

<b>Title</b>	<b>Demonstrate knowledge of operating principles and installation requirements of commercial electrical appliances</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>7</b>

<b>Purpose</b>	<p>This unit standard covers the operating principles of commercial electrical appliances and is intended for use in the training of commercial electrical appliance servicing technicians.</p> <p>People credited with this unit standard are able to describe:</p> <ul style="list-style-type: none"> <li>– legal and regulatory obligations relevant to commercial appliance servicing;</li> <li>– the operating principles and installation requirements of installed commercial kitchen appliances;</li> <li>– the operating principles of commercial steamers, broilers and fryers;</li> <li>– the operating principles and installation requirements of commercial dishwashing and dish machines; and</li> <li>– the operating principles of commercial electric ranges, cook-tops and ovens.</li> </ul>
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<b>Classification</b>	Electrical Engineering > Electrical Appliance Servicing
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 Refrigerators, freezers, icemakers, and ice-cream machines are not covered by this unit standard.
- 3 References  
 Consumer Guarantees Act 1993;  
 Electricity (Safety) Regulations 2010;  
 Electricity Act 1992;  
 Fair Trading Act 1986;  
 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.

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## Outcomes and performance criteria

### Outcome 1

Describe legal and regulatory obligations relevant to commercial 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 and installation requirements of installed commercial kitchen appliances.

Range includes but is not limited to – wall and island hoods, extraction systems, waste disposal unit, counter-top equipment; evidence of three types of installed commercial kitchen appliances is required.

#### Performance criteria

2.1 The operation of installed kitchen appliances is described with reference to wiring diagrams, electrical components, and mechanical components.

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

2.2 The installation requirements of typical kitchen appliances are described with reference to operational requirements, commissioning requirements, and safety.

Range operational requirements – electrical connections, mechanical fixing, pipe work.

### Outcome 3

Describe the operating principles of commercial steamers, broilers and fryers.

#### Performance criteria

3.1 The operating principles of commercial steamers, broilers, and fryers are described with reference to components and wiring diagrams.

Range electrical resistance elements, reflectors, heat transfer, temperature control, simmerstats, timers, thermal protective devices, tilt switches, safety switches.

3.2 The installation requirements of commercial steamers, broilers, and fryers are described with reference to operational requirements, commissioning requirements, and safety.

Range operational requirements – electrical connections, mechanical fixing, pipe work, extraction systems, flues.

#### **Outcome 4**

Describe the operating principles and installation requirements of commercial dishwashing machines and commercial dish machines.

#### **Performance criteria**

4.1 The types of dishwashing machines and dish machines are identified and described with reference to application.

Range upright, free standing, conveyer, low energy, high temperature, under counter.

4.2 The operating principles of dishwashing machines and dish machines are described with reference to cycles of operation.

Range cold and hot water filling, heating, temperature ranges and food safety requirements, rinse and hold options, wash, pre-rinse, final rinse, dry.

4.3 The installation requirements of dishwashing machines and dish machines are described with reference to operational requirements, commissioning requirements, and safety.

Range operational requirements – electrical connections, mechanical fixing, pipe work, drain water requirements.

#### **Outcome 5**

Describe the operating principles of commercial electric ranges, cook-tops and ovens.

#### **Performance criteria**

5.1 The operating principles of commercial electric ranges, cook-tops and ovens are described with reference to components and wiring diagrams.

Range oven and oven elements, top plates, griller, electrical resistance elements, radiant elements, forced air circulation in ovens, oven thermostats, top plate simmerstats, timers, rotisserie accessories.

- 5.2 The installation requirements of commercial electric ranges, cook-tops and ovens are described with reference to operational requirements, commissioning requirements, and safety.

Range operational requirements – electrical connections, mechanical fixing.

**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

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