GC Heating

An established plumbing and central-heating company, and the region's first, foremost, and original supplier of domestic and commercial renewable systems.

GC Heating provides a comprehensive service for homes and domestic customers. We can provide advice and assistance on all forms of heating, from traditional gas central heating to cutting edge renewable energy systems, finding the best solution for you and your home.

And of course, we provide all the traditional plumbing services such as blocked drains, burst pipes, external taps, and everything else!

Heat Pumps:

- Eco friendly
- Carbon neutral
- Low cost energy
- Vastly reduced energy bills
- Guaranteed payments scheme

These are just some of the benefits of a ground source heat pump system. But how does it work? Read inside.

GC Heating are specialists in ground-source pumps, solar PV systems, biomass systems, and other eco-friendly systems. Our systems reduce your fuel bills, and can provide payment for the energy you generate!

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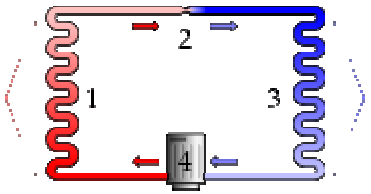
Stokes Premier Plumbers

Heat Pumps: A Guide



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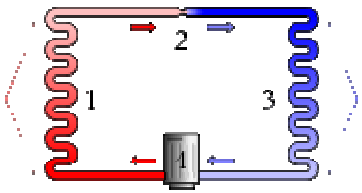
Heat Pumps - The Ins and Outs

A heat pump is very simply a system that moves heat from one location to another. We all have heat pumps in our houses: refrigerators and freezers.

What is not widely known is that the same principle can also be used for the opposite effect; to provide heating, for homes and buildings.

Heat pumps have the ability to move heat from one area to another, and in either direction; to bring heat into a space, or to take it out.

The basic process uses a refrigerant which absorbs heat as it vaporizes, and releases the heat when it is condensed. The key component is the *reversing valve*, which allows the flow change to be changed, and heat to be pumped in either direction.



Heat pump cycle
1. condenser
2. expansion valve
3. evaporator
4. compressor

The process is very simple.

How it works

The system contains a refrigerant liquid, which has a very low boiling point ie -10 degrees. The warmth from the ground is sufficient to boil the liquid, and turn it into vapor.

2. The vapor passes through a compressor. By compressing the gas, it heats up -to between 75 and 125deg! This is how a pressure cooker works.

3. The pressurised gas is passed to a condenser, which heats up. This heat is used to heat a building and provide hot water.

4. The cooled gas passes through the expansion valve, which decreases the pressure and the gas becomes a liquid again, and the cycle starts again.

Heat sources

Heat pumps draw heat from the air or ground. We deal with the later, ground-source heat pumps, which are more efficient because of the constant level of heat; at a depth of about 1m the ground is at a constant temperature, about 10deg, which is more than sufficient to change the refrigerant from liquid to gas. At its heart, a heat pump exploits fundamental laws of nature; the very low boiling points of some liquids and the resultant liquid to gas conversion, and compressing a gas causes its temperature to rise.

Benefits

Ground source heat pumps are eco-friendly, and provide a cheaper long-term alternative to traditional heating methods due to lower operating costs. They are silent, maintenance needs and costs are negligible, and there are no visible external units. They can be installed in any home, large buildings such as office blocks, residential homes and community centers.

They can lead to a cut in fuel bills between 35% to 70% - saving tens of thousands over a period of years. And they qualify for the **Renewable Heat Incentive** whereby you are paid for generating energy!

Contact us for more details!

Typical savings for a ground source heat pump

	Terrace	Semi	Detached
Gas	£260	£300	£420
Electric	£640	£730	£1000
Oil	£500	£570	£760
LPG	£570	£660	£870
Solid	£210	£250	£350