POWERLINK
Power Systems
Power Link the World

Biogas Cogeneration

RELIABLE • ENVIRONMENTAL • POWER • HEAT

POWERLINK
Power Systems

www.powerlinkenergy.com
info@powerlinkworld.com

Electronic Brochure

If there is technical data change without notice, please contact POWERLINK company or your local agent for more details.

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ABOUT US

PowerLink, founded in 2001, is a manufacturer focusing on gas cogeneration. PowerLink is committed to provide global users with advanced technology and excellent quality distributed Cogeneration Equipment and system solutions for natural gas and biogas. There is one R&D center and three manufacturing factories across the world. PowerLink has a global distribution marketing network with more than 200 sales service providers in more than 100 countries, and has set up subsidiaries in China, the United Kingdom, the United States and Australia. PowerLink insists on providing professional and high-quality products and services for global users, and on providing advanced, environmentally friendly, safe and valuable green energy products and systems for users.

PowerLink Natural Gas Cogeneration is suitable for industrial users such as hotels, hospitals, schools, clubs, large-scale commercial organizations and factories. It can provide users with a system solution of cogeneration of heat,power and cold. The power ranges from 10 Kw to 2000 Kw. It belongs to advanced distributed energy products. It can provide users with a new choice of energy supply. Compared with traditional energy, the cost of energy is greatly reduced.

PowerLink biogas cogeneration is suitable for anaerobic fermentation of organic matter in agriculture and animal husbandry or biogas power generation in COD degradation process of industrial organic wastewater. The output power of the unit is from 50Kw to 2000 Kw. The generated power can be used for self-use or residual power transmission grid or all transmission grid. It belongs to advanced renewable distributed energy products and installed in large quantities in industrial and agricultural users.

PowerLink Gas Generator is suitable for natural gas, petroleum associated gas and low calorific value gas fuel. Its power output ranges from 12 Kw to 2000 Kw. It provides a complete solution for petroleum exploitation, traditional energy substitution and energy regeneration.

From concept to finished product delivery, we strictly implement the product quality system of ISO 9001:2000. Every product has passed strict and standard manufacturing, testing and inspection to ensure reliable quality.

PowerLink is not only a single equipment manufacturer, but also a solution provider for energy systems in various industries. It develops, manufactures, distributes, run projects, provide services, and invests in distributed energy resources in the field of energy equipment. PowerLink has become a global advanced, green, environmentally friendly and safe energy system supplier.

POWERLINK Biogas Cogeneration

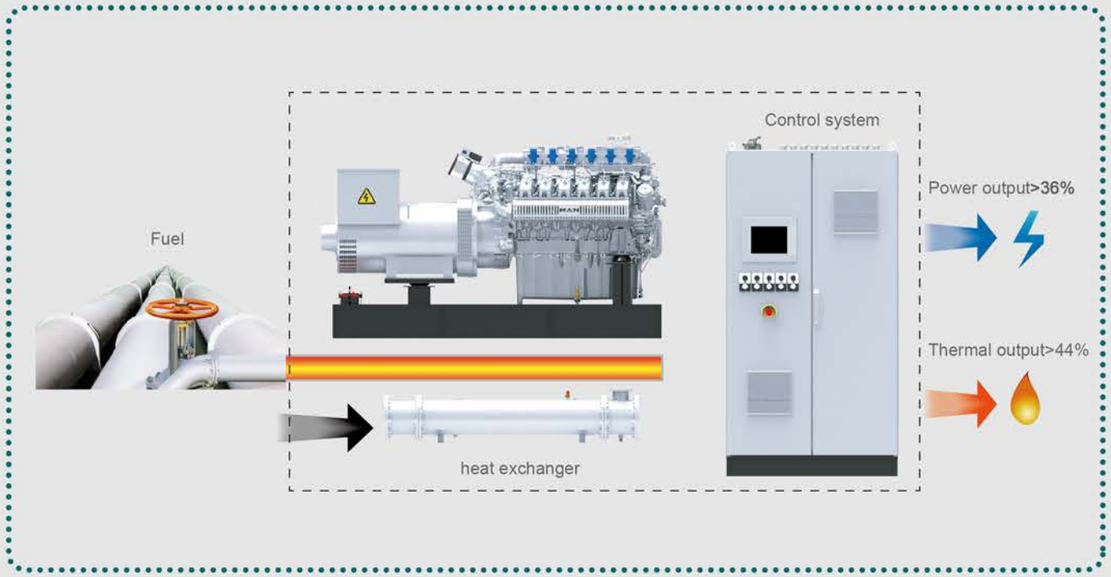
The energy supply equipment not only provides electric energy, but also provides heat energy, which is called CHP. The mechanical energy can be converted into electricity energy and heat energy, and heat energy can be used for heating, refrigerating or producing steam. The combined utilization of heat and power can increase the comprehensive utilization efficiency of energy to more than 90% in the process of power generation, so as to avoid the energy dispersion into the atmosphere. It can save as much as 40% of the primary energy and reduce carbon dioxide emissions by 60%. This is the reason why CHP is highly efficient and environmentally friendly.

POWERLINK Biogas Cogeneration

Efficient and environmentally friendly energy utilization technology

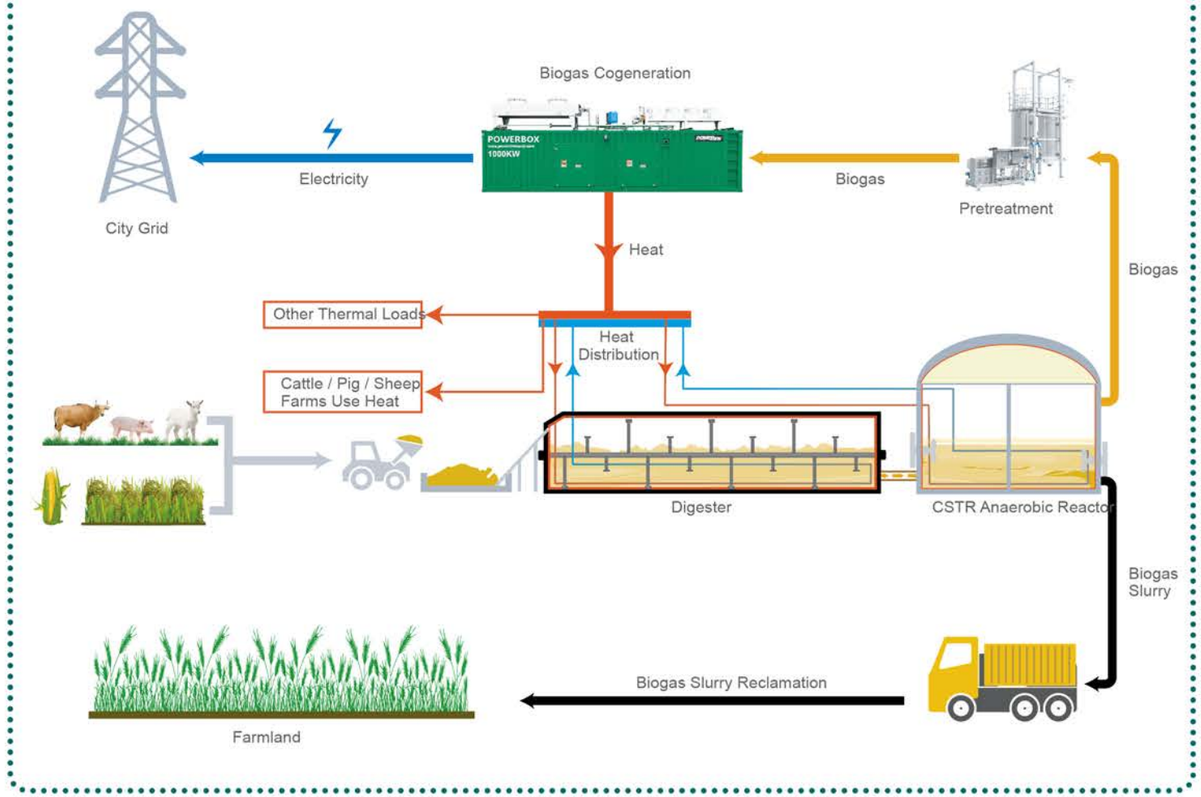
- Applied in agriculture, animal husbandry, organic waste water, garbage burying and other fields, thereby providing electricity energy and heat energy for biogas engineering, and improving the comprehensive benefit of power plant.
- Realize the Steam, heat and electricity are three kinds of energy being produced on a cascade utilization, the heat generated from POWERLINK biogas cogeneration is fully used. The comprehensive utilization of energy will be raised to more than 80%.
- Compared to conventional coal-fired and fossil fuels, POWERLINK biogas cogeneration uses lean combustion technology and NOx and CO2 emissions are reduced by 60%-80%, and dust emissions closer to zero.

Efficiency of biogas cogeneration



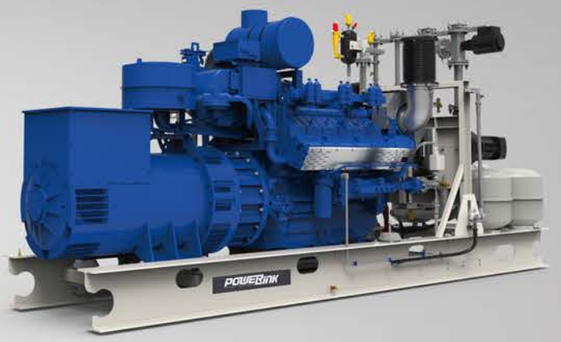
POWERLINK biogas cogeneration has been widely used in various fields, mainly includes:

- Agricultural field: corn straw, rice straw, wheat straw, watermelon vine, greenhouse and so on.
- Livestock industry: pig farms, cattle farms, chicken farms, sheep farms, farmhouse and so on.
- Industrial Organic waste water: brewery, paper mill, food factory, palm oil factory, etc.



Open set

Electric power: 50kWe-2000kWe
Thermal power: 69kwt-2019kWt



Soundproof

Electric power: 50kWe-560kWe
Thermal power:69kwt-716kWt

Container

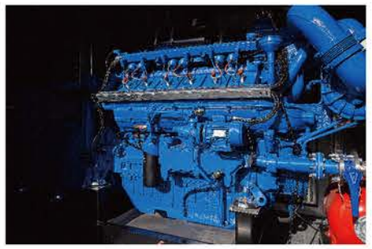
Electric power: 50kWe-2000kWe
Thermal power:69kwt-2019kWt

Modular design

The fuel input system, the power output system and the heat output system are designed with modular structure, which is convenient and fast to install and quick to use. The overhaul door is removable, and the outdoor unit can be dismounted at any time. It can be used outdoors without the computer room. It is easy and convenient.

Ultra low noise, does not affect the surrounding environment

Industrial muffler can reduce the noise value 12-20dB (A) The unit is equipped with noise proof cotton, which can effectively reduce the noise of the unit.

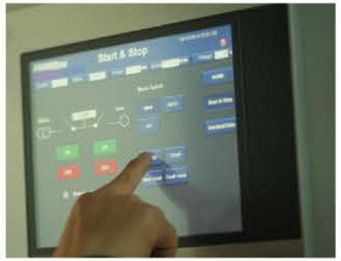


Low emissions, comply with environmental protection requirements

Lean combustion technology improves CO2 emissions, and the thermal efficiency can be increased by more than 8% compared with the general equivalence ratio of the engine. It can effectively reduce the CO and HC in the emission, and inhibit the high temperature conditions for NOx production.

Technical characteristics of POWERLINK biogas cogeneration

Modular design can be quickly installed, put into use, ultra-low noise, low emissions, meet the environmental requirements; flexible grid technology...



Flexible grid connection technology

The PCC300 control system has flexible grid connected control technology, which can be used for meeting the island mode and the synchronizing mode without restrictions.

Advanced waste heat recovery and utilization system

The operation of the unit generates electricity, which can meet user demands, at the same time the engine water jacket would discharge the excess of waste heat. Refrigerant equipment would take full advantage to utilise and to fully recover through the heat exchanger and the waste heat boiler, which would provide the users with heating and cooling energy simultaneously.

Fan frequency conversion control technology

In the low temperature environment, the wind turbine does not need to start, and only part of the fan gets started in the mid-temperature environment, which not only meets the power of the unit, but also reduces the fuel consumption.

POWERFUL ENGINE

High Durability

- **Coupling connection**

  The engine and generator are elastically connected by couplings, which bear the torque and load fluctuation, and limit the torque to the actuator overload

- **Integral lubricating oil filtration system**

  The engine is equipped with high performance filters to remove dust, metal particles, carbon deposits and other components in the engine oil, which effectively slows down the wear of crankshaft and other parts, and extends the service life

- **High strength chassis**

  The engine and generator base made out of the whole steel structure have high strength and good endurance

- **Damping rubber pad**

  A high performance damping pad is installed between the engine and generator and chassis. The new vibration proof capability of the unit meets the requirements of GB/T2820.9

- **Elastic ripple management**

  Installed in the engine exhaust manifold and muffler, the entire exhaust system contains elastic connections, damping and noise reduction facilities, all contributes to a longer life of the product effectively

Professional air intake and exhaust design, good cooling effect

Low noise, does not affect the surrounding environment

Fully automatic unattended, automatic start and stop

The unit runs stably, reliably and continuously

1. Gas inlet safety valve group
2. Exhaust louver
3. Gas leakage protection device
4. Lubricating oil filtration system
5. Air filter

High Safety

POWERLINK biogas cogeneration is equipped with a variety of sensors, safety valves, set control, measurement and safety functions in one unit

- **Knock control system**

  The detonation controller has a sensor which sends the analog signal to the ignition system after processing to adjust the ignition timing, and reduces the load or stop, to avoid the occurrence of detonation.

- **Gas leakage protection device**

  If gas leakage occurs, the gas pipeline will be automatically cut off and alarm signal will be send out.

- **Lightning protection device**

  The lightning protection device is introduced to protect the equipment and personnel from lightning stroke.

- **Smoke alarm system**

  Timely detection of smoke concentration inside the unit, once detected excessive smoke, immediately set off an alarm to prevent fire spread or explosion.

- **Electric inlet and exhaust louver**

  Contains an automatic controlled exhaust, automatic shutdown system when the unit fails, and opens back up when in use. The automatic adjustment system will be stored within the unit when not in use to prevent the entry of small animals. During the event of gas leakage, the automatic closing prevents the air from being isolated in the unit, which therefore prevents explosion.

BIOGAS COGENERATION

Intelligent Control

Advanced control unit

Micro processing electronic ignition control system and speed control system, omni directional detection, control and protection.

Local or remote login detection and control unit.

Scalable input / output control to meet customer localization requirements.

The whole life cycle of the Internet of things management system, understanding of CHP related information.

Automatic oil filling system

The oil level controller monitors the oil level of the engine. When the value is lower than the set value, the auxiliary oil tank will automatically refuel and stop after the set value is reached. The oil level controller is built with a large inspection window, which makes it easier to during checks.

GXC series

High performance price ratio

Product features

- Market positioning is high value, electric power covers from 50~1000kWe
- Lean combustion technology is adopted for high efficiency and low emission
- Modular structure design, can be quickly installed and put into use
- It has three design structures, open, soundproof and outdoor, which can meet the different requirement of the application environment
- PCC300 control system, advanced intelligence, which reduces labour cost
- Automatic filling of the oil system to ensure the long duration of the unit running time
- Continuous operation up to 6000h, overhaul cycle 30000h
- It is mainly used in agriculture and animal husbandry, and provides power and heat for biogas project

GXC series type spectrum

Model	Electric power/kWe	Thermal power/kWt	Electric efficiency	Thermal efficiency	Total efficiency
GXC50-6BG	50	69	35.50%	49.00%	84.50%
GXC100-6BG	100	138	36.20%	50.50%	86.20%
GXC150-6BG	150	207	35.30%	48.80%	84.10%
GXC200-6BG	200	272	37.20%	50.60%	83.80%
GXC250-6BG	250	319	37.00%	47.20%	84.20%
GXC350-6BG	350	429	38.10%	46.70%	84.80%

Notes:

1) The above data is for reference only, for precise data please see the technical specification; 2) Based on the data of methane value: MN>100, low thermal value: LHV = 21.6MJ/Nm3.

CG series

High value

Product features

- Market positioning is high value, electric power covers from 66~1000kWe
- Lean combustion technology is adopted for high efficiency and low emission
- Modular structure design, can be quickly installed and put into use
- It has three design structures, open, soundproof and outdoor, which can meet the different requirement of the application environment
- PCC300 control system, advanced intelligence, which reduces labour cost
- Automatic filling of the oil system to ensure the long duration of the unit running time
- Continuous operation up to 8000h, overhaul cycle 50000h
- It is mainly used in agriculture, animal husbandry and organic waste water to provide power and heat for biogas project

CG series type spectrum

Model	Electric power/kWe	Thermal power/kWt	Electric efficiency	Thermal efficiency	Total efficiency
CG66-6BG	66	93	36.50%	45.00%	81.50%
CG100-6BG	100	135	37.80%	45.00%	82.80%
CG200-6BG	200	342	38.70%	47.00%	85.70%
CG220-6BG	220	221	40.50%	44.00%	84.50%
CG350-6BG	350	376	40.00%	43.00%	83.00%
CG430-6BG	430	481	39.30%	43.00%	82.30%
CG520-6BG	520	654	40.00%	43.00%	83.00%

Notes:

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TCG series

High value

Product features

- Market positioning is high value, electric power covers from 600~2000kWe
- Lean combustion technology is adopted for high efficiency and low emission
- Modular structure design, can be quickly installed and put into use
- There are two kinds of design structures, open and outdoor, which can meet the different requirement of the application environment
- PCC300 control system, advanced intelligence, which reduces labour cost
- Automatic filling of the oil system to ensure the long duration of the unit running time
- Continuous operation up to 8000h, overhaul cycle 48000h
- It is mainly used in agriculture, animal husbandry and organic waste water to provide power and heat for biogas project

TCG series type spectrum

Model	Electric power/kWe	Thermal power/kWt	Electric efficiency	Thermal efficiency	Total efficiency
TCG600-BG	600	594	42.7%	42.3%	85.0%
TCG800-BG	800	791	42.8%	42.3%	85.1%
TCG1000-BG	1000	1007	42.0%	42.3%	84.3%
TCG1200-BG	1200	1248	42.1%	43.8%	85.9%
TCG1560-BG	1560	1642	41.8%	44.0%	85.8%
TCG2000-BG	2000	2019	42.9%	43.3%	86.2%

Notes:

1) The above data is for reference only, for precise data please see the technical specification; 2) Based on the data of methane value: MN>100, low thermal value: LHV = 21.6MJ/Nm3.

Cases

The field of agriculture and animal husbandry biogas -- 75kW power generation project

- CHP: 1x GXC75C-BG
- Electrical output mode: low voltage Internet
- Field / fuel: Cogeneration / Biogas
- Total output electric power: 75kWe

2MW electric heat steam cogeneration in organic wastewater field

- CHP: 2xCG1000S-BG
- Electrical output mode: 10.5kV high voltage Internet access
- Field / fuel: Cogeneration of heat and steam / Biogas
- Total output electric power: 2 Mwel

Cattle farm 200kW cow manure anaerobic fermentation project

- CHP: 1xGXC200S-BG
- Field / fuel: Cogeneration / Biogas
- Electrical output mode: low voltage Internet
- Total output electric power: 200kWe

Farm 1.1 biogas generating unit project

- CHP: 1xCG1000S-BG, 1xCG100S-BG
- Electrical output mode: low voltage Internet
- Field / fuel: Cogeneration / Biogas
- Total output electric power: 1.1 Mwel

1MW landfill gas generating unit project

- CHP: 1xPB1000S-BG
- Field / fuel: Garbage power generation / landfill gas
- Total output electric power: 1 Mwel

Funing, Jiangsu

- Pig farm 500kw Biogas Cogeneration Project
- Biogas Cogeneration: 2*GXC250C-BG
- Field / fuel: Farming/biogas
- Total output electric power: 500kW

Zhenghe, Jiangxi

- Farm, 2MW Biogas Cogeneration Project
- Biogas Cogeneration: 2*CG1000S-BG 1*CG1001S-BG
- Field / fuel: Farming/biogas
- Total output electric power: 2MW

Biogas Application Case

Sanfeng, Chongqing

- Waste treatment, 1.8MW Biogas Power Generation Project
- Biogas Cogeneration: 3*TGE600-BG
- Field / fuel: Waste treatment / biogas
- Total output electric power: 1.8MW

Gansu cattle farm

- Cattle farm 150kw Biogas Power Generation Project
- Biogas Cogeneration: 1*GXC150C-BG
- Field / fuel: Farming/biogas
- Total output electric power: 150kW

Wankai, Zhejiang

- Industrial organic wastewater 200kw Biogas Power Generation Project
- Biogas Cogeneration: 1*GXE200C-BG
- Field / fuel: Industrial organic wastewater/biogas
- Total output electric power: 200kW

Biogas Application Case

Yucheng, Shandong

- Cattle Farm 2MW Biogas Power Generation Project
- Biogas Cogeneration: 4*CG500DS-BG
- Field / fuel: Livestock manure/biogas
- Total output electric power: 2MW