



MIBP and BP

BIOGAS PLANTS



DESCRIPTION

The slurry and other organic waste produced on livestock farms can be prepared in preparation tank for pumping into the bioreactor.

Bioreactor is a tank in which a process of anaerobic degradation takes place. Anaerobic digestion is a microbiological process of decomposition of organic matter, in the absence of oxygen. At this process a gas mixture - biogas is produced, which is stored in biogas storage before used.

Cogeneration unit combust clean biogas for electricity and heat production. Heat as a side product of electricity production is send trough heat exchanger coolant/water and stored in heat storage. Heat is used for heating bioreactor and for domestic hot water.

Produced electricity is used for powering the electrical equipment on the farm. The excesses of electrical energy are sold to electricity distributor.

The substrate mixture continuously flows into the bioreactor and the same volume digestate flows through the outlet to the end lagoon. During spreading of processed digestate to the fields there are significantly less unpleasant odours as in the case of the slurry.

The engine room (cogeneration unit, heat storage tank, heat exchangers, automatics...) is closed in heat and sound proof ISO container. Only bioreactor tank is installed separately near to the engine room.

Type *	Electrical power	Heat power	Number of large livestock	Volume part of maize silage	Annual production of electrical energy
	kW	kW	pcs	%	MWh
MiBP 5	5	15,5	70	0	38
MiBP 10	7	18	90	0	49
MiBP 15	16	33	110	8	105
MiBP 20	22	43	110	12,5	139
MiBP 30	30	65	150	14,5	227
MiBP 40	43	63	180	16	305
MiBP 50	50	79	230	15,9	442
MiBP 60	64	103	270	15,6	524
MiBP 75	70	109	300	15,7	606
BP 100	105	138	400	15,7	820
BP 150	143	207	600	13,9	1144
BP 250	252	321	1000	14,2	1990
BP 300	307	360	1500	11,3	2441
BP 375	375	421	2000	9,3	2970

* Each biogas plant is a specific project which is adjusted according to the type and size of farm. OMEGA AIR is designer and producer of biogas plants to size 375 kW.

DIMENSIONS OF TYPICAL BIOGAS PLANTS		
Dimensions [m]	Type of biogas plant	
	MiBP 30 (30 kW)	MiBP 50 (50 kW)
L	6 m	6 m
B	2,5 m	2,5 m
øj	4 m	5 m
øR	12,8 m	14,6 m
reactor height	4,4 m	4,4 m
gas storage height	1,5 m	1,5 m
end lagoon diameter	19,2 m	23,8 m
end lagoon height	7,3 m	5,8 m
silos (L×W×H)	6×30×3 m	8×30×3,5 m

