



Australian Government

Assessment Requirements for AURLTE002 Diagnose and repair light vehicle engines

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

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 faults in three different light vehicle engines:
- a fault in an engine cylinder head with an overhead camshaft, in which the work must involve removing the cylinder head from the engine
- a fault in two of the following components, in which the work must involve removing the components from the engine:
 - engine valve timing belt
 - engine valve timing chain
 - engine valve lifters
 - cylinder head valve stem seals
 - camshaft
 - camshaft bearings
 - crankshaft
 - balance shaft or its bearings
 - pistons and connecting rods
 - cylinder block sleeves
 - main bearings and big-end bearings
 - internal oil pump
- dismantle and reassemble one of the above engines.

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 engines, including procedures for lifting and supporting light vehicle engines
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from engines
- operating principles of light vehicle engines and associated components, including:
 - combustion, including:
 - air-fuel ratios and combustion cycles
 - direct injection
 - detonation
- engine design, including:
 - swept volume and engine volume
 - compression ratio
 - engine efficiency, including volumetric efficiency, thermal efficiency and mechanical efficiency
 - torque and horsepower, including brake horsepower
- application, purpose and operation of the following components of light vehicle engines and components, including:
 - lubrication systems, cylinder blocks, cylinders, pistons, cylinder heads, combustion chambers, inlet and exhaust manifolds, connecting rods, crankshafts, piston rings, gudgeon pins, camshafts, timing gears, vibration dampers and flywheels
- diagnostic testing procedures for light vehicle engines, including:
 - wet and dry compression tests
 - cylinder leakage tests
 - oil pressure tests
 - checking sources of fluid leaks
 - exhaust smoke diagnosis
 - checking abnormal engine noises
- dismantling procedures for light vehicle engines, including procedures for:
 - measuring clearances and tolerances
 - inspecting components
- repair procedures for removing, replacing and adjusting light vehicle engines
- assembly procedures for light vehicle engines, including procedures for removing, replacing and adjusting them
- post-repair testing procedures for light vehicle engines, including:
 - checking oil pressure
 - road testing under load
 - checking for fluid leaks.

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 engines 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 engine specifications
- three different light vehicle engines with faults specified in the performance evidence
- diagnostic equipment for light vehicle engines
- tools, equipment and materials appropriate for repairing light vehicle engines.

Links

Companion Volume implementation guides are found in VETNet -

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

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