



Australian Government

AURLTQ002 Diagnose and repair light vehicle drive shafts

Release: 1

AURLTQ002 Diagnose and repair light vehicle drive shafts

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to diagnose and repair faults in the drive shafts of light vehicles. It involves preparing for the task, selecting the correct diagnostic procedure, carrying out the diagnosis and the repair, performing post-repair testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The drive shafts include those in light vehicles or light commercial vehicles. This unit does not apply to agricultural machinery, heavy commercial vehicles, marine vessels, mobile plant machinery or motorcycles.

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

Competency Field

Mechanical - Light Vehicle

Unit Sector

Technical - Driveline and Final Drives

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. Prepare to diagnose and repair light vehicle drive shaft	1.1 Job requirements are determined from workplace instructions 1.2 Diagnostic information is sourced and interpreted 1.3 Diagnostic options are analysed and those most appropriate to the circumstances are selected 1.4 Hazards associated with the work are identified and risks are managed 1.5 Diagnostic tools and equipment are selected and checked for serviceability
2. Diagnose drive shaft	2.1 Diagnostic tests are performed according to workplace procedures and safety and environmental requirements 2.2 Faults are identified from diagnostic test results and causes of faults are determined 2.3 Diagnosis findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Repair drive shaft	3.1 Repair information is sourced and interpreted 3.2 Repair options are analysed and those most appropriate to the circumstances are selected 3.3 Repair tools, equipment and materials are selected and checked 3.4 Repairs and component replacements and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or system 3.5 Post-repair testing is carried out according to workplace procedures to confirm fault rectification, and any further problems detected as having been introduced during the repair process are rectified
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and drive shaft or 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 Tools and equipment are checked and stored according to workplace procedures 4.4 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 information from manufacturer and workshop literature when seeking drive shaft specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report diagnostic findings and make repair recommendations.
Numeracy skills to:	- measure drive shaft components and use basic mathematical operations, including addition and subtraction, to calculate distances, angles, tolerances and deviations from manufacturer specifications - understand 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 equipment, such as vernier calipers, micrometers and inclinometers.

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 and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with hazardous oils - environmental requirements, including procedures for trapping, storing and disposing of oils released from drive shafts.
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Unit Mapping Information

Equivalent to AURLTQ3002 Repair final drive - driveline (light 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 AURLTQ002 Diagnose and repair light vehicle drive shafts

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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:

- diagnose and repair the following drive shafts in two different light vehicles, in which the work must involve:
 - one rear wheel drive vehicle with drive shaft with universal joints, including removing the drive shaft from vehicle, replacing one universal joint, and refitting the drive shaft
 - one front wheel drive vehicle with constant velocity joint drive shaft, including removing the drive shaft from the vehicle and refitting it.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing and repairing light vehicle drive shafts, including procedures for working with hazardous oils
- environmental procedures for trapping, storing and disposing of oils released from drive shafts
- operating principles of light vehicle drive shafts and associated components, including:
 - torque reaction of rear axle housings
 - torque steer
- application, purpose and operation of the following components of light vehicle drive shafts and components, including:
 - propeller shafts, including:
 - single and multi-piece shafts
 - universal joints, including cross and yoke joints, double cardan joints and Lobro joints

- velocity fluctuation of universal joints
- shaft alignment
- constant velocity joints, including:
 - Birfield joints
 - double offset joints
 - tripod joints
- diagnostic testing procedures for light vehicle drive shafts, including road testing procedures that include drive shaft noise and vibration
- repair procedures for light vehicle drive shafts, including procedures for:
 - dismantling drive shafts
 - inspecting drive shafts
 - reassembling and aligning components
- post-repair testing procedures for light vehicle drive shafts.

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 light vehicle drive shafts 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 light vehicle drive shaft specifications
- light vehicle with front engine and rear wheel drive
- light vehicle with front wheel drive constant velocity joint drive shaft
- diagnostic equipment for light vehicle drive shafts
- tools, equipment and materials tools appropriate for repairing light vehicle drive shafts.

Links

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