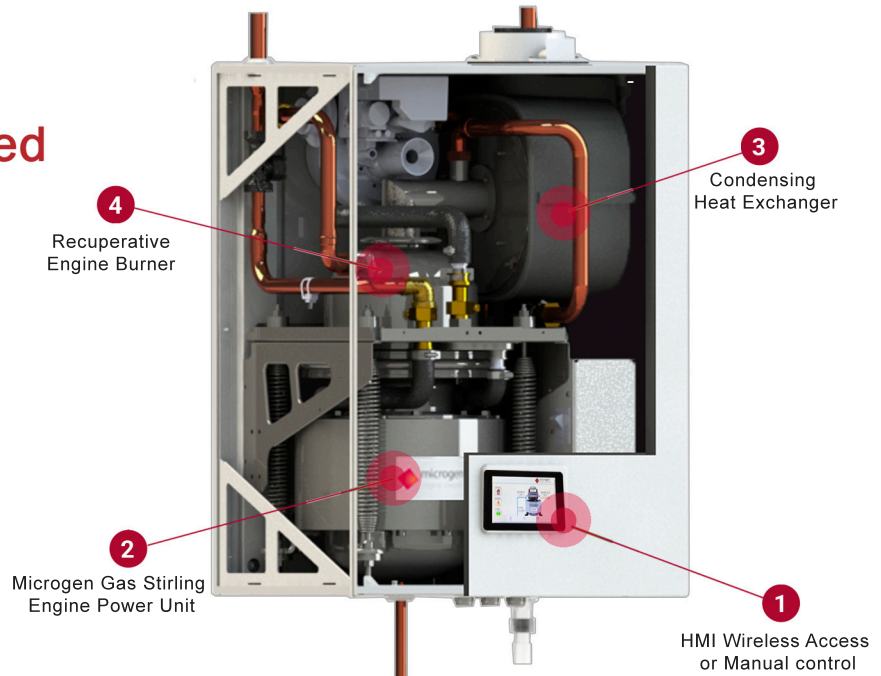




Microgen's compact gas fired Heater - Generator

The next step in the evolution of gas fired mCHP appliances.



BENEFITS



Quiet operation



Power and Heat



Clean combustion: natural gas, LPG or biogas!



For On and Off Grid situations



Autarkic living style possible in combination with Photovoltaic



Multi voltages and output currents possible (DC/AC)



Simple operation with very little maintenance. And no maintenance for the Stirling Power Unit

Microgen is the company that has brought Stirling Technology from a R&D environment to practical applications and use in real life situations. Since 2011 thousands of Microgen Stirling Power Units have been used in gasfired Combined Heat and Power heating appliances in urban domestic environments.

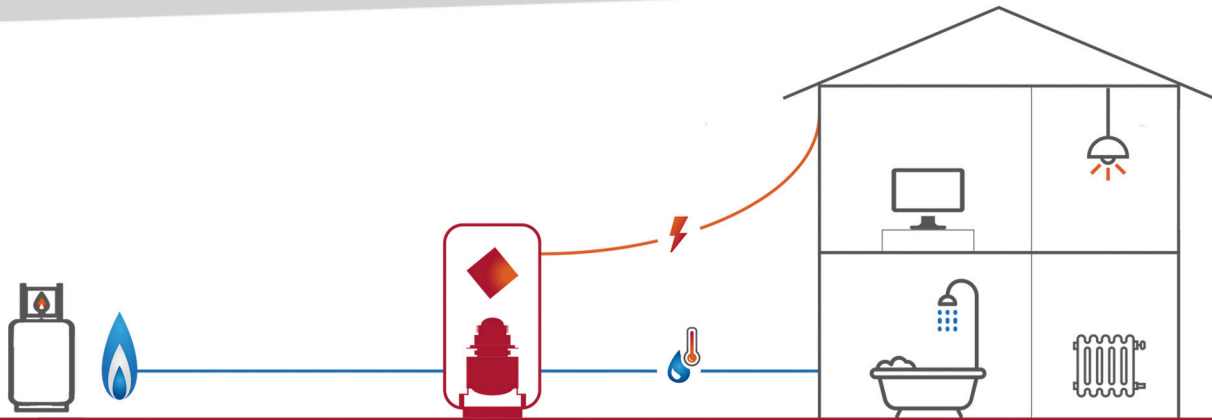
With the experience in high-heating-capacity mCHP appliances, Microgen has developed a lean, smaller, simpler and more cost effective heat - power unit. While keeping the overall efficiency high, with the main functions "heating" and "generating electricity" still in place, we have significantly reduced the size and weight compared to the original gas fired mCHP appliances, as well as complexity and number of components. Inside are still the same proven and reliable components for the gas train, burner, and small heat exchanger. ThermoGen can now be used for continuous water heating, ideal in combination with a water storage tank, or as add on to existing heating appliances.



Microgen Engine Corporation

ThermoGen 1.0kW

Cogeneration of Electricity and Heat using Gas



GAS



THERMOGEN

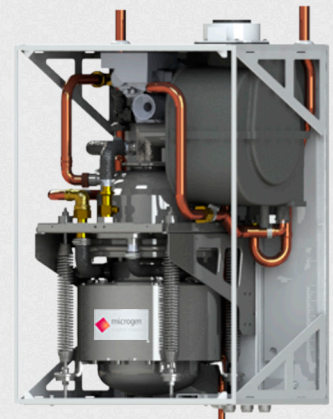


HOT WATER & POWER

ThermoGen Specifications

Power	On - Off grid Electrical Output Electrical power unit Stirling type	Various options available 1000 Watts, 50 – 60 Hz, 230 vAC Microgen Gas Stirling Power Unit Free Piston Beta type
Heat	Output	Max. 6kW Continuous
Fuel	Natural Gas Fired, LPG or (clean) Biogas	6.5 - 7.0 kW
Dimensions	Height x Length x Width	700 mm x 500 mm x 400 mm
Weight	Including Stirling unit aprox	105 Kg
Maintenance	Clean burner technology Gas Stirling Power Unit	Once per year Maintenance free
Other	Overall efficiency Emissions Noise level Remote Monitoring & control Options	>95% UltraLow CO & NOx Max 46 dBA

How it works



The flames of a small recuperative gas fired ring burner are heating the engine heat acceptors.

Another part of the engine is cooled. The temperature difference makes the (helium) displacer and power piston move, and magnets attached to the power piston give electricity. The heat from the burner is captured in the heat exchanger, and together with the heat from the engine will heat up water.



NEW BUT NOW PROVEN TECHNOLOGY

A revolution in power generation and energy efficiency: Microgen's Linear Free Piston Stirling Engine is the result of meticulous engineering and development of a high tech, game changing solid-base technology with a focus on carefree and lifelong use. The engine can be combined with numerous heat sources, like gases, biomasses, solar, and is maintenance free over its life. Since the production start in 2010 the gas application has been installed thousands of times and massive relevant experience has been built up in engine production, gas combustion and appliance manufacturing. Our installed engines operated over 250 million run hours combined. Besides the proven 1kW Engine, now an identically sized 1.7kW Engine based on precisely the same technology is available too. The engines come with Microgen's developed and patented Engine Controls and can operate on- and off grid.