

BioSPR

gives boost to your BioGas



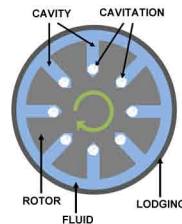
- 100% efficiency
- Maximum yield
- Disgregates every biomass

Install BioSPR in your plant

- BioSPR guarantees 100% transfer of energy, therefore an efficient pre-treatment
- BioSPR increases methane production and reduces retention time
- BioSPR can efficiently disgregate biomass of any kind, speeding up the biodegradation and fermentation in the digester

How BioSPR works

BioSPR reactor is an innovative and patented technology which harnesses cavitation phenomenon in a controlled manner, producing ultrasonic shock waves which transfer 100% energy directly to biomass, disgregating it.



The disgregation obtained involves a considerable increase of contact surface, improving your plant performance.



Why BioSPR gives boost to your Biogas

- Because BioSPR considerably increases methane yield of each biomass, notably reduces retention times, remarkably reduces stirring and mixing consumptions in the digester.
- Because BioSPR can treat difficult fibrous biomass, both to the load or recirculation in the digester, or between a digester and the other.
- Because BioSPR is 100% efficient, improves the yield, reduces energetic and hydraulic costs.

BioSPR applications

BioSPR is the ideal technology for every kind of plant:

- New-built plants, to optimize the yield
- Existing plants, to increase efficiency
- Big size and long retention time biogas plants (≈ 120 days), to guarantee the control of the yield
- Small size and short retention time biogas plants ($\approx 30-40$ days), to increase the yield or reduce retention time

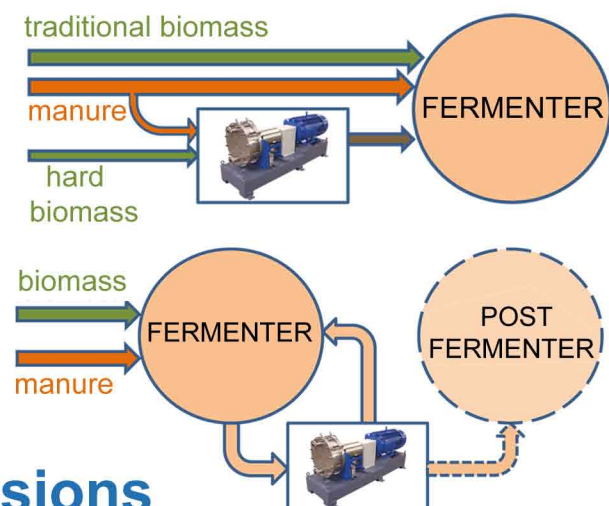
BioSPR is the optimum solution for every kind of feeding:

- Plants feeded with agriculture products
- Plants feeded with agriculture products and manure
- Plants feeded with manure
- Plants feeded with FORSU (Organic Fraction from Solid Urban Waste)
- Plants feeded with industrial waste

Typical installations

The installation can be made:

- On the main feeding, or in parallel with the traditional load lines
- Ricirculation on the digester or between the digesters



Conclusions

BioSPR has immediate benefits for any existing or future biogas plant. The innovative BioSPR technology, opposite to the conventional ones, allows to accurately manage the disaggregation effect, with a 100% efficiency, on any kind of biomass. BioSPR reduces duration of anaerobic digestion cycle, increases biomass yield, reduces the amount of biomass to load, treats biomass of any kind, cure quickly your digester problems.

SPR reactor is extensively tested over many years of operational use in biofuels, pulp and paper, chemical and food industry, and always feature following benefits:

- Reduction of working time
- High quality standards of treated products
- Operational flexibility

SPR reactor has a simple, elegant and robust design, it doesn't wear and requires a limited routine maintenance.