The Stirling engine is a type of heat engine. In simple terms, the Stirling works by very efficiently converting heat energy to mechanical energy. It is considered to be one of the most efficient types of engine.

Any source of heat can be used for a Stirling engine, including solar, waste heat, or burning various fuels. Stirling engines are typically larger than internal combustion engines (or to put it another way, a Stirling engine typically produces less power than a similarly-sized internal combustion engine), limiting use in vehicles.

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Types

Several types of Stirling engines exist; for now we best focus on the 2 types that are most useful in development projects. These include the Alpha and the Beta type.

The Alpha type is the simplest design, and the most easy to maintain/repair. It however does use more material to build, and efficiency may be lower. Hence, it is most useful for stationary (and/or large) engines.

The Beta type is a more complicated design and more difficult to maintain/repair. It however does use less material to built, and efficiency may be higher. Hence, it is most useful for mobile (and/or small) engines.

Manufacturers

Although Stirling engines can be made DIY in developing countries,[1] in a appropriate context, it is best that any engine/device is built locally, the simply purchasing of a Stirling engine will probably be most appropriate for small projects and/or projects in locations where little factories, machine shops, garages are available. Also, Stirling engines need to be very well constructed, and have very tight tolerances, much more so than IC engines. Hence a list of Stirling engine manufacturers:

- Whispertech: Micro Combined Heat and Power
- American Stirling Company
- Stirling Technology, Inc: Ventilators
- Stirling Cryogenics & Refrigeration BV
- Stirling Process Cryogenerator
- SGL: Stirling gas liquifier
- Power Coolers
- STM Power: Combined Heat and Power Stirling engine generators
- QRMC: Sterling engine manufacturer
- Thales Cryogenics
- Coleman: Expensive coolers
- Cussons Technology
- Clean Energy Industries: Stirling engines
- Bomin Solar Research
- SOLO Kleinmoteren Gmbh
- D. Viebach
- Sunmachine
- Leybold Didactic GMBH
- Epas GmbH
- FREE BREEZE wood stove fan
Inventor Dean Kamen is developing a roughly one cubic meter Stirling-powered electrical generator (generating 1kw) which he hopes will be widely adopted for use in developing countries and rural locations.

Stirling Technology Inc has designed the first mass-production Stirling engine for developing countries.[5]

**DIY manufacturing**

Some plans to build good reliable Stirling engines are available at http://www.stirlingengine.com/links Education projects can be done using aluminum can Stirling engines (not suitable for anything else). See Hobbyist and enthusiast's Stirling engines

**See also**

- Kamen's Stirling engine

**References**

1. Understanding Stirling engines
2. Stirling engine manufacturers
3. Clean energy Stirling engines
4. Stirling engine manufacturers 2
5. Stirling Technology Inc
External links

- Wikipedia:Stirling engine