Boiler Servicing Procedure

Boiler servicing procedure – the professional heating engineers approach

A boiler servicing checklist when visiting a client

Check	Operation
[ ]	Always introduce yourself politely and have your ID card on show, this will only reassure your customer that you are a registered member of Gas Safe (http://www.gassaferegister.co.uk/) and this is always a professional attitude to practice. First impressions always count to a new customer!
[ ]	Ascertain from customer any problems (if any) they may be experiencing.Also see Energy Companies Obligation (ECO): Boiler Assessment Checklist (https://www.ofgem.gov.uk/ofgem-publications/75773/baclboilerassessmentchecklist.pdf)
	Carry out a visual risk assessment of the gas installation pipework, gas meter/box, and any sealing, other appliances, system controls, and any ventilation provisions needed.

Visual Checking of the installation

- Check for **water leaks**?
- Was the boiler installed correctly?
- Is there damage to the boiler?
- Is the boiler suitable for the home?
- Are the controls working correctly?
- Are the electrics in good order?
- **Are there signs of good previous boiler maintenance?**
- Is the boiler located correctly?
- Is the boiler vented correctly?
- Is the flue correctly installed and working?
- Is the boiler still serviceable?

[ ]	Carry out gas tests (let – by, tightness and governor operating pressure).
	Check that the volume of gas consumed by the boiler is compliant with the manufacturers specifications (/boiler-manuals/).
	See the boiler manuals for detailed boiler manufacturer information (/boiler-manuals/)

Check the Working Pressures

- Gas Meter (/service-engineers-toolkit/)
- Appliance Inlet
- Burner

Gas Meter Checks

Test the **Emergency Control Valve** (ECV) – sometimes some, older installations may have a missing or corroded valve.

This should be treated as an emergency. **Legislation states that an ECV wheel or lever should be securely fitted**.

It also advises that a lever should be parallel to the direction or axis of the gas pipe in the open position to

make it clear if the valve is turned on or off. The ECV is normally positioned within two meters of the gas meter or within visual sight of the meter.

General Checks

- Is there correct labeling?
- Is there proper Electrical Safety Bonding (https://boilerfaultfinder.com/electrical-safety-checks/)?
- Is the system letting any gas escape?
- Is the Flue functioning correctly? Is the Flue fitted correctly?
- Visually **inspect the flame** to make sure there is correct combustion

Natural gas consists primarily of methane, a substance that gives off a blue color when burned. A properly burning gas heater should produce a sharply defined, blue-colored flame with just a little yellow glowing near the tip.
If the pilot light in your gas heater shows a lot of yellow, orange, red, purple or green color, this indicates inefficient combustion because other condensates are burning along with the methane.

These condensates might include tar, dust, rust or oil, all of which are potentially **hazardous chemicals**.

- Check the Expansion Vessel (/general-fault-finding/pressure-relief-valve-problems/) for condition and pressure
- Check the PH and Quality of the water supply

See the General Boiler Fault Finding Section (/general-fault-finding/)

[ ] Inform the customer of any findings and immediately address any findings which may constitute a danger to life or property in accordance with the current industry standards.

[ ] Electrically isolate appliance and turn programmer (https://boilerfaultfinder.com/programmer-and-time-switch-guides/)/timer to on, room thermostat (/?s=thermostat) to maximum setting and boiler thermostat (/?s=thermostat) to the maximum setting.

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[ ] Electrical safety checks (/electrical-safety-checks/) (earth continuity. (https://boilerfaultfinder.com/electrical-safety-checks/earth-continuity-test/) resistance to earth (https://boilerfaultfinder.com/electrical-safety-checks/resistance-to-earth/), short circuit (https://boilerfaultfinder.com/electrical-safety-checks/short-circuit/) and mains voltage polarity (https://boilerfaultfinder.com/electrical-safety-checks/mains-voltage-test/)).

[ ] Before commencing to strip down appliance, ensure very briefly, both hot water (https://boilerfaultfinder.com/system-component-testing/domestic-hot-water-flow-switches/) and heating is functioning correctly.

[ ] Electrically isolate the appliance and remove the fuse.

[ ] Remove burner and clean off any oxidation/debris accumulation using a soft brush, can of compressed air and hoover.

[ ] Inspect condition of combustion seals (they MUST be in good condition).

[ ] Inspect heat exchanger (https://boilerfaultfinder.com/general-fault-finding/noisy-heat-exchanger/) connections for signs of any leakage and brush clean the waterways using correct grade heat exchanger (https://boilerfaultfinder.com/general-fault-finding/noisy-heat-exchanger/) brush and hoover.

[ ] Inspect fan assembly (https://boilerfaultfinder.com/general-fault-finding/fan-problems/) and clean off any dirt/debris accumulation using a soft brush, can of compressed air and hoover. (The fan may need to be removed when there is heavy accumulation present, as it can imbalance the impeller –**always handle with care**!).

[ ] Carry out a visual assessment of the integrity of flue pipe, connections and termination. (Flues concealed within boxing-in, need access points)!

[ ] Replace components (/system-component-testing/) previously removed for inspecting/cleaning and test. Some boilers may need the *condense trap* removed for cleaning.

[ ] Undertake necessary flue flow continuity test (/?s=flow%20continuity%20test)/spillage test (open flue appliance only).

[ ] Check all combustion case seals, especially on a positive fan assembly (https://boilerfaultfinder.com/general-fault-finding/fan-problems/), using a tapered match. (Any leakage due to worn seals, the appliance MUST not be further used and the immediately dangerous procedure applied. THEY ARE STILL OUT THERE!

[ ] Open all TRV's (thermostatic radiator valve) to the maximum setting (if fitted).

[ ] Check the minimum and maximum gas setting pressures (if possible) and inlet working pressure.

[ ] Check CO/CO^2 readings with electronic combustion gas analyser (/service-engineers-toolkit/). (modern boilers will need to be forced into "*service mode*" for this procedure – follow manufacturer's instructions (/boiler-manuals/)).

[ ] Monitor the system water pressure gauge to ascertain if the correct vessel pre-charge is ok or if there is a faulty diaphragm.

[ ] Visually inspect all internal parts for any signs of leakage.

[ ] Vent system to remove any trapped hydrogen gas/air build-up. (Hydrogen gas is a by-product of electrolytic corrosion – **FLAMMABLE!**).

[ ] Attach **service sticker** to appliance showing next due service date and contact details (remember, the property may change hands but if not, it will be another satisfied customer).

[ ] Ensure the property has been left clean and tidy and as you found it.

[ ] Finally, discuss with the customer any possible **energy-efficient system improvements** you think they could benefit from, by adding onto their existing system. Always look at it as your responsibility to raise their awareness in these matters as it can only maintain a positive and professional relationship, which should lead to more work.

1. Know the basic components of a combi boiler: heat exchanger (https://boilerfaultfinder.com/general-fault-finding/noisy-heat-exchanger/), burner, expansion vessel (/general-fault-finding/pressure-relief-valve-problems/), pressure gauge, and controls.
2. Always follow the manufacturer's instructions for installation and maintenance.
3. Ensure the boiler is installed in a well-ventilated area.
4. Check the pressure regularly and refill the system if necessary.
5. Regularly check the system for leaks, corrosion and damage.
6. Clean the heat exchanger (https://boilerfaultfinder.com/general-fault-finding/noisy-heat-exchanger/) and remove any debris to prevent blockages.
7. Ensure the pressure relief valve (https://boilerfaultfinder.com/general-fault-finding/pressure-relief-valve-problems/) is functioning correctly.
8. Check the gas pressure regularly to ensure it's within the recommended range.
9. Check the flue regularly to ensure it's free from blockages.
10. Clean the burners regularly to prevent carbon build-up.

11. Check the electrical connections regularly and replace any damaged components.
12. Check the system's water hardness levels regularly and treat if necessary.
13. Use only recommended parts and components for repairs.
14. Regularly test the boiler's safety controls, including the overheat and flame failure devices.
15. Use a carbon monoxide detector to ensure the system is safe.
16. Ensure the boiler is commissioned correctly after any repairs or installations.
17. Consider regular maintenance contracts to keep the system in good working order.
18. Keep records of any maintenance carried out and any issues that have arisen.
19. Offer energy-saving advice to homeowners to help them reduce their energy usage.
20. Keep up to date with the latest combi boiler technology and developments in the industry.

Common improvements / upgrades are:

- New TRV's (Thermostatic Radiator Valve)
- "Power flush" system
- New room thermostat (/?s=thermostat)
- New timer / programmer (https://boilerfaultfinder.com/programmer-and-time-switch-guides/)
- Insulated copper cylinder
- Cylinder thermostat (/?s=thermostat)
- Insulated pipework

As a member check out these Key Areas

- Sequence of boiler operation (/sequence-of-boiler-operation/)
- Boiler servicing procedures (/boiler-servicing-procedure/)
- Boiler System Component Testing (/system-component-testing/)
- Top Tips for the Heating Engineer (/top-tips/)
- Boiler Manuals and Service Manuals (/manufacturer-boiler-manuals/)
- General Boiler Fault Finding (/general-fault-finding/)
- Boiler Error Codes (/boiler-faults-error-codes/)
- Using Multimeters (/safe-use-of-multimeter-functions/) to diagnose Boiler Faults (https://boilerfaultfinder.com/general-fault-finding/)
- Boiler Electrical Safety Checks (/electrical-safety-checks/)
- Boiler Service Engineers Toolkit (/service-engineers-toolkit/)
- Notching and Drilling (/notching-and-drilling-requirements/)
- Asbestos information for Boiler Engineers (/asbestos/
- Heating Engineers Directory (/business-directory/)
- 1000's of PDF boiler manufacturers installation and service manuals (/boiler-fault-finding/manufacturer-boiler manuals/)
- Boiler Hot Water faults (/general-fault-finding/domesti hot-water-faults/)