



Australian Government

Assessment Requirements for AURETD001 Diagnose and repair electronically controlled steering systems

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 standard defined in the unit's elements and performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in the electronically controlled steering systems of two different vehicles or machinery, including faults in two of the following:
 - steering wheel torque sensor circuit
 - steering wheel angle sensor circuit
 - wheel speed sensor circuit
 - ultrasonic position sensor self-parking system circuit
 - power steering motor control circuit
 - power steering hydraulic pump control circuit.

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 electronically controlled steering systems, including procedures for:
 - using specialised tools and equipment
 - using appropriate personal protective equipment (PPE)
 - identifying hazards and controlling risks associated with working with high pressure and high temperature steering systems
- electronically controlled power steering system principles, including:
 - adaptive steering topography, inputs and outputs
 - typical vehicle or machinery systems equipped with adaptive steering systems

- application, purpose and operation of electronically controlled steering systems and components, including:
 - adaptive steering control modules
 - control sensors and actuators
 - actuators, including pulse width modulated (PWM)
 - steering control module functions, including:
 - control of hydraulic fluid settings
 - pressure control valve settings
 - power steering pump operation
- diagnostic testing procedures for electronically controlled steering systems, including:
 - accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs)
 - live data
 - freeze frame data
 - waveforms
 - using diagnostic flow charts
 - testing electrical systems, including procedures for:
 - accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
 - undertaking resistance and voltage drop tests
 - testing open and short circuits
 - testing shorts to signal, power circuits and grounds
- repair procedures for electronically controlled steering systems, including procedures for removing and replacing electronically controlled steering system components
- post-repair testing procedures for electronically controlled steering systems, including:
 - DTC clearing procedures
 - static and dynamic performance tests of steering 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 electronically controlled steering 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 specifications for electronically controlled steering systems
- two different vehicles or machinery with faults in the electronically controlled steering system components specified in the performance evidence
- diagnostic equipment for electronically steering controlled system, including:
 - multimeter
 - scan tool
- tools, equipment and materials appropriate for repairing the electronically controlled steering systems of vehicle and machinery.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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