



Australian Government

AURLTQ102 Diagnose and repair light vehicle drive shafts

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 diagnose and repair faults in the drive shafts of light vehicles. The unit involves preparing for the task, sourcing a diagnostic testing strategy, diagnosing the cause of the fault, carrying out the repair, performing post-repair testing, and completing workplace processes and documentation.

The unit applies to those working in the automotive service and repair industry. The drive shafts include those in light vehicles or light commercial vehicles.

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

Unit Sector

Mechanical Light Vehicle Technical – Driveline and Final Drives

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 diagnose and repair light vehicle drive shaft	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for diagnosis activity 1.3 Analyse diagnostic options and source testing strategy to identify cause of fault using workplace and manufacturer procedures 1.4 Identify hazards and environmental issues associated with diagnose and repair activity, assess potential risks and implement control measures in line with workplace policies and procedures 1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace

ELEMENTS	PERFORMANCE CRITERIA
	procedures
2. Diagnose light vehicle drive shaft	2.1 Implement diagnostic tests set out in testing strategy according to manufacturer and workplace procedures, and workplace health and safety requirements 2.2 Identify cause of fault through analysis of diagnostic test results 2.3 Confirm and report cause of fault according to workplace procedures 2.4 Develop and report recommendations for necessary repairs according to workplace procedures
3. Repair light vehicle drive shaft	3.1 Identify required information for repair activity 3.2 Identify required tools, equipment and materials required for repair activity and establish serviceability according to workplace procedures 3.3 Carry out repairs according to workplace and manufacturer procedures, manufacturer specifications, workplace health and safety and environmental requirements 3.4 Carry out post-repair testing according to workplace procedures, workplace health and safety and environmental requirements
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 - Develops a sequenced plan for a specific task.
Reading	Organises and interprets technical information from workplace procedures, manufacturer procedures and manufacturer specifications.
Oral communication	- Clarifies instructions - Obtains information from customers and supervisors.

SKILL	DESCRIPTION
Numeracy	• Measures drive shaft components • Uses mathematical operations • Calculates deviations and tolerances from manufacturer specifications • Measures angles in degrees.
Planning and organising	• 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 AURLTQ012 Diagnose and repair light vehicle drive shafts.

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 AURLTQ102 Diagnose and repair light vehicle drive shafts

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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:

- diagnose and repair 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
- carry out a diagnostic test in the course of the above for at least one of the following faults:
 - abnormal drive shaft noise
 - vibrations.

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 diagnose and repair light vehicle drive shafts, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair light vehicle drive shafts, including:
 - establishing serviceability of tools and equipment
 - 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 diagnosing and repairing light vehicle drive shafts, including procedures for working with hazardous oils
- environmental requirements relating to diagnosing and repairing light vehicle drive shafts, including 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
- purpose and operation 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 for:
 - drive shaft noise diagnostic
 - 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

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.

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 -

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