



**Australian Government**

# **AURTTL005 Diagnose and repair LNG fuel systems**

**Release: 1**

# AURTTL005 Diagnose and repair LNG fuel systems

## 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 liquefied natural gas (LNG) fuel systems of vehicles or machinery. 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 unit applies to LNG fuel systems in agricultural machinery, forklifts, heavy commercial vehicles, light vehicles or mobile plant machinery.

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 Miscellaneous

## Unit Sector

Technical – Alternative Fuels

## 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 diagnose and repair LNG fuel system	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

<b>Elements</b>	<b>Performance Criteria</b>
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.
	1.4 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 LNG fuel system	2.1 Diagnostic tests are performed according to workplace procedures and <b><i>safety and environmental requirements</i></b> 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 LNG fuel system	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, safety and environmental requirements, and AS/NZ 2739 Natural gas (NG) fuel systems for vehicle engines, and without causing damage to components or system 3.5 Post-repair testing is carried out according to workplace procedures and AS/NZ 2739 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 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 expectations 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.

<b>Skills</b>	<b>Description</b>
Learning skills to:	<ul style="list-style-type: none"> <li>locate appropriate sources of information efficiently.</li> </ul>
Reading skills to:	<ul style="list-style-type: none"> <li>interpret Australian standards relating to repairing LNG fuel systems</li> <li>interpret information from manufacturer and workshop literature when seeking LNG fuel system specifications and procedures.</li> </ul>
Writing skills to:	<ul style="list-style-type: none"> <li>legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.</li> </ul>
Oral communication skills to:	<ul style="list-style-type: none"> <li>clarify instructions</li> <li>report diagnostic findings and make repair recommendations.</li> </ul>
Numeracy skills to:	<ul style="list-style-type: none"> <li>measure LNG fuel system components and use basic mathematical operations, including addition, subtraction, multiplication and division, to calculate distances, areas, volumes, tolerances and deviations from manufacturer specifications.</li> </ul>
Planning and organising skills to:	<ul style="list-style-type: none"> <li>plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.</li> </ul>
Technology skills to:	<ul style="list-style-type: none"> <li>use precision measuring equipment, including exhaust gas analyser.</li> </ul>

## 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.

<b><i>Safety and environmental requirements</i></b> must include:	<ul style="list-style-type: none"> <li>work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: <ul style="list-style-type: none"> <li>working with extremely cold and flammable gas</li> <li>storing LNG</li> </ul> </li> <li>environmental requirements, including procedures for preventing loss of gas to atmosphere.</li> </ul>
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## Unit Mapping Information

Equivalent to AURTTL3005 Diagnose and repair LNG fuel systems

## Links

Companion Volume implementation guides are found in VETNet -

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