Home Energy Advice Team

Gas Central Heating Systems

Modern gas central heating systems are extremely safe and highly efficient. They are also very controllable, so it is important to understand and be able to use **the controls** on your system. Using heating controls properly can:-

- Improve the comfort of your home
- Reduce the energy used and your fuel bills
- Avoid the risk of condensation dampness

To get the full benefit of your system, you should follow the manufacturer's instructions. If you have mislaid the instruction booklet for your systems, find the booklet online by visiting the manufacturer's website or ask the manufacturer for a replacement.

Why have controls on a gas central heating system?

For a gas central heating and hot water system to operate at full efficiency, it must be able to be controlled so that heating and hot water are provided at a suitable temperature, when and where you want it. Most systems include:-

- Boiler (which can be a condensing, condensing combi, conventional or conventional combi model)
- Hot water tank (often known as an immersor) for systems without a combi boiler
- Room thermostat
- Radiators
- Thermostatic radiator valves
- Programmer

The Boiler

A boiler burns gas and heats up water which is circulated through radiators throughout the home to provide heat.

If your boiler is a 'combi' boiler, then the water is heated instantaneously when the hot water taps are switched on. For boilers which are not 'combi', the heated water also circulates through a coil in the hot water tank (also called an immersor), which in turn heats up the rest of the water in the cylinder to provide running hot water.

The thermostat on the boiler controls the temperature of the water circulating around the system. Please refer to the manufacturer's instructions for the optimum setting of the thermostat.

Hot Water Tank

Most hot water cylinders have a thermostat; this is recommended to be set at 60º C. To retain as much heat as possible, the cylinder should have 80mm of insulation.

Radiators

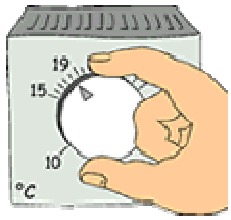
Radiators are most commonly used in ‘wet’ central heating systems i.e. those systems which use water. The water is heated by the boiler and travels through the radiators, giving out heat.

Generally, one radiator should be left permanently switched on: this is the ‘bypass’ radiator. This radiator may be a bathroom towel rail (where the heat is always likely to be useful), or in the same room as the room thermostat (see below).

Thermostatic Radiator Valves (TRVs)

TRVs are found on radiators other than the bypass radiator. The TRV senses the air temperature in the room and can be set higher in the rooms you use most and lower in rooms used least such as bedrooms. They usually have a fat valve at one end, marked with a * and numbers from 1 to 5. The * setting is to protect against frost; it will typically leave the radiator switched off unless the temperature falls below about 6° C. For a normal living room, the setting of 3 or 4 is likely to be about right; for a bedroom a cooler temperature will normally be enough. Turning the dial up when the radiator is already on will not increase the room temperature! They can also be used to turn an individual radiator on or off.

Room Thermostat



This is usually found in the living room or hallway and – for most people – it is recommended to be set between 18 and 21º C. The room thermostat will respond to the temperature in the room where it is situated. When the room is warm enough it sends a signal to the central heating pump to stop heating the radiators until the temperature drops below the set level. At this point they will come back on again.

Programmer or Timer

The programmer or timer is set to control the times when the central heating and hot water are switched on and off. The average household needs heat for about 8 hours each day. But this depends on your own personal circumstances. The majority of time clocks allow you to set two 'on' and 'off' periods during the day i.e. 8am - 10am and 4pm - 10pm.

So that the house is warm when you wake up, set the heating to come on approximately 30 minutes before you get up and then in the evening set the heating to turn off about 1 hour before you go to bed. This will allow the house to warm up in the morning and cool down slightly at night.

There is a variety of programmers for operating central heating (CH) and hot water (HW). Many offer the following programmes:-

- ON/CONSTANT – hot water (HW) / central heating (CH) is on 24 hours each day.
- OFF - the HW/CH is completely off.
- ONCE - the HW/CH comes on at the first "ON" time selected and turns off at the second "OFF" time selected.
- TWICE/AUTO - the HW/CH comes on for the 2 selected time periods.
- HOT WATER ONLY - the heating system will not operate.

For Further Information Contact

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