



Australian Government

AURLTD003 Reset steering system alignment adjustments to customer specifications

Release: 1

AURLTD003 Reset steering system alignment adjustments to customer specifications

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to reset the steering system alignment according to customer specifications. It involves assessing any modifications made to a steering system against safety and Australian Design Rule (ADR) compliance, checking the vehicle, performing any necessary adjustments, and then testing the vehicle.

It applies to those working in the automotive service and repair industry. The steering systems are those of four wheel drive (4WD) vehicles, light vehicles, light commercial vehicles or motorsport vehicles.

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

Competency Field

Mechanical - Light 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.
1. Prepare to reset steering system alignment	1.1 Purpose for resetting steering system alignment is established from workplace instructions and confirmed with customer 1.2 Practicality of customer specifications are assessed and discussed

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.
	with customer 1.3 Proposed modifications are assessed in relation to ADRs and safety compliance
2. Carry out alignment pre-checks	2.1 Vehicle is tested according to workplace procedures and safety requirements to ensure its condition is appropriate to safely reset steering system alignment 2.2 Vehicle wheel alignment pre-check specifications are sourced and interpreted 2.3 Wheel alignment equipment and tools are checked according to manufacturer and workplace procedures
3. Adjust alignment to achieve required specifications	3.1 Vehicle wheel alignment specifications are sourced and interpreted 3.2 Wheel alignment measuring equipment is connected to vehicle according to manufacturer specifications and workplace procedures 3.3 Wheel alignment measurements are performed and recorded according to manufacturer specifications, workplace procedures and safety requirements 3.4 Adjustments are carried out according to manufacturer specifications, workplace procedures and safety requirements 3.5 Post-adjustment wheel alignment measurements are performed and recorded according to manufacturer specifications, workplace procedures and safety requirements 3.6 Vehicle is tested to confirm accuracy of adjustments according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Wheel aligner maintenance is completed and tools and equipment are checked and stored according to workplace procedures 4.4 Alignment adjustment data is entered into customer's vehicle records and 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 manufacturer specifications and workplace signs and procedures - interpret information from manufacturer specifications and workshop literature when seeking wheel alignment specifications.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting findings, making recommendations and recording parts and material used.
Numeracy skills to:	- measure steering and suspension system components and calculate distances, tolerances and deviations from manufacturer specifications - understand measurements in metric and imperial units of measurement and angles in degrees.
Digital literacy skills to:	navigate computer-based wheel alignment software.
Planning and organising skills to:	select and prepare appropriate tools and equipment to allow the job to be completed without time wastage.
Problem solving skills to:	- determine job requirements and select appropriate tool or equipment - assess practicality of customer specifications and recommend steering system alignment adjustments based on safety and ADR compliance.

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) and occupational health and safety (OHS) requirements, including procedures for using air jacks.
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Unit Mapping Information

Equivalent to AURLTD3003 Reset steering system alignment adjustments to customer specifications

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 AURLTD003 Reset steering system alignment adjustments to customer specifications

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Performance Evidence

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

- reset the steering system alignment of two different vehicles, in which the work must involve measuring, recording and adjusting the following angles on all four wheels of each vehicle:
 - camber
 - caster
 - steering axis inclination (SAI)
 - 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 resetting steering system alignment, including procedures for using air jacks
- application, purpose and function of steering 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
- reasons for making non-standard alignment settings on driving and ride characteristics, including:
 - fitting modified road springs
 - fitting revised shock absorbers
 - fitting modified sway bars
 - altering ride height
 - fitting non-standard wheel and tyre combinations
 - variations to understeer and oversteer
 - off-road use
- vehicle wheel alignment pre-check procedures, including:
 - assessing steering system alignment adjustments against safety and Australian Design Rule (ADR) compliance
 - road testing
 - 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
- wheel alignment checking procedures, including:
 - checking caster
 - checking camber
 - checking toe-in
 - checking toe-out on turns
- wheel alignment adjustment procedures, including:
 - adjusting caster
 - adjusting camber
 - adjusting toe-in
 - adjusting toe-out on turns.

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 steering systems that they have worked on, 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 steering system alignment specifications
- Australian Design Rules
- two different vehicles requiring steering system adjustments to the angles specified in the performance evidence
- wheel alignment equipment
- tools, equipment and materials appropriate for adjusting steering system alignment.

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