



**Australian Government**

# **AURTTL113 Diagnose complex faults in LPG fuel systems**

**Release: 1**

## AURTTL113 Diagnose complex faults in LPG fuel systems

### 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 complex faults in liquefied petroleum gas (LPG) fuel systems and determine the repair action necessary to restore system performance. It involves confirming the existence of a fault, choosing the diagnostic procedure and tools, applying the diagnostic procedure, reporting conclusions and making repair recommendations. Complex faults are outside the normal scope of a technician's diagnosis and repair work. They include intermittent faults, multi-system faults, faults introduced as a result of system repairs, and indirect faults caused by the influence of external systems, requiring the application of complex diagnostic processes to resolve.

This unit applies to those working in the automotive service and repair industry. The LPG fuel systems include those in vehicles from all sectors of the industry.

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 Miscellaneous Technical - Alternative Fuels

### 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. Identify and confirm the work requirement     | 1.1 Determine nature and objective of diagnosis requirements from workplace instructions<br>1.2 Confirm existence of fault in LPG fuel system from direct or indirect evidence<br>1.3 Identify hazards associated with the work and manage risks according to workplace procedures, and safety and environmental requirements |

| ELEMENTS                              | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Prepare to diagnose complex faults | <ul style="list-style-type: none"><li>2.1 Access and interpret manufacturer specifications and other technical information for LPG fuel system</li><li>2.2 Identify diagnostic procedures and options</li><li>2.3 Select diagnostic method sequence, tests and testing processes from the range of available options</li><li>2.4 Select and prepare testing equipment according to manufacturer specifications and workplace procedures</li><li>2.5 Identify, select and prepare tools, equipment and materials required to support the diagnostic process for use</li></ul>                                                                                                                                     |
| 3. Apply diagnostic procedures        | <ul style="list-style-type: none"><li>3.1 Follow selected diagnostic process and carry out testing according to manufacturer specifications, workplace procedures, and safety and environmental requirements</li><li>3.2 Confirm diagnostic findings, as required, by using alternative or optional process according to manufacturer specifications and workplace procedures</li><li>3.3 Draw and document conclusions from findings according to workplace procedures, and develop recommendations for required repairs that comply with AS/NZS 1425 LP Gas fuel systems for vehicle engines</li><li>3.4 Provide conclusions to required personnel or customer to confirm further action to be taken</li></ul> |
| 4. Complete work processes            | <ul style="list-style-type: none"><li>4.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use</li><li>4.2 Clear work area and dispose of or recycle materials according to workplace procedures</li><li>4.3 Complete documentation according to workplace procedures</li></ul>                                                                                                                                                                                                                                                                                                                                                                                       |

## 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><li>• Applies diagnostic skills to different LPG fuel systems.</li></ul>                                                                                                                                             |
| Numeracy | <ul style="list-style-type: none"><li>• Measures LPG fuel system components and uses basic mathematical operations, including addition and subtraction</li><li>• Calculates deviations and tolerances from manufacturer specifications</li><li>• Uses gauges and interprets units, such as kilopascals and</li></ul> |

| SKILL                   | DESCRIPTION                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | pounds per square inch (PSI).                                                                                                                                                                               |
| Oral communication      | <ul style="list-style-type: none"><li>• Clarifies instructions</li><li>• Obtains information from customers and supervisors.</li></ul>                                                                      |
| Reading                 | <ul style="list-style-type: none"><li>• Organises and interprets technical information from manufacturer and workshop literature when seeking LPG fuel system specifications and procedures.</li></ul>      |
| Planning and organising | <ul style="list-style-type: none"><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><li>• Uses specialised diagnostic equipment.</li></ul>                                                                       |

## Unit Mapping Information

Supersedes and is equivalent to AURTTL013 Diagnose complex faults in LPG fuel systems.

## Links

Companion Volume Implementation Guide is found on VETNet -

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