

User Guide to Your Heating and Hot Water Controls

Your Central Heating system is the biggest single user of energy within your home. Using your heating and hot water controls effectively can make the biggest difference to your energy bills.

- In homes, heating and hot water accounts for 82% of the total energy use. As your boiler usually provides most, if not all, of your heating and hot water it is by far the biggest energy consuming appliance in your home.
- Controls allow you to set the comfort conditions you require and will then automatically operate the boiler to keep you comfortable while using as little energy as possible.

Keep this document as a handy reference to help you understand how your heating system works and how to use your controls most effectively. It is based on the typical controls that are recommended within the Governments Building Regulations compliance guide for boilers and radiators. If you have a different type of heating or control system you may need to consult your installer or the manufacturer.

All you need to do is decide when you want to be warm, how warm you want to be and the heating controls will do the rest. The same goes for hot water, decide when you want the water to be available, then leave the controls to it. Here are some useful ideas to help you.

Individual Controls

Programmer

What does it do?

- Operates the boiler to 'on' and 'off' times that you set. During 'on' periods the boiler is available to provide heating and hot water if requested by other controls (see below.) During 'off' periods the boiler will not provide heating and hot water, *even if requested by other controls*.
- Some programmers will allow you to set different on and off times for different days so that, for example, the heating system operates to different times at weekends.
- There is often a 'boost' function of some sort which will allow you to operate the heating system for a short period of time when it would otherwise be off. At the end of the boost period it will turn off again.

How should I use it?

- The times that the boiler comes on and goes off should be set as closely as possible to suit your lifestyle. You should particularly avoid having the boiler on when no-one is at home (Except if using it for frost protection while on holiday, in which case the thermostat must be set to a low temperature.)
- You want the house to be warm when you get up but the time this will take will vary depending on your type of house and how cold it is outside. Try setting the heating to come on 30 minutes before you wake up and adjust it if your house still isn't warm enough for you. Reduce this warm up time when it is milder outside.
- Familiarise yourself with the operation of your programmer so that you are happy making changes. Setting the heating to come on later when you know you will be late home will save you money!
- If you have a hot water cylinder, the aim is for the boiler to heat the water in the cylinder so that there is hot water when you need it. Setting the hot water timing for 2 hours in the morning and evening should be more than enough, and the cylinder thermostat will turn the boiler off when the water is hot enough. If you are

able to set different timings for your heating and hot water bear in mind that the boiler needs to do both. So it may be worth setting the hot water to come on an hour before the heating, particularly for cold mornings, so that the boiler can deal with one at a time.

Room thermostat

What does it do?

- This provides overall temperature control of your home.
- It reacts to the room temperature and turns the boiler on and off so that the room temperature matches the set-point (see below.)
- The focus is on the internal temperature, so it will bring the heating on more on cold days and less on milder days. If you are happy with the set-point temperature you shouldn't need to adjust it whatever the weather.

How should I use it?

- Try to find a comfortable set-point temperature and leave the thermostat at this setting. The idea should be to be comfortably warm rather than hot, and a lower set-point will lead to lower heating bills. Try starting at 20°C and gradually adjust it over a few days to see what suits you. (Note: Elderly and vulnerable individuals may need warmer temperatures so always check specific advice if you have any concerns.) Most people are comfortable in a temperature of 18 – 20°C.
- Don't try to warm the house more quickly by turning the thermostat up – it doesn't work. This won't make any difference to how quickly you feel comfortable but will result in higher fuel bills, particularly if you forget to turn it down again!
- Bear in mind that your room thermostat is sensitive to internal temperatures. If a window is open in the room where the thermostat is located then the thermostat will assume that the house is not up to temperature and keep the boiler on – even if this means that other rooms are overheating.

Programmable room thermostat

What does it do?

- You may have this control instead of a separate programmer and room thermostat as it combines the functions of both of these. You can tell if you have a programmable room thermostat as it will have both time and temperature shown on its display.
- Operates the boiler to 'on' and 'off' times that you set and provides overall temperature control of your home during 'on' periods.
- During 'on' periods the boiler will react to the room temperature and turn the boiler on and off so that the room temperature matches the set-point. It will also provide hot water during this period if requested by a cylinder thermostat (see below.) During 'off' periods the boiler will not provide heating and hot water, *even if requested by other controls.*

How should I use it?

- Follow the guidance given for an individual programmer and room thermostat (above.)

- The big advantage of this control is that it lets you set different temperatures for different times of the day which can reduce your running costs. For example, you could set the temperature to 18°C for mornings and early evenings when you are likely to be more active, and to 20°C for late evenings.

Thermostatic radiator valves (TRVs)

What do these do?

- These provide individual temperature control in each room where a TRV is located. They prevent the room from overheating and save heating a room that is already warm.
- Each TRV will monitor the room temperature and reduce the heat output of the radiator so that the room temperature matches the set-point.
- Like a room thermostat, a TRV is focussed on maintaining the internal temperature regardless of how cold it is outside. Unlike a room thermostat, TRVs do not directly turn the boiler off when no heat is required but they should allow the room thermostat to turn the boiler off more frequently.

How should I use them?

- Try to find a comfortable set-point temperature for the room and leave the thermostat at this setting. Bear in mind that TRVs will usually have a number scale (for example 1 – 6) rather than temperature settings. You may be best starting with this set at the mid-point and over the course of a couple of days gradually adjusting it higher or lower until the room remains at a comfortable temperature.
- For rooms that aren't used very often you can save money by keeping the TRV at a low setting, providing background heating only, and turning it to a more suitable setting when the room needs to be warmer.
- As TRVs work by sensing temperature it is important to keep them free of obstructions from furniture or curtains. Generally this is true of radiators anyway as you want to get the heat into the room.

Cylinder thermostat

(Note: This only applies if you have a hot water cylinder connected to your heating system.)

What does it do?

- This provides overall temperature control of your hot water.
- It monitors the temperature of the water in the cylinder and turns the boiler on and off so that the water temperature matches the set-point.

How should I use it?

- You don't need to set your hot water cylinder to the maximum as this will waste energy. An ideal temperature setting is between 60°C and 65°C. This is hot enough to kill of any harmful bacteria in the water but note that these temperatures can cause scalding so you should still be careful with hot water straight out of the tap.