles
- tools, equipment and materials appropriate for carrying out wheel alignment operations on light vehicles.

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

## Links

Companion Volume Implementation Guide is found on VETNet -

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