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| Title | Install, commission, and maintain mechanical gas appliances and equipment | | |
| Level | 4 | Credits | 10 |

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| Purpose | <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"> – install mechanical gas appliances and equipment; – commission mechanical gas appliances and equipment; and – maintain mechanical gas appliances and equipment. |
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| Classification | Plumbing, Gasfitting and Drainlaying > Gasfitting |
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| Available grade | 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.

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.

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| Replacement information | This unit standard and unit standard 30725 replaced unit standard 21890. |
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| Planned review date | 31 December 2022 |
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Status information and last date for assessment for superseded versions

| Process | Version | Date | Last Date for Assessment |
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| Registration | 1 | 23 November 2017 | N/A |

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| 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>.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.