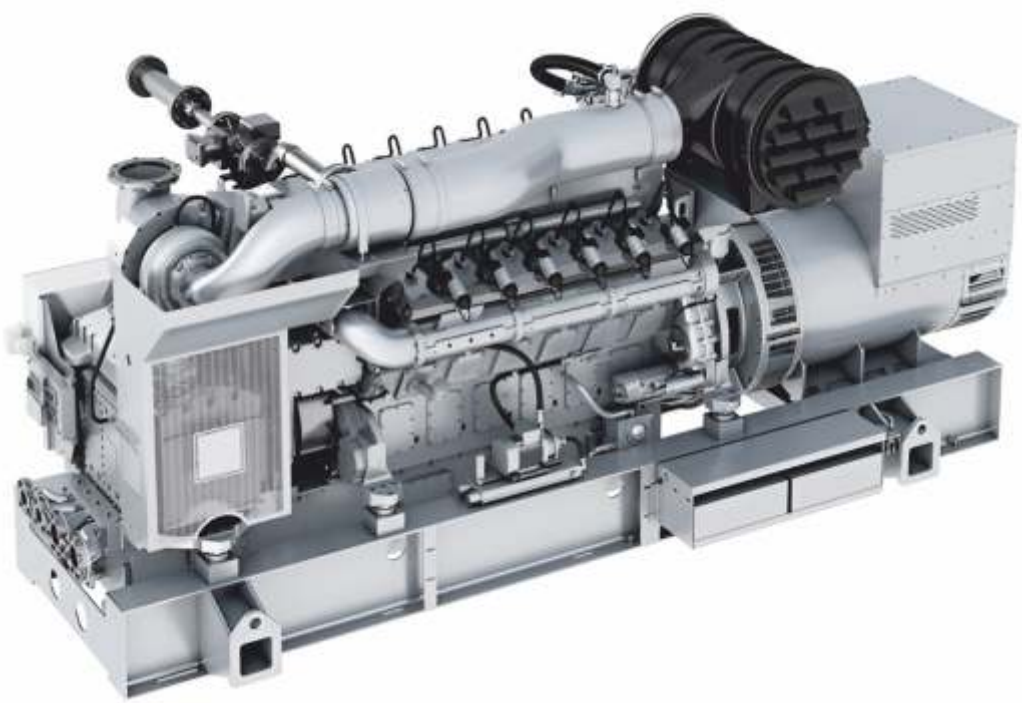
www.ggegenset.com | www.ggepower.com

GGE®

Green Gas Equipment


Sustainability Efficiency



ENVIRONMENTAL SOLUTIONS

CHP Solutions from GGE World's most reliable and fuel efficient gas genset - natural gas & bio gas Solutions

Natural & Bio Gas Gensets 30 KW e to 2000 KW e

As a well-known provider of biogas and energy management solutions for various industries, we have built up a wealth of expertise over the years. This also greatly benefits our customers in the biogas industry. During both planning and commissioning, we synchronize the activities of all partners, be it for a small farm, medium-sized cooperative or large industrial plant. And at the same time we work very closely together with plant builders and system integrator

Guascor Gas Gensets Range 300 Kwe to 2000 Kwe

Electrical KW	KVA at 0.8 p.f.	Rated Amperes at 415V, 0.8 p.f.	Mechanical Brake KW	Engineer Model	No. of Cylinders	Bore mm	Stroke mm	Cylinder Volume Ltrs.	Compression Ratio	Length mm (A)	Width mm (B)	Height mm (C)	Weight Kg.
300	360	521	314	SGE-18SL	6	152	165	18	118.8 : 1	3024	1226	2210	3885
400	500	696	419	SGE-24SL	8	152	165	24	118.8 : 1	3658	1235	2268	4795
600	750	1040	630	SGE-36SL	12	152	165	36	118.8 : 1	3830	1664	2150	6530
808	1010	1400	838	SGE-48SL	16	152	165	48	118.8 : 1	4396	1664	2184	8450
945	1180	1650	985	SGE-56SL	16	152	165	56	118.7 : 1	4670	1670	2817	9780
1000	1250	1758	1033	SGE-42HM	12	160	175	42	118.9 : 1	4865	2155	2373	10735
1200	1500	2100	1240	SGE-56HM	16	160	175	56	12 : 1	5800	1670	2817	11200
1300	1625	2100	1360	SGE-56HM	16	160	175	56	12 : 1	5800	1670	2817	11200
2012	2515	3500	2065	SGE-56HM	12	195	240	86.1	13.5 : 1	6056	2043	2075	25000

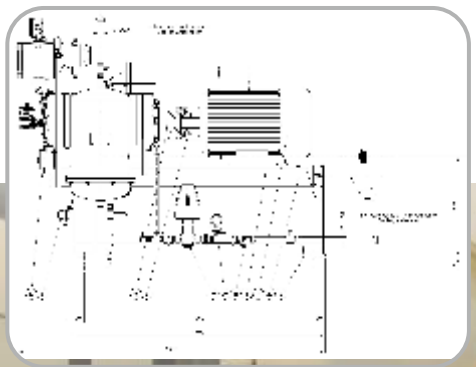
BIOGAS COMPRESSORS FOR ANAEROBIC DIGESTERS

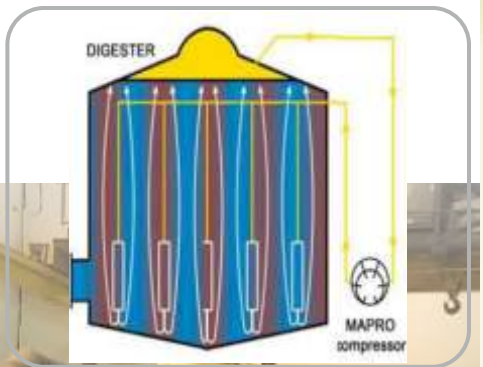
Anaerobic digestion is a biological process in which microorganisms break down biodegradable material in the absence of oxygen.

It is used as part of the process to treat effluents, sewage sludge,and almost any organic material. It takes place into digesters where the process produces a biogas, mainly consisting of methane and carbon dioxide.

GGE sliding vane rotary compressors are widely used for the agitation of the digester contents.

GGE compressor sucks the biogas from the digester dome and re-inject it at the bottom of the digester, thus providing uniform mixing.





COMPLETE & COMPREHENSIVE SOLUTION FOR BIOGAS TO POWER GENERATION

MEMBRANE TYPE GAS HOLDERS

GGE is the largest manufacturer and supplier of Double membrane biogas holders in India. The fabric of the membrane is especially imported. The double membrane gas holder like its name suggests has an inner membrane which is holding the gas. This membrane is H2S resistant, has low permeability and high tensile strength. The space between the inner membrane and outer membrane is filled with air by means of blowers. The outer membrane is exposed to sunlight and is designed to be UV protected, with high tensile strength. The inner membrane expands or contracts depending upon the quantity of gas in the holder.

The gas holder has the required safeties for high pressure and vacuum as per duty requirement. It also has a level indicator that provides remote readings through a SCADA and can control the blowers feeding the gas to the holder or withdrawing gas from the holder as the case may be. The gas holders are individually designed and fabricated for each project based on the size, pressure and flow taking into account the ambient temperature, wind velocity etc.

Both the membranes are fastened to the foundation by means of a ring with bolts.

GGE has a well experienced team of engineers and technicians to carry out the installation and commissioning of the gas holders. GGE offers both types of gas holders, stand alone type which is installed on a foundation and digester mounted gas holder dome as per clients requirement.

General Specifications:

Volume: 10 - 15,000 M3, Pressure: 3 - 30 mbar

Gas Flow: Based on System Requirement

Salient Features:

1. Membrane made of double-sided PVC coated polyester fabric, UV, microbial, H25 resistant, flame retardant.
2. High Tensile Strength with an expected life more then 10 years.
3. The design is made on a special computer with stress chart available to the client in case they need to get a consultant client approval.
4. Membranes are cut to the required shape and then welded with a European high frequency electronic welding machine to get the desired shape.
5. Fastest deliveries compared to any other manufacturer the world over.

FLARE SYSTEM

Bio-Gas Flares help to protect the environment and also provide safety to your plant. GGE Manufactures automatic self ignition and manual type flares. GGE flares are capable of burning low methane Biogas and have a high turn down ratio.

General Specifications:

Range - 5 M3/hr to 5000 M3/hr, Gas Pressure - 0 mbar 500 mbar

Type - Manual, Semi automatic and Fully automatic, Configuration - Open and Enclosed

FLARE ARRESTORS

Flame arrestors are required to be installed as a safety device in order to ensure that there is no flame travel through the biogas line from one equipment to the next. Normally flame arrestors are recommended to be installed before and after every major equipment.

GGE manufactures fabricated type flame arrestors which can be opened for cleaning or replacement of the element.

General Specifications: Suitable for Pipelines of 25mm to 600 mm

BIOGAS CLEANING AND

BIOGAS SCRUBBER FOR H2S REMOVAL

Hydrogen sulfide (H2s) is a highly toxic and corrosive gas. It is also a major pollutant. Sweetening of biogas is essential before it can be used in the boiler, genset or for upgradation. GGE Offers Biogas Scrubbers for removal of H25 from the gas. Scrubbers can be of different types Chemical, Bio Chemical or Biological. GGE can offer all types of scrubbers, however selections must be made, based on the substrate, H25 content, gas generation, capital cost and operating cost considerations.

General Specifications:

Inlet H2S < 3 %, Outlet H2S < 200 ppm, Flow 10 m3/hr - 3000 m3/hr.

GGE manufactures Chemical Scrubbers in house . The Scrubber is skid mounted with a small footprint and plug and play design. It requires no civil work apart from a shed and foundation.

The principle of operation is based on the neutralization of H25 with Caustic Soda (NaOH) solution.

General Specifications:

Input H2S< 10,000 ppm, Output H2S< 200 ppm, Flow Upto 2000 m3/hr

Salient features:

1. Low Capital Cost.
2. No Civil Work or Construction requirement.
3. Immediate operation after installation as no dependence on bacterial growth.
4. Low Power and Water Consumption.
5. Effluent is a neutral salt unlike other systems.

CERAMIC FILTERS

Biogas is contaminated with minute dust particles. This dust can damage equipment that is using or processing the biogas. Ceramic filters need to be installed in line to clean the gas.

GRAVEL FILTERS

Foam can cause blockage of pipes, malfunction of instruments and can be harmful for the biogas equipment. GGE manufactures Stainless Steel Gravel Filters that remove foam and dust from the pipeline.

General Specifications:

Gravel Sizes: As per design requirement
Pipeline Size: 25mm to 600mm
Type: Manual or Auto Drain

CONDITIONING EQUIPMENT

BIOGAS DEHUMIDIFIER

GGE manufactures Biogas Dehumidifiers to reduce the

water content / Relative Humidity in the Biogas.

Biogas generated from the digester is fully saturated and

contains impurities like H2S.

H25 and water forms acids which are very harmful for all the equipment that comes in contact with the biogas. In order to reduce the damage due to the moisture a dehumidifier is a necessity in a plant whether for upgradation or for CHP.

General Specifications:

Flow: 50 m3/hr to 3,000 m3/hr.

Biogas Cooled to < 6 C

Biogas Temperature at Outlet > 28 C

Salient features:

1. Critical Equipment made in Stainless Steel
2. Regenerative type Heat Exchanger to reduce power consumption

MOISTURE TRAPS

Since biogas is normally fully saturated, it is important to remove its moisture. GGE manufactures passive type, low pressure drop moisture traps. It is generally recommended to install moisture traps every 30 meters of pipe line and before most critical equipment.

General Specifications:

Suitable for Pipelines of 25 mm to 600 mm

Type: Manual or Auto drain.

System Capacity: As per project requirement.

AGITATORS AND MIXERS

GGE Offers imported propeller type mechanical agitators and mixers most suitable for wet type anaerobic digesters. The agitators are suitable for upto 12 % solids. most suitable where the digestrate is from Agro, MSW, Mixed Waste, Cow & Pig Manure or Chicken Litter.

Agitators available are Submersible in Digester or External Mounting Horizontal, Vertical or Lateral. GGE also supplies the mounting arrangement to suit the digester.

General Specifications:

Power Rating: 3 KW to 18.5 KW

RPM : 325

Salient features:

1. Double sealed submersible agitators with epoxy or Stainless Steel body.
2. Stainless Steel Propeller with self cleaning profile.
3. Gear Driven with automatic lubrication and cooling system.
4. Complete arrangement with Guide rail, Service Box, Mounting bracket and Electrical or Mechanical Lifting arrangement available.

SUBMERSIBLE PUMPS

GGE offers imported Submersible Pumps for feeding the digester from the settling tank. The pumps serve the purpose of pumping the digestrate to the digester

General Specifications:

Power: 3 - 18.5 KW , Flow: Upto 200 m^3/hr, Pressure: Upto 2 bar

Salient features:

1. Digester is fed smaller organic particles reducing the retention time.
2. Particularly useful for Agro, Kitchen, Sewage and Abattoir wastes.
3. Reduces the clogging ofthe pipelines and settling at the bottom of the digester.

SEPARATORS

GGE Offers imported Separators for the mechanical separation of solid and liquid fractions.

Due to its robust design it can handle all types of livestock manure and biogas slurry with ease, there by resulting in high yield of very dry solids. The liquid fraction can be recirculated to the digester if necessary or can be sold as a liquid fertilizer. The separated dry matter can be converted to compost after pasteurization or directly sold.

General Specifications:

Power: 2.2 KW-23.5 KW.

Separation :Size 0.25 mm to 1 mm.

Salient features:

1. Rugged and Reliable design to suit any kind of slurry and particle size.
2. Lowest power Consumption fora high throughput.
3. Reduces odour and health risks. Reduces the water consumption while generating revenue for the plant.

THERMAL HYDROLYSIS

Thermal hydrolysis involves heating and pressurizing sludge to break down organic matter, making it more digestible for anaerobic digestion and improving biogas production. Thermal hydrolysis increases biogas production, improved sludge dewaterability, and reduced sludge volume.

SOLAR SLUDGE DRYING

Solar sludge drying focuses on using solar energy to reduce the moisture content of sludge, typically from wastewater treatment plants, for volume reduction, pathogen reduction, and potential reuse.

Benefits: Energy Efficiency: Compared to conventional thermal dryers, solar drying consumes significantly less energy.

Environmental Friendliness: Reduces reliance on fossil fuels and greenhouse gas emissions. Cost Reduction: Lower operating costs and potential for long-term cost savings.

Volume Reduction: Drying reduces the sludge's bulk, simplifying storage, handling, and transportation. Pathogen Reduction: Solar drying can help reduce pathogens in the sludge.

Special Equipment for Sewage Treatment & Waste treatment Plants

DECANTER

Decanter are primarily known for their ability to separate solids from liquids, a crucial process in various industries like biotech, mining, and wastewater treatment. separates solid and liquid phases of a mixture using centrifugal force. The process involves feeding the mixture into a rotating bowl, where centrifugal force causes denser solids to settle on the bowl's inner wall while the lighter liquid phase moves towards the center. A screw conveyor continuously moves the solids to the discharge end, while the clarified liquid is separated and discharged through separate outlets.

CERTIFICATE OF REGISTRATION

This is to Certify that the Quality Management System of

GGE GENSET PVT. LTD.

REGD. OFFICE : 26/24, EAST PATEL NAGAR, NEW DELHI - 110008
FACTORY : PLOT NO. 184, PHASE IV, UDYOG VIHAR, GURGAON - 122016, HARYANA, INDIA

has been assessed and found to be in accordance with the requirements of

ISO 9001:2015

This Certificate is valid for the following scope

MANUFACTURER, TRADER AND SERVICE PROVIDER OF GAS GENERATOR, MEMBERANCE GAS HOLDER, BIOGAS COMPRESSORS, MIXERS AND PUMPS H2S SCRUBBER, FLARE SYSTEM, MIOSTURE TRAP, FLAME ARRESTER, GLASS FUSED STEEL TANKS

Certificate Number: SCPL3005

Date of initial registration : 20.09.2021 Date of Issue : 14.09.2024
Certificate Expiry : 19.09.2027 Recertification Due : 19.09.2027

Authorized Signatory

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This Certificate is property of SIGMA CERTIFICATION PTY. LTD and remains valid subject to satisfactory surveillance audits. Certificate can be verified on www.sigma-au.com

CERTIFICATE OF REGISTRATION

GGE POWER PVT. LTD.

ISO 9001:2015

Authorized Signatory

BIOGAS FLOW METERS

GGE Make Flow Meters are developed for the measurement of various gases like natural gas, CNG, LPG, Flare gas, Syngas. They are designed to withstand the wet and corrosive biogas. Another optional feature in GGE flow meters which is not available with any other make is that they can also provide a rough measurement of the Methane content in the gas.

General Specifications:

Suitable for Pipe Line 25 mm -400 mm

Accuracy Range : Class 1.5

Features:

1. Low Pressure drop, Corrosion Resistant, No moving parts, Low Maintenance.
2. Single Probe to measure flow, velocity, temperature and methane content.
3. Local digital display and Remote readings, SCADA connectivity, GPRS Option available.

BIOGAS ANALYSERS

GGE offers Portable as well as Stand alone Biogas Analyzers. The analyzers are suitable for upto 4 gases - CH_4 CO_2, H_2S and O_2.

General Specifications:

Range:

CH_4 0 to 100% CO_2 O to 100% H_2S 0 to 1% O_2 0 to 25%

Salient Features:

1. Local and Remote readings available through SCADA.
2. Optional in built gas dryer available.
3. In case of high H_2S gas, inbuilt air mixing before testing arrangement available.

Methane Upgradation by Membrane

Membrane separation technology is a prominent method for biogas upgrading, offering advantages like high energy efficiency and compact system design. This method involves using specialized membranes to separate methane from carbon dioxide and other impurities in biogas, resulting in a cleaner, more valuable gas called biomethane.

Process: Biogas is fed into the membrane system, and the membrane selectively allows methane and other desirable gases to pass through (permeate), while retaining carbon dioxide and other contaminants (retentate).

Advantages: Membrane separation offers high efficiency, energy savings, and scalability, making it a promising technology for biogas upgrading.

Applications: Biomethane produced through membrane separation can be used as a renewable natural gas substitute in various applications, including energy production, transportation, and industrial processes.

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