

<b>Title</b>	<b>Install, commission, and maintain mechanical gas appliances and equipment</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	<p>This unit standard is for people who work in the gasfitting industry.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> <li>– install mechanical gas appliances and equipment;</li> <li>– commission mechanical gas appliances and equipment; and</li> <li>– maintain mechanical gas appliances and equipment.</li> </ul>
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<b>Classification</b>	Plumbing, Gasfitting and Drainlaying > Gasfitting
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<b>Available grade</b>	Achieved
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**Guidance Information**

- 1 References
 

Building Act 2004;  
 Electricity Act 1992;  
 Gas Act 1992;  
 Gas (Safety and Measurement) Regulations 2010;  
 Health and Safety at Work Act 2015;  
 Plumbers, Gasfitters, and Drainlayers Act 2006;  
 Plumbers, Gasfitters, and Drainlayers Regulations 2010;  
 The following standards, which are available at <http://www.standards.govt.nz>:  
 AS/NZS 5601.1:2013 *Gas installation*,  
 AS/NZS 5601.2:2013 *LP Gas installations in caravans and boats for non-propulsive purposes*,  
 NZS 3604:1999 *Timber Framed Buildings*;  
 The following clauses, and any related compliance documents, which are available at <https://www.building.govt.nz/>:  
 New Zealand Building Code, Clause E2 External moisture,  
 New Zealand Building Code Clause G11 Gas as an Energy Source;  
 and all subsequent amendments and replacements.
  
- 2 Range
 

Mechanical gas appliances include cooking, space heating, and water heating appliances.  
 For the purposes of assessment learners must complete practical activities on four appliances, as follows:

  - two gas cooking appliances which must an oven or range, plus one other from, gas hobs, grills, fryers, ring burners;
  - one gas heating appliance which may include but is not limited to – natural

- draught, balanced flue, portable heater, flueless heater, radiant panel heater;
  - one gas water heating appliance which may include but is not limited to – water heaters, pool heaters, spa pool heaters.
- 3 Credit for this unit standard does not entitle the candidate to legally perform certain aspects of this work unless registered or supervised by a registered person under the provisions of the Electricity Act 1992.
- 4 This unit standard requires the application of theory as included in the Plumbers, Gasfitters, and Drainlayers Regulations 2010.
- 5 Definitions  
*Job specifications* – instructions (oral, written, graphic) and may include any of the following: manufacturers' instructions; design drawing detail specifications; specifications from a specialist source such as an architect, designer, engineer, or a supervisor; and site or work specific requirements. Where job specifications are in conflict with applicable legislation, standards, and/or codes, such legislation, standards, and/or codes shall take precedence for the purpose of assessment.  
*Maintain* may refer to all or any of – repair, upgrade, alter, remove, replace.  
*Mechanical gas appliances* – mechanically controlled gas appliances that do not rely on supplied electricity, and are generally below 250MJ per hour rated input.  
*Other services* – to any existing installed services.
- 6 All practical activities are to be carried out in a way that avoids harm to people and damage to property, environment, other services, materials, tools, and equipment.

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## Outcomes and performance criteria

### Outcome 1

Install mechanical gas appliances and equipment.

### Performance criteria

- 1.1 Select gas appliances, flues, and ventilation (where required) in accordance with AS/NZS 5601:2013 and manufacturer instructions.
- 1.2 Establish location of gas appliances, flues, and ventilation in accordance with job specifications.
- 1.3 Verify that the gas type and supply pressure is suitable and safe for the appliance to be installed.
- 1.4 Verify that gas is available at an adequate flow rate to meet the anticipated maximum load.
- 1.5 Install gas appliances, flues, and ventilation in accordance with AS/NZS 5601:2013, Part 1 and Part 2.

- 1.6 Carry out soundness tests in accordance with AS/NZS 5601:2013, Part 1 and Part 2.
- 1.7 Connect gas appliances and associated fittings to gas supply connection points.
- 1.8 Test final connections.

## **Outcome 2**

Commission mechanical gas appliances and equipment.

### **Performance criteria**

- 2.1 Commission gas appliance in accordance with manufacturer instructions.
- 2.2 Test flues in accordance with AS/NZS 5601:2013, Part 1 and Part 2.
  - Range smoke test or draft gauge.
- 2.3 Complete required commissioning documentation.
  - Range includes information for – gas certificates, guarantees; may also include – other company requirements, checklists, photographs.

## **Outcome 3**

Maintain mechanical gas appliances and equipment.

### **Performance criteria**

- 3.1 Perform scheduled servicing in accordance with job specifications and manufacturer instructions.
- 3.2 Carry out gas appliance isolation and cleaning in accordance with job specifications.
- 3.3 Test flues and ventilation in accordance with job specifications.
- 3.4 Identify causes of faults and possible means of rectification.
  - Range faults may include but are not limited to – poor gas supply, regulator fault, ignition fault, burner fault, flame failure device fault, heat exchanger, flue; considerations relating to possible means of repair may include but are not limited to – component availability, repair costs, cost of equivalent new appliance. assessment must include at least one example of commissioning an atmospheric burner.
- 3.5 Rectify faults in accordance with job specifications, taking into account economics of repair or replacement procedure.

- 3.6 Carry out operational tests in accordance with job specifications and AS/NZS 5601:2013, Part 1 and Part 2.
- 3.7 Complete documentation and customer communication in accordance with job specifications.

<b>Replacement information</b>	This unit standard and unit standard 30725 replaced unit standard 21890.
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**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	23 November 2017	31 December 2028
Review	2	25 July 2024	31 December 2028

<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>.