



Australian Government

AURPTR3001 Test and service 240V portable generators

Release 1

AURPTR3001 Test and service 240V portable generators

Modification History

Release	Comment
Release 1	Replaces AURP322776B Test and service 240V portable generators Unit code updated to meet policy requirements Reference to OHS legislation replaced with new WHS legislation Licensing / Regulatory Information updated

Unit Descriptor

Unit descriptor	This unit of competency describes the skills and knowledge required to carry out load testing and servicing of portable power generators rated at 240V output. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.
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Application of the Unit

Application of the unit	This unit applies to individuals who undertake servicing of small portable generators in the outdoor power equipment industry. Portable generators include small 240V units that are used for recreational and professional purposes. Testing and servicing relates only to the 240V generator and not the engine driving the generator.
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Licensing/Regulatory Information

Where state/territory legislation requires a Restricted Electrical Licence (REL) or other such requirement to undertake work on power generation of 240V output, units of competency from the UEE11 Electrotechnology Training Package or the MEM05 Metal and Engineering Training Package should be sourced as electives.

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 performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to undertake load test	1.1. Confirm nature and scope of work requirements 1.2. Identify and source procedures, information and tooling required 1.3. Analyse method options, select those most appropriate to the circumstances and make preparations 1.4. Source technical and/or calibration requirements for load testing and prepare support equipment
2. Conduct test and analyse results	2.1. Observe workplace health and safety (WHS) requirements, including individual state/territory regulatory requirements and personal protection needs, throughout the work 2.2. Observe warnings in relation to working with 240V 2.3. Carry out load test in accordance with workplace procedures and manufacturer/component supplier specifications 2.4. Compare test results with specifications to indicate compliance or non-compliance 2.5. Document results with evidence and supporting information and make recommendations 2.6. Forward report to persons for action in accordance with workplace procedures
3. Prepare for service operation	3.1. Confirm work to be carried out 3.2. Access and interpret service procedures, workshop manuals and manufacturer's information 3.3. Identify and prepare tools, equipment and materials required for servicing job 3.4. Set up work area
4. Service generator	4.1. Identify and observe applicable WHS requirements, including state/territory regulatory requirements and personal protection needs 4.2. Select tooling and equipment to meet job requirements and check to ensure they are in good working order 4.3. Service generator following manufacturer/component supplier recommended procedures and specifications
5. Complete work and return unit to	5.1. Complete service schedule documentation and update customer and warranty information as

ELEMENT	PERFORMANCE CRITERIA
customer	required 5.2. Inspect serviced unit to ensure protective guards, cowlings and safety features are in place 5.3. Clean unit to workplace expectations 5.4. Clean work area, dispose of waste and store tools and equipment in accordance with workplace procedures 5.5. Provide customer report on service and explain use and care of equipment and warranty requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills include:

- technical skills to the level required to use workplace technology and tools related to testing and servicing portable generators
- communication skills to the level required to confirm work requirements and specifications, to communicate effectively regarding work requirements with supervisor, other workers and customers, to report work outcomes and problems, and to relate to people from a range of social, cultural and ethnic backgrounds and of varying physical and mental abilities
- literacy skills to the level required to understand information related to work orders and to locate, interpret and apply manufacturer/component supplier information, workplace policies and procedures
- numeracy skills to the level required to correctly calculate time, assess test results, apply accurate measurements, calculate material requirements and establish quality checks
- problem-solving skills to the level required to plan and organise activities and establish safe and effective work processes which anticipate and/or resolve problems and downtime, and to systematically develop solutions to avoid or minimise reworking and avoid wastage
- team skills to the level required to work effectively and cooperatively with others to optimise workflow and productivity

Required knowledge

Required knowledge includes:

- dangers of working with 240V equipment
- volts, amperage, wattage, frequency (hertz) and power generation and their relationship to each other
- identification of portable generator application, purpose and operating principles
- resistive load testing procedures
- classifications of portable generators and components
- types and causes of problems in portable generators
- types and layout of service/repair manuals (hard copy and electronic)
- portable generator service procedures
- selection, checking and use of tooling and equipment
- manufacturer and/or component supplier specifications
- applicable commonwealth, state or territory legislation, regulations, standards and codes of practice, including WHS and environment, relevant to testing and servicing portable generators

REQUIRED SKILLS AND KNOWLEDGE

- organisational policies and procedures, including quality requirements, reporting and recording procedures, and work organisation and planning processes, related to testing and servicing portable generators

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently:

- observe safety procedures and requirements
- communicate effectively with others involved in or affected by the work
- select servicing methods and techniques appropriate to the circumstances
- complete preparatory activity in a systematic manner
- identify generator application, purpose and operating principles
- conduct inspection, servicing and operational testing in accordance with workplace and manufacturer/component supplier specifications
- accurately interpret test results
- service a range of generators to manufacturer/component supplier requirements
- present serviced generator to customer in compliance with workplace requirements
- complete workplace records.

Context of, and specific resources for assessment

- The application of competency is to be assessed in the workplace or a simulated environment that reflects as far as possible the actual working environment.
- Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.
- Assessment is to comply with relevant regulatory requirements, including specified Australian standards.
- Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
- The following resources should be made available:
 - a range of portable generators and components
 - materials relevant to testing and servicing of generators

EVIDENCE GUIDE	
	• equipment, hand and power tooling appropriate to testing and servicing of generators • specifications and work instructions.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of this Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of Required Skills and Knowledge. • Assessment methods must be by direct observation of tasks and include questioning on Required Skills and Knowledge to ensure its correct interpretation and application. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	Assessment processes and techniques must be culturally sensitive and appropriate to the language and literacy capacity of the candidate and the work being performed.

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. 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.	
Portable generators	Portable generator types may include: • inverter • cyclo-converter

RANGE STATEMENT	
	• standard • bobbin • condenser
Testing	Testing relates only to the 240V generator and not the engine driving the generator, and may include: • AC output voltage and frequency • brush and battery voltage • resistive load testing • engine speed • rotor magnet • circuit breaker
Servicing methods	Servicing relates only to the 240V generator and not the engine driving the generator and may include: • on- and off-site servicing and repair • inspection and replacement of components • adjustments • communicating with customers • documenting and reporting on service and replacement
Tooling and equipment	Tooling and equipment may include: • specific service/repair and general workshop equipment and tooling • meters and gauges • circuit tester and load testing device • load appliances and equipment • cleaning equipment
Materials	Materials may include: • spare parts • lubricants • cleaning materials
Information/documents	Information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets (MSDS), diagrams or sketches • safe work procedures related to testing and servicing portable generators

RANGE STATEMENT	
	• regulatory/legislative requirements pertaining to testing and servicing portable generators • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian standards
WHS requirements	WHS requirements are to be in accordance with applicable commonwealth, state or territory legislation and regulations, and organisational safety policies and procedures, and may include: • personal protective equipment and clothing • safety equipment • first aid equipment • hazard and risk control • electrical safety • elimination of hazardous materials and substances • manual handling, including shifting, lifting and carrying • emergency procedures
Legislative requirements	Legislative requirements are to be in accordance with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice, and may include: • award and enterprise agreements • industrial relations • Australian standards • Australian Design Rules • confidentiality and privacy • WHS • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care
Environmental requirements	Environmental requirements may include: • waste management

RANGE STATEMENT	
	• pollution • noise • dust • clean-up management
Quality requirements	Quality requirements may include: • regulations, including Australian standards • internal organisational quality policies and procedures • enterprise operations and procedures
Organisational policies and procedures	Organisational policies and procedures may include: • quality policies and procedures, including Australian standards • WHS, sustainability, environment, equal opportunity and anti-discrimination • manufacturer specifications and industry codes of practice • safe work procedures • reporting and recording procedures

Unit Sector(s)

Unit sector	Outdoor Power Equipment
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Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Electrical and Electronic
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