

BIOGAS PLANT ON DRY FERMENTATION

Biogas plant ensures the process of continuous production of biogas from biomass including programmable process control and the mobility of the facility in the form of containers.

To ensure equal production of biogas the whole fermenter is divided by separating a gas-tight barrier into two independent fermentation chambers with front gas-tight single-wing gates. Between the fermentation chambers is situated technology room with separate entrance, in which are located heating lines, collecting technologies, treatment and distribution of the percolate.

Inner coat of the fermentation chambers is all made of stainless steel. The container is fully insulated. Floor and side walls have installed hot water heater. The heat for heating is secured from the cogeneration unit. For startup of all process in the fermentation chambers will be used the boiler in the temporary adjustment to burning propane-butane. The boiler is situated in the technological container.

Closed percolation circuit ensures taking of the percolate from the chamber, its transport to the collecting tank, pH adjustment and subsequent sprinkling of biomass through the nozzle. Resulting biogas from the fermentation chamber passes into the bladder gas tank, which is located in the protective structure above digester.

From a gas storage the biogas passes into the technological container, at the same time there occurs a basic adjustment of its quality parameters and with the help of blower is fed into the combustion engine of cogeneration unit.

Cogeneration unit ensures the electricity and the heat production. It is possible to distribute the electrical energy into the network; small part of the heat is necessary for the operation of the entire process and can be used for further application (heating systems, drying).

In case of cogeneration unit shut down all biogas is combusted in the burner, which is integrated in the hot water boiler to start up the process. The whole process is controlled by a computer in automatic mode. Remote control biogas plant is also possible. The whole device is safe, against improper and unauthorized use the key elements are blocked.

The whole device can be modularly expanded with the fact, that additional containers with fermentation chambers are not designed with technology room.

GASCONTROL,
společnost s r.o.
Nový Svět 1407/59a
Havířov-Prostřední Suchá
735 64
Czech Republic
T: +420 596 496 411
F: +420 596 496 397
E: gascontrol@gascontrol.cz
www.gascontrol.cz



Fermentation container



Machinery room



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Basic data – fermentation container

Dimension (l x w x h)	14 730 x 3 000 x 3 450 mm
Weight	17 000 kg
Usefull weight	80 000 kg
Operating pressure	0,1 – 0, 4 kPa
Operating temperature of the chambers	35 – 40°C
Total volume of the chambers	2 x 47 m ³
Net volume of the chambers	2 x 40m ³
Intended el. power	15 – 25 kW (depending on the material of the charge)
Intended heat power	18 – 30 kW

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