



Australian Government

Assessment Requirements for AURETD011 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

The candidate must demonstrate they can perform the following according to the standards defined in the elements, performance criteria and foundation skills of this unit.

The candidate must demonstrate a diagnosis and repair of electronically controlled steering systems that safely follows workplace procedures to meet required outcomes. This includes:

- diagnosis and repair of a fault within two of the following electronically controlled steering systems of two different vehicles or machinery:
 - 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
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Knowledge Evidence

The candidate must demonstrate the following knowledge:

Key policies and procedures relating to the diagnosis, testing and repair of electronically controlled steering systems, including:

- how to locate and interpret manufacturers specifications or equivalent documentation and workplace procedures for the diagnosis and repair of electronically controlled steering systems
- the following workplace health and safety requirements for diagnosis and repair of electronically controlled steering systems:
 - procedures for using specialised tools and equipment
 - knowledge of the required personal protective equipment (PPE)
 - procedures for identifying hazards and controlling risks associated with working with high pressure and high temperature steering systems

- environmental requirements for diagnosis, testing and repair of electronically controlled steering systems
- the following 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
- the following electrical systems testing procedures:
 - accessing electrical terminals
 - using test probes without damaging connectors, fuse holders or wiring
 - undertaking resistance tests
 - undertaking voltage drop tests
 - testing open circuits
 - testing short circuits
 - checking shorts to signal, power circuits and grounds
- the following repair procedures for electronically controlled steering systems:
 - removing and replacing electronically controlled steering system components
- the following post-repair testing procedures for electronically controlled steering systems:
 - DTC clearing procedures
 - static and dynamic performance tests of steering systems
- workplace housekeeping and documentation procedures

Electronically controlled power steering systems information, including:

- the operating principles of:
 - adaptive steering topography, inputs and outputs
 - typical vehicle or machinery systems equipped with adaptive steering systems
- the purpose and operation of:
 - adaptive steering control modules
 - control sensors and actuators
 - actuators, including pulse width modulated (PWM)
- the purpose and operation of the following steering control module functions:
 - control of hydraulic fluid settings
 - pressure control valve settings
 - power steering pump operation
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Assessment Conditions

The assessment must:

- include access to:
 - an automotive repair workplace or simulated workplace that reflects workplace conditions - where simulation is used, it must reflect real working conditions by modelling industry operating conditions and contingencies, as well as, using suitable facilities, equipment and resources
 - repair orders and workplace instructions relating to diagnose and repair activity
 - workplace procedures relating to diagnose and repair activity
 - manufacturer electronically controlled steering systems specifications and procedures or equivalent documentation to complete diagnose and repair activity
 - two different vehicles or machinery with faults in the electronically controlled steering system components specified in the performance evidence
 - diagnostic equipment for electronically controlled steering systems, including:
 - multimeter
 - scan tool
 - tools, equipment and materials required for repairing electronically controlled steering systems of vehicle and machinery
- be demonstrated in the workplace or in a simulated environment that reflects workplace conditions
- be conducted in a safe environment
- be assessed in compliance with relevant policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed
- confirm consistent performance can be applied in a range of relevant workplace circumstances

Assessor requirements

Assessors of this unit must:

- satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards
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Links

Companion Volume Implementation Guides are found in VETNet -

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