Australian Government

AURETR019 Inspect, service and repair AC electric motor drive systems

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect, service and repair alternating current (AC) electric motor drive systems in vehicles, vessels or machinery. It involves preparing for the task, inspecting AC electric motor drive systems, repairing the systems, and completing workplace processes and documentation, including associated recommendations for further action.

It applies to those working in the automotive service and repair industry. The AC electric motor drive systems include those in agricultural machinery, heavy commercial vehicles, light vehicles, vessels, mobile plant machinery, motorcycles or outdoor power equipment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Electrical and Electronic

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to inspect, service and repair AC	1.1 Job requirements are determined according to workplace instructions

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
electric motor drive system	1.2 Inspection and servicing procedures are accessed and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and materials are selected and checked for serviceability
2. Inspect and test system	2.1 System is inspected and tested according to workplace procedures and ***safety requirements*** 2.2 Circuits are tested according to workplace procedures and without causing damage to components or systems 2.3 Inspection results are compared with manufacturer specifications 2.4 Inspection findings are reported according to workplace procedures, including recommendations for required repairs or adjustments
3. Service and repair system	3.1 System is serviced and repaired according to manufacturer and component specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems 3.2 System is performance tested and final adjustments are made 3.3 Post-repair testing is carried out to confirm system is operating to manufacturer specifications, any reported problems are resolved, and no other problems are present
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle, vessel or machinery is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• locate appropriate sources of information efficiently.
Reading skills to:	• interpret text, symbols and diagrams from manufacturer specifications and workplace procedures.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting inspection findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	• clarify instructions and report inspection findings to appropriate personnel.
Numeracy skills to:	• interpret vehicle electrical measurements and readings on digital and analogue gauges • measure voltage, current and resistance and use basic mathematical operations, including addition and subtraction, to calculate deviations from manufacturer specifications.
Technology skills to:	• use specialised tools and electrical test equipment to inspect, service and repair AC electric motor drive systems, including multimeters.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Safety requirements must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for:
	  • selecting and using personal protective equipment (PPE), including clothing, and eye and hand protection
	  • working safely with high current electrical systems.

Unit Mapping Information

Equivalent to AURETR3019 Inspect, service and repair AC electric motor drive systems

Links

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