BD AGRO RENEWABLES

MegaFerm

Biogas units with between 500 kW_{el} and 5 MW_{el} capacity

BD AGRO provides intelligent system concepts for modern biogas production which guarantee reliability and lasting economic efficiency. On the basis of tried and tested technology, they offer you an easy to handle, custom built solution.

A special characteristic of the MegaFerm units is the up to 24-metre high digester made of reinforced concrete or enamelled steel with a solid cover. The »slim«, tall containers with volumes of up to 7,625 cubic metres enable the use of larger input quantities with optimum agitator efficiency.

Thanks to the central agitation technology, a wide range of substrates can be fermented with low process energy needs. Because the substrate is continually agitated, the tank volume is fully utilised, enabling greater digestion tank loads and reducing residence times. As no floating layers are formed, gas production is virtually continual with constant gas quality. The MegaFerm units are extremely well insulated and are therefore ideal for mesophilic and thermophilic digestion processes, including in regions with extremes of climate.

For system designs with full heat use, the low process heat needs are a valuable advantage. This also applies if all of the biogas produced is fed into the public natural gas network and not used to heat the digesters.

MegaFerm systems (Examples)

Benefit from maximum gas yields due to high digestion tank loads combined with short retention times.

	Output	Internal diameter	Tank height	Tank volume
MegaFerm 500	500 kW_{el}	14.0 m	14.0 m	2150 m^3
MegaFerm 1000	1000 kW_{el}	18.5 m	20.0 m	5000 m^3
MegaFerm 1500	1500 kW_{el}	21.5 m	23.5 m	7400 m^3
MegaFerm 2500	2500 kW_{el}	2 x 19.5 m	21.5 m	2 x 5700 m^3
MegaFerm 4000	4000 kW_{el}	3 x 19.5 m	21.5 m	3 x 5700 m^3
MegaFerm 5000	5000 kW_{el}	3 x 21.5 m	23.5 m	3 x 7400 m^3

The special characteristic of the MegaFerm biogas units is the tall digester.

A heat exchanger positioned outside the concrete tank is used to heat the substrate to the ideal temperature by the countercurrent process. The heat exchanger is robust, low-maintenance and easily extendable using modules.

Heating further tanks, e.g. of secondary digesters in the proven UniFerm design, is an optional feature.

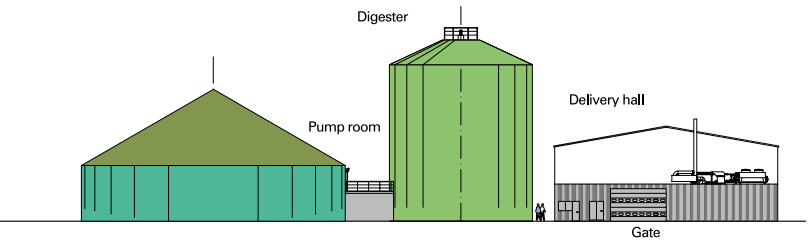
The connected UniFerm reinforced concrete tanks have double membrane covers. The combination of a gas-proof membrane and weather-proof film results in large gas storage volumes with relatively low temperature variations. This roof construction also serves the biological desulphurisation of the biogas.

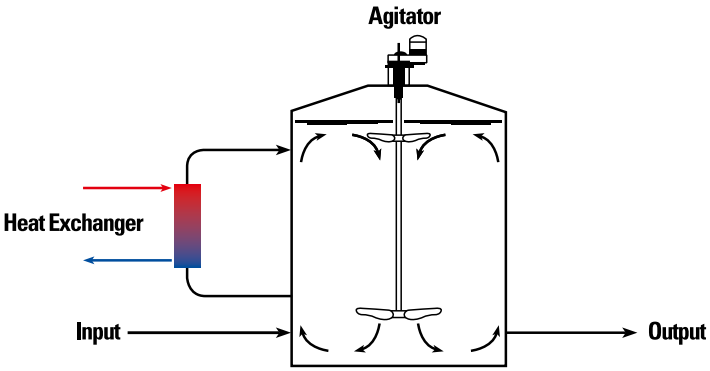
MegaFerm biogas units contain only industry standard components. Whether it be valves, fittings and mountings, or sensors: all components are of the highest quality and perfectly matched to each other. Piping is made of stainless steel or electrowelded HDPE. Digester, secondary digester and storage tank are interconnected by means of a central piping and pump system which allows all tank contents to be mixed with each other. As a result, you achieve optimum fermentation results and high system availability.

The MegaFerm control technology is based on Siemens S7 Simatic, giving you fast, upgradeable component availability and easy expansion options.

The biogas unit control system with visualisation developed by BD AGRO provides you with an extensive range of functions, optimal operation and a rapid response from our services, including remote servicing. The performance range includes continuous measurements of substrate and gas filling levels with individually adjustable minimum and maximum values. You can set and measure daily feeding intervals and feeding quantities of individual substrates. The cumulative values are stored and logged for your plant operating log.

The installed profi-bus interface also allows the gas analysis device readings and combined heat and power (CHP) unit signals to be connected to the PLC control and to be retrieved quickly. Relevant values such as stirring times, gas quality, CHP run times, feed quantities, temperatures, pressures, filling levels, etc. can be displayed graphically in freely selectable intervals and evaluated.





Technical details subject to change. e 10/2010

MegaFerm Advantages/Benefits:

- very low process energy requirements
- climate-independent operation
- mesophilic and thermophilic processes
- high dry matter intake capacity
- robust and safe technology, proven worldwide
- for both energy crops and organic waste
- ideal for producing natural gas quality biogas
- worldwide availability of components
- service- and maintenance-friendly design

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BD AgroRenewables GmbH & Co. KG
P.O. Box 1163 · 49360 Vechta · Germany
Tel. +49 (0) 44 47 801-43 00 · Fax +49 (0) 44 47 801-237
www.bd-agro.de · info@bd-agro.de