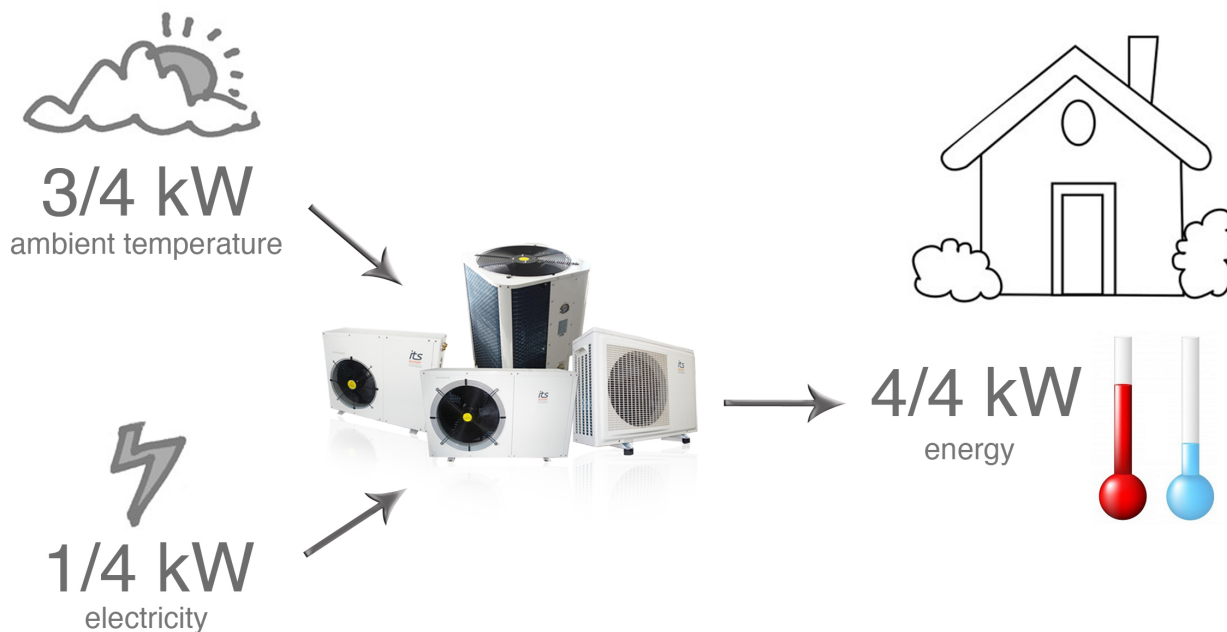


Why a heat pump?

What is a heat pump?

A domestic hot water heat pump is a very efficient water heating device. It uses a small amount of electricity to produce up to four times more heat energy. So by connecting an ITS heat pump to your existing hot water cylinder you can divide your hot water electrical consumption by up to four. Unlike a solar geyser, a heat pump is not directly dependent on the sun and therefore it can operate day and night, winter and summers, ensuring the highest possible saving and piping hot water 24/7



How long does a Heat Pump take to heat water?

The heat pump size is normally selected so that it will heat the water slightly faster than what an electrical element will do.

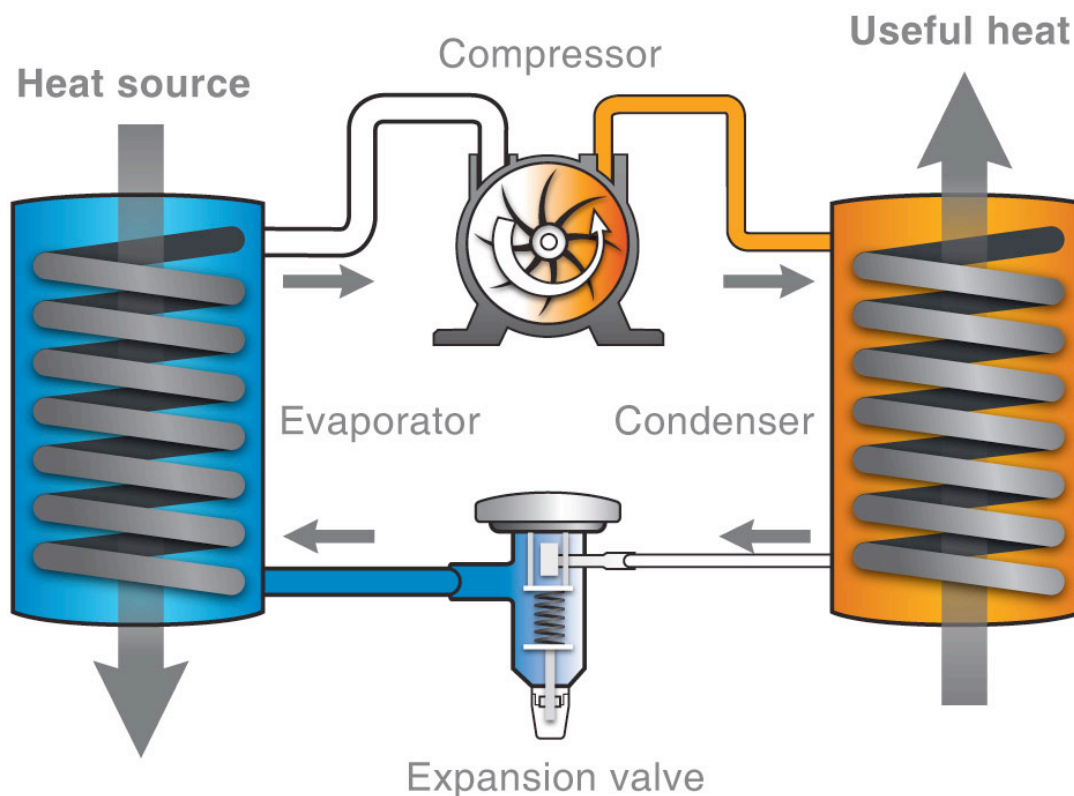
Does a Heat Pump Need Maintenance?

Our heat pumps range requires virtually no maintenance of the system except for making sure the evaporator is clean from dirt and leaves. We do however recommend that the system be checked annually to ensure that you are getting the best possible efficiency out of the system.

How does a heat pump work?

A heat pump works like an air conditioning unit in reverse. It extracts heat from the ambient air surrounding it, enabling it to heat the refrigerant which is then compressed causing it to get even hotter. This is then run through a heat exchanger in which the water is heated. The refrigerant is then allowed to expand again, thus cooling it down and enabling it to again absorb heat from the surrounding air. So only a little electricity is used to run a fan and compressor while the heat energy is provided indirectly by the sun.

The modern domestic heat pump is a very efficient water heating device which uses a small amount of electricity to drive a compressor which forms the heart of the heat pump. The heat energy produced is as much as four times the electrical energy used to drive the compressor. This means that your electricity consumption for water heating can be divided by up to four.



The heat pump is not reliant on sunshine or direct radiation but extracts heat energy from the air at any time of the day or night and so is effectively a solar heater in a different form. Even in extremely cold conditions (-5C and lower) the heat pump can still provide a saving of more than 50%. In most cases in South Africa, where our daytime temperatures are relatively high, the efficiency is going to be at least 3 x that of an element heated water system. Even in the colder climates of Europe heat pumps are extensively used in domestic applications. A heat pump looks similar to an air conditioner and can be installed either on the ground or on brackets on a wall. It is quiet and unobtrusive with a user friendly controller, has no greenhouse gas emissions and requires almost no maintenance.

Heat pump cycle

2. Vapour

Vapour is channelled into an electric compressor, increasing the pressure and temperature of the vapour.

1. Fan

A fan passes ambient air over the evaporator. The refrigerant boils and evaporates at low temperatures.

3. Warm vapour

Warm, high-pressure vapour enters the heat exchanger producing heat for water or heating system.

4. Condensed vapour

Condensed vapour returns to liquid, passes through the expansion valve, reducing pressure and temperature. The cycle repeats.

