

REF: 403 CHOOSING A NEW BOILER (wet central heating system)

What is the function of a boiler?

The central heating boiler provides both space heating and domestic hot water. Water is heated by the combustion of fuel and then pumped from the boiler round the radiators and, depending on the system, to the hot water cylinder, store or directly to the tap.

What type of boilers is there? There are basically 4 different boiler types.

1. Conventional Boiler

These are currently the most common type of boiler found in houses. All conventional boilers are capable of providing space heating directly but need connection to a separate hot-water storage system. They provide heating via radiators and hot water via a hot-water storage cylinder. Cold water is usually supplied to the boiler by a small 'header' tank although the more modern boilers can take water direct from the mains. The efficiency of these boilers is typically about 78- 82% for mains gas and 78- 86 % for oil.

2. Condensing Boiler

Condensing boilers offer significantly higher efficiencies than can be achieved from other non-condensing boilers. Most will achieve an average efficiency in excess of 90% when in "condensing" mode. Even when not in condensing mode this boiler will still be more efficient than a conventional, typically about 85% or more. It achieves this by including a large heat exchanger, which extracts more heat from the flue gases so much so that the water vapour in the flue gases condenses and the water needs to run to a drain – hence 'condensing boiler'. The condensing boiler may have higher purchase and installation cost but generally will pay for itself within 0-4 years through reduced fuel bills. This period will be reduced if an energy efficiency offer is available towards the cost of installing a condensing boiler so check with the Energy Efficiency Advice Centre prior to purchase of the boiler. Care is needed when siting the boiler flue due to the plume of water vapour usually present during operation of the boiler. The plume will be visible for much of the time but is not hazardous.

3. Combination Boiler

Combination boilers provide both space heating and direct domestic hot water. The most common type of unit is the instantaneous combi, which heats water on demand, there is no storage of hot water as hot water is supplied instantly to the taps when they are turned on (the same principal as an instant shower). No need for a hot –water cylinder freeing up space. It is possible to have combi boiler system with a hot water store. A possible disadvantage is that the hot water may flow slower through the taps therefore taking a bit longer to fill a bath etc. The cold water supply is fed straight from the mains to the boiler and there is no need for a header tank.

4. Condensing Combination Boiler

As described under condensing boiler but providing hot water instantaneously, as detailed under combi boiler. This is likely to be the most fuel-efficient option.

Boiler positioning

Floor standing and wall-mounted models are available for internal and external siting, you should check with your installer or with the manufacturer on availability.

Replacement boiler

When boilers are replaced the systems should be upgraded to a fully pumping for both space and water heating and new controls installed to give effective control and improved energy efficiency.

Mission Statement

SCARF aims to work through partnership to promote sustainable use of energy, eradicate fuel poverty and create sustainable employment and training opportunities.

Core Objectives

- + To provide free impartial and accessible energy efficiency advice and information services to help save energy, save cash and help save the environment.
- + To encourage investment in energy efficiency and renewable energy measures and grant take up for property improvements to achieve affordable warmth.
- + To create sustainable employment and training opportunities.

SCARF Provides

One Stop Energy Advice Shop offers free impartial advice and information:

- + Energy efficiency in the home, business and the community
- + Renewable energy in the home, business and the community
- + Grants for loft and cavity wall insulation
- + Grants for draughtproofing
- + Grants for central heating
- + Grants for renewable energy installations
- + Paying for fuel and fuel suppliers
- + Choice and operation of heating and hot water systems

SCARF also offers:

- + Home visits
- + Home energy checks
- + Presentations and informal training
- + NVQ and City & Guilds Qualifications

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