



Australian Government

**Assessment Requirements for AURHTD106
Diagnose complex faults in heavy
commercial vehicle steering and suspension
systems**

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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 each of the following:
 - steering system of a heavy commercial vehicle
 - suspension system of a different heavy commercial vehicle
 - steering or suspension system of a third heavy commercial vehicle.
- develop a testing strategy in the course of the above work to diagnose the cause of two of the following types of complex faults:
 - 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.

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 commercial vehicle steering and suspension systems, including:
 - heavy commercial vehicle steering and suspension system manufacturer specifications
- workplace procedures required to diagnose complex faults in heavy commercial vehicle steering and suspension systems, 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 commercial vehicle steering and suspension systems, including procedures for working with:
 - stored energy in springs, air springs and torsion bars
 - high pressure and high temperature steering system fluids
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from steering and suspension systems
- types of complex faults relating to heavy commercial vehicle steering and suspension systems, including:
 - intermittent
 - multi-system
 - introduced as a result of system repair
 - indirect, caused by the influence of external systems
- key features of heavy commercial vehicle steering and suspension systems, including:
 - manual steering systems
 - power assisted steering systems, including:
 - power steering pumps
 - power steering boxes
 - rack and pinion steering
 - electronic and load sensing steering systems
 - leaf spring suspension
 - equaliser beam-leaf spring and solid rubber spring suspension
 - rubber block and torsion bar suspension
 - air spring suspension, including:
 - pneumatic
 - combination pneumatic and leaf spring
 - axle alignment
- testing procedures for heavy commercial vehicle steering and suspension systems, including procedures for:
 - vehicle dynamic and static testing, including hydraulic tests of power assisted steering systems
 - component analysis
 - abnormal noise analysis
 - component failure analysis
- key features and limitations of diagnostic testing equipment required to diagnose complex faults in heavy commercial vehicle steering and suspension systems
- 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
- 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 commercial vehicle steering and suspension 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 commercial vehicle steering and suspension specifications
- three different heavy commercial vehicles with complex faults in their steering and suspension systems
- heavy commercial vehicle steering and suspension system diagnostic equipment, including:
 - pressure gauge
 - scan tool
- heavy commercial vehicle steering and suspension system specifications
- tools, equipment and materials appropriate for diagnosing complex faults in heavy commercial vehicle steering and suspension 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>