

Title	Service electrical appliances		
Level	4	Credits	25

Purpose	<p>This unit standard follows on from Unit 22763, <i>Service electrical or electronic goods</i>. It completes the final part of the practical requirements of servicing domestic electrical appliances, portable electrical appliances and power tools or commercial electrical appliances to meet industry standards. Competence may be demonstrated on a wide variety of electrical appliances and it is intended for use in the training of electrical appliance servicing technicians.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – fault-find electrical appliances and decide appropriate action; – isolate electrical appliances for servicing; – replace or repair faulty components; and – return electrical appliances to service.
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Classification	Electrical Engineering > Electrical Appliance Servicing
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Available grade	Achieved
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Prerequisites	<p>For safety reasons, competency in this unit standard should be assessed only after competency in the following unit standards has been achieved, or equivalent knowledge and skills demonstrated:</p> <p>Unit 750, <i>Demonstrate knowledge of electrical test instruments and take measurements</i>;</p> <p>Unit 15851, <i>Demonstrate knowledge of electrical safety and safe working practices for electrical workers</i>;</p> <p>Unit 17799, <i>Demonstrate knowledge of testing for electrical safety for electrical appliance servicing – single-phase</i>, or Unit 15852, <i>Isolate and test low-voltage electrical subcircuits</i>;</p> <p>Unit 17802, <i>Replace fuses and plug-in miniature circuit breakers</i>;</p> <p>Unit 17803, <i>Select and connect flexible cords in single-phase plug-in and fixed wired applications</i>;</p> <p>Unit 17804, <i>Test single-phase electrical appliances</i>;</p> <p>Unit 17806, <i>Demonstrate knowledge of protection from the harmful effects of electricity</i>;</p> <p>Unit 17808, <i>Isolate electrical appliances from the supply</i>;</p> <p>Unit 26551, <i>Provide first aid for life threatening conditions</i>;</p>
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	Unit 26552, <i>Demonstrate knowledge of common first aid conditions and how to respond to them.</i>
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Guidance Information

- 1 This unit standard has been developed for learning and assessment on-job under adequate supervision as defined in the Electricity Act 1992.
- 2 Competency under this unit standard does not entitle the candidate to legally perform prescribed electrical work without adequate supervision until the candidate has been registered and licensed under the Electricity Act 1992.
- 3 References
Electricity (Safety) Regulations 2010;
Electricity Act 1992;
Health and Safety in Employment Act 1992, and associated regulations;
New Zealand Electrical Codes of Practice (Ministry of Business, Innovation and Employment, ISSN 0114-0663);
and all subsequent amendments and replacements.
- 4 Definitions
Current regulations and standards – refers to the requirements of the above legislation and standards, applied to the context in which the term is used.
Industry acceptable time-frame – the length of time within which a competent person at this level could reasonably be expected to perform the task. In the appliance service industry time is a significant factor in judging competence. Assessors must therefore ensure that the time taken is representative of industry expectations for the type of servicing undertaken.
Industry practice – those practices, which competent practitioners within the industry recognise as current industry best practice.
- 5 Range
 - a Details about classes of registration for electrical workers are available at EWRB Electrical Licensing Classes at [EWRB - Publications](#).
 - b Competence may be assessed on any one or more of the following categories of electrical appliances – domestic appliances, portable appliances, portable tools or commercial appliances.
 - c Evidence is required of at least 30 complex repairs covering at least six different types of appliances, in one or more categories, and involving repair or replacement of mechanical, electrical, and electronic modules or components. Note: these repairs must be in addition to the repairs completed and assessed for Unit 22763, *Service electrical or electronic goods to gain electrical registration for electrical technicians and service persons*.
 - d Typical mechanical components include but are not limited to – shaft, mechanical linkage, drive coupling, drive belt, drive chain, pulley, gearbox, transmission, clutch, brake, balance weight, valve, pump, compressor, condenser, lint screen, filter, trap, agitator, air or liquid impeller, bearing, gasket, door lock.
 - e Typical electrical components include but are not limited to – overload device, control switch, micro-switch, touch switch, capacitor switch, controller, push-button switch, pressure switch, float switch, proximity switch, fuse holder, plug, power socket, lamp socket, contactor, solenoid; heating element, induction coil, resistor, capacitor, motor,

transformer; thermostat, simmerstat, thermistor, timer, time clock, electrical cord, wiring.

- f Typical electronic modules or components include but are not limited to – printed circuit board, plug-in control chip, liquid crystal displays, light emitting diode displays, motor starting capacitors, radio frequency suppression circuits.
 - g All work must comply with current regulations and standards as defined above, and with any applicable environmental and company safety and health procedures.
 - h All servicing work must be performed within industry acceptable time-frames (see Guidance Information note 4).
- 6 This unit standard has not been formally replaced; however, the following standards are recommended as alternatives:
- Unit 31736, *Service and repair domestic electrical appliances*
 - Unit 31739, *Service and repair commercial electrical appliances*
 - Unit 31740, *Service and repair consumer electronic products*.

Outcomes and performance criteria

Outcome 1

Fault-find electrical appliances and decide appropriate action.

Performance criteria

- 1.1 Symptoms are identified by questioning customer or from information detailed on job card.
 - Range visual, sound, smell, timing of occurrences, departure from normal operation.
- 1.2 Symptoms are verified by direct observation.
 - Range visual, sound, smell, heat sensing where appropriate, checking of fault codes where applicable.
- 1.3 Alternative causes of the fault symptom are assessed and evaluated prior to making a decision as to the likely cause.
 - Range mechanical versus electrical, control circuit versus power circuit, external influences, module versus wiring and terminations, where appropriate – alternatives listed in service diagnostics book or service manual.
- 1.4 Fault-finding demonstrates a logical technique of analysing symptoms and making measurements where necessary, to establish the cause of the problem and locate the fault and faulty components, and follows manufacturers' documented procedures where available.
- 1.5 Viability of repair is assessed, taking into account component availability, cost and time of repair, cost of equivalent new appliance, and supervisor or customer instructions.

- 1.6 Customer's or supervisor's agreement to proceed with repairs is obtained.

Outcome 2

Isolate electrical appliances for servicing.

Performance criteria

- 2.1 Isolation of the appliance from the supply is carried out in accordance with current electrical regulations and industry practice.
- 2.2 Appliance is clearly tagged as being under service to prevent its further use.

Outcome 3

Replace or repair faulty components.

Range components – mechanical, electrical, electronic.

Performance criteria

- 3.1 Faulty components are removed, where possible in accordance with manufacturers' guidelines, without damage to other components, and taking electrostatic precautions where appropriate.
- 3.2 Replacement components are obtained in accordance with company practice, or the original components repaired as appropriate in accordance with manufacturers' instructions.
- 3.3 Replacement or repaired parts are re-installed in accordance with manufacturers' instructions, industry practice, and current regulations and standards where they apply.

Outcome 4

Return electrical appliances to service.

Performance criteria

- 4.1 Electrical, mechanical, and visual safety tests are completed in accordance with current regulations and standards.
- 4.2 Re-connection to the electrical supply is in accordance with current regulations and standards.
- 4.3 Operational tests and adjustments where relevant or necessary, ensure that the appliances perform according to manufacturer's specification.
- 4.4 Documentation is completed and the customer or supervisor advised according to company requirements.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 June 2006	31 December 2021
Rollover and Revision	2	20 September 2012	31 December 2021
Revision	3	15 January 2014	31 December 2021
Review	4	28 March 2019	31 December 2021

Consent and Moderation Requirements (CMR) reference

0003

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.