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*What Is the Delta T of a Two Can Stirling Engine?*

Stirling engines are an older technology that is being given a closer look as an alternative energy source. Our project started out to see if a geothermal hot springs provided enough heat to operate a Stirling engine well enough to produce electricity. Our initial tests showed that the 140 degree surface water was not hot enough to run our engine. This led us to ask the question what is the minimum temperature difference, or Delta-T, to operate a Stirling engine.

We built an alpha, or two cylinder, type Stirling engine because this type would be the easiest to change or maintain temperatures on each side of the engine. Heat is applied to one side of the engine while ice was applied to the other side of the engine. When maximum temperature was achieved we started the engine and counted the RPMs at the flywheel. We then lowered the temperature and counted the revolutions per minute (RPMs) for every 5 degrees decrease until the engine stopped running. The temperature differences were recorded, calculated, and graphed.

The minimum Delta-T that our engine ran reliably was at 123 degrees Fahrenheit. Currently the Delta-T of our engine is too great to operate with the surface water of our hot springs. However we have many ideas to try in the future that may yet enable us to produce energy with a Stirling engine and our geothermal heat sources.