

Air Source Heat Pumps Page 1 of 2

Your Home is heated by an air source heat pump.

This a very efficient, low carbon form of heating, it makes use of a refrigerant cycle (working sort of like a fridge in reverse), which means that for each unit of electricity it consumes, it can produce 3 units of heat.

How does an air source heat pump work?

1. The outdoor unit sucks in air, a heat exchanger extracts heat from the air and passes it to a refrigerant fluid
2. The refrigerant fluid boils and evaporates, turning into a vapour
3. That vapour is then compressed, which increases the temperature
4. The heated vapour passes over a heat exchanger with the fluid in your radiator system

Due to the extremely low boiling point of refrigerants, this cycle will work effectively at very low outside temperatures, as low as -20C.



A heat pump will heat your home efficiently and comfortably, and it operates slightly differently than a gas or oil boiler.

- The fluid inside the radiator system is a lower temperature when compared to a gas or oil boiler. You will notice the radiators are not scalding hot to touch – this doesn't mean they're not effective though!
- It may take a little more time to reach the desired temperature, and we recommend setting it up so it's not required to do big jumps in temperature. E.g. you may want to set it to 18C during the day, and 21C when you're sitting down in the evening.
- Do not set the temperature excessively high (e.g. above 23C) expecting the room to heat up faster – this will only make the heat pump work harder and cost you more. If you want to achieve 21C at 5pm for example, but you regularly find the system is not achieving this, try setting thermostat to 21C at 4pm, allowing the system time to increase in temperature.
- The system will work more efficiently (and cheaply) if it is allowed to keep the house a low level of heat all day (around 17-19C) and heat up to 21-22C when you need it. The heat pump will not run all day, it will just click on and off as needed to maintain the temperature.

Setting up your system

- Your programmable room stat will be located in your hall or lounge and will look something like these ones pictured. You can use this to set the times and temperatures for the system. You will find full instructions in the manufacturers manual. Contact Osprey if you need a copy.
- There is no need for you adjust the main controller (usually located in the cupboard next to the hot water cylinder). This is for heating engineers use only.



- The thermostatic radiator valves (or TRVs) control the temperature in each room. It's worth noting that 5 is not any warmer than 4, it just means that the radiator will not turn off, even when the room is very warm. Once the programmable room stat records the desired temperature, it overrides all the TRVs and will shut the system off.



- The heat pump also heats your hot water. The water is stored in the tank at around 50C, and the system automatically brings it up to over 60C once per week to prevent legionella. The code of practice for safe water temperatures states that 41C is the safe temperature for showers and wash hand basins.
- In very cold winter temperatures the system may automatically defrost the outdoor unit, when this happens you will see a large plume of steam from the outdoor unit do not be alarmed if this happens, this is part of the process and the system will continue to work as usual.
- It's important to keep the area around the outdoor unit clear of any plants or debris to allow good air flow.

Why heat pumps are a sustainable choice

- Oil and gas are fossil fuels, burning these emits greenhouse gases, and contributes to climate change. We need to use alternatives to heat our homes.
- Air source heat pumps use electricity to run—In Scotland around 90% of electricity is generated from renewable sources (such as wind or hydro), this makes electricity a much more environmentally friendly option than it has been in the past. Heat pumps are more efficient than other forms of electric heating.