

Enhanced magnetic technology increases energy efficiency for storage water heating

Water heating accounts for 13%~26% of the energy consumed in US household. In household and commercial usage, most water heaters are of the tank type which is also called storage water heaters. Energy efficiencies of storage water heater vary greatly. The overall energy factors for the electric type can be as low as 80% (mainly the horizontal type) whereas the gas system is 50%.

Although the horizontal storage water heater is not widely used in US, many Asian countries do use them widely, for example the annual units sold in China is 5 millions pcs, Singapore is 50K pcs and Malaysia is 200K pcs. Main reason for using the horizontal storage heater is it saves space as compared to the vertical tank type.

Here, we have invented a world's first innovation called *HeatSphere*. It uses our patents pending magnetic technology to weaken the inter-molecular bonding energy in fluids such as water. By weakening the molecules bonding strength, the heating efficiency or the energy factor, (as defined by the DOE 10 CFR Part 430 guidelines), is improved through accelerated movement of water molecules during the convective heat transfer process. Performance test by our Singapore's national test laboratory (an internationally recognized and accredited laboratory) has shown that our *HeatSphere* increases the energy factor by 5% for the smaller tank (38 litres) and 10% for the preferred larger 56 litre tank. Further tests on larger tank sizes are in progress.

HeatSphere is a standalone device that does not require any electric source to operate and lasts for years. By mounting *HeatSphere* inside the storage tank that operates at 3 kW for 2 hours every day, it will save 219 kWh for every storage heater annually. And if 50% of all storage heaters use *HeatSphere* in China, Singapore and Malaysia, the achievable potential energy saving is 575 million kWh annually.

Although *HeatSphere* has just been recently introduced in Singapore in early 2008, a major storage water heater manufacturer for Singapore and Malaysia markets have already started a program to install *HeatSphere* into their production line. Further, our current program in 2008 includes marketing this new technology to the China and Japan markets as well.