

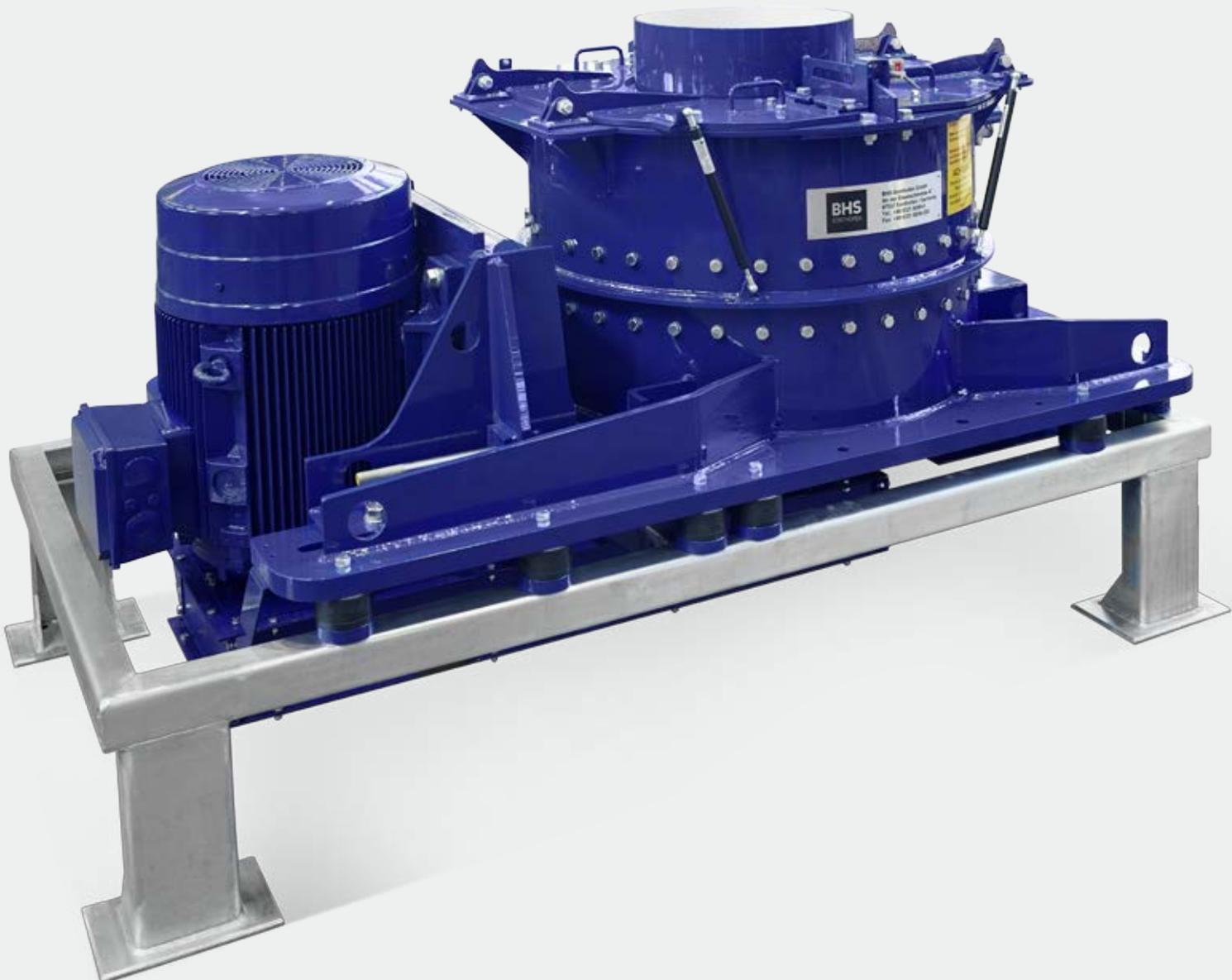


BHS
SONTHOFEN

RBG Biogrinder

Efficient substrate processing

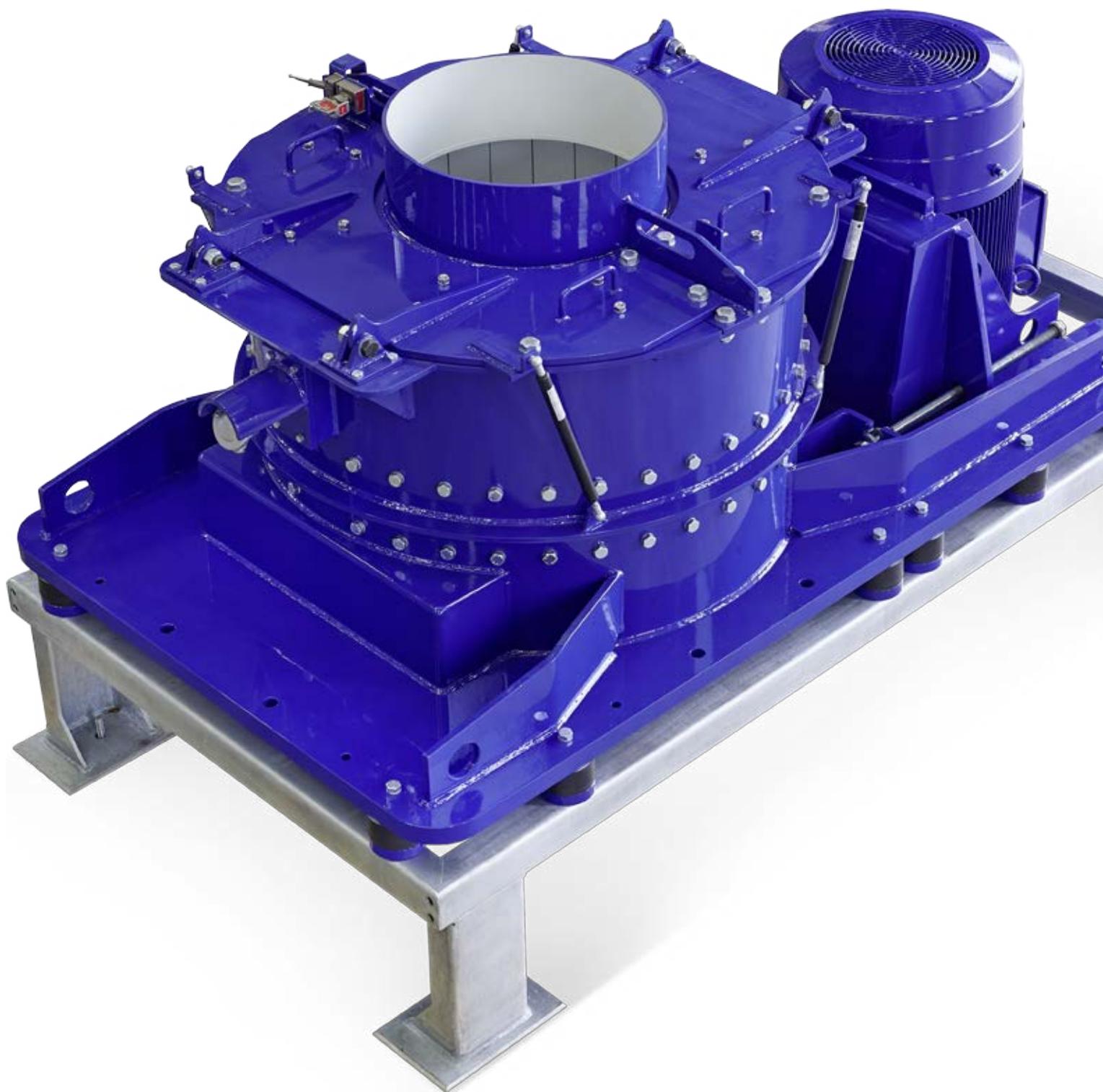
TRANSFORMING
MATERIALS
INTO VALUE



BIOGRINDER

BHS Biogrinder

The patent-protected Biogrinder is used for intensive mechanical processing of biomass before it is fed into the fermenter for the generation of biogas. The input material is crushed and defibred by means of impact and shear forces. Use of the Biogrinder accelerates the gas yield, stabilizes the overall process and allows the selection of a wider range of raw materials. The overall cost-effectiveness of the biogas plant is significantly increased.



Fermenter-friendly processing

In the Biogrinder, the input material is intensively crushed, homogenized and defibered to a flocculent mass, in some instances right down to the level of the cell structures. This pretreatment facilitates the uptake of nutrients by the micro-organisms. The effect is particularly attractive in the case of highly fibrous biomass. Furthermore, extraneous materials, such as soil clods and stones, are also crushed without danger to the machine.

Greater variety of raw materials

Raw materials that were previously difficult or impossible to decompose in the fermenter can now be processed simply after treatment in the Biogrinder. Green waste, stable dung or other biological waste, for example, can be used as inexpensive raw materials. Food waste can also be processed.

High energy efficiency

The substrates remain in the Biogrinder for a very short time, so the energy applied is converted into crushing performance and not heat. Further energy savings result from reduced need for shredding during harvesting. Additional savings are achieved by means of reduced stirring times.

Stable fermentation process

The substrates are homogenized and can thus be conveyed more easily. Layers are no longer formed in the fermenter.

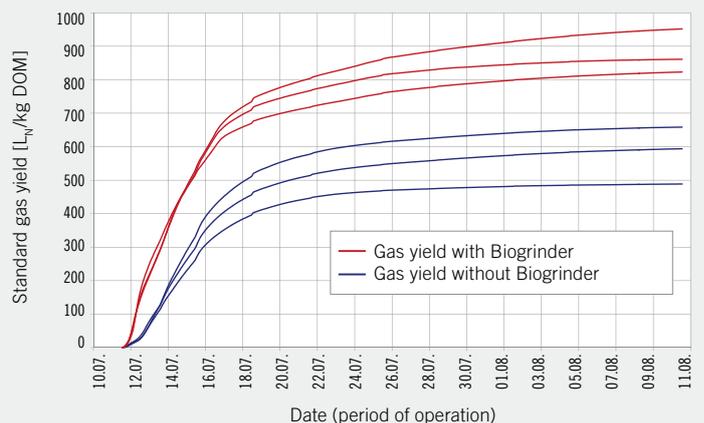
Optimal process integration

The Biogrinder works continuously, thereby simplifying the process integration of the machine into the overall plant. The relatively low height of the machine also enables a space-saving dimensioning of the feeding and discharge systems.



Standard gas yield operating with/without Biogrinder using green rye

Green rye samples processed with and without the Biogrinder were investigated at the Research Center for Agriculture in Weihenstephan. The samples processed with the Biogrinder showed a significantly greater standard gas yield.



Feed opening **1**

Materials are fed into the Biogrinder via a large central feed opening with a diameter of 500 mm. The machine has a relatively low height, allowing cost-effective connection to your plant technology.

Rotor **2**

The rotor is mounted on a vertical shaft. First of all, the material stream hits the guide blades. Beneath these, the rotor has two star-shaped levels, each of which can be fitted with a maximum of six pivot-mounted hammers. Crushing is carried out primarily between the rotating hammers and the stator strips on the machine casing. The arrangement of the hammers is variable; the rotor can thus be optimally configured for the specific task.

Guide blades **3**

The guide blades guide the input material downwards and direct it towards the hammer levels. This prevents possible clogging of moist or particularly light input material in the feed area.

Hammers **4**

The design of the hammers is simple and optimized for long service life. Due to the flexible bearings, even solid extraneous materials, such as stones and soil clods, can be crushed easily. A modification of the hammer configuration can be carried out in minutes.

Stator strips **5**

The stator strips and wearing plates are of simple design and fastened from outside by means of bolts. These wearing parts, which are easy to exchange, have a service life of several months.

Discharge opening **6**

The processed substrate continuously leaves the processing chamber via a generously dimensioned opening at the bottom of the machine. A liner consisting of plastic plates prevents caking.

Drive system **7**

Depending on the required throughput and the desired crushing ratio, we equip the Biogrinder with 55 or 75 kW motors.

Maintenance hatches **8**

The Biogrinder has generously dimensioned access hatches at the top for maintenance or conversion of the machine. The hatches are easy to access and can be opened quickly.

Lubricating oil unit **9**

As a technically reliable solution, the Biogrinder has a circulating oil lubrication unit. This system is also used for cooling the bearings.

Vibration dampers **10**

The machine is installed on vibration dampers to prevent the transmission of vibrations into the surrounding steel or concrete construction.

Key transfer system

In order to prevent uncontrolled access via the maintenance hatches, we equip the machine with a key transfer system. The power supply is interrupted and the machine can be opened only by means of a special key after the rotor has come to a standstill.

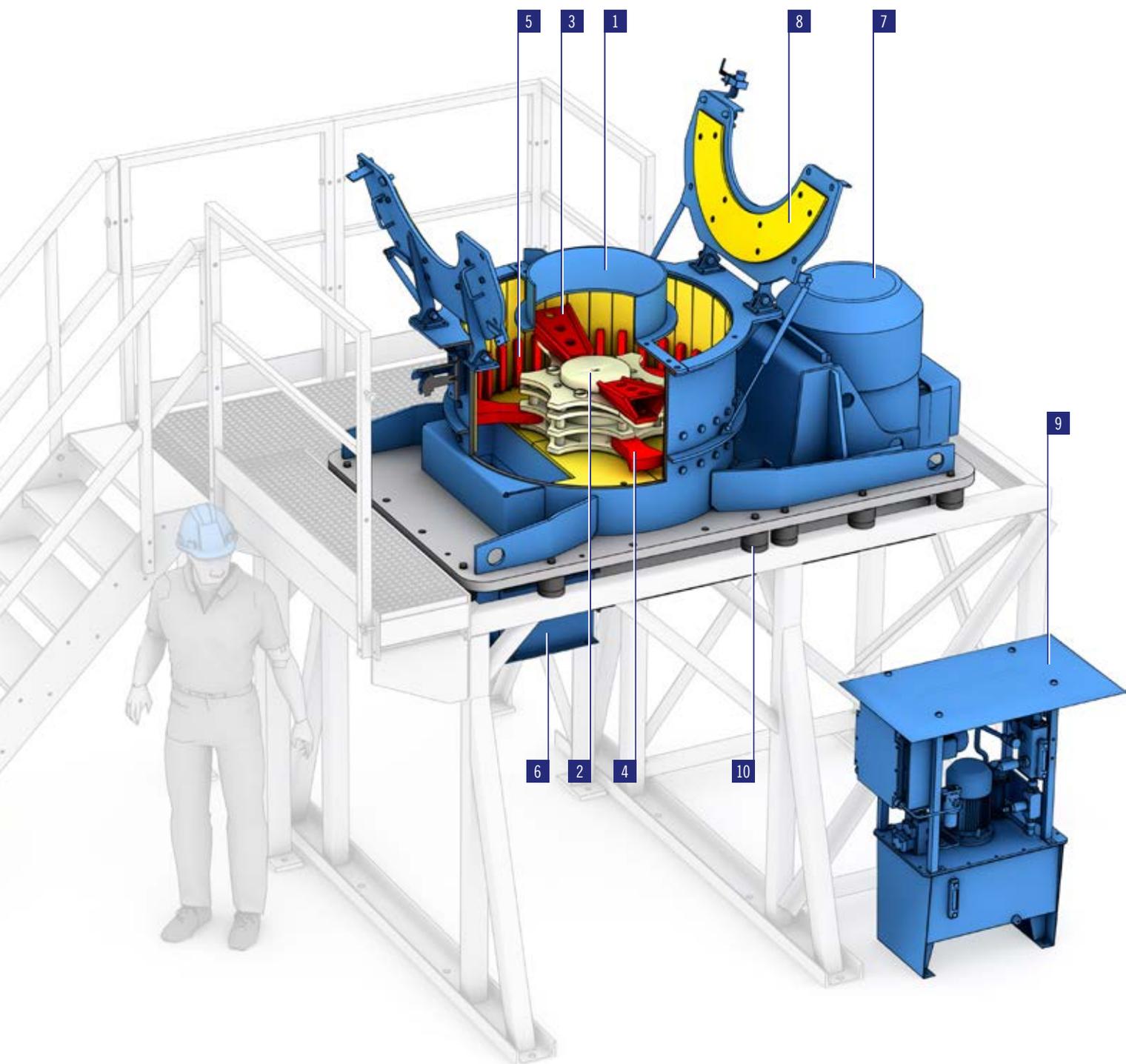
Control system

The Biogrinder can optionally be equipped with a control system. In the case of frequently changing input materials, we recommend a frequency inverter. Together with the rotor configuration options, this allows optimal coordination of the desired goals in terms of crushing result, throughput rate and power consumption.

Steel construction

We offer an optional, standardized steel construction for installation of the machine. It has a platform for maintenance of the Biogrinder and a stairway.





POSSIBLE APPLICATIONS

Corn silage before and after the Biogrinder



Cut grass before and after the Biogrinder



Green rye before and after the Biogrinder



Stable dung before and after the Biogrinder



Sugar beet before and after the Biogrinder



Cereal before and after the Biogrinder



APPLICATION EXAMPLES



A customer in Southern Germany uses a BHS Biogrinder (75 kW) installed on a biogas plant (capacity 900 kW_{eI}) for processing corn silage, grass silage, green rye and WCS.



The biogas plant (capacity 1,200 kW_{eI}) of a customer in Northern Germany is equipped with a BHS Biogrinder (75 kW). It is used for processing grass silage, shredded corn cobs, cattle and horse dung, green rye and WCS.



In Saxony, a BHS Biogrinder (55 kW) on a biogas plant (capacity 300 kW_{eI}) processes grass silage, cattle and horse dung, and WCS.

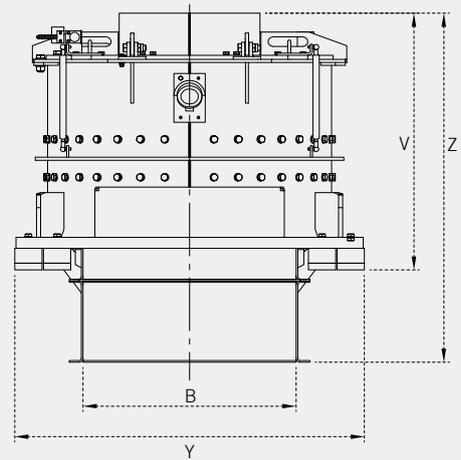
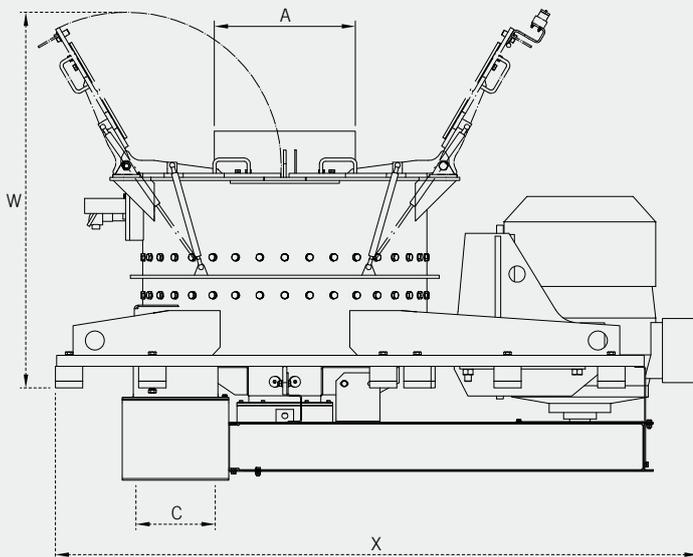
Performance data

Type	Rotor diameter	Motor	Max. throughput
RBG 08	1,000 mm	55 kW	6 t/h
		75 kW	12 t/h

Dimensions and weight (standard design)

Type	A	B	C	V	W	X	Y	Z	Weight
RBG 08	516 mm	780 mm	290 mm	950 mm	1,385 mm	2,350 mm	1,280 mm	1,290 mm	2,650 kg

All specifications apply to the standard design.
 Technical data for customized design may differ from the specified data.
 All technical data may change due to development.
 Subject to modification without notice.



FIELDS OF COMPETENCE

MIXING TECHNOLOGY



CRUSHING TECHNOLOGY



RECYCLING TECHNOLOGY



FILTRATION TECHNOLOGY



BHS-Sonthofen GmbH

An der Eisenschmelze 47
87527 Sonthofen
Germany
Phone +49 8321 6099-0
Fax +49 8321 6099-220
info@bhs-sonthofen.com
www.bhs-sonthofen.com



HAS CZ a.s.
P iblylova 28
719 00 Ostrava-Kun ice
Czech Republic
www.has.cz

tel: +420 595 245 016
mobil: +420 733 535 643
fax: +420 596 247 983
e-mail: jiri.milata@has.cz
www.prumyslove-vibratory.cz
www.cerpadla-michadla.cz