

**OptiPress II - for higher DM contents and non-homogeneous substrates**

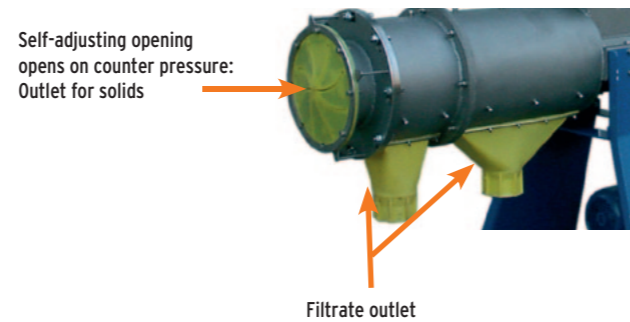
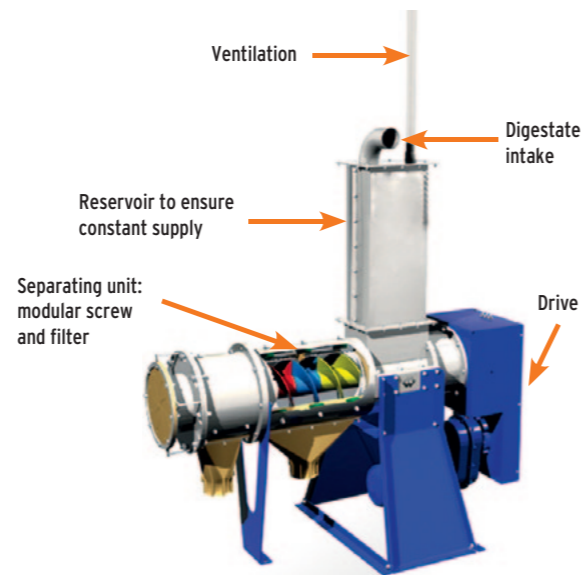
**Advantages of OptiPress II:**

- ✓ easily accommodates larger quantities with higher dry matter contents
- ✓ the degree of separation depends on the filters used (0.5 to 0.7 mm filter hole diameter)
- ✓ Spiral consists of stainless steel (for temperatures over 40°C) or modular design in plastic
- ✓ low energy requirements
- ✓ good price/performance ratio
- ✓ robust technology, suitable for continuous operation

**How it works**

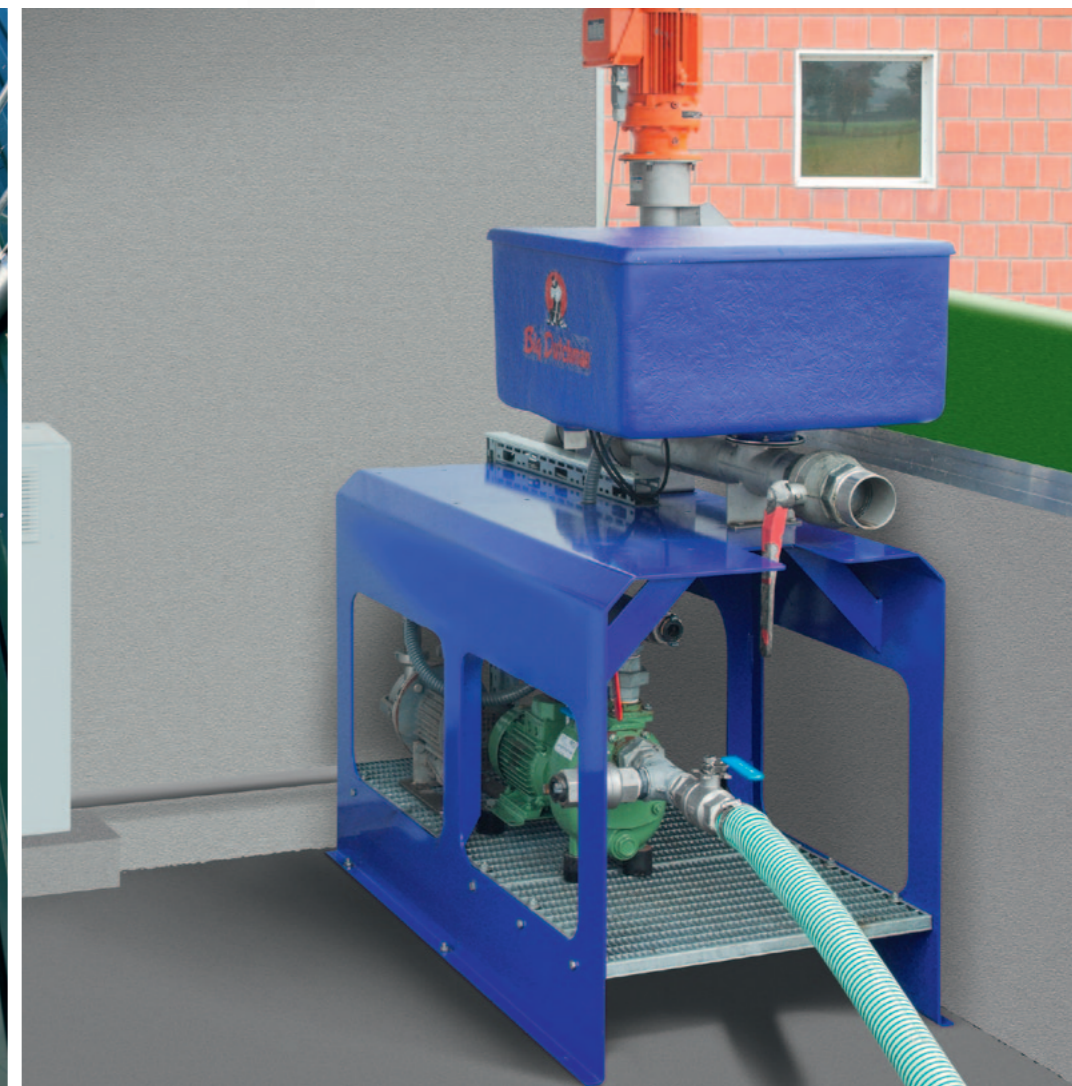
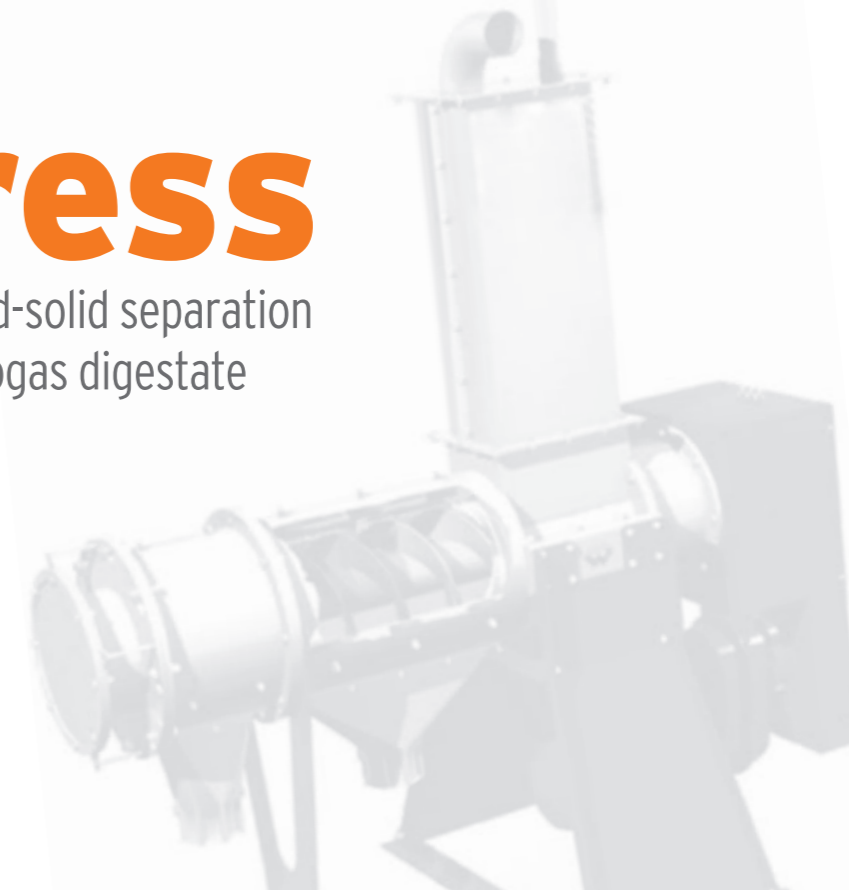
OptiPress II should also be installed between the digester and the digestate tank. This allows direct separation of the digestate, and the filtrate is pumped into the digestate tank. Other areas of use are, for example, separation of cleaning water from cattle trucks.

OptiPress II works horizontally. The basic substrate is pumped from a storage tank to the reservoir of the screw press. This ensures a constant supply to the separating unit. The filter provides good separation. The solid matter outlet only reacts to a certain counter pressure created by the separated solid matter. The 5.5 kW drive creates the maximum output of 30 m<sup>3</sup>/h. The scope of delivery also comprises a control box that is individually planned and manufactured.



# OptiPress

Liquid-solid separation of biogas digestate



Technical details subject to change. e 10/2010

## OptiPress – simple separation of digestate

OptiPress is a newly designed system for the separation of biogas digestate (digestate = digested material) and other materials to be separated, such as slurry or water resulting from cleaning cattle trucks.

OptiPress I and II are innovative systems tailored to the respective area of use. They offer decisive advantages. Please let our experts advise you in detail.

### Our solutions for dry matter contents of 2 to 15 %



OptiPress I for substrates with a low dry matter content and a homogeneous structure



OptiPress II for substrates with higher dry matter content and a coarser structure

We offer OptiPress in two different versions depending on DM content and homogeneity of the basic material.

OptiPress I is a spiral filter press ideally suited for separating digestate with a dry matter content of 2 to 8 %.

OptiPress II is a screw press mainly used for separating digestate with a higher DM content and higher proportion of fibre.

In both versions, the separated solids have a dry matter content of 25 to 30 %. The filtrate has only around half the dry matter content of the original material.

Since phosphorus is mainly bound to solids, it is separated more easily than nitrogen and potassium which mostly remain in the filtrate. This can then be used as a valuable liquid fertilizer, for example by spreading on the fields by means of irrigation systems. When storing the liquid phase it is no longer necessary to homogenise the mixture since hardly any floating and sinking layers are formed.

## Advantages:

- ✓ separated solids with approx. 30 % DM can be used in many ways
  - as an easily transported, spreadable fertilizer
  - as a suitable material for biogas plants
  - to produce energy-rich, combustible pellets

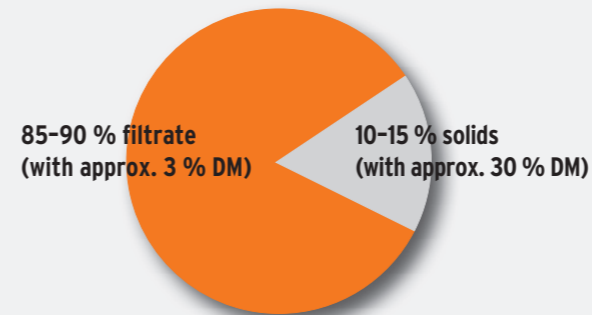
- ✓ compact construction, minimal space requirements
- ✓ simple cleaning and maintenance
- ✓ only high-quality materials are used → minimum wear, long service life

## What results can be achieved by separation with OptiPress I und II?

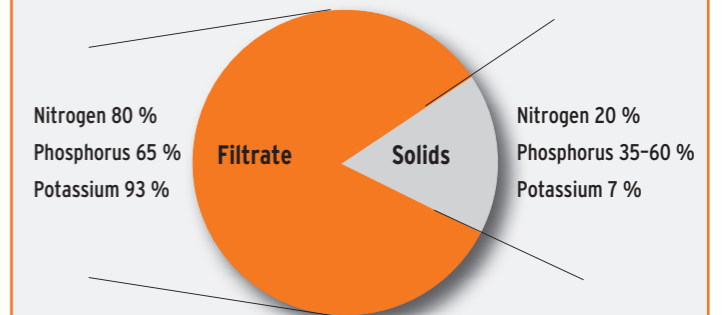
If the basic material - digestate - has approx. 6 % DM, separated solids with approx. 35 % DM and filtrate with approx. 3 % DM are produced. The nutrient distribution is such that approx. 35 % to 60 % phosphorus

(depending on the basic material) is present in the solids. This can be transported at low cost to regions with higher demand.

Filtrate/solids ratio after separation



Nutrient distribution (as % of input)



## OptiPress I – for low DM contents and homogeneous substrates

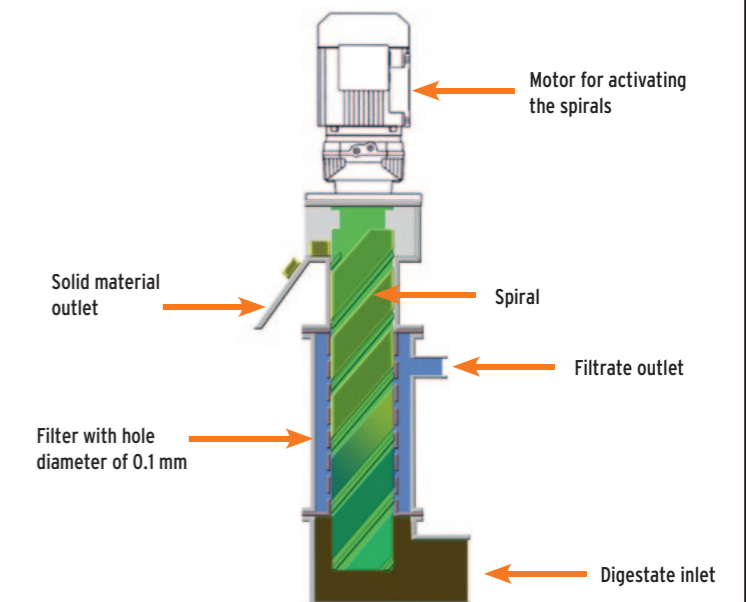
### Advantages of OptiPress I:

- ✓ high degree of separation (0.1 mm filter hole diameter)
  - very low sedimentation of filtrate
  - higher proportion of phosphorus due to a greater quantity of solids
- ✓ modular system (1 to 4 filter columns)
  - OptiPress I is tailor-made to the requirements on the farm
- ✓ low energy requirements → 0.55 kW per filter column
- ✓ vertical spiral → OptiPress I is immediately ready for operation, no start-up phase
- ✓ low-noise, easy to operate, ideal for continuous operation

### How it works

It is best to install the spiral filter press with storage tank between the digester and the digestate store. This allows direct separation of the digestate, and only the filtrate is pumped into the digestate store.

A compensation tank with level sensors ensures that the pump of the spiral filter press can always process the basic material uniformly. The vertical filter column captures the basic material by its turning motion, lifts it upwards and thus removes solids by passing the liquid phase through the filter supported by a filtrate pump. Depending on the quantity of material to be separated (approx. 1.5 m<sup>3</sup>/filter column/h), 1 to 4 filter columns can be installed on the divider pipe. Each filter column is activated by a separate motor. The solid material is released at the top of the spiral.



The speed of the spiral is frequency-regulated so that the spiral can always take up the right amount of basic material. The machine is controlled by a control unit which is made and supplied to the customer's specifications.

**Attention:** It is important to keep the basic material free from extraneous material (e.g. ear tags). If this is not possible we recommend installing a suitable separator for extraneous material.



Individually planned control box



Solid material outlet