

Title	Demonstrate knowledge of the operating principles of portable electrical appliances and power tools		
Level	4	Credits	7

Purpose	<p>This unit standard covers the operating principles of portable electrical appliances and is intended for use in the training of electrical technicians and service persons.</p> <p>People credited with this unit standard are able to describe:</p> <ul style="list-style-type: none"> – legal and regulatory obligations relevant to appliance servicing; – the operating principles of portable electro-mechanical kitchen appliances; – the operating principles of power tools; and – the operating principles of portable domestic appliances.
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Classification	Electrical Engineering > Electrical Appliance Servicing
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Available grade	Achieved
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Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 Portable refrigerators, freezers, dehumidifiers, and air conditioners are covered in unit standard 18084, *Demonstrate knowledge of refrigeration principles applicable to domestic appliances*.
- 3 References
 Fair Trading Act 1986
 Consumer Guarantees Act 1993;
 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 Definition
Electrical technicians and service persons – for the purposes of this unit standard means, people who hold or who are working towards electrical registration as an Electrical Service Technician, Electrical Appliance Serviceperson (endorsed to disconnect and connect), or Electrical Appliance Serviceperson.

Outcomes and performance criteria

Outcome 1

Describe legal and regulatory obligations relevant to appliance servicing.

Performance criteria

1.1 Legal and regulatory obligations pertaining to consumer rights protection are described.

Range Fair Trading Act 1986, Consumer Guarantees Act 1993.

1.2 Legal and regulatory obligations pertaining to workplace safety, including electrical safety, are described.

Range Health and Safety in Employment Act 1992; Electricity Act 1992, Electricity (Safety) Regulations 2010.

Outcome 2

Describe the operating principles of portable electro-mechanical kitchen appliances.

Range evidence of four types of portable electro-mechanical kitchen appliances is required.

Performance criteria

2.1 The operating principles of typical portable electro-mechanical kitchen appliances are described with reference to wiring diagrams and block diagrams.

2.2 The operation of typical portable electro-mechanical kitchen appliances is described with reference to electrical components, and mechanical components.

Range electrical components – motor, capacitor, switch, overload, suppression circuit, speed control, thermal and over-current protection;
mechanical components – associated parts and accessories.

Outcome 3

Describe the operating principles of power tools.

Range evidence of four types of power tools is required.

Performance criteria

3.1 The operating principles of typical power tools are described with reference to wiring diagrams and block diagrams.

- 3.2 The operation of typical power tools is described with reference to electrical components and mechanical components.

Range electrical components – motor, capacitor, switch, overload, suppression circuit, speed control, reversing switch, thermal and over-current protection;
mechanical components – fan, gear, mechanical speed control, guards, adjustment, mechanical links, chucks and jaws.

Outcome 4

Describe the operating principles of portable domestic appliances.

Range heating – radiant, fan, oil-filled radiator;
electro-mechanical – including but not limited to vacuum cleaner, floor polisher or scrubber, carpet cleaner, water blaster;
evidence of two types of portable domestic appliances is required.

Performance criteria

- 4.1 The operating principles of typical portable domestic appliances are described with reference to wiring diagrams and block diagrams.

- 4.2 The operation of typical domestic appliances is described with reference to electrical components and mechanical components.

Range electrical components – motor, capacitor, switch, overload, suppression circuit, speed control, thermal and over-current protection, safety devices;
mechanical components – associated parts and accessories, guards.

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 January 2021	31 December 2021

Consent and Moderation Requirements (CMR) reference	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.