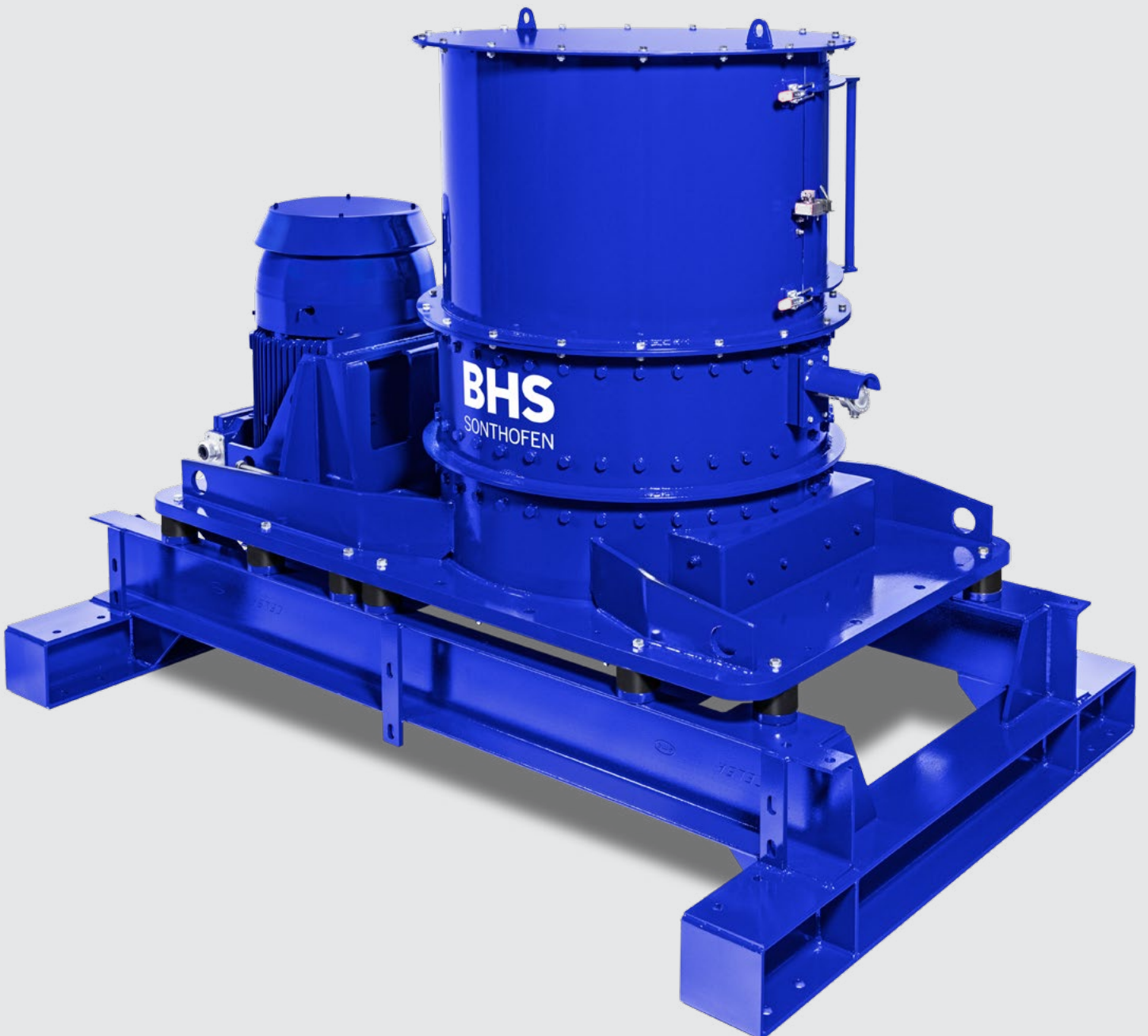


RBG Biogrinder

Efficient substrate processing

BHS
SONTHOFEN

TRANSFORMING
MATERIALS
INTO VALUE



Headquarters of BHS-Sonthofen



TRANSFORMING MATERIALS INTO VALUE

BHS
SONTHOFEN



The Company

BHS-Sonthofen is an owner-operated group of companies specialized in machinery and plant engineering. The group is headquartered in Sonthofen, Germany. BHS provides technical solutions for mechanical process engineering with a focus on mixing, crushing, recycling and filtration technologies. With more than 300 employees and several subsidiaries, BHS-Sonthofen maintains a global presence.

More than 100 Years of Experience in Crushing Technology

We built our first crushers over a hundred years ago for the aggregates industry. In addition to targeted crushing, this market demands robust, low-wear machinery and low operating costs. Based on our many decades of expertise, we developed crushing machines for recycling technology in the 1990s. Today we see ourselves as a technically innovative problem solver for all types of recycling tasks, including the treatment of renewable resources and biological waste.

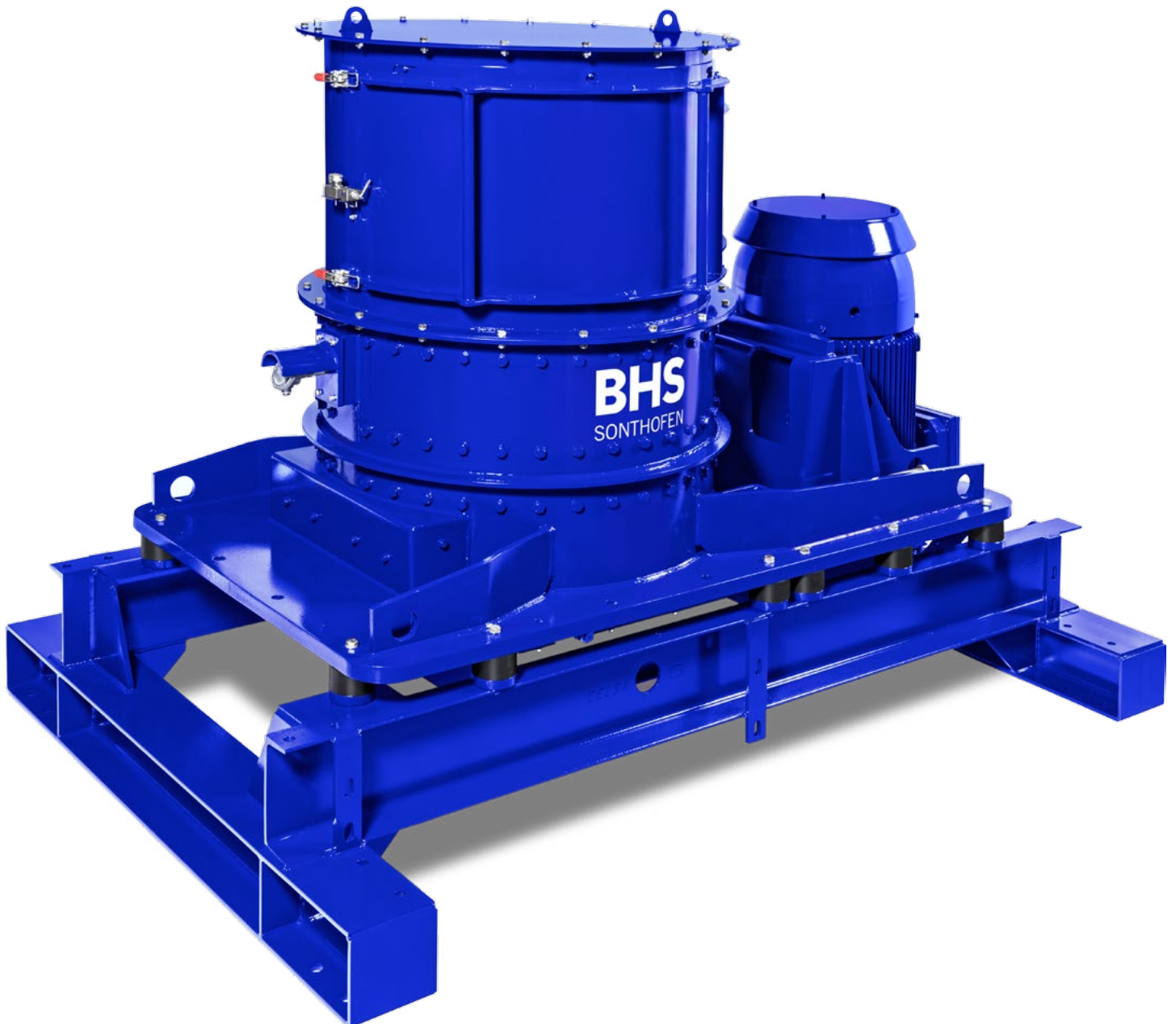
Global Service

BHS ensures fast and reliable service around the world, complete with technical customer support and a large inventory of spare parts for all common machine types, including older models.

www.bhs-sonthofen.com

BHS Biogrinder

The 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 mashed by means of impact and shear forces. Use of the Biogrinder accelerates the gas yield and stabilizes the overall process. It also greatly expands the selection of raw materials and significantly increases the overall cost-effectiveness of the biogas plant.



Fermenter-Friendly Processing

The Biogrinder intensely crushes the fed material and homogenizes and defibers it 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 microorganisms. The effect is particularly great 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. For example, green waste, manure or other biological waste 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 that virtually all the energy applied is converted into crushing capacity and not heat. Further energy savings result from the reduced need for chopping during harvesting. The stirring requirements in the fermenter are also reduced.

Stable Fermentation Process

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

Continuous Process

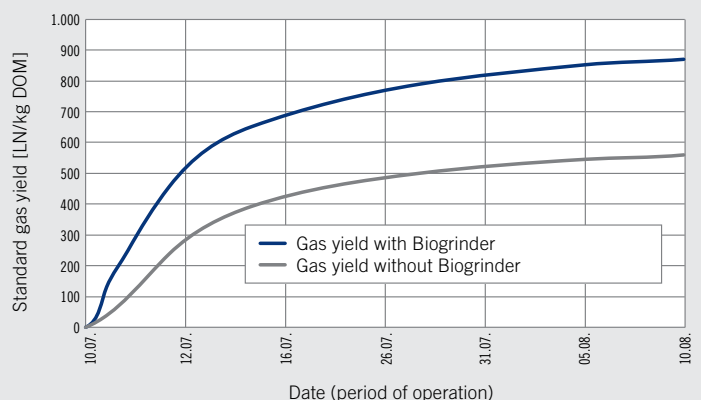
The Biogrinder works continuously, thereby simplifying the process integration of the machine into the overall plant. The Biogrinder comes in two different sizes, allowing operators to optimally match the machine throughput to the type and size of the biogas plant.

Future-Proof Investment

Changing market conditions and legal frameworks constantly present operators of biogas plants with new challenges. To ensure long-term success in this context, the Biogrinder allows high flexibility in the selection of raw materials.

Standard Gas Yield for Green Rye with/without Biogrinder

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



Feed Opening **1**

The Biogrinder has a large feed opening, which allows the machine to be easily fed with different materials.

Rotor **2**

The rotor is mounted on a vertical shaft. The material stream first connects with a distribution cone. Below this, the rotor has two levels, each of which can be fitted with a maximum of two 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, so that the rotor can be optimally configured for the specific task.

Distribution Cone **3**

The distribution cone feeds the inserted material to the hammer levels. This prevents possible clogging of moist or light material in the feed area.

Hammers **4**

The carbide hammers welded onto the base are optimized for long service life. Due to the flexible bearing, even extraneous solid materials, such as stones and soil clods, can be crushed easily. Modification of the hammer configuration can be achieved in minutes.

Stator Strips **5**

The stator strips and wearing plates are fastened from the outside by means of bolts. The wearing parts can thus be easily exchanged and are optimized for long service life.

Discharge Opening **6**

The treated substrate continuously exits the processing chamber through a generously dimensioned discharge opening. A liner consisting of plastic plates prevents caking.

Drive System **7**

Depending on the size, required throughput and desired crushing ratio, the Biogrinder is equipped with motors ranging from 37 to 90 kW.

Maintenance Hatch **8**

The Biogrinder has a large access hatch at the top to facilitate easy and quick maintenance or retooling.

Vibration Absorption **9**

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

Lubrication

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

Key Transfer System

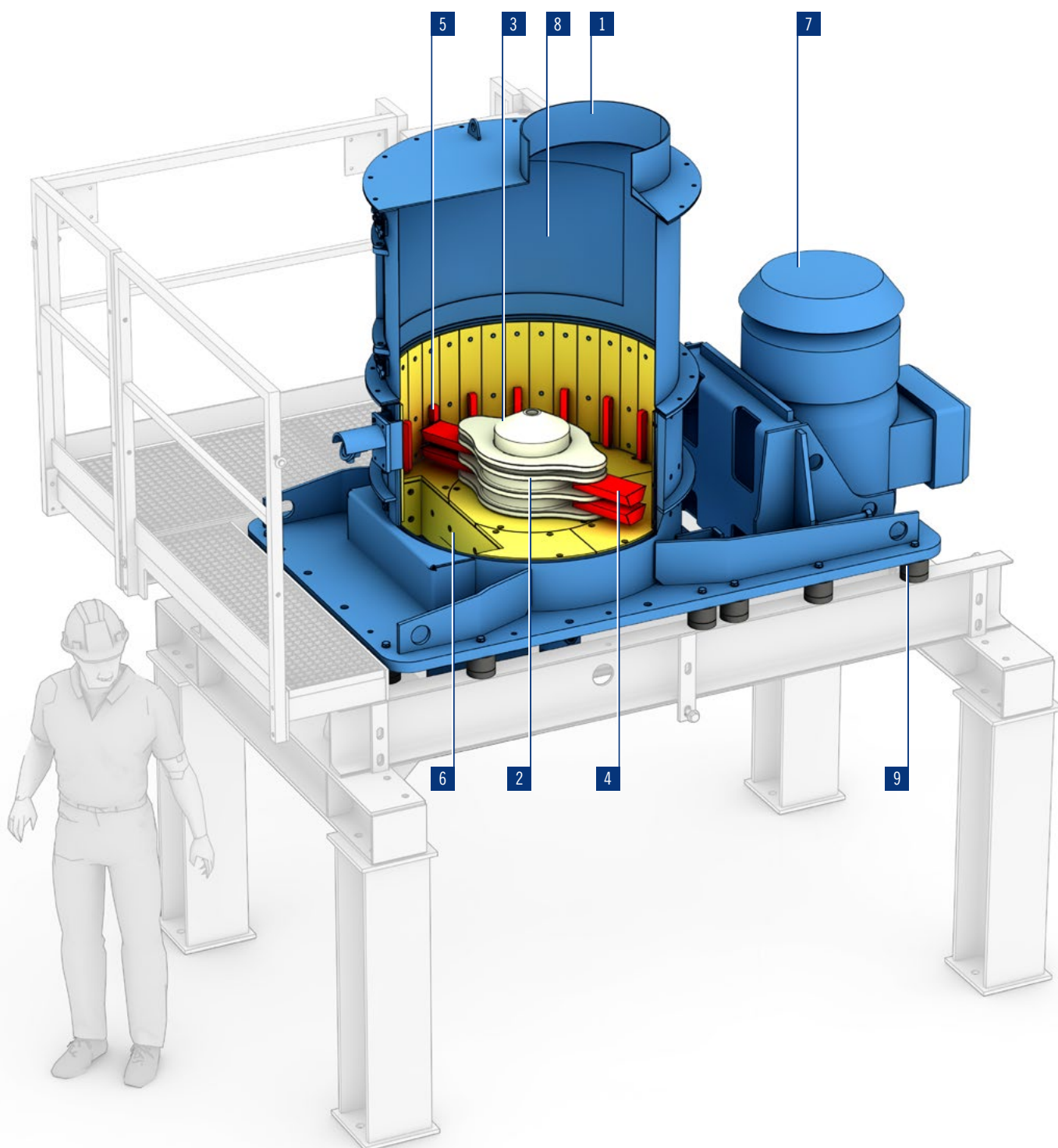
In order to prevent uncontrolled access via the maintenance hatch, the machine is equipped with a key transfer system. The power supply is interrupted and the machine can be opened only by means of a special key after the rotor has come to a standstill.

Control System

The Biogrinder can optionally be equipped with a control system. In the case of frequently changing input materials, it makes sense to implement a frequency inverter. In combination with the variable rotor configuration options, this allows for optimal coordination of the desired targets in terms of crushing results, throughput rate and power consumption.

Steel Structure

As an option, customers can order a standardized steel structure for installation of the machine. It features a maintenance platform for the Biogrinder and a ladder.



Biogrinder RBG 08

Corn silage before and after Biogrinder processing



Grass before and after Biogrinder processing



Organic waste before and after Biogrinder processing



Manure before and after Biogrinder processing



Sugar beet before and after Biogrinder processing



Corn straw before and after Biogrinder processing





Biogrinder in Germany

The operator of a German biogas facility implemented the Biogrinder RBG 08 (55 kW) as the core component of the plant. The facility processes surplus field crops, green rye, corn and rape straw, GPS as well as horse manure containing straw.



Biogrinder in a mobile processing facility

The mobile processing facility delivers a cost-efficient alternative for applications with changing locations. The Biogrinder RBG 08 (75 kW) is the centerpiece of the installation. Further plant components, such as a feed hopper, control system as well as feed and discharge technology, are added depending on the specific application.



Biogrinder in Thailand

The operator of a biogas facility in Thailand employs the Biogrinder RBG 08 (75 kW) to process empty fruit bunches (EFB) and elephant grass. The remote monitoring module continuously provides information on the plant's availability status. This enables the operator to fix faults from Europe or reconfigure and optimize parameters.



Biogrinder in Germany

Another German customer facilitates raw material processing at its biogas facility with the Biogrinder RBG 08 (75 kW). It is mainly used to process turkey dung and corn straw.

Performance Data

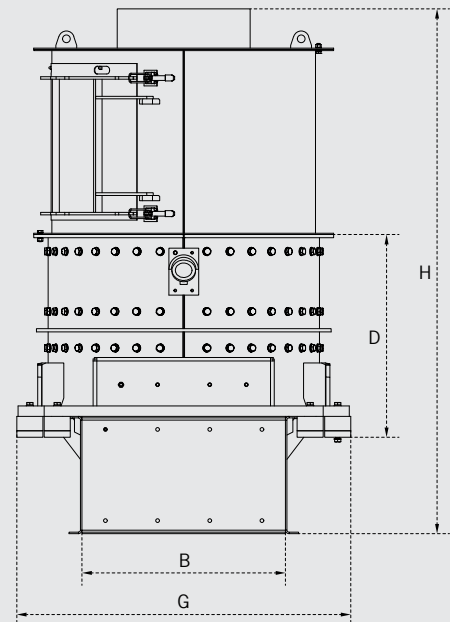
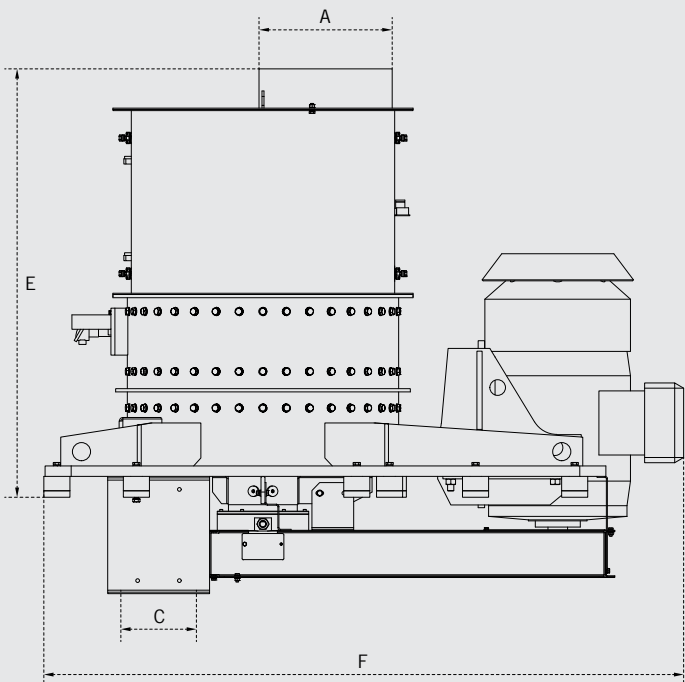
Type	Rotor Diameter	Motor
RBG 06	780 mm	37 kW / 45 kW
RBG 08	1,000 mm	55 kW / 90 kW

Dimensions and Weights

Type	A ¹⁾	B	C	D	E	F	G	H	Weight
RBG 06	416 mm	652 mm	210 mm	700 mm	1,565 mm	1,985 mm	1,050 mm	1,885 mm	2,000 kg
RBG 08	510 mm	750 mm	260 mm	780 mm	1,640 mm	2,450 mm	1,280 mm	2,010 mm	3,000 kg

Technical specifications of customized models may differ from the data provided here.
 All technical specifications are subject to change due to continuous development.
 Subject to change without notice.


¹⁾ Depending on the feed characteristics, data may differ from the information provided.



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