

SHERMAN'S PROJECTS

Creating Heating Solutions

Specializing in Floor Heating, Heat Pumps & Electrical Accessories

PRO'S & CONS OF A HEAT PUMP

PRO'S:

1. A heat pump does not use an electric element to heat the water. The electricity it uses goes into driving the fan at the evaporator and driving the compressor. However, these components uses only 1KW, but the system produces 3KW of energy. Compare this to a 3KW electric element in a traditional electric geyser, which uses 3KW to produce 3KW of energy. The total saving on the water heating part of the electric bill should be about 60-70%.
2. As compared to solar geysers, where the water is heated by the heat of the sun, collected in solar panels or evacuated tubes, heat pumps used for water heating has the edge in that they can extract heat through the evaporator in all circumstances: whether the sun is shining or not; in the middle of the night or in bright daylight; even when temperatures drop sharply. However, when power failures or load shedding occurs, they cannot operate, whereas solar systems can.
3. Installing heat pumps are more expensive than both electric geysers and solar geysers. However, two factors are decisive in this regard: The sharp rising price of electricity in South Africa, and the subsidising policy of the electricity supplier in South Africa, ESKOM. The price of electricity has been rising at an alarming rate of 25%+ per year compounded, has just been raised again for 2011 – 2012 by the same margin and is due to rise again next year by 25%+ (146% in 3 years!!). This not only means that using electricity to heat water has become very expensive, but it also means that saving 60%+ on this portion of the bill is increasingly becoming a substantial saving. It also means that the payback period for the more expensive heat pumps is becoming shorter the higher the price of electricity. In addition to this, the subsidising of solar geysers by ESKOM has now been extended to heat pumps as well (announced on 19/4/2011) – meaning that the capital outlay will be regained even quicker.
4. heat pumps are easier to maintain and have lower maintenance cost. They do not have electric elements which have to be replaced from time to time. The closed refrigerant system of heat pumps can run for years on end without any problems
5. Another advantage of heat pumps is the fact that they can be retrofit to an existing electric geyser, by replacing the electric element with the heat exchanger of the heat pump. They can even be used in conjunction with solar geysers. Many people refuse to use solar energy for the unsightly solar collectors on their roofs. Obviously, this does not apply to heat pumps.
6. Lesser electricity also means less pollution, so heat pumps do make a contribution towards the global attempts to reduce CO2 emissions.



Panasonic

SANYO



TOSHIBA



CONS

- 1.** Heat pumps work only when electricity is available, which could be an issue in South Africa, where power failures or load shedding occur from time to time, in particular in winter. However, this situation applies to traditional electric geysers as well. where solar geysers come into their own; they work whether there's electricity or not.
- 2.** The effectiveness of heat pumps is directly related to the heat available at the heat source where the absorber is placed. Even though a heat pump can extract some heat from ambient temperature of as low as -15 degrees C, it has to work considerably harder to heat the water in the storage tank than when the ambient temperature is 27 degrees C. This means that heat pumps will not be as effective in low temperature regions; as a matter of fact, if temperatures stay very low for extended periods of time you might end up using more electricity to heat your water than with the traditional electric geyser. The heat pump has to be placed in a nice and cozy area towards the northern side of your home (southern hemisphere) and protected from cold winds. Also make sure that shrubs do not eventually overgrow the device, putting it in cool shade.
- 3.** The maximum temperature which can be generated by heat pumps is 60 degrees C. This is indeed hot enough, but some people have a problem with that, not realizing that it does not make any sense to set the temperature in your geyser any higher than that in any case.