Screw-Expander ORC Generator Set / Turbine ORC Generator Set

Clean Renewable Energy Created Through Waste Heat and Residual Pressure.

About Hanpower Energy

Hanpower Energy Technology Co., Ltd. was established in 2015. The company combines Taiwan's advanced precision machinery, refrigeration and air-conditioning, and electromechanical industry professionals, and it has entered into a long-term technical development and research contract with Industrial Technology Research Institute in Taiwan. At the same time, it has established strategic alliances and technical collaboration with foreign enterprises to fulfill industrial energy saving, power generation, renewable energy development, and economic efficiency requirements and provide stable equipment and reliable services.

Hanpower Energy primarily engages in the development of low-level thermal energy power generation equipment and systems integration, with Organic Rankine Cycle (ORC) and back pressure steam generator sets as the main products. Adhering to the spirit of innovative R&D and green environmental protection, the company continues to improve technologies and applications of waste heat and residual pressure power generation products to fulfill future changes in energy applications and face challenges arising from the low-carbon economy. Moving towards the goals of product varieties and worldwide business, the company is entering the international market as one of Taiwan's innovative green energy industries.

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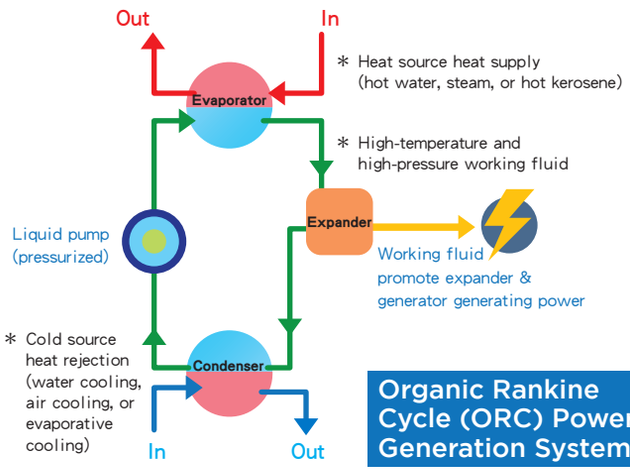
Organic Rankine Cycle (ORC) Power Generation System

The Organic Rankine Cycle (ORC) Power Generation Systemuses suitable working fluid (e.g., refrigerant, alkanes) according to the temperature range of the heat and cold source. Electricity is generated due to the temperature difference when converting between heat and cold source. The ORC generation system has simple structure, mature technology, excellent reliability, and high utilization rate. It is a highly efficient and extremely economical effective way to generate power within the low temperature difference power generation methodology. Therefore, the ORC system has been widely applied for waste heat conversion in industrial processing (e.g., steam condensate, hot water, low-pressure steam, hot oil) and for medium and low-temperature thermal energy conversion in renewable energy field (e.g., geothermal, biomass thermal, solar energy).



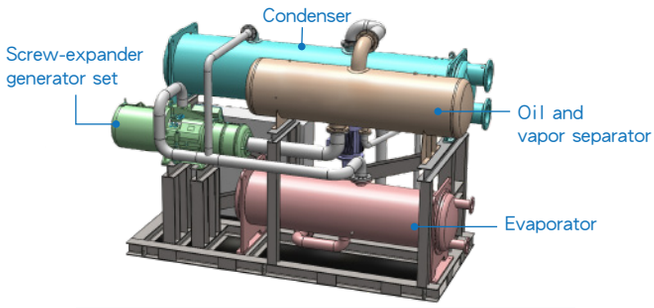
Organic Rankine Cycle (ORC) Power Generation System

Product Introduction

Screw-Expander ORC Generator Set

Hanpower Energy engages in research and production based on different cold/heat source and power design parameters, which provides “semi-hermetic screw ORC induction (asynchronous) generator” and “open screw expander ORC synchronous generator” with “screw-expander generator set” as its core engine. Supplemented by an evaporator, condenser, oil and vapor separator, and control system, the generator set is embedded with programmable logic controller as the hub for adjusting the main components’ working conditions. Due to the advantage of rapid power grid connection, it is able to achieve energy saving and environmental protection.

Power generation range: 10kW~300kW.

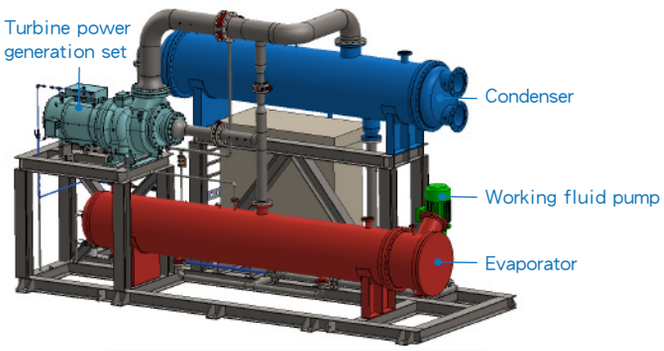


Configuration Diagram of Screw-Expander ORC Generator Set

Turbine ORC Generator Set

Hanpower Energy provides the “semi-hermetic turbine ORC induction (asynchronous) generator,” with an “axial turbine” as the engine core. Due to its semi-hermetic structure, there are no working fluid leakage or shaft centering issues, neither is a cooling fan needed. Users’ various needs for power could be fulfilled due to its high heat efficiency and high reliability characteristics.

Power generation range: 150kW~1500kW.



Configuration Diagram of Turbine ORC Generator Set

Product Features

Automated Following and Control System

Automatically track cold and heat source changes and quickly respond to maximize thermal energy utilization.

Wide Operation Range

Operated at the rated power generation of 10~120%, it is applied in situations where cold and heat sources are stable or subject to large fluctuations.

Smart Self-protection System

Auto detect working conditions and unexpected events, and able to automatically adjust to protect the unit.

Long Lifecycle

The unit could be used for more than 20 years, and stable to operate with easy maintenance.