

Historically, fanned draught room-sealed boilers were of the positive pressure type. For this type of appliance, it is essential to ensure that the combustion chamber casing is firmly secured to the boiler, as the manufacturer intended, with the correct seal in a good condition. If this is not achieved, there is a risk that products of combustion may escape into the room and due to the poor combustion that is likely to occur, high levels of carbon monoxide (CO) could be produced creating a dangerous environment. A list of these types of appliances is given overleaf. Regulation 26(9) of the Gas Safety (Installation and Use) Regulations 1998 requires an examination of the effectiveness of any flue following work on a gas appliance. A test method to help ensure that a case seal of such appliances should comply with the regulations has been developed and is described below.

Step 1. Before the case is put back on the appliance the following checks should be carried out:

- Are any water leaks evident?
- Is the backplate or case corroded?
- Where corrosion is evident, is it likely to affect the integrity of the case, backplate, or seal?

Note: The extent of the corrosion should be carefully checked with a sharp instrument e.g. a screwdriver. If the instrument does not perforate the corroded area, this should be deemed acceptable, but the customer advised of the problem and potential consequences if a repair is not made.

- Are the combustion chamber insulation linings intact?
- Is the backplate or the case distorted or damaged. Pay particular attention to the area where the case and seal meet. This may have been caused by explosive ignition of the main burner.
- Is the case sealing material intact and in good condition? (e.g. pliable, free from discolouration, trapped debris, etc.). Will it continue to form an adequate seal between the case and the backplate?
- Is anything trapped or likely to be trapped when the case is put back on (e.g. wires, thermocouple capillaries, tubes, etc.)?
- Are other gaskets and seals intact?
- Is the pilot inspection glass undamaged?
- Are the case fastenings and fixings (including fixing lugs) in good condition? (e.g. screws/nuts stripped)
- Are there any signs of discolouration on or around the appliance which may have been caused by leaks of products of combustion from the appliance.

Rectify any defects as necessary and proceed to Step 2.

Note: Where defects are identified they should be classified using the following criteria in accordance with the current Gas Industry Unsafe Situations Procedure. Where there are inappropriate or missing case fittings or defective seals, which cannot be remedied, but there is no evidence of leakage, the appliance should be classified as At Risk. If there is evidence of actual leakage, then the appliance should be deemed Immediately Dangerous. Where suitable replacement seals are no longer available the appliance should be classed as ID and regarded as obsolete.

Step 2. When the case has been put on the appliance the following checks should be carried out:

- Is the case fitted correctly?
- Is a "mark" visible showing that the case had previously been fitted closer to the backplate?
- Are all the case screws adequately tightened?
- Is a bright area visible on the screw thread of any of the case securing screws, indicating that the screw was previously secured more tightly.
- Is anything trapped and showing through the case seal?

Rectify any defects as necessary. Proceed to Step 3.

Step 3. Operate/light the appliance

Ensure that the main burner remains lit (i.e. set the appliance and room thermostats to their highest setting).

Check for possible leakage, initially this can be done by running your hands around the boiler casing and backplate.

Then check for possible leakage etc. as in step 4 where practicable.

Step 4. Check for possible leakage of combustion products from the appliance

Where joints have been disturbed check with leak detection fluid to confirm that there are no gas leaks. Check for possible leakage of combustion products from the appliance using a taper, an ordinary match, or similar. (A taper can be used to get into less accessible locations). Whilst smoke tubes and smoke matches can be used, the results may require further interpretation and these methods are currently being validated.

Light the taper/match, and allow the flame to establish. Position the flame very close to the case seal or any possible leakage point (e.g. back panel). The flame will be blown quite easily by the draught caused by a leak. Move the taper around the entire seal, using fresh tapers as required. To investigate the seal at the bottom of the case – hold the lit taper between the bottom of the case and the appliance control panel. Does the flame flicker slowly or is it disturbed by leakage flowing from the case? Try the taper in several positions.

DO NOT confuse natural convection with leakage.

DO NOT look for a gas escape with this method.

Rectify any defects as necessary and re-check. If still unsure seek expert advice.

When using this method be careful not to set fire to surrounding fixtures/furnishings.

Below is a list of room-sealed fan assisted positive pressure gas appliances.

This list is not exhaustive but may be used as guidance to appliances that are believed to operate under positive pressure.

Manufacturer and model	Manufacturer and model
<p>Alde International (UK) Ltd Alde 2927 Slimline</p> <p>Brassware Sales Ltd Ferrolli 76 FF* Ferrolli 77 FF*</p> <p>Crosslee (JLB) (Pyrocraft) AWB 23. 09 WT Combi</p> <p>Crosslee (Trisave Boilers Ltd) Trisave Turbo T45* Trisave Turbo T60* Trisave Turbo 30* Trisave Turbo 22*</p> <p>Glow Worm Ltd Economy 30F* Economy 40F* Economy 50F* Glow Worm Fuelsaver 35F* Glow Worm Fuelsaver 45F* Glow Worm Fuelsaver 55F* Glow Worm Fuelsaver 65F* Glow Worm Fuelsaver 80F* Glow Worm Fuelsaver 100F*</p> <p>Glynwed Domestic & Heating Appliances Ltd AGA A50 AGA A50 A AGA A50 NG AGA A50 SS AGA A50 ANG AGA A60 AGA A60 NG AGA A75 NG Hi-light P50 Hi-light P50A SC Hi-light P50S Hi-light P50SS Hi-light P50S/A Hi-light P50S/A GLC Hi-light P50S/A SC Hi-light P50/A Hi-light P70 Hi-light P70S Hi-light P70SS</p> <p>Halstead Heating & Engineering Ltd Halstead 45F* Halstead 55F* Halstead 65F* Wickes 45F* Wickes 65F* Barlo Balmoral 45F* Barlo Balmoral 55F* Barlo Balmoral 65F*</p>	<p>Harvey Habridge Ltd Impala MK 11 Impala MK 11 Ridgeseal Impala Super 2 (HF) Impala Super 2 (VF)</p> <p>Potterton Myson Ltd Myson (Thorn) Olympic 20/35F ‡ Myson (Thorn) Olympic 38/50F ‡ Myson (Thorn) Apollo Fanfare 15/30 Myson (Thorn) Apollo Fanfare 30/50 Supaheat 50/15 with 'A' control Supaheat GC 50/15 Netaheat MK 1 10/16 Netaheat MK 1 16/22 BF Netaheat MK 11 10/16 BF Netaheat MK 11 16/22 BF Netaheat MK 11F 10-16 BF Netaheat MK 11F 16-22 BF Netaheat Electronic 6/10 Netaheat Electronic 10/16 Netaheat Electronic 16/22 Netaheat Electronic 10/16e Netaheat Electronic 16/22e Netaheat Profile 30e Netaheat Profile 40e Netaheat Profile 50e Netaheat Profile 60e Netaheat Profile 80e Netaheat Profile 100e</p> <p>‡ A safety enhancement kit has been designed for these appliances and is available from Potterton Myson Ltd.</p> <p>Stelrad Group Ltd Ideal Elan 2 40F* Ideal Elan 2 50F* Ideal Elan 2 60F* Ideal Elan 2 80F* Ideal Excel 30F* Ideal Excel 40F* Ideal Excel 50F* Ideal Excel 60F* Ideal Sprint 80F* Ideal W2000 30F* Ideal W2000 40F* Ideal W2000 50F* Ideal W2000 60F*</p> <p>Worcester Bosch Heatslave 9.24 RSF* Worcester 9.24 Electronic RSF* Worcester 9.24 Electronic RSF 'S'*</p>

* Boilers where spares relevant to case seal problems are still available, based on information provided by manufacturers.