

Oil-fired combi boilers – perhaps too much of a compromise!

Designed in the 1970's with few technical advances since, are they really suitable for "modern-day" hot water supply requirements?

It's essential that homeowners are fully aware of the compromises they will have to make when living with an oil-fired combi boiler. Often overlooked are the significant technical / engineering differences between gas and oil-fired combi boilers.

Consider:

1. High life-time costs:

- Unlike a gas combi, water is stored in the boiler at circa 80°C; components subjected to this constant residual temperature will fail.
- Oil-fired combi boilers are complex, have bespoke components; they will be more expensive to maintain than a conventional system.
- Good business for boiler manufacturers, not necessarily the best option for the homeowner!

2. Modulating burner:

- Gas-fired combis have modulating burners: when a hot tap is opened, a gas valve opens (modulates), passing more fuel into the burner/boiler to satisfy increased heating demand.
- Oil fired combis have fixed output burners; they cope with additional heating demand in two ways:
 1. An integral "heat store" making them physically big – often twice the size of a conventional heat-only boiler.
 2. A larger boiler input (kWatts) than is actually required to satisfy central heating demand; typically a 30kW boiler where a 20kW heat-only boiler would suffice. It's like running a Jaguar V12 when a Nissan Micra would do the job just as well and be far more efficient!

2. Hot water "temperature rise" and "water flow rates":

- Temperature rise and flow rates quoted by manufacturers must be treated with caution. Flow rates of 10 - 13 litres per minute @ 35°C degree temperature rise above mains water temperature is around the norm in practice.
- The temperature rise will fall once the integral "heat-store" in the boiler is exhausted.
- Temperature rise will be lower during the winter months when the "mains in" water temperature drops below the norm of say 10°C.
- To fill a bath, 25 gals / 112 ltrs will take about 10 minutes, provided no other taps are open.
- Showers, again, temperature and flow rates will change when other taps in the system are opened.

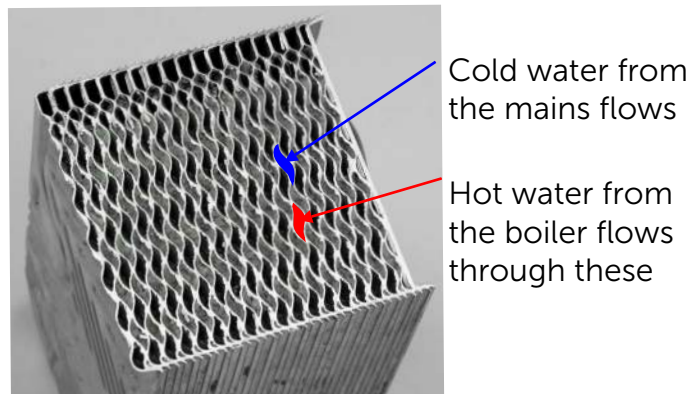


3. Hard water problems:

- Hot water is produced via a small plate heat exchanger. These get scaled-up just like a kettle and often need replacing.
- A mechanical water softener is essential. They take up space. Magnetic / electric in-line scale reducers are available but there is no scientific evidence to prove they work.

The photo below is of a plate heat exchanger, cross-sectioned, to show the cold water channels blocked with limescale.

At just 80 x 80 x 180 mm (3.5" x 3.5" x 7" inches), a combi boiler relies on this component to produce all hot water requirements.



4. Hot water back up:

- If the boiler fails, for example if you run out of fuel, there's no back up for hot water, as there would be with a conventional hot water cylinder with an immersion heater; this alone can lead to expensive "emergency" engineer call-outs.

5. Life time costs:

- Combi boilers are complex and have bespoke components; they are more expensive to maintain than a conventional system that use industry standard components.

So, what's the solution?

Keep it simple! A heat-only boiler with even a small 60 litre pressurised hot water cylinder will provide nearly twice the hot water storage of a combi boiler.

There's no need for an airing cupboard, and at just 475mm x 600mm a 60 litre cylinder would work along side our Kitchen, External or Wall Mounted Models; a similar foot print to a combi boiler, a far better solution!

Some customers have built external housings to accommodate a boiler and hot water cylinder or located the cylinder in a garage.

Pressurised cylinders such as the Megaflow or Stelflow will provide many years of maintenance free service.

The benefits:

Loads of hot water at mains pressure up to 72 litres per minute @ 3 bar vs 10-13 litres for a combi boiler. With an immersion heater for back-up if you run out of fuel and industry standard components provide for low life-time maintenance costs.

For more information see:

<https://hounsfeldboilers.co.uk/support/> Different types of boiler explained & Heating systems explained.