



Australian Government

**Assessment Requirements for AURHTE103
Diagnose complex faults in heavy vehicle
diesel engines**

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

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 a complex fault in three different heavy vehicle diesel engines in which the work for at least two of the engines must involve a different type of complex fault selected from the following:
 - an intermittent fault
 - a fault that affects more than one system
 - a fault introduced as a result of a system repair
 - an indirect fault caused by the influence of external systems.
- develop a testing strategy to diagnose cause of the complex faults in the above engines.

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 complex faults in heavy vehicle diesel engines, including heavy vehicle diesel engine manufacturer specifications
- workplace procedures required to diagnose complex faults in heavy vehicle diesel engines, including:
 - establishing the 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
 - safe disposal of materials
 - recycling procedures

- workplace health and safety (WHS) requirements relating to diagnosing complex faults in heavy vehicle diesel engines, including procedures for working with:
 - hot engine components
 - rotating engine components
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from diesel engines
- types of complex faults relating to heavy vehicle diesel engines, including:
 - intermittent
 - multi-system
 - introduced as a result of system repair
 - indirect, caused by the influence of external systems
- key features of heavy vehicle diesel engines, including:
 - intake, exhaust, lubrication, cooling and engine mounting systems and components
 - turbochargers
 - valve timing
- testing procedures for heavy vehicle diesel engines, including:
 - abnormal noise analysis
 - compression testing
 - cylinder leak-down testing
 - oil pressure testing
 - component failure analysis
- key features and limitations of diagnostic testing equipment required to diagnose complex faults in heavy vehicle diesel engines
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
 - vehicle continuous and non-continuous monitored systems.

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 heavy vehicle diesel 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 heavy vehicle diesel engine specifications
- three different heavy vehicle diesel engines with complex faults
- heavy vehicle diesel engine diagnostic equipment, including:
 - compression tester
 - cylinder leakage tester
 - oil pressure gauge
 - scan tool
- tools, equipment and materials appropriate for diagnosing complex faults in heavy vehicle diesel engines.

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 -

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