Stirling Generator RS1000

The Stirling engine is an external combustion engine that avoids the explosive shockwork of traditional internal combustion engines. As a result, it achieves high efficiency, low noise, low emissions, and low operating costs.

Unlike conventional generators, RS1000 Stirling Generator can run on a wide range of fuels – from natural gas, biogas, propane, hydrogen, and coal gas to diesel, LPG, and even solid fuels like wood. It can also harness solar thermal energy.

As long as the hot chamber reaches 180°C, the engine begins operating, delivering about 25% electricity and 70% usable heat.

- Low Noise
- Clean Energy
- 10-Year Maintenance-Free
- Works for both on-grid, off-grid, and mobile power needs.
- Solar CHP, Biomass CHP, Gas CHP - tailored for various energy ecosystems.
- Multiple units can be networked for higher capacity generation and heating.
- Matches output to real-time demand, maximizing efficiency and fuel savings.

From Military Technology to Civilian Breakthrough.

Originally developed as a strategic military technology, Stirling engine was designed for resilience, reliability, and silent performance under extreme conditions.Over time, this pioneering innovation has been refined, RIGID plays a critical role in bringing it into the civilian marketplace.

With over 10 years of expertise in Stirling engine design, assembly, and commercialization, RIGID is one of the few companies worldwide capable of civilian mass production of **Free Piston Stirling Engines**. This positions RIGID not only as a manufacturer, but as a global leader in next-generation energy solutions.

RIGID is working with world-class suppliers to expand Stirling's role in modern energy ecosystems. Expanding Global Applications:

>Solar Combined Heat & Power
>Biomass CHP
>Gas-fired CHP

Today, RIGID Technology bridges the gap between advanced defense and the urgent civilian need for clean, reliable, and distributed energy systems.

Linear Free Piston Stirling Engine Generator 1KW

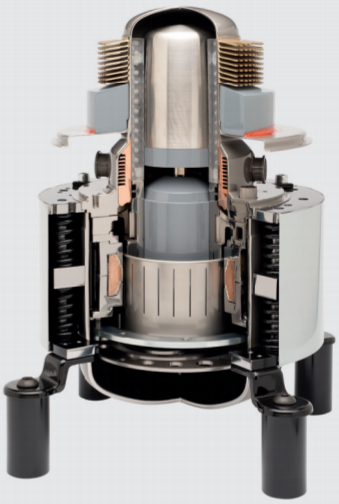
Technical Data		
Max power output	1050 watt	
Frequency / Voltage	Power AC	50/60 Hz 220-230V
	Off-grid	Inverter or battery
Generating efficiency Electric cogeneration efficiency	For Electricity	18% - 25% 95%
Net Weight	Non-combustible materials	49 kgs
Size	Non-combustible	Height:450mm; Diameter: 300mm
Emission	low emissions	National quality standards
Noise	No enclosure	52.5 dB / 1 meter distance
	With enclosure	45 dB / 1 meter distance

Compatible fuels include:

>Natural gas.
>Biogas, propane.
>Hydrogen, coal gas.
>Diesel and LPG.
>Wood and biomass.
>Solar thermal energy.

RIGID Stirling Generator RS1000 excels:

>Disaster-Prone Regions
>Critical Infrastructure
>Clean, Sustainable Energy
>Remote or Off-Grid Locations
>Renewable Energy Integration
>Scalability and Load Management
>Industrial and Manufacturing Facilities



How the Stirling Generator Works?

Unlike internal combustion engines that rely on explosive combustion, the Stirling is an external combustion engine. This means fuel is burned outside the engine chamber, creating steady, controlled heat.

When the hot chamber reaches just 180°C, the engine begins operating. Inside, helium shuttles back and forth, expanding and contracting. This movement drives a free piston that is directly coupled to a linear alternator, converting thermal energy into electricity with exceptional efficiency.

RS1000 Stirling Generator delivers:

*25% as electrical energy.
*70% as usable thermal energy.

This unique balance enables it to function not only as a power generator but also as a combined heat and power (CHP) system, offering unmatched efficiency and cost-effectiveness.