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Electric Pool Heating

Heat pumps are relatively new to the swimming pool market, but their technology has been used in air conditioning and refrigeration for many years.

For the technically minded, they gather heat from the surrounding air by drawing it through the unit. It is then transferred to the refrigerant carried inside pipes where the temperature is increased by compressing the refrigerant.

That heat is then transferred to the pool water contained in adjacent piping.

ENERGY EFFICIENCY IS THE KEY

Electric heat pumps are extremely energy efficient. They consume very little electrical energy to operate, and produce much more in the form of heat. For example, if a heat pump consumes 2 kW of electricity it will produce 6 to 10 kW of heat energy.

SIZING

Heat Pumps range from 2 kW to 2,000 kW output. Which one suits your application will depend on careful consideration of the following factors;

- Location – local climatic conditions will have a bearing on performance.
- Target Temperature – it's your choice, however as a guide:- exercise and/or fun pool 24 – 28 degrees C therapeutic exercise 28 – 35 degrees C spa pool 34 – 38 degrees C
- Pool Volume – the amount of water to be heated can be determined multiplying the surface area in sq. metres by the average depth (including wading areas and spa).
- Shading and exposure to wind – these can effect the heat losses and gains of heated water.
- Pool Position – indoor or outdoor
- Swimming Season – do you want to swim all year round or just extend the season?

INSTALLATION

Heat Pumps are generally installed outdoors but can be installed indoors when ducting to outside or fresh air is supplied. A fan draws in air across a coil and then expels it and this should be allowed for, especially indoors. Positioning of the heat pump should be carefully considered so that noise levels do not intrude into bedrooms.
Plumbing can be included as part of the pump/filter network or as a separate heating circuit.
Average size domestic installations generally require a single-phase electrical connection. Larger pools may require three-phase power. Where available, off-peak connection will further reduce running costs.

CONTROL

All heat pumps should have some form of flow control device to prevent the unit operating without adequate water flow.

All are thermostatically controlled with either analogue dial type units to micro-processed digital devices. These types all control the pool temperature to your desired setting with the digital devices displaying the settings more clearly. Some manufacturers also provide additional controls including time clock and/or pump interlock to ensure the most economical operation of the heat pump/pool pump.

The addition of a pool blanket is strongly recommended