



Australian Government

Assessment Requirements for AURHTF102 Diagnose and repair heavy vehicle diesel fuel injection systems

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 and repair a fault in at least two different heavy vehicle diesel fuel injection systems, completing the following with each system:
 - testing the low-pressure fuel supply
 - removing and refitting a low-pressure fuel pump
 - removing, refitting and timing a diesel high pressure pump
 - removing, refitting and testing injectors
 - bleeding a diesel fuel injection system.

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 and repair heavy vehicle diesel fuel injection systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair heavy vehicle diesel fuel injection systems, including:
 - establishing 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
 - disposal of excess materials

- recycling procedures
- workplace health and safety (WHS) requirements relating to diagnosing and repairing heavy vehicle diesel fuel injection systems, including procedures for:
 - working with:
 - high fuel pressures
 - stored fuel pressures
 - high voltage diesel fuel injectors
 - engine start-up and shut-down
- environmental requirements relating to diagnosing and repairing heavy vehicle diesel fuel injection systems, including procedures for trapping, storing and disposing of diesel fuel released from injection systems
- operating principles of heavy vehicle diesel fuel injection systems, including:
 - phases of combustion
 - composition of diesel fuel
- purpose and operation of heavy vehicle diesel fuel injection systems and components, including:
 - low pressure fuel supply systems, including:
 - fuel pumps
 - filters and separators
 - common rail injection systems
 - high pressure diesel fuel injection systems, including:
 - distributor type injection pumps
 - in-line injection pumps
 - electronic unit injection (EUI)
 - hydraulic electronic unit injection (HEUI)
 - high pressure injection (HPI)
 - injectors
- diagnostic testing procedures for heavy vehicle diesel fuel injection systems, including:
 - assessing exhaust smoke
 - testing low pressure fuel systems
 - testing injector opening pressure, back leakage, nozzle leakage and spray pattern
 - assessing air induction systems
 - measuring individual cylinder exhaust temperature to determine underperforming cylinders
- repair procedures for heavy vehicle diesel fuel injection systems, including procedures for:
 - dismantling, cleaning, adjusting and reassembling conventional injectors
 - removing, installing and timing high pressure injection pumps
 - adjusting and tuning mechanical unit injection systems
 - bleeding fuel systems

- post-repair testing procedures for heavy vehicle diesel fuel injection systems, including procedures for:
 - checking fuel system leakage
 - assessing engine performance.

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 fuel injection 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
- manufacturer heavy vehicle diesel fuel injection system specifications
- two different heavy vehicles with faults in their diesel fuel injection systems
- diagnostic equipment for diesel fuel injection systems
- tools, equipment and materials appropriate for repairing and adjusting heavy vehicle diesel fuel injection systems.

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>