Ridgewater Energy

Air Source Heat Pump

How do air source heat pumps work?

Air source heat pumps take warmth from the air outside (even when it's cold outside) and use that heat to heat your home. Heat pumps can take a bit of getting used to, as they work and are operated differently to other forms of heating. They are designed to heat to low temperatures over a long period of time, rather than quickly providing heat when turned on like a traditional boiler heating system.

Heat pumps are designed to run for long periods of time. It is usually cheaper and provides more effective warmth to leave them running during the day, compared to only heating in the morning and evenings like your boiler.

They respond slowly to temperature changes, so when you want to turn the temperature up, change the setting of your room thermostat by one or two degrees. Wait to see if you're comfortable at this setting before turning up again. Turning up the temperature up too quickly, the heat pump cannot respond quickly enough and will run at a higher capacity to boost the temperature, using more electricity.

What temperature should we run our heat pump at?

During the winter months, as a general rule, it is advised that you run your heat pump between 18/19 degrees all day and then when you are ready to go to bed, turn the temperature down by a couple of degrees (no lower than 15 degrees).

Adjusting individual rooms

In general, temperatures should only be lowered in unused rooms or bedrooms. If there's a short warmer spell in the winter, it's usually better to turn down the individual rooms heating controls, instead of adjusting the main room thermostat.

When you don't want heat

Heat pumps should NEVER be turned off completely, because they will be more expensive when turned on again, as they'll try to raise the temperature quickly, using more electricity. It takes several days to restore the home to temperature from a cold start.

- At night: Lower temperature by 2/3 degrees to approximately 15 degrees, set it to slowly increase in the morning so that the room is a comfortable (18/19 degrees) when you get up.
- Away for the day: Just leave the system running as usual.
- Away for a week: The system should have a 'holiday' or 'frost protection' setting, which lowers the room temperature while you're away. This will also prevent the pipes freezing during cold weather.
- During the summer: Your heat pump may have a 'summer' mode, or you can simply turn down the room thermostat, meaning the heating will not come on, but you'll still get hot water.

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Hot water tank

The heat pump should heat your hot water tank to around 40-50°C quite comfortably. However, this is not hot enough to kill any bacteria within the tank, so your tank is designed to automatically heat up to 60°C once a week – this is usually set by the heat pump installer, so agree the best time for this to occur with them. During this purge of heating up the tank to 60°C you will notice a corresponding increase in your electricity usage.

Additional things to be aware of...

Insulation: If your home is not well insulated or is very draughty, then it may struggle to get warm and your running costs will be higher. This is because the heat pump will have to work harder to maintain a constant interior temperature, using more electricity to do so.

Control unit: The main control unit is often in a cupboard and should only be adjusted by a trained engineer (e.g., during the annual service), otherwise accidental changes, risk altering the efficiency of the system and increasing your running costs. A separate 'user' unit, which often looks like a traditional boiler programmer, should include all the settings you need to use yourself.

Electricity tariffs: In general, heat pumps are best run on a single-rate tariff rather than Economy 7 (where you have cheaper night electricity, but it's more expensive during the day). Your electricity company can advise on which tariff suits your usage and your installer may also be able to advise.

For more information about heat pumps you can visit:
http://www.hpf.org.uk/advice/homeowners (The Heat Pump Federation - Guide for Homeowners)
http://www.heatpumps.org.uk/about/homeowner (Heat Pump Association - Homeowners Information)
http://energysavingtrust.org.uk/advice/air-source-heat-pumps (Energy Saving Trust - Air Source Heat Pump Guide)