

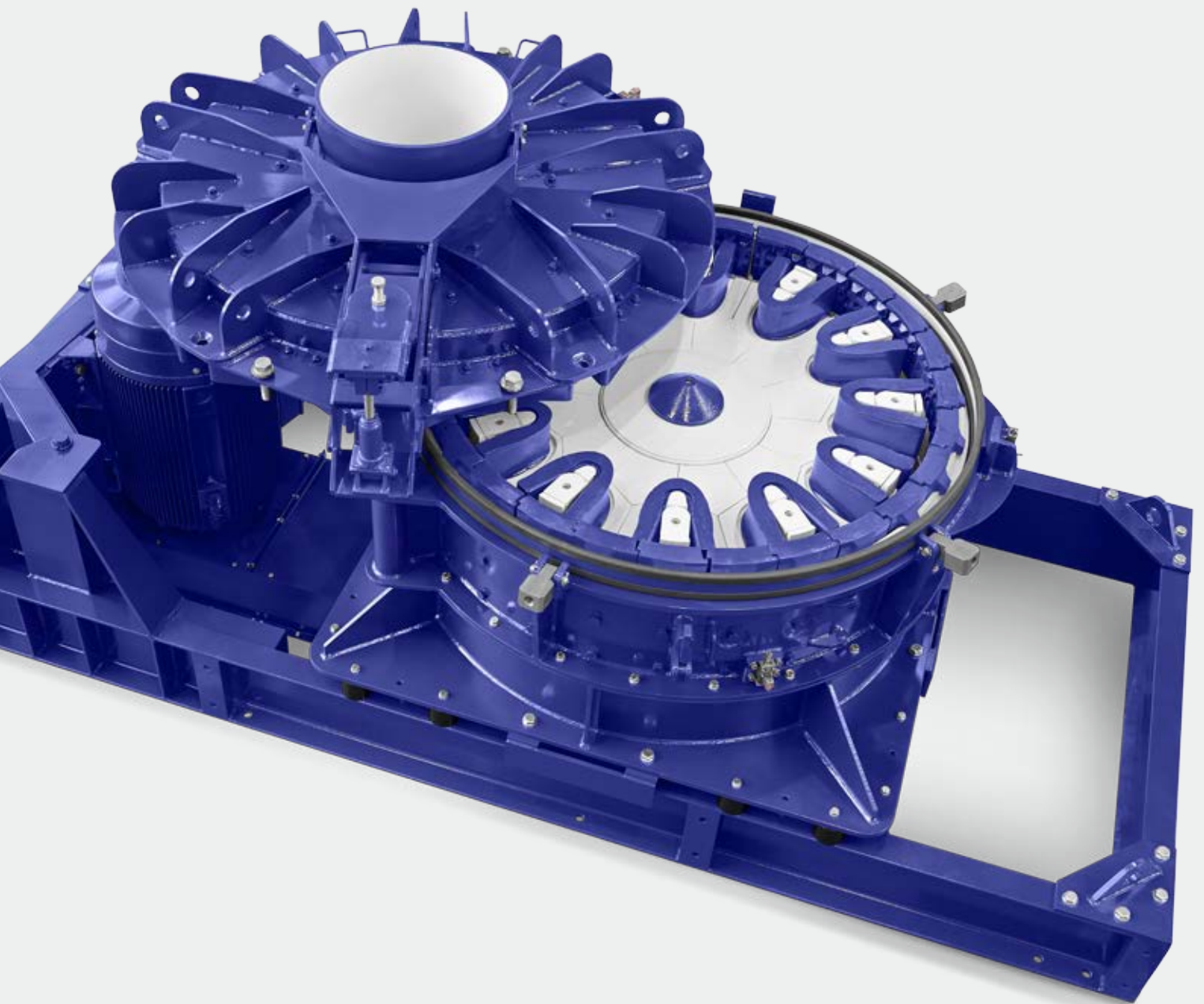
RPM

Rotor Impact Mill

The sand maker

BHS
SONTHOFEN

TRANSFORMING
MATERIALS
INTO VALUE



Headquarter of BHS-Sonthofen



TRANSFORMING MATERIALS INTO VALUE

BHS
SONTHOFEN



BHS-Sonthofen

We are a mid-sized, owner-operated group of companies with over 300 employees. We are passionate about technology, innovative, and place a premium on quality. The group of companies is based in Sonthofen, Germany, and has subsidiaries in the US, China, India and Russia. We are a successful global player in the fields of mixing, crushing, recycling and filtration technology. We provide our customers with well-engineered, state-of-the-art solutions.

Experience

We have been manufacturing crushers and mills for over 100 years. About 50 years ago, we specialized in impact crushing. The primary focus of our technical development and application expertise is on our vertical-shaft impact crushers.

Crushing trials in the BHS technical center

BHS offers customers the opportunity of conducting crushing trials with their own materials at the technical center in Sonthofen. These provide an important basis for deciding how to optimize planned upstream and downstream processes and information about the final product results that are to be expected.

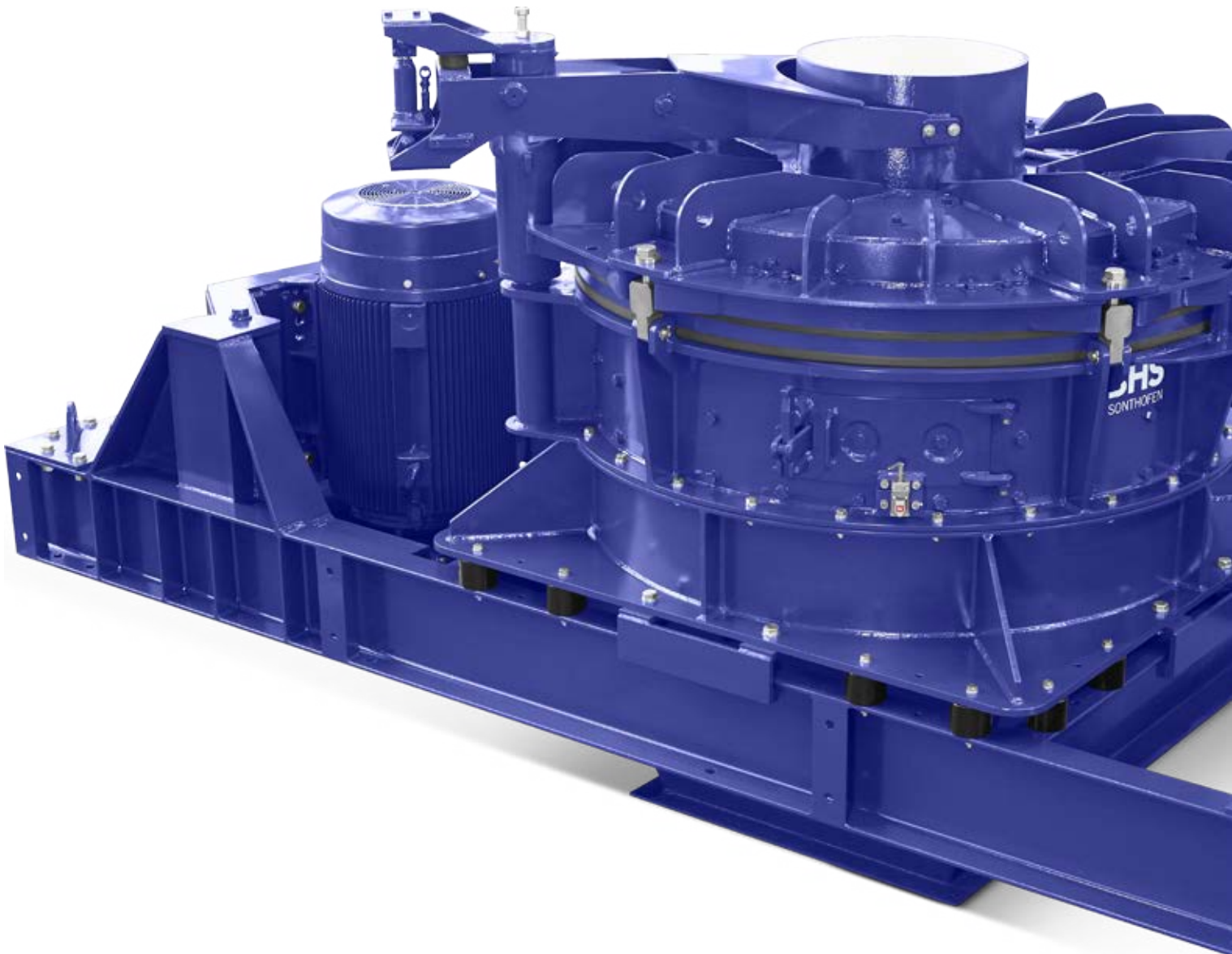
Worldwide service

BHS offers quick and reliable service worldwide with its technical customer support and a large stock of spare parts for all standard machine types and also for older machines.

www.bhs-sonthofen.com

BHS Rotor Impact Mill

The BHS rotor impact mill RPM is a high-performance crusher with a vertical shaft. The BHS rotor impact mill enables you to achieve a high reduction ratio and excellent particle shape. The mill is suitable for crushing all low to moderately abrasive minerals and is therefore used predominantly in the production of sand for the concrete, asphalt and dry mortar industries.



Production of quality sand

Unique crushing principle

The impeller rotor of the BHS rotor impact mill is unique worldwide. The high circumferential speed of the rotor results in an almost permanent gap between the tips of the horseshoe-shaped hammers and the anvil ring. The small gap width and the high energy input due to the circumferential speed result in a very high, targeted crushing ratio.

Grain shape

Rock crushing with the BHS rotor impact mill produces a high-quality crushed sand with a cubical grain shape. This is ideally suited for ensuring the workability of dry mortar, for example.

Consistent grading curve of the final product

The unique functional principle of the BHS rotor impact mill guarantees constant grading curves. The reduction ratio is determined by the speed of rotation and the gap size between hammer and anvil ring. The degree of wear on the crushing tools has no negative influence on the quality of the grading curve.

Superior machine technology

Operational unit

The machine and drive train are mounted on a base frame as a unit that is ready for installation. A large cover that can be raised hydraulically and pivoted through 360° allows unimpeded access.

Reliable lubrication

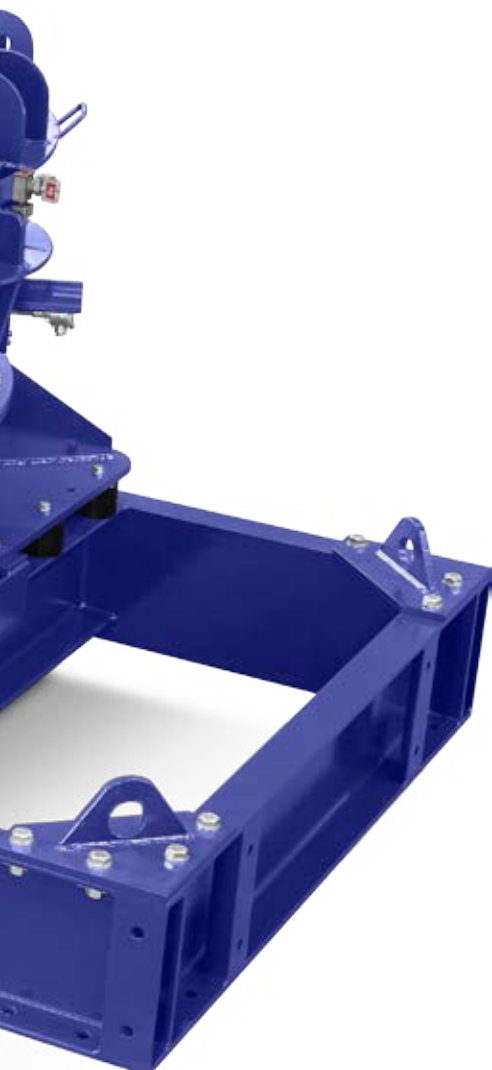
The BHS rotor impact mill is supplied with a recirculating oil lubrication system with cooling and integrated monitoring. This allows low-maintenance and reliable operation.

Easy maintenance and high availability

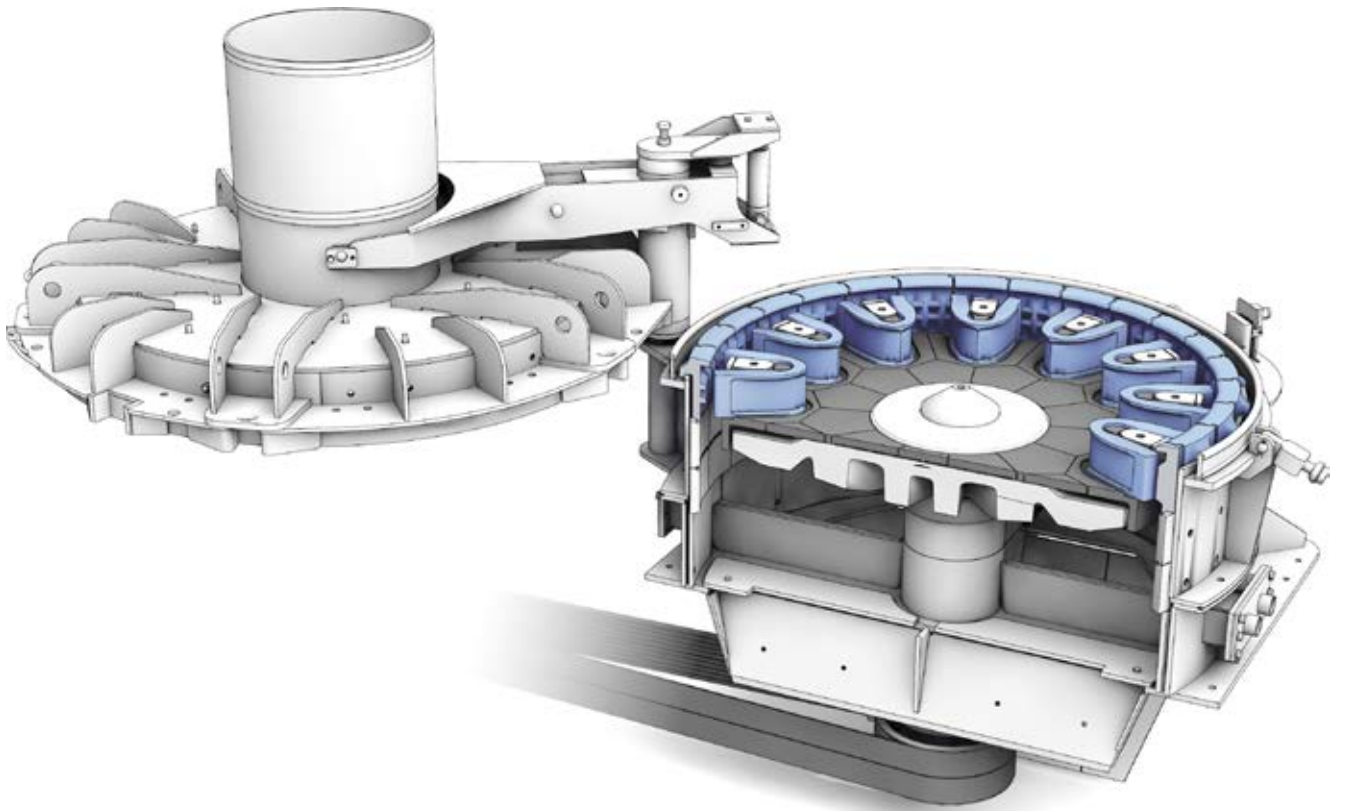
All areas of the machine which are in contact with the crushing material are protected by wearing parts that are easy to exchange and made of materials that can be optimized for the specific application.

Vibration absorption

The rubber spring elements between the base frame and the machine absorb vibrations generated during operation and keep them away from the support structure. Excessive vibrations are registered by an electronic vibration monitor and cause the machine to be shut down.



Layout of the rotor impact mill



Functional description

The input material is fed into the machine from above through the central feed tube. When it hits the rotor, it is accelerated outward by the centrifugal forces, where it is then caught by the horseshoe-shaped hammers, which impel it against the anvil ring. Here the rock is crushed as a result of the impact and shearing forces. Repelled by the anvil ring, the material hits the hammers again, is further crushed by the impact, and is then thrown back against the anvil ring. This process is repeated several times, resulting in intensive multiple stressing of the input material.

The material leaves the rotor through the gap between the rotor and the anvil ring and falls out through the two discharge funnel. The crushing result is determined by the gap size between hammer and anvil ring, the characteristics of the input material and the circumferential speed of the rotor. This makes it possible to optimize the results in each individual case.

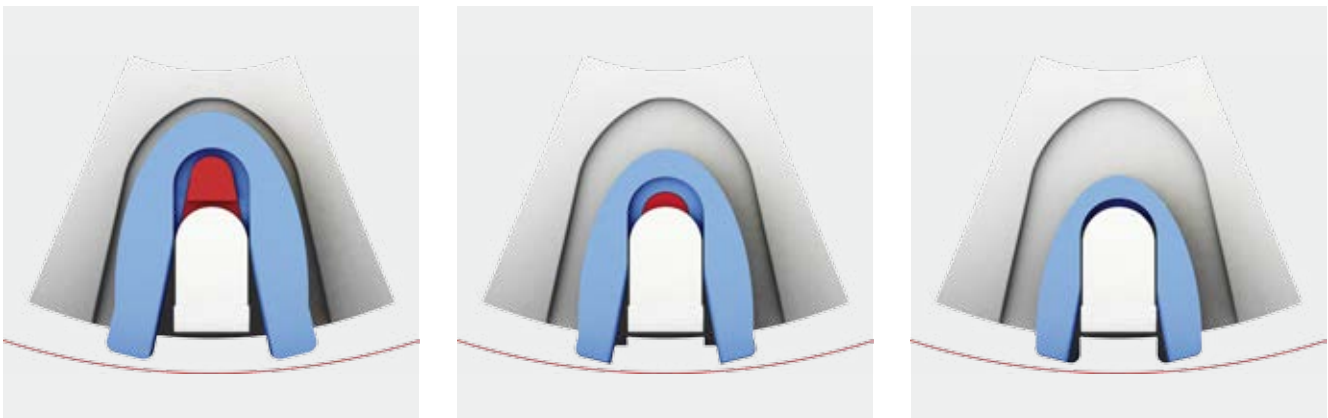
Design of the rotor

- 1** Exchangeability of the crushing tools: The anvil ring elements are attached to the mill housing. The horseshoe-shaped impact hammers are seated on the rotor and are held on the rotor journal by centrifugal force. Both the anvil ring and the impact hammers can be easily exchanged manually.
- 2** Adjustability of the gap: A set of exchangeable spacers is provided for adjusting the annular gap. As the wear of the impact hammers increases, the gap width can be readjusted simply by exchanging spacers of different sizes (shown red in the graphic).
- 3** Optimization of the service life: The rotor is reversible, thereby enabling both sides of the impact hammers to be fully utilized.



Functional principle (overhead view)

Spacers for increasing degrees of wear



AREAS OF USE AND POSSIBLE APPLICATIONS

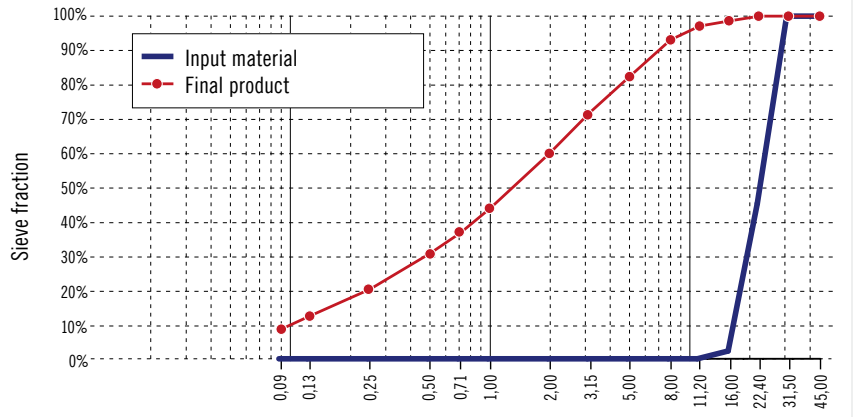
Production of sand:

- » as concrete or mortar sand for the construction industry
- » as high-quality crushed sand for the asphalt industry
- » for the production of ready-mixed dry mortar
- » for the manufacture of surfaces for sports facilities
- » for fireproof building materials

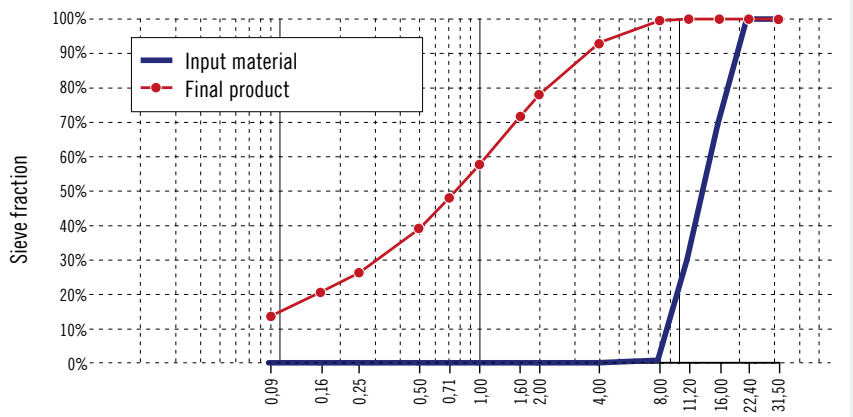
Grinding of fertilizers from:

- » limestone, dolomite, burnt lime
- » synthetic fertilizers

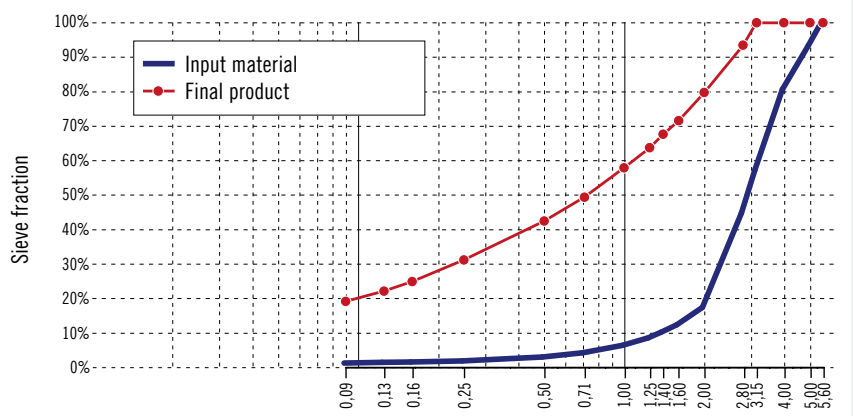
RPM 1113 for the production of concrete sand (0 - 2 mm) from gravel (16 - 32 mm)



Two RPM 1513 for the production of dry mortar sand (0 - 1.6 mm) from limestone (8 - 20 mm)



RPM 1113 for the production of high-grade crushed sand (0 - 2 mm) from off-spec gravel fractions (2 - 5 mm, andesite)



Reinforced cover lining 1

In order to increase the service life, a cover with a reinforced lining can optionally be selected.

Electro-hydraulic cover opening 2

For even faster opening of the machine cover for maintenance and inspection, an optional electro-hydraulic actuation mechanism is available.

Electrical terminal box 3

All the cabling can optionally be connected to a terminal box for easier installation.

Intensive cooling 4

In the case of high ambient temperatures or high temperatures of the input material, a lubricating oil system with increased storage volume and cooling performance can be provided.

Air cannon 5

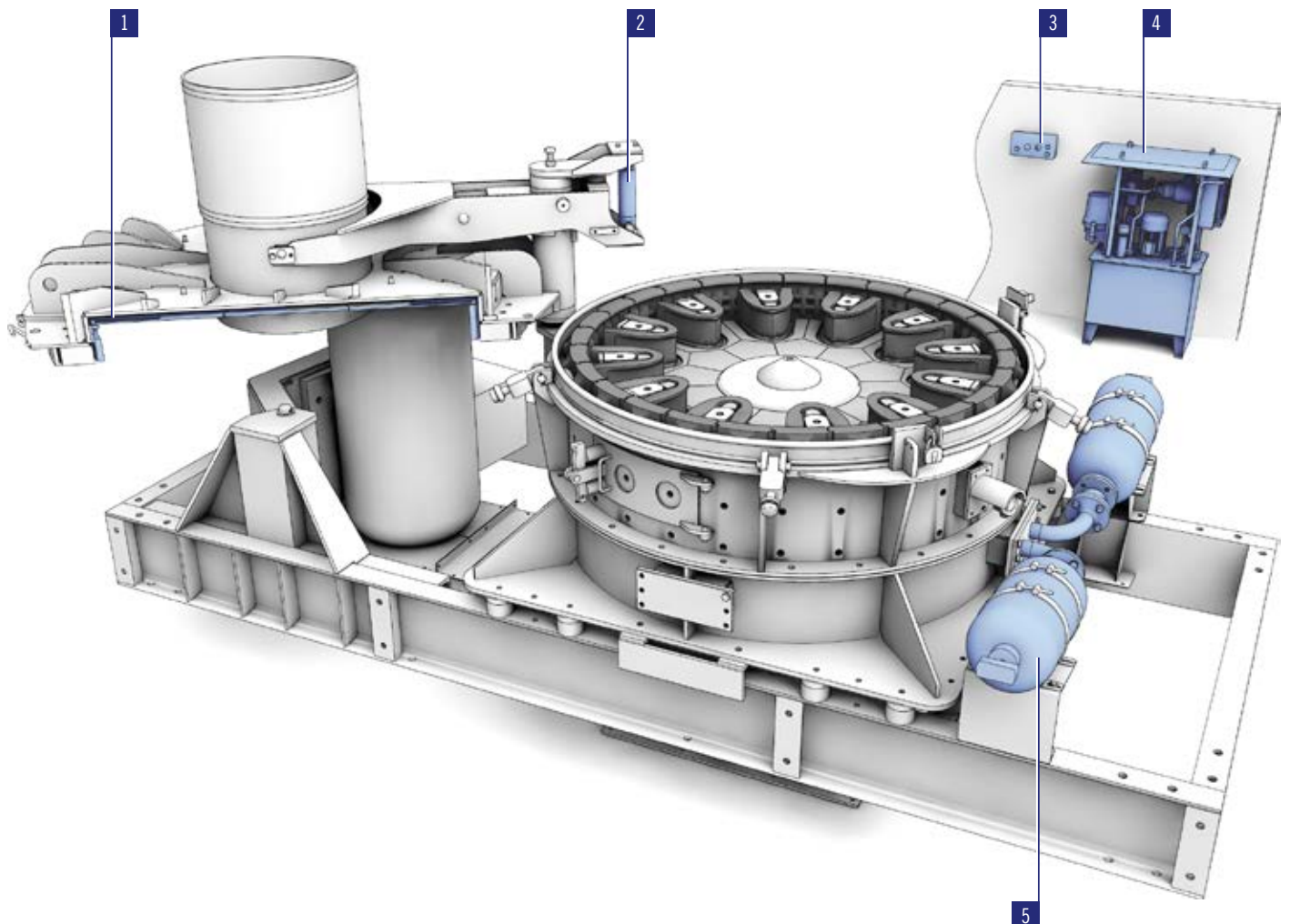
To reduce caking in the discharge outlet area, the crusher can be equipped with air cannons if required.

Control system

As an alternative to integration in the system controller, the machine can be supplied with a PLC (including touch panel) and, if required, with a frequency converter to ensure self-sufficient operation and monitoring of the machine functions.

Periphery

We can also provide the steel construction, storage bunker and metering equipment, feed and discharge equipment, and dust capture systems – all adapted to your specific applications.



Tests give certainty

We operate an all-weather processing plant on our premises in Sonthofen. All our crushing machines are installed as production machines in this facility.

We can perform crushing tests with your input material. A variety of machine parameters can be intensively tested. This is followed by detailed evaluation of the data and a grain-size analysis which serve as the basis for the creation of an optimal machine configuration.



Performance data

Type	Rotor diameter x height	Number of hammers	Circumferential speed (max.)	Drive power (max.)	Throughput rate ¹⁾ (max.)	Input size ²⁾ (max.)
RPM 0813	850 x 135 mm	6	65 m/s	55 kW	20 t/h	45 mm
RPM 1113	1,150 x 135 mm	8	70 m/s	132 kW	35 t/h	56 mm
RPM 1513	1,500 x 135 mm	12	70 m/s	200 kW	70 t/h	56 mm

Dimensions and weights

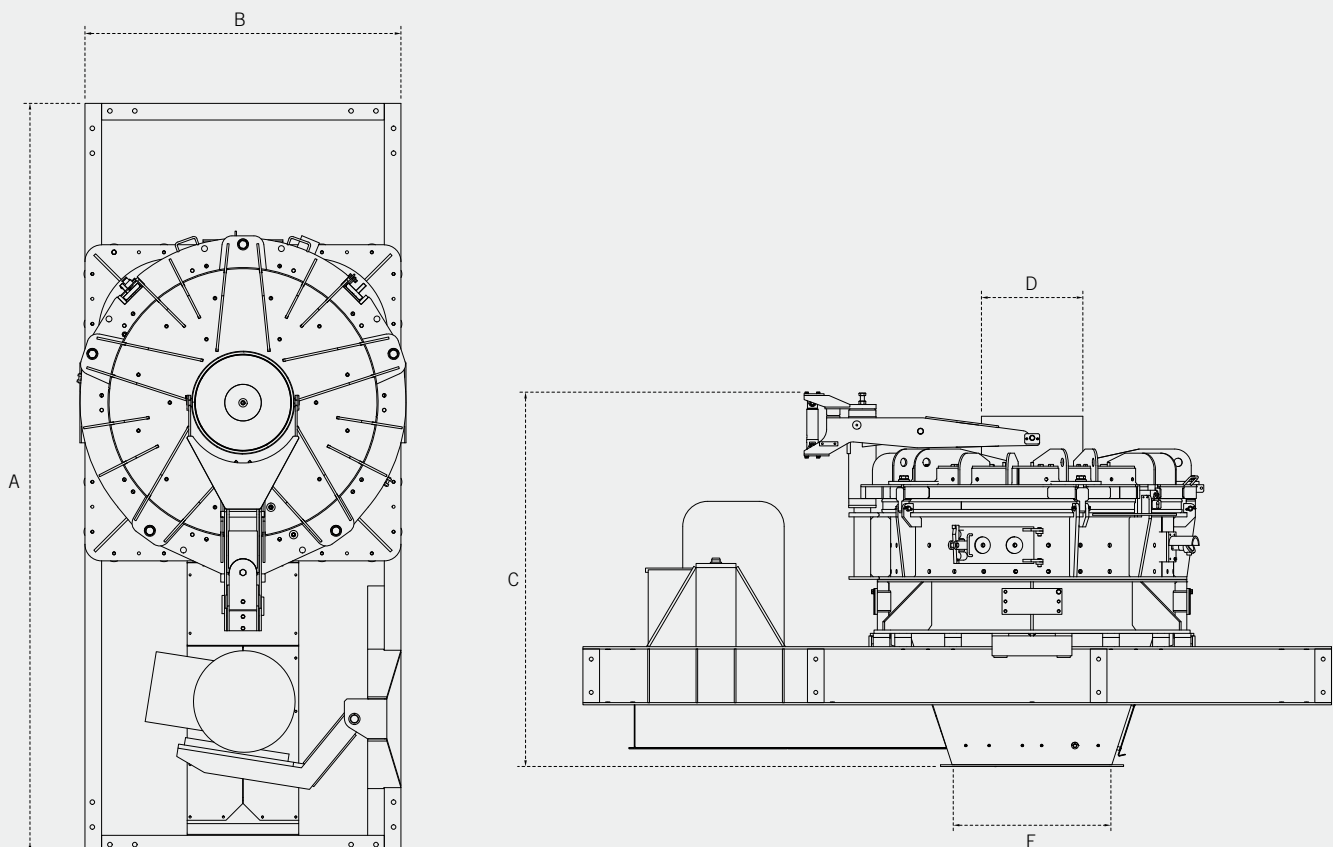
Type	A	B	C	D	E	Weight ³⁾
RPM 0813	2,800 mm	1,270 mm	1,975 mm	219 mm	770 mm	4,400 kg
RPM 1113	3,080 mm	1,500 mm	2,110 mm	406 mm	940 mm	6,800 kg
RPM 1513	4,500 mm	1,900 mm	2,125 mm	610 mm	970 mm	9,100 kg

¹⁾ The throughput rate depends on the circumferential speed of the rotor and the grading curve of the input material.

²⁾ The input size depends on the type of rock, the circumferential speed of the rotor and the percentage of maximum particle size in the grading curve (screened through square mesh).

³⁾ Weight for standard design without motor and accessories.

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



BHS FIELDS OF COMPETENCE

MIXING TECHNOLOGY



CRUSHING TECHNOLOGY



RECYCLING TECHNOLOGY



FILTRATION TECHNOLOGY



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