

Install gas meters and regulators (2.5 to 16.0m<sup>3</sup>/hr)

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**Overview**

This national occupational standard is for gas engineers who are required to install and exchange meters and regulators (2.5 to 16.0m<sup>3</sup>/hr) on low pressure and medium pressure gas systems. This standard covers the work activities of, planning, installing, exchanging, disconnecting, de-commissioning and commissioning those meters and regulators.

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### Performance criteria

- You must be able to:* Plan and prepare work activities for installing and exchanging gas meters and regulators (2.5 to 16.0m<sup>3</sup>/hr) on low pressure and medium pressure gas systems
1. Identify, agree and record the customer's job requirements
  2. Compare the customer's job requirements with statutory and industry requirements and identify any conflicting issues
  3. Survey the work site and consult site diagrams as necessary for any key structural features that could affect the installation and record them
  4. Check that the proposed siting of the gas meter and regulator meets the manufacturers' and industry standards' requirements for location, siting and clearance
  5. Check that the proposed siting of the gas meter housing for both low and medium pressure meets the manufacturers' and industry standards' requirements for location, siting and clearances
  6. Confirm the availability of input services and that the gas supply, electricity earthing and provision of ventilation meet the manufacturers' and industry standards' requirements for the installation
  7. Produce a risk assessment and method statement which incorporates safety provisions in the work site, access to the work site, movement of the workforce, members of the public, and the movement and safe storage of materials, tools and equipment for the job
  8. Survey the work site for any pre-installation damage or defects to existing building features and record it and advise the property occupier of any defects found
  9. Protect the work site and the building fabric against possible damage being caused during the de-commissioning and installation process
  10. Get confirmation from the property occupier before the job starts to ensure that they agree the planned work
  11. Check and confirm:
    - a) all materials, tools and equipment necessary for the de-commissioning, installation and commissioning process are available as required and are fit for purpose
    - b) whether the gas meter and regulator is a primary or secondary meter installation
    - c) that the gas supply is either low or medium pressure
    - d) that the siting of the gas meter and regulator meets the manufacturers' and industry standards' requirements for location, siting and clearances
    - e) that the siting of the meter housing meets the manufacturers' and industry standards' requirements for location, siting, clearances for both

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low and medium pressure installations

f) that the siting of the meter housing and the proximity distances of meter boxes and vent-discharges can be achieved and meet the manufacturers' and industry standards' requirements for medium pressure installations

g) the siting of the emergency control valve (ECV) and meter inlet valve (MIV) is accessible, correctly labeled and that they operate correctly

h) the siting of the existing gas supply and it's proximity to other services that may affect the installation

i) that the gas supply and the provision of ventilation meets the gas meter and regulator manufacturers' and industry standards' requirements for the installation

12. Carry out all necessary checks and tests to confirm the gas supply and earthing system meets the manufacturers' and industry requirements for the installation

13. Check existing installation for any unsafe appliances and system components and apply the gas industry unsafe situations procedures as required

De-commission gas meters and regulators (2.5 to 16.0m<sup>3</sup>/hr) on low pressure and medium pressure gas systems

14. Check that conditions within the gas and earthing systems will permit safe de-commissioning

15. Select and use the correct tools and equipment for de-commissioning activities

16. Use designated safe isolation methods, tests, and procedures to de-commission gas meters, regulators, earthing systems, gas systems and components

17. Take precautionary actions to ensure that temporarily de-commissioned gas meters, regulators, earthing systems, gas systems and components do not present a safety hazard

18. Permanently remove and disconnect gas meters, regulators, gas systems and components as required

19. After permanent removal of a meter, mark any live gas pipes with a notice to indicate the pipe contains gas

Install, Exchange, and Remove gas meters and regulators (2.5 to 16.0m<sup>3</sup>/hr) on low pressure and medium pressure gas systems

20. Carry out planned preparatory work to meet the installation

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requirements

21. Carry out planned installation processes minimising damage to customer property and building features
22. Select and use the correct tools and equipment for installation activities
23. Remove existing gas and earthing system components as required by the installation plan
24. Visually check new gas meter and regulator for any damage, that the seals are intact, the packaging is removed and gas ways are clear
25. Fabricate and assemble gas meter and regulator system components as required by the installation
26. Position the gas meter and regulator and confirm it meets the location, siting and clearances required by the manufacturers' and industry standards' specification
27. Provide the required ventilation for new or replacement gas meter and regulator installations and systems
28. Ensure existing gas systems are clean and free of debris
29. Fix and connect gas and earthing system components to the gas meter and regulator installation
30. Use tightness testing and purging procedures to confirm the integrity of the installed gas meter and regulator and gas system
31. Take precautionary actions to prevent the unauthorised use of un-commissioned gas meters and regulators, gas appliances, gas systems and components by isolation procedures and use of warning notices
32. Complete and attach an emergency notice on or near the meter or at the ECV if remote from the primary meter
33. Complete meter labeling

Pre-commission and Commission gas meters and regulators (2.5 to 16.0m<sup>3</sup>/hr) on low pressure and medium pressure gas systems

34. Confirm the complete gas meter and regulator installation complies with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations
35. Check that conditions within the gas and electricity systems will permit safe commissioning
36. Select and use the correct tools and equipment for commissioning activities
37. Check and confirm the gas system operating pressures meet industry standards and is between 19 & 23mbar, if incorrect contact the

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gas supplier

38. Ensure that adjustments and resealing of meter regulators are performed by Ofgem Approved Meter Installers
39. Reconfirm that the ventilation requirements meet industry standards for the installation
40. Check and confirm the operation of the gas meter, regulator and components to ensure they function safely and operate in accordance with manufacturers' instructions, industry standards and British Standards
41. Check and confirm the earthing system and components function safely and operate in accordance with industry standards
42. Instruct the property occupier on the correct operation of the gas meter and regulator installation and provide them with their copy of any literature

Use and communicate data and information to carry out de-commissioning, installation and commissioning work

43. Liaise with the property occupier and other people who will be affected by the work during the planning, de-commissioning, installation, and commissioning processes to minimise disturbance to the job
44. Use normative documents, industry standards, British Standards and information from manufacturers' instructions for the gas meter, regulator and components to ensure the work is done to the specification
45. Advise of any delays to the work, unsafe situations and required remedial actions to those who require the information
46. Check that the customer is satisfied with the finished job
47. Complete records and documentation confirming the safe commissioning of gas meter, regulator and components
48. Complete gas meter and system de-commissioning records

Resolve problems within own area of responsibility and competence which could affect the de-commissioning, installation and commissioning process

49. Rectify problems within own area of responsibility and competence and report deficiencies in gas and earthing input services
50. Resolve problems in accordance with approved procedures when:
  - a) pre-commissioning checks and tests reveal defects with the gas meter, regulator, gas system and components
  - b) the gas meter, regulator, gas system and components being

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commissioned do not meet design requirements

c) the gas meter, regulator, gas system and components cannot be restored to full performance

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### Knowledge and understanding

*You need to know and understand:* General Knowledge

1. Regulations and guidance governing health and safety in the workplace, environmental protection and the use of risk assessments
2. Legislation covering the general responsibilities of the operative for their own safety and that of others
3. The limits of your own autonomy and responsibility

De-commissioning, Installing and commissioning gas meters and regulators (2.5 to 16.0m<sup>3</sup>/hr) on low pressure and medium pressure gas systems

4. The health, safety and environmental factors which need to be incorporated in risk assessment for the domestic installation process
5. Safe access and working at heights
6. The tools and equipment necessary to provide safe access to work at heights, or in confined spaces
7. The methods of working which protect the building décor, customer property and existing systems and components
8. The care and maintenance requirements of tools and equipment, and checks for safe condition
9. The tools, equipment, materials and components required for the gas meter and regulator system de-commission, installation and commission – ordering, supplying, advising, checking and delivery procedures
10. How to safely secure and store tools, equipment, materials and components to minimise loss or wastage
11. The potential hazards that could arise from all de-commissioning, installation and commissioning activities and the checks to be carried out before work takes place
12. The steps to take should materials, components, tools and equipment not be available at the site to commence the de-commissioning, installation and commissioning activity
13. How to access and correctly interpret the required information, including normative documents, industry standards guidance documents, British Standards and manufacturers' instructions applicable to the appliance, to ensure the work is done to the specification and industry standards
14. How to measure and record installation and site details for prefabrication purposes
15. How to confirm that the services and systems requirements are

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adequate for installation, extending the system or adding components of the new gas meter, regulator and components on both low and medium pressures

16. Safe isolation methods, tests, and procedures to de-commission gas meters, regulators, gas systems, components and earthing systems

17. The procedures for temporary and permanent de-commissioning of gas meters, regulators, gas systems and components including use of temporary continuity bonds

18. The precautions to ensure that de-commissioned gas meters, regulators, gas systems and components do not prove a safety hazard

19. Measures to prevent de-commissioned gas meters, regulators, gas systems and components being brought into operation utilising safety and warning notices

20. The need to liaise with others whose procedures or routines may be affected by the suspension of the gas meter, regulator, gas system and components operation

21. The points in the de-commissioning, installation and commissioning process where co-operation and liaison with other trades and property occupier may be required

22. How to identify gas meter installations that incorporate non-return valves and the manufacturers' and industry standards' installation requirements

23. The industry practices and work standards for fabricating and installing:

a) emergency control valves (ECV's) and meter inlet valves (MIV's)

24. b) domestic gas meters, regulators and components as a primary or secondary meter installation

c) domestic gas meters, regulators and components, on both low and medium pressure installations, to comply with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations

d) domestic gas meters, regulators and components in meter housings, including both low and medium pressure installations

25. The procedures and work methods for connecting to input services including; gas, earthing systems and ventilation

26. The positioning and fixing requirements for domestic gas meters, regulators and components, on both low and medium pressure installations, to comply with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations



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27. The industry practices and work standards for the provision of ventilation when installing domestic gas meters and regulators
28. The process and procedures, equipment and legislative requirements for applying tightness testing and purging to domestic gas meters, regulators, gas systems and components on both low and medium pressures in line with current British StandardsThe routines and sequences for commissioning domestic gas meters, regulators and components in accordance with manufacturers' specification and industry standards
29. The procedures for checking the correct operation and performance of domestic gas meters, regulators and components and checking against the design specification and current British Standards including low pressure & medium pressure
30. The procedures for checking the operation of domestic gas meters, regulators and components to ensure they function safely and operate in accordance with manufacturers' instructions and industry standards
31. The procedures for checking and confirming the gas system operating pressure is correct and actions to take if incorrect
32. The procedures for making adjustments to meter regulators
33. How to complete all domestic gas meter installation and commissioning documentation, labels and records to be left with the property occupier e.g. Benchmarks, Landlord/Home owner gas safety record, recording meter details for gas supplier on job documentation and meter label, emergency notices, ECV labels, medium pressure labels, etc
34. The system handover procedures and demonstrating the operation of domestic gas meters, regulators and components to end users
35. The steps to take when problems arise in the work activities
36. Job management structures and methods of reporting and recording job progress or problems delaying progress
37. How to safely collect and dispose of system contents that may be hazardous to health or the environments
38. How to isolate unsafe gas appliances, gas systems and components and application of the gas industry unsafe situations procedure

## Glossary

“Cookers” refers to Freestanding, Built In, Slide Under, Hotplates, Grilles, Range Cookers, and Dual Fuel Cookers

“Leisure Appliances” refers to Greenhouse Heaters, BBQ’s, Patio Heaters, Gas Flambeaux, and Outdoor Gas Lighting

“Work site” refers to the area where the work will take place and all areas affected by the works

“Meters” refers to credit or prepayment diaphragm meters and ultrasonic gas meters

“Low pressure” refers to inlet pressures to the meter of up to 75mbar

“Medium pressure” refers to inlet pressures to the meter of between 75mbar and 2bar

“Primary meter” refers to a meter nearest to and downstream of a service pipe for ascertaining the volume of gas supplied through that pipe by a supplier

“Secondary meter” refers to a meter, other than a primary meter, for ascertaining the quantity of gas provided by a person for use by another person

‘Services and Systems’ refers to water, central heating, gas, electricity supply, condensate disposal, chimneys and ventilation systems

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