



Australian Government

AURETR2016 Read and apply vehicle wiring schematics and drawings

Release 1

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Modification History

Release	Comment
Release 1	New unit of competency

Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes required to read and apply information from vehicle wiring schematics and drawings in an automotive retail, service and repair environment.</p> <p>Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.</p>
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Application of the Unit

Application of the unit	<p>Work applies to reading and applying vehicle wiring schematics and drawings applicable to the diagnosis and repair of electrical faults in light and heavy vehicle, plant and equipment, motorcycles and marine craft.</p> <p>Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. <i>Workplace instructions</i> are used to determine <i>job requirements</i> 1.2. <i>Workplace health and safety (WHS) requirements</i> are observed throughout the work 1.3. <i>Wiring schematics and drawings</i> that relate to the vehicle being serviced or repaired are sourced 1.4. Wiring schematics and drawings are checked to ensure that latest amendments and version are relevant for the vehicle being diagnosed and repaired 1.5. Knowledge of electrical fundamentals is applied
2. Read and apply information from vehicle wiring schematics and drawings	2.1. Circuit symbols, wiring codes, legends and diagrammatic representations are correctly identified and interpreted 2.2. Information is interpreted and drawings of vehicle wiring schematics are applied to testing and repair procedures 2.3. Technical information located in workshop wiring schematics, circuits and drawings is applied to assist when carrying out testing and repair procedures
3. Finalise work and clean up	3.1. Vehicle wiring schematics and drawings and vehicle specifications are stored appropriately to protect from damage and ensure ready access and appropriate version control of information 3.2. Equipment and work area are cleaned and inspected for serviceable condition according to workplace procedures 3.3. Faulty equipment is identified, tagged and isolated according to workplace procedures 3.4. Operator maintenance is completed according to manufacturer and component supplier specifications and site procedures 3.5. Tools and equipment are maintained according to workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
 - follow verbal and written instructions
 - clarify workplace instructions and determine job requirements
 - gain information from appropriate persons and assistance as required
- initiative and enterprise skills to:
 - apply learning when reading and applying vehicle wiring schematics and drawings
 - recognise a workplace problem or potential problem and take action
- learning skills to identify sources of information, assistance and expert knowledge to expand skills, knowledge and understanding
- literacy skills to:
 - read and follow information in written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents
 - obtain and record measurements
 - document required repairs and parts
- planning and organising skills to:
 - plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed on time
 - identify risk factors and take action to minimise them
- problem-solving skills to:
 - refer problems outside area of responsibility to appropriate person and suggest possible causes
 - seek information and assistance as required to solve problems
- self-management skills to:
 - select and use appropriate equipment, materials, processes and procedures
 - recognise limitations and seek timely advice
 - follow workplace documentation, such as codes of practice and operating procedures
- technical skills to use workplace technology to assist in reading and applying vehicle wiring schematics and drawings when diagnosing and repairing vehicles, including:
 - specialist equipment
 - electrical measuring equipment
- technology skills to use tools and equipment to collect, analyse and provide information

Required knowledge

- relevant WHS and environmental regulations, standards, codes of practice, and workplace policies and procedures needed to carry out work in a manner that ensures the safety of people,

REQUIRED SKILLS AND KNOWLEDGE

equipment and the environment

- vehicle wiring schematics, service manuals, drawings, circuits or specifications of vehicles, plant, tools, equipment and systems
- procedures for amending and maintaining version control status of appropriate vehicle wiring schematics and drawings, particularly as applied to the vehicle being diagnosed and repaired
- established communication channels and protocols
- quality standards applicable to maintenance of service information
- procedures for recording, reporting and maintaining workplace records and information

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.</p> <p>A person who demonstrates competency in this unit must be able to:</p> <ul style="list-style-type: none"> • observe safety procedures and requirements • select methods and techniques appropriate to the circumstances • complete preparatory activity in a systematic manner • read and apply circuit wiring schematics and diagrams • confirm that amendment and version control status is current and is the latest revision of service information for the work being performed • use sourced information to accurately interpret test results.
Context of, and specific resources for assessment	<p>Competency is to be assessed in the workplace or a simulated workplace environment that accurately reflects performance in a real workplace setting.</p> <p>Assessment is to occur:</p> <ul style="list-style-type: none"> • using standard workplace practices and procedures • following safety requirements • applying environmental constraints. <p>Assessment is to comply with relevant:</p> <ul style="list-style-type: none"> • regulatory requirements • Australian standards • industry codes of practice. <p>The following resources must be made available for the assessment of this unit:</p> <ul style="list-style-type: none"> • workplace location or simulated workplace • wiring schematics and drawings relevant to testing and repairing basic electrical circuits and components • equipment, and hand and power tools appropriate to testing and repairing basic electrical circuits and components

EVIDENCE GUIDE	
	<ul style="list-style-type: none"> • specifications and work instructions.
Method of assessment	<p>Assessment must satisfy the endorsed Assessment Guidelines of this Training Package.</p> <p>Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with the application of required skills and knowledge.</p> <p>Assessment methods must be by direct observation of tasks and include questioning on required skills and knowledge to ensure correct interpretation and application.</p> <p>Competence in this unit may be assessed in conjunction with other units which together form part of a holistic work role.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate the needs of diverse clients.</p> <p>Assessment processes and techniques must be culturally sensitive and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.</p>

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Workplace instructions</i> may include:	<ul style="list-style-type: none"> • electronic or hard copy instructions • verbal instructions • written instructions.
<i>Job requirements</i> may include:	<ul style="list-style-type: none"> • reading, interpreting and applying vehicle wiring schematics and drawings • diagnosis and repair methods, processes and equipment.
<i>Workplace health and safety requirements</i> may include:	<ul style="list-style-type: none"> • personal protective clothing and equipment • safe use of tools and equipment • safe handling of material • use of fire-fighting equipment • workplace safety policies and procedures • workplace first aid equipment • hazard control, including control of hazardous materials and toxic substances.
<i>Wiring schematics and drawings</i> may include:	<ul style="list-style-type: none"> • verbal, written and graphical instructions • signage • work schedules, plans and specifications • work bulletins and memos • material safety data sheets • diagrams and sketches • regulatory and legislative requirements relating to automotive industry • Australian Design Rules • workplace work specifications and requirements • instructions issued by authorised workplace or external persons • vehicle wiring schematics • electrical component symbols • electrical operational block schematics • vehicle zoning information tables • electrical component drawings • connector drawings, including connector end view drawings • electrical installation instructions and wiring diagrams • vehicle service requirements and repair manuals.

Unit Sector(s)

Competency field	Electrical
Unit sector	Technical – Electrical and Electronic

Custom Content Section

Not applicable.