BÖRGER®

EXCELLENCE – MADE TO LAST

THE POWERFEED

LIQUID FEEDING TECHNOLOGY

POWERFEED FAMILY
ECONOMIC LIQUID FEEDING TECHNOLOGY

The Powerfeed is used for feeding solids into biogas plants. The liquid feeding technology feeds the biomass in doses into a flow pipeline in the fully enclosed system.

Tanks of any number and of different heights can be fed by means of a Powerfeed.

Inside the Powerfeed the biomass is compressed and broken down very finely before it is fed into the system. This concept releases any trapped air from the biomass. The fine biomass particles have a large surface and ensure a higher gas yield.

The homogeneous mixture of recirculate and solid particles being fed as well as the release of trapped air ensure that hardly any floating layers are formed and the agitating effort in the tank is reduced, thus saving agitation energy.

The Powerfeed is available in four different versions and multiple sizes to provide the most economic and suitable technology for every plant size.

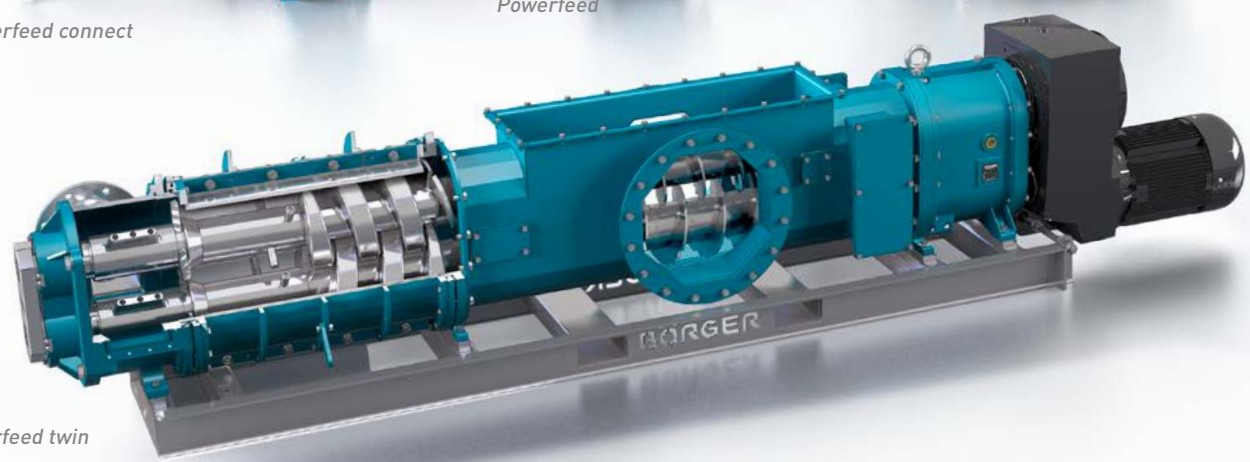
+ BENEFITS

- less quantity of trapped air
- less buoyancy of the biomass
- less agitating effort
- less power consumption

Powerfeed connect

Powerfeed

Powerfeed duo



Powerfeed twin

POWERFEED AT A GLANCE

+ tanks of any number and of different heights can be fed by means of a Powerfeed

+ the enclosed system prevents odor emission and possible gas leakage

+ the Powerfeed breaks down the biomass into ultra-fine particles; due to the large surface of these particles a higher gas yield can be realized

+ because trapped air is released from the biomass less floating layers form in the tank, which results in energy savings due to reduced agitating effort

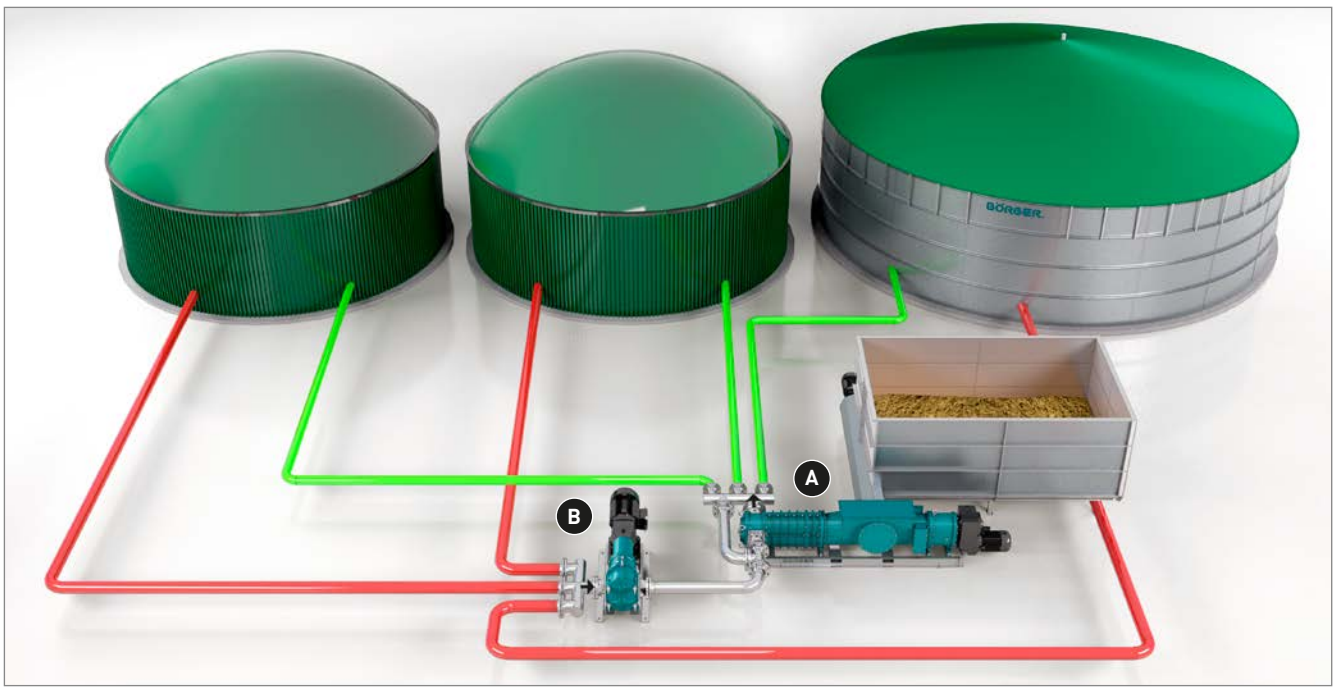
+ simple retrofitting possible in every biogas plant

FEEDING ANY NUMBER OF TANKS

The Powerfeed **(A)** and a high-capacity biogas pump **(B)** form the central unit of the liquid feeding technology. The tanks of the biogas plant are connected to the pump via pipe and valve systems, so that the pump can extract recirculate from the requested tank.
The Powerfeed is installed at an appropriate position in the pipe system. The Börger feeding technology feeds the biomass in doses into the flow pipeline in the fully enclosed system.
The recirculate enriched with biomass is conveyed into the requested fermenter.
This enclosed system provides significant advantages:

- **no open gas-emitting liquid**
- **no unpleasant odor emission**
- **no gas leakage**

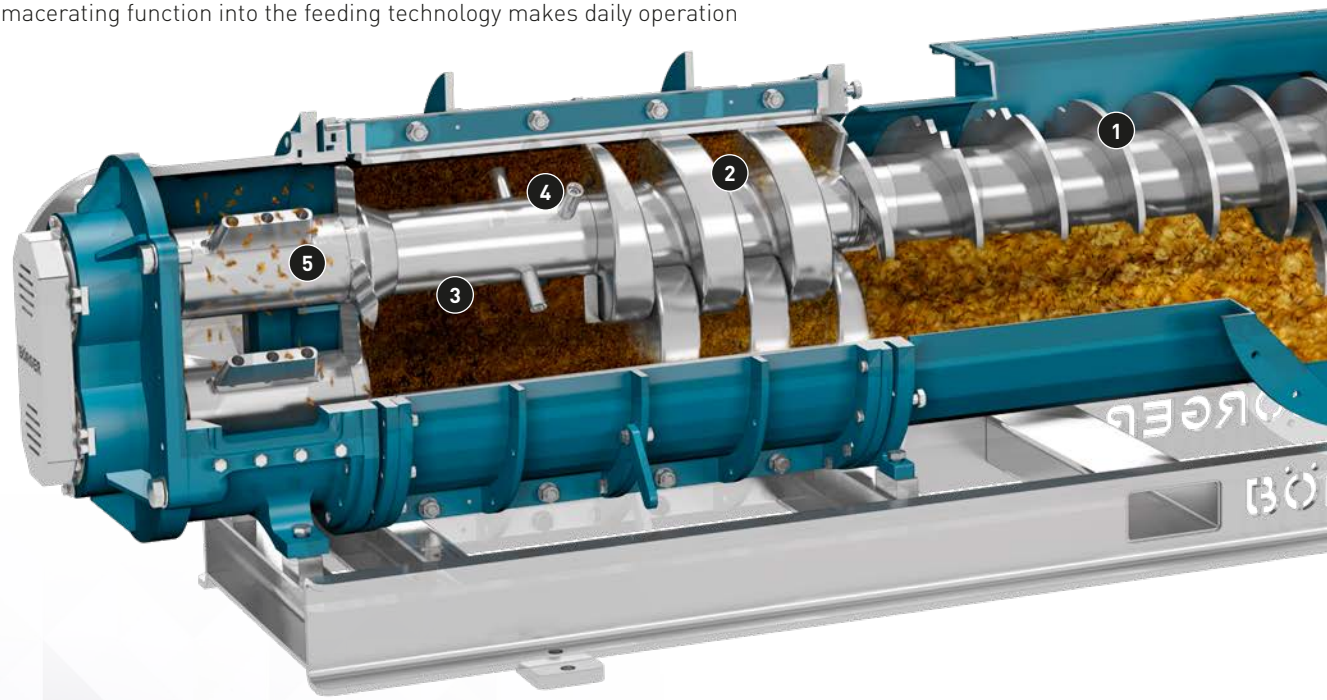
Upon request, Börger control technology coordinates the operation of the pump and the Powerfeed – simple and reliable from a single source.



POWERFEED TWIN
TWO FUNCTIONS IN ONE DEVICE

The Powerfeed twin feeds large quantities of varying biomass in an enclosed system, safely and without odors, into your biogas plant. The liquid feeding technology is equipped with an integrated macerating unit and thus ensures a higher energy availability of the biomass and, at the same time, less agitating required in the tank.

The Powerfeed twin technology was developed to be able to feed any kind of biomass. Moreover, in the Powerfeed the biomass is pre-shredded and defibered in a compressed state. The benefits are obvious. Not only the acquisition, installation and integration costs but also the current energy costs of a separate macerator are eliminated. In addition to that, integrating a macerating function into the feeding technology makes daily operation a lot easier.



OPERATING PRINCIPLE

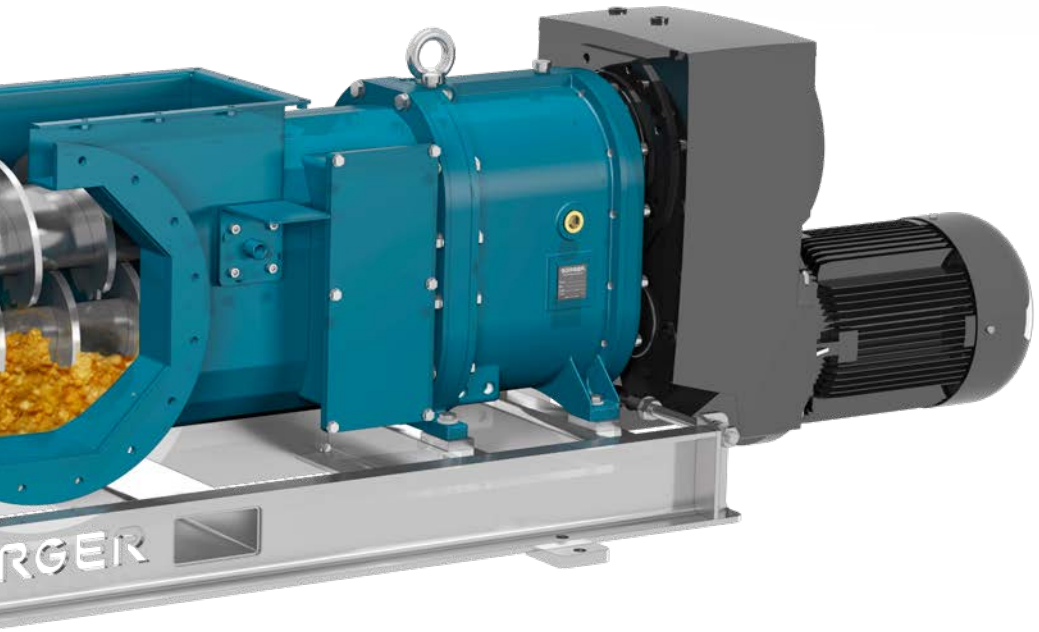
The biomass introduced is collected by augers **(1)** and fed to the compactor unit **(2)**. The screw spindle unit **(2)** which seals in every position conveys the biomass into the press channel **(3)**. A replaceable narrowing is attached to the outlet side of the press channel. Combined with the screw spindle unit, strong compression is achieved in the press channel. The forming plug serves as a seal and offers additional protection.
The structure of the biomass is changed by the friction generated by the pressing procedure and trapped air is released. Material disintegration can be increased if the optional macerating tools **(4)** are screwed onto the rotating shafts.
The press channel leads to the induction unit **(5)** where rotating blades scrape solid particles from the plug. The solid particles are fed into the recirculate by means of rotating agitator blades. The release of trapped air, the small size of the solid particles and the careful dosing into the recirculate ensure that hardly any floating layers are formed in the fermenter. The agitating effort is significantly reduced and the power consumption decreases. In addition, the large surfaces of the solid particles ensure a higher gas yield.

EFFICIENT DEFIBRATION OF THE BIOMASS

The Powerfeed twin is equipped with an integrated macerating function.
In the press channel the biomass is strongly compressed and pushed axially into the direction of the cone-shaped narrowing. In this section, optionally two to six macerating tools can be screwed onto the rotating shafts which defiber the biomass. The large surfaces of the defibered biomass particles result in an improved energy availability. In addition, the compression and defibration minimize the quantity of trapped air. This means less buoyancy, less floating layers and, as a result, less agitating in the fermenter.

Before

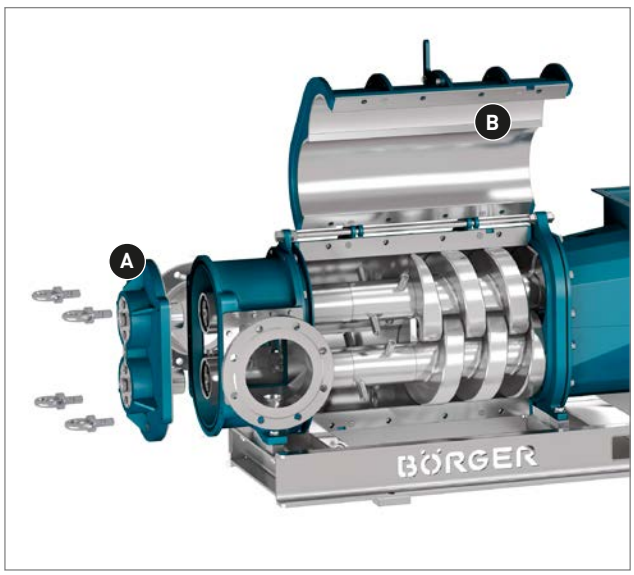
Afterwards



+ BENEFITS

- less quantity of trapped air
- less buoyancy of the biomass
- less agitating effort
- less power consumption

UNIQUE EASE OF MAINTENANCE



The Powerfeed twin is maintained at the installation site of the feeding technology without the need to remove piping or the drive system.

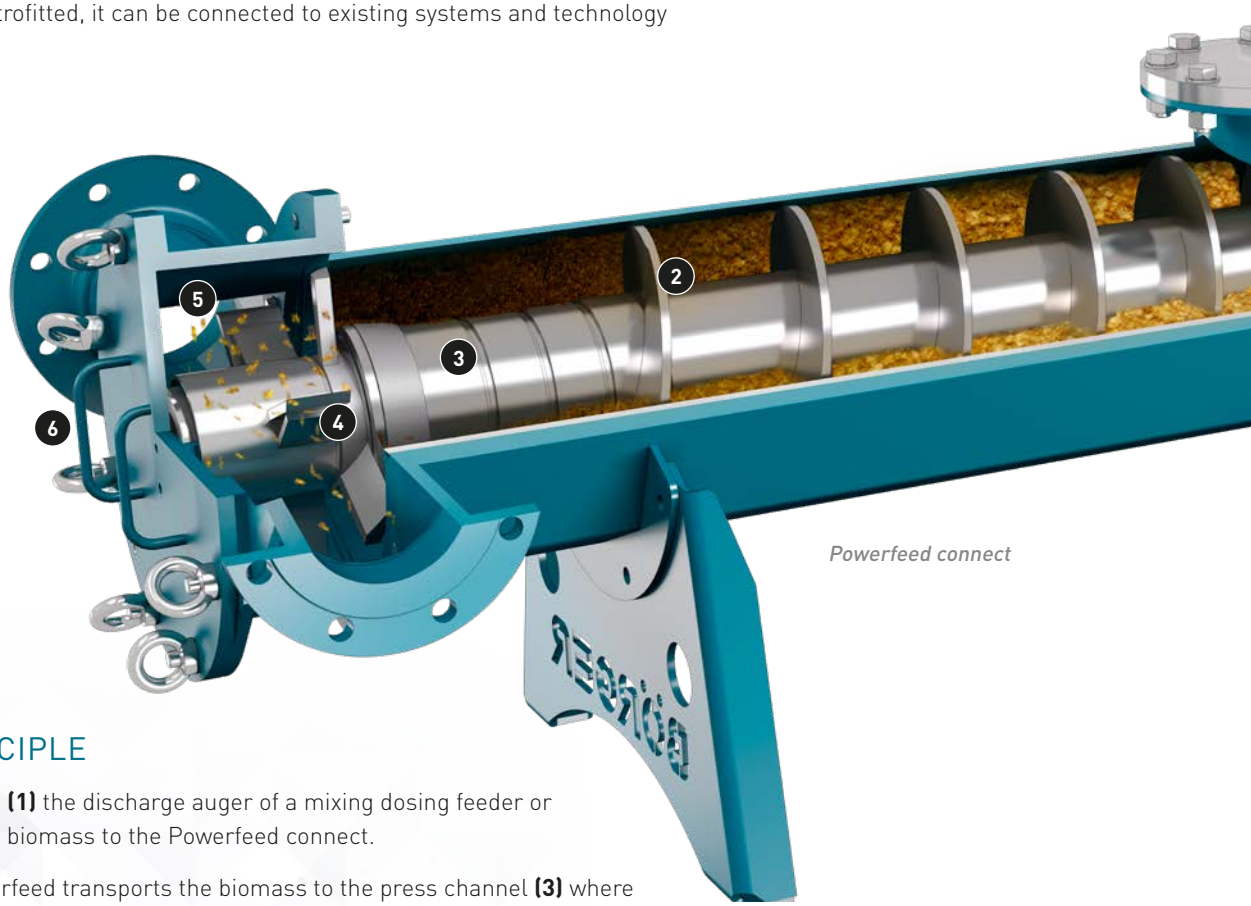
Easy opening of the quick-release cover **(A)** and the lateral maintenance opening **(B)** enable the operators...carry out the maintenance work by themselves, easily and quickly.

MAINTENANCE IN PLACE® MIP BÖRGER

THE POWERFEED
SOPHISTICATED QUALITY

The Powerfeed technology stands for safe and reliable "feeding" of biogas plants with solids. The liquid feeding technology is available in two sizes and three versions.

Whether feeding is requested from the right or left, from the top or in combination with a stainless steel storage container, the Powerfeed can be adapted perfectly to almost any local conditions. When retrofitted, it can be connected to existing systems and technology without problems.



Powerfeed connect

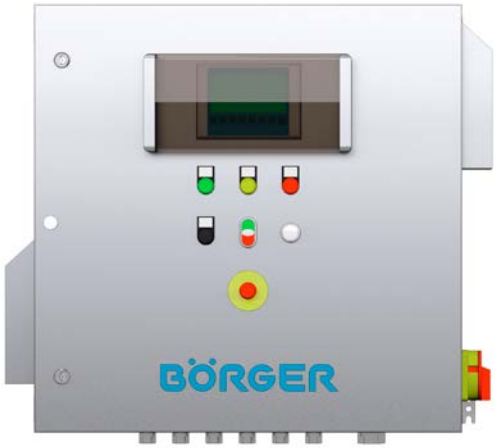
OPERATING PRINCIPLE

Through the inlet opening **(1)** the discharge auger of a mixing dosing feeder or a moving floor feeds solid biomass to the Powerfeed connect.

The auger **(2)** in the Powerfeed transports the biomass to the press channel **(3)** where the biomass is compressed and trapped air is released. A plug is formed. The press channel leads to the induction unit of the Powerfeed where rotating blades **(4)** scrape solid particles from the plug. The ultra-fine solid particles are fed into the recirculate by means of rotating agitator blades **(5).** The release of trapped air, the small size of the solid particles and the careful dosing into the recirculate ensure that hardly any floating layers are formed in the fermenter. The agitating effort is significantly reduced and the power consumption decreases. In addition, the large surfaces of the solid particles ensure a higher gas yield.

The quick-release cover **(6)** facilitates easy maintenance of the Powerfeed. (MIP = Maintenance in Place)

MAINTENANCE® MIP IN PLACE BÖRGER



CONTROL TECHNOLOGY

The Powerfeed is often supplied as a package with a rotary lobe pump and the Borger control technology. This way, the customer receives a ready-to-connect unit with high-quality components perfectly matched to each other.

Continuous measurement of flow rate, pressure and power consumption enables the control technology to immediately react to changing conditions and to adapt the operation of the biogas pump and the Powerfeed accordingly. This ensures that the Powerfeed always operates at optimal capacity and with the highest degree of operational safety.

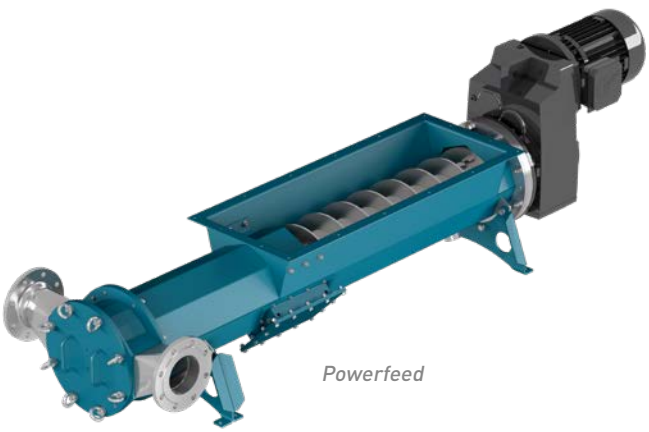
+ BENEFITS

- less quantity of trapped air
- less buoyancy of the biomass
- less agitating effort
- less power consumption

LARGE NUMBER OF VARIANTS

While the Powerfeed connect is connected laterally to the discharge auger of a mixing dosing feeder or a moving floor, the Powerfeed basic model is fed from the top.

The Powerfeed duo is the efficient Börger feeding technology combined with an intelligent stainless steel storage container.



Powerfeed

Powerfeed duo

BÖRGER®

EXCELLENCE – MADE TO LAST

THE BETTER FEEDING TECHNOLOGY

P16_01_2019

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