CaviMaximise your biogas plants potential

Hydrodynamic Cavitation Technology

- Breaking down lignin
- Increasing biogas yields
- Intensifying processes

CAVIMAX

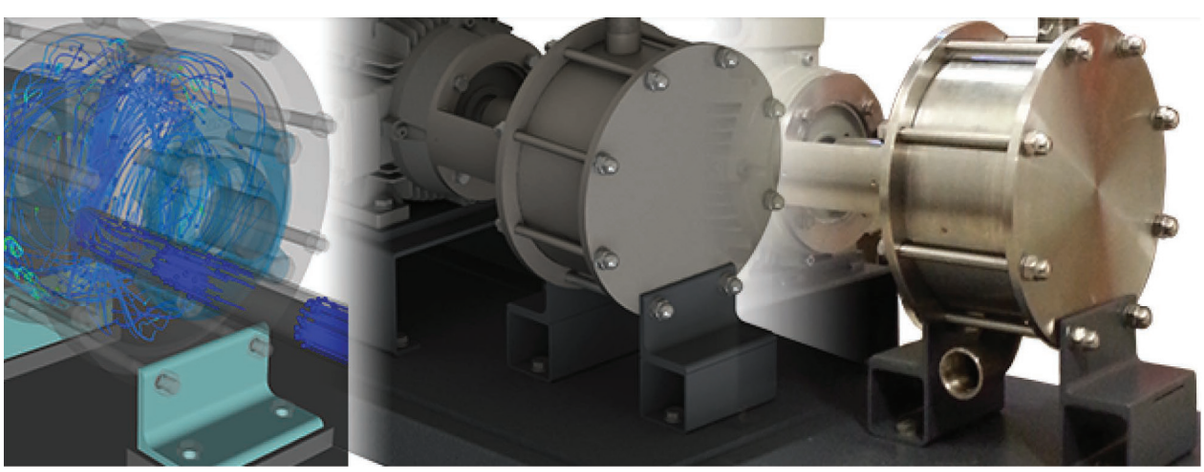
“Wouldn't you like to add straw and grass to your feedstock mix?”

Increase the output of your digester & produce more biogas...How?

CaviMax is the machine; hydrodynamic cavitation is the process which maximises the potential of your biogas plant. By installing one in your plant you could increase your biogas yield up to 15% and utilise previously inaccessible feedstocks.

Finally unlock the energy potential of straw, grass and high lignin feedstocks easily, or maximise the output of your current anaerobic digestion plant, the choice is yours.

This is a plug & play inline process intensification device – no additional chemicals needed, just install and away you go.



Utilising hydrodynamic cavitation to break down lignin and particles sizes in substates

We have a proven technology to disrupt the lignin in straw and grass, which we all know is the key to utilising these plentiful and low cost feedstocks. There are a couple of existing processes capable of doing this, such as steam and alkali treatment. However, we have an innovative clever machine that harnesses the power of hydrodynamic cavitation.

The E-PIC S.r.l. ROTOCAV in the CaviMax makes all this possible by producing physical rotational forces that create hydrodynamic shockwaves, breaking down and forcing together seemingly incompatible gas/ liquid/ solid mixtures into flowing substrates.

The shockwaves induced by a liquid moving from a high to low to high pressure environment, causes millions of microscopic bubbles to form and collapse. Creating tremendous localised pressures, which shear solid particles, break down cell walls and allow liquids to bind with solids. This creates a mixture with increased surface area which is more readily available to be broken down by anaerobic digestion bacteria, this in turn means more biogas....the CaviMax is a process intensification device which increases sustainability and flexibility in the running of your AD plant.

Why pre-treat AD feedstocks?

Quite simply pre-treating biomass improves the digestion process, by how much depends on the feedstock and the treatment.

Processes using physical, biological, chemical and thermal forces or a mixture of these, aid organic break down of the feedstock(s).

Hydrodynamic cavitation in the CaviMax harnesses extreme fluid dynamic pressures that cause particle disintegration and cell disruption.

The CaviMax can break down recalcitrant materials into a flowing mass, aiding microbiological access to the cellular juices, and is capable of enabling the use of high lignin feedstocks.

Max your substrate flow

Other ways to increase your biogas yield are to maximise the substrate flow by homogenising the liquid/solid matrix, reducing the tendency for larger particles to come out of suspension and form a floating layer.

The CaviMax can be installed mid-process, either between digesters or positioned to treat a top layer of floating partially digested feedstock.

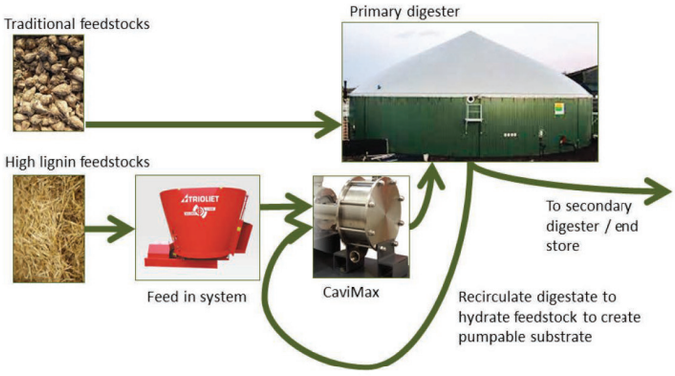
Once passed through the CaviMax machine, particles are considerably decreased in size, increasing the surface area available to your bugs to feed on, and a problem is quickly turned into a bonus of extra biogas yield.

Where does the CaviMax fit into my biogas plant?

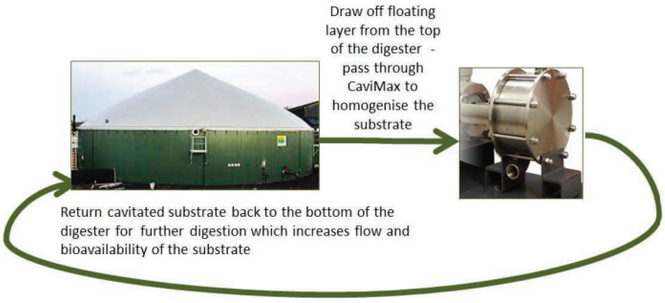
Where we install the CaviMax depends entirely on what you would like to achive...

- Position at the front end to pretreat feedstocks
- Position after the primary digester to treat high dry matter floating layers
- Position between digesters to maximise your substrate flow

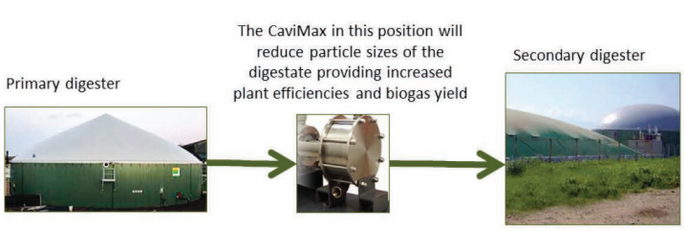
CaviMax positioned to pre-treat high lignin feedstocks



CaviMax positioned mid-process – treating the floating layer



CaviMax positioned mid-process between digesters



Benefits of hydrodynamic cavitation for biogas

- Reduce feedstock costs or increase biogas production by up to15% or 4 times depending on process
- Ability to digest high lignin feed stocks
- Broadens your feedstock portfolio
- Decrease problematic floating layer – crust reduction in digester
- Increased availability of cellular juices
- Acceleration of hydrolysis and the anaerobic digestion process
- Reduce retention time in digester
- Increased pumpability of substrate
- Reduced plant downtime due to blockages

About us...

CaviMax is the exclusive UK & European distribution and sales agent for the patented E-PIC S.r.l. ROTOCAV biomass cavitator.

Our teams field of expertise cover the sectors of farming, biogas &biofuel generation, food & drink production, heathcare, construction, water treatment, chemical processing, engineering & servicing.

“Get more bang for your buck...FIT A CAVIMAX”

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So, if decreasing your feedstock costs, increasing your output and ultimately producing more gas with less wear and tear on your plant is your thing, then please get in contact and arrange a meeting to see how we can help you.

Please visit our website for more technical information and access to scientific papers regarding hydrodynamic cavitation and biogas production.

www.cavimax.co.uk