



Australian Government

AURTTL004 Inspect and service LNG fuel systems

Release: 1

AURTTL004 Inspect and service LNG fuel systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect and service liquefied natural gas (LNG) fuel systems. It involves preparing for the task, inspecting the system, reporting the inspection findings, servicing and adjusting the system, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The LNG fuel systems include those of 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 inspect and service LNG fuel system	1.1 Job requirements are determined from workplace instructions 1.2 Servicing information is sourced and interpreted 1.3 Hazards associated with work are identified and risks are managed according to <i>safety and environmental requirements</i>

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.
	1.4 Tools, equipment and materials are selected and checked for serviceability
2. Inspect LNG fuel system	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures, safety requirements, and AS/NZS 2739 Natural gas (NG) fuel systems for vehicle engines 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Service LNG fuel system	3.1 Service and adjustments are carried out according to manufacturer specifications, workplace procedures, AS/NZS 2739, and safety and environmental requirements, and without causing damage to components or systems 3.2 Post-service testing is carried out according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle or system 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 service procedures and specifications relating to LNG fuel systems.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and

Skills	Description
	recording parts and material used.
Oral communication skills to:	- clarify instructions - report inspection findings and make repair recommendations.
Numeracy skills to:	use basic mathematical operations, including addition and subtraction, to calculate service schedule intervals.
Problem solving skills to:	refer problems outside area of responsibility to appropriate person.

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 a lighter-than-air flammable gas - avoiding cold burns - storing LNG - environmental requirements, including procedures for preventing loss of gas to atmosphere.
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Unit Mapping Information

Equivalent to AURTTL3004 Inspect and service LNG fuel system

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 AURTTL004 Inspect and service LNG fuel systems

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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:

- inspect and service the following liquefied natural gas (LNG) fuel systems:
two different light vehicle LNG fuel systems or
two different heavy commercial vehicle LNG fuel systems or
 - two different forklift LNG fuel systems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting and servicing LNG fuel systems, including procedures for:
 - working with a lighter-than-air flammable gas
 - avoiding cold burns
 - storing LNG
- environmental requirements, including procedures for preventing loss of gas to atmosphere
- licensing requirements for working on LNG systems
- identification and function of LNG fuel system components
- basic operation of LNG fuel systems
- requirements of AS/NZS 2739 Natural gas (NG) fuel systems for vehicle engines
- inspection procedures for LNG fuel systems, including:
 - leakage check
 - LNG container identity

- container life
- container recertification date
- container corrosion and damage
- container attachment
- automatic fuel shut-off device
- manual valves
- compartment and sub-compartment refuelling connection
- refuelling interlock device
- flexible piping and hoses
- ground clearances
- vehicle identification, including identification markers
- service and adjustment procedures for LNG fuel systems, including checking compliance of fuel system emissions
- post-service testing procedures for LNG fuel systems.

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 vehicle LNG fuel 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
- AS/NZS 2739 Natural gas (NG) fuel systems for vehicle engines
- manufacturer servicing schedules and vehicle LNG fuel system specifications
- vehicles and machinery specified in the performance evidence with operating LNG fuel systems requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing LNG fuel systems.

Links

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