



Australian Government

Assessment Requirements for AURETR051 Diagnose, repair and replace precision agriculture systems

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with the Automotive Retail, Service and Repair Training Package Version 7.0. Newly created unit.

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, repair and replace at least two of the following precision agriculture systems:
 - autoguidance
 - application and machine control
 - satellite constellation.

In the course of the above, the candidate must:

- test circuits according to workplace procedures and without causing damage to components or systems
- test performance of systems and make any final adjustments as required
- confirm systems are operating to manufacturer specifications and workplace requirements
- confirm any reported problems are resolved and no other problems are present
- confirm vehicle has protective guards, safety features and cowlings in place.

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, repair and replace precision agriculture systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- types, uses and operation of precision agriculture systems, including:
 - global network satellite system (GNSS)
 - in-vehicle monitoring systems (IVMS)

- electronic data interchange (EDI) systems
- mobile phone technologies & satellite telecommunications
- cloud-based portals
- workplace procedures required to diagnose, repair and replace precision agriculture systems, including:
 - establishing serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - identification, tagging and isolation of faulty equipment
- work health and safety (WHS) requirements relating to diagnosing and repairing precision agriculture systems, including procedures for identifying hazards and controlling risks associated with:
 - selecting and using personal protective equipment (PPE), including clothing, and eye and hand protection
 - working with high current electrical systems
- environmental requirements, including procedures:
 - found in safety data sheets (SDS) relating to toxic and corrosive substances
 - for recycling and disposing of replaced precision agriculture system components
- application and purpose of electronic tools and test equipment used in diagnosis and repair of precision agriculture systems, including:
 - scan tools
 - hydraulic circuit testing system
 - electrical testing system
 - handheld multimeter
 - onboard diagnostic systems
- operating procedures of precision agriculture systems, including:
 - system overview
 - global network satellite system (GNSS)
 - mobile phone technologies
 - electronic sensors and processors
 - electrical actuators
 - hydraulic systems and sensors
 - receivers
 - displays
 - electronic controllers
 - steering actuators
 - hydraulic systems and controllers
 - telematics
 - connectors and harnesses
- electronic components and units, including:

- universal control module (UCM)
- electronic diesel controller (EDC17)
- body control module (BCM)
- immobilizer module (IM)
- armrest control module (ACM)
- driveline electronic controller (DEC)
- instrument control module (ICM)
- advanced steering technology (AST)
- cab suspension module (CSM) procedures, including:
 - analysing system operation
 - identifying software versions
 - interrogating electronic fault codes
 - methods of testing electronic communication systems and operations, including procedures for accessing terminals and using test probes without damaging connectors, fuse holders or wiring
- service and repair procedures, including:
 - component removal and replacement procedures
 - downloading and installing relevant component software
 - component and associated system adjustment and calibration procedures to include variable operating conditions
 - calibration of components and systems
- post-repair testing procedures, including:
 - confirming that vehicle precision agriculture systems are serviceable and operating to manufacturer specifications
 - confirming that no other problems are present as a result of the repair.

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 precision agriculture system 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:

- workplace instructions
- manufacturer specifications for precision agriculture systems
- precision agriculture systems
- PPE, including clothing, and eye and hand protection

- equipment with precision agriculture systems specified in the performance evidence requiring service or repair
- tools, equipment and materials for diagnosing and repairing precision agriculture 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 Guides is found on VETNet -

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