

# RS Rotorshredder

Crushing, disaggregating and separating materials

**BHS**  
SONTHOFEN

TRANSFORMING  
MATERIALS  
INTO VALUE



Headquarters 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 innovative, passionate about technology 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.

### Over 100 years of experience in crushing technology

We built our first crushers for the aggregates industry over 100 years ago. In addition to targeted crushing, this market also demands robust, low-wear machinery and low operating costs. We have continued to build on this experience, developing crushing machines for recycling applications in the 1990s. Today, we see ourselves as a technologically innovative problem solver and experienced system supplier for a wide variety of recycling tasks.

### Crushing tests at the BHS technical center

BHS offers customers the excellent opportunity to run production-scale crushing tests with their own specific materials on our machines at the BHS technical center in Sonthofen.

### 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.

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[www.bhs-sonthofen.com](http://www.bhs-sonthofen.com)



## BHS Rotorshredder

The BHS Rotorshredder crushes, untangles and disaggregates materials. The crushing tools exert an intense stress on the input material through a combination of impact, punch and shear forces. This results in selective size reduction with the following special features:

- » Particle sizes are reduced in a targeted manner
- » Composite materials are separated
- » Hard and brittle materials undergo intense size reduction
- » Metals are separated and cleaned
- » Entangled materials are liberated



Rotorshredder of type 2018 during construction of an E-Scrap recycling plant.



### Simple tools

The BHS Rotorshredder uses several rotating hammers flexibly attached to a vertical shaft one above the other. The tools are of a very simple and sturdy design. They do not need to be readjusted or sharpened.

### Flexibility

The BHS Rotorshredder is designed to disaggregate a broad range of input materials. The intensity and selectivity in processing the input material can be influenced and optimized by means of various machine parameters. The flexibility to be able to cope with changing requirements in the future will safeguard your investment.

### Continuous operation

The BHS Rotorshredder operates in a continuous mode. This makes it easy for the Rotoshredder to be efficiently integrated into a complete process. In addition, the input material remains inside the machine for a relatively short time only, avoiding excessive heat transfer to the crushed material and preventing plastics from melting, for example.

### Extraction of solid parts

Individual solid parts that cannot be shredded by the rotating tools are discharged separately through a gate which opens automatically.

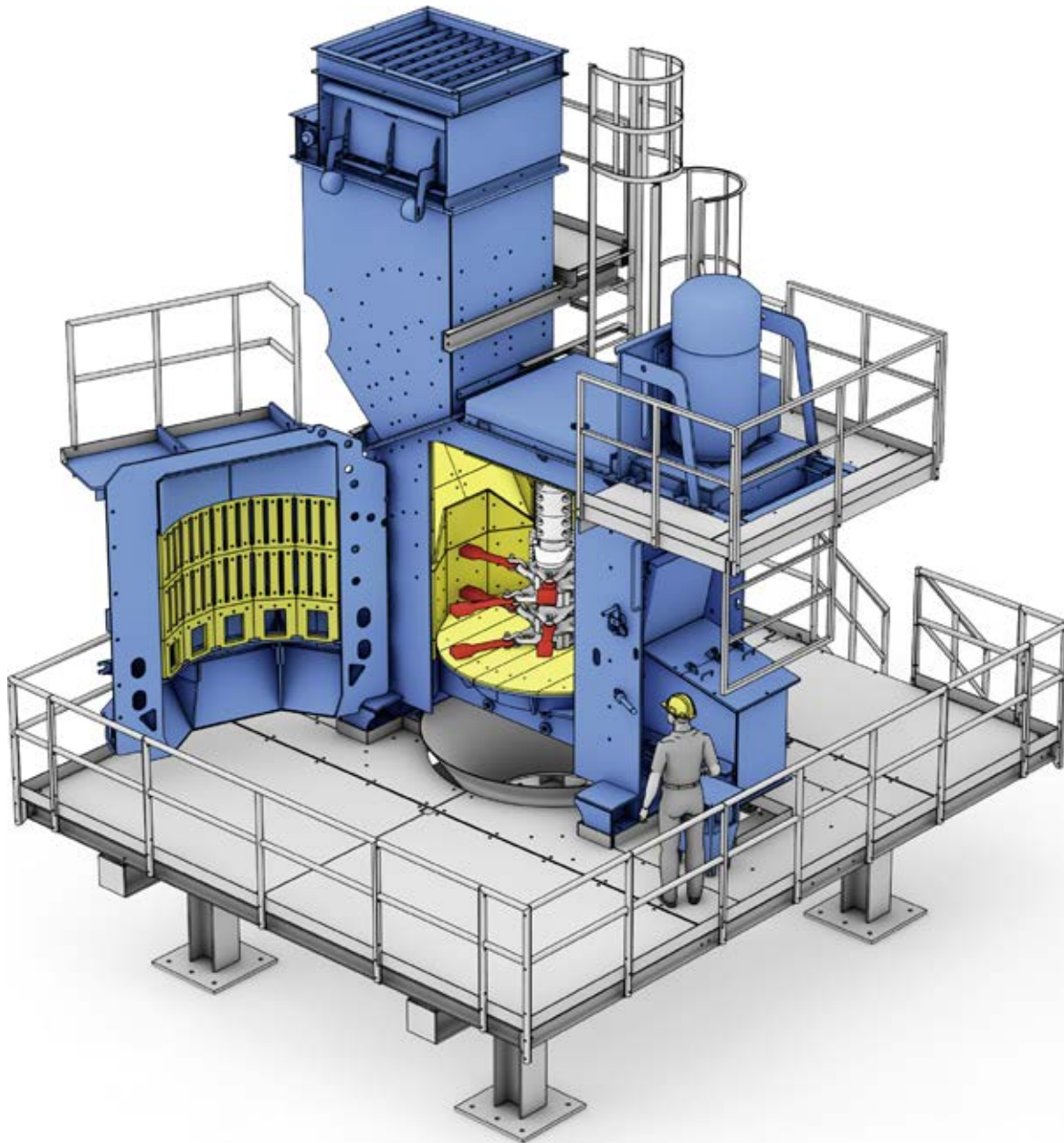
### Easy maintenance

Two large maintenance doors provide easy access to the interior of the BHS Rotorshredder. All wearing parts are fastened with screws and can be quickly replaced.

### Flywheel

The Rotorshredder can optionally be equipped with a flywheel for energy storage. This is capable of automatically compensating for brief mechanical or electrical peak loads. This protects the machine and avoids expensive peaks in the power consumption.





### Functional description

The patented BHS Rotorshredder consists of a cylindrical working chamber with a high-speed vertical shaft. Mounted one above the other on the shaft are pairs of overhung crushing tools. The tools are aligned horizontally and stabilized by centrifugal force. The flexible suspension of the tools on the shaft also serves the purpose of overload protection. The Rotorshredder can optionally be equipped with a flywheel for energy storage.

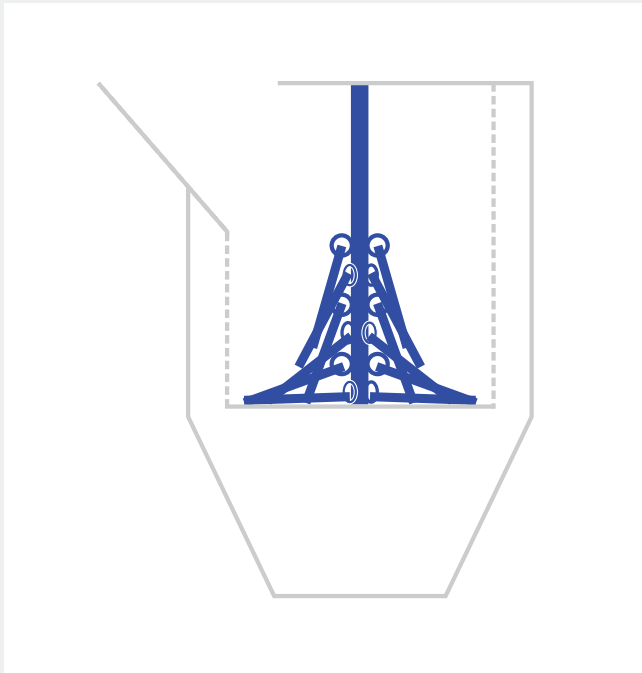
The cylindrical chamber features a double wall comprising a sturdy slotted grid on the inside. The size of the gaps in this grid can be varied to suit the customer's requirements. The input material is fed into the chamber from above. As the material enters the range of the tools, it is subjected to intense impact, punch and shear forces. The selectively processed material then leaves the chamber through the slotted grid. Individual solid parts that cannot be shredded are discharged from the chamber through a separate gate.

### Separation of harmful materials

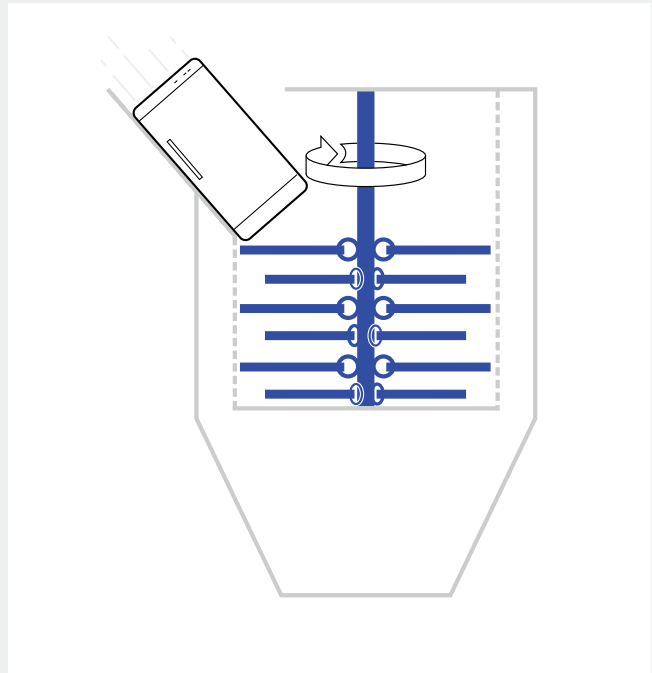
The EU directive for E-Scrap recycling requires that certain components containing harmful substances are reliably separated. The BHS Rotorshredder is able to separate these components, such as batteries, capacitors, printed circuit boards, etc., from the composite structure without destroying them completely. The harmful materials can be reliably sorted from the post-shredder material stream.

### Example of the crushing process with a refrigerator in the Rotorshredder

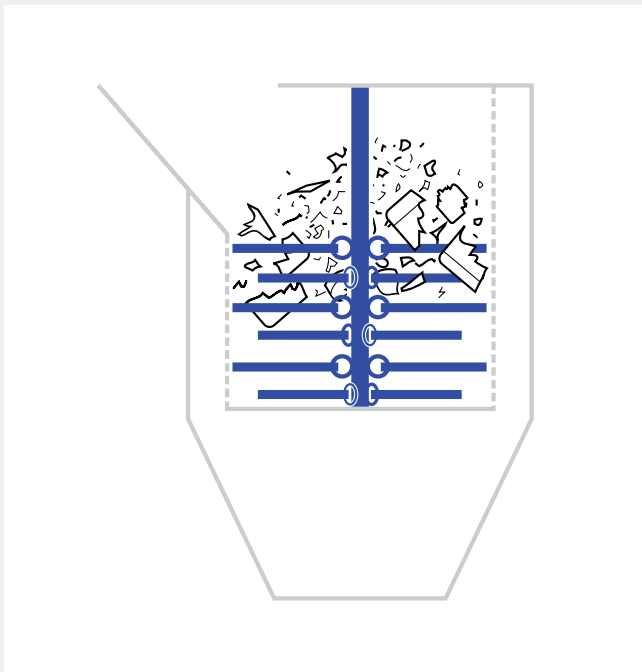
The crushing ratio and the intensity of stress on the material can be variably adjusted via the speed, and the configuration of the tools and grid. Three machine sizes are available to accommodate various requirements, especially in terms of throughput and input material size.



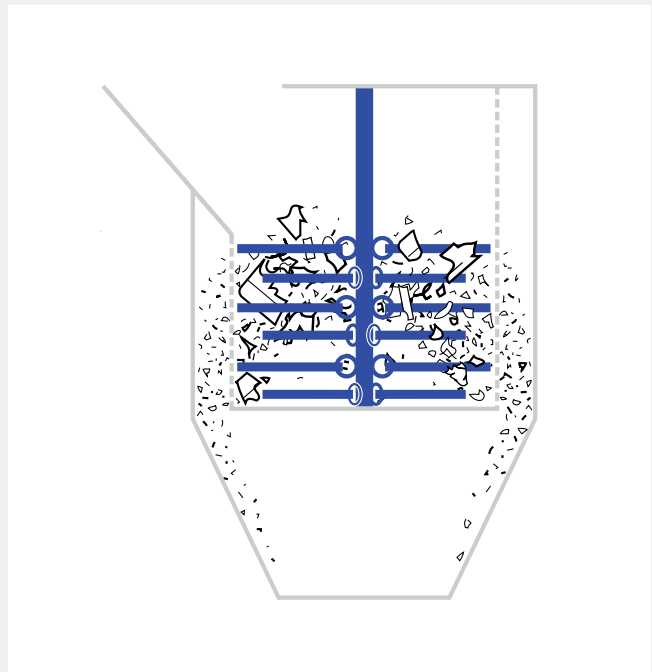
1. Rotorshredder at rest.



2. During operation, the hammers are positioned horizontally and stabilized by centrifugal force.



3. The feed is crushed intensively when it reaches the impact chamber.

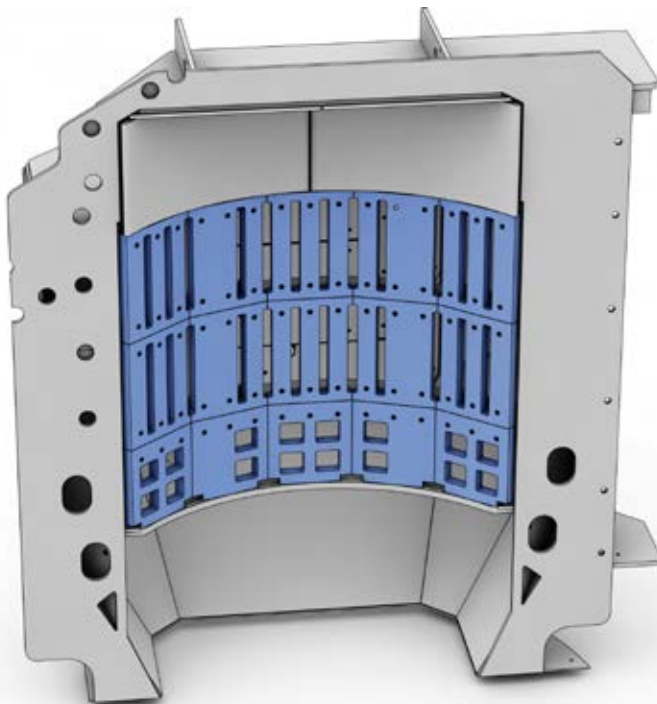
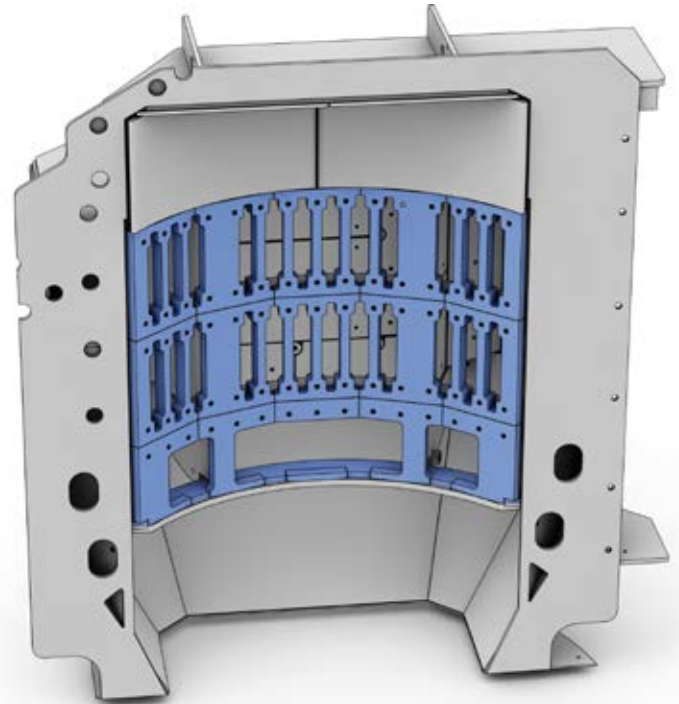


4. After just a few seconds the selectively processed material leaves the chamber through the slotted grid.

## Patented slotted grid

A distinctive feature of the Rotorshredder is the patented slotted grid in the large, double-walled doors. The interior of each door consists of grid segments with slots through which the crushed material automatically leaves the working chamber once it has reached the required particle size. Different types of grid segments can be used depending on the input material and requirement.

Grid configuration with a large aperture at the bottom, e.g. for the separation of tangled input material.



Grid configuration with small apertures at the bottom for a high crushing ratio of brittle-hard materials.



## Expertise in plant engineering

We design and implement complete recycling plants or plant components for treating recyclable materials for a wide variety of applications. Our experienced specialists are at your service to determine the best possible processes for your requirements. We will be happy to help you by performing tests with your materials at our technical center in Sonthofen. You obtain a future-proof solution with a high throughput, low operating costs and final products in line with market requirements. Numerous references testify to our expertise.



This Rotorshredder of type RS 2018 is used in France for the metal recycling of shredder fractions.



Installation of a complete BHS recycling plant for crushing secondary metals in Austria. The plant is centered on a Rotorshredder from BHS, shown here without its final sound-proof enclosure.



Construction and assembly of a complete BHS recycling plant in France. The E-Scrap plant is equipped with a BHS Rotorshredder of type RS 2018.



The Rotorshredder is enclosed for disaggregation of E-Scrap in the first recycling stage.



The second major component of an E-Scrap recycling plant can be a BHS rotor impact mill of type RPMV 1113 for fully mechanized treatment of the 0-20 mm fine fraction in the second stage.





Treatment plant for E-Scrap in Romania.



The E-Scrap plant in Romania is centered on a Rotorshredder of type RS 2018.



### INPUT MATERIAL



E-Scrap



Shredder light fraction



Aluminum scrap



## MATERIAL OUTPUT AFTER AUTOMATIC SORTING



Iron



Non-ferrous metals



Plastics



Iron



Non-ferrous metals



Plastics



Pre-crushed aluminum



Rubber fraction (from window profiles)



Aluminum shaped into balls in the rotor impact mill (RPMV)



### Tests give certainty

We operate an all-weather, industrial-sized treatment plant on our premises in Sonthofen. All our crushing machines are installed in this facility. The crushed material can be separated into different categories using a sieve or overbelt magnet. Samples can be analyzed in further detail.

We can perform treatment tests at our center using input material from prospective customers. A variety of machine parameters can be tested. A box feeder is available for large material quantities. Even large input appliances such as heavy washing machines can be processed.

All test results are recorded and analyzed according to mutually agreed criteria.

Rotorshredder of type RS 2018 for tests at the BHS technical center at Sonthofen.





Performance data

| Type    | Working chamber<br>(diameter) | Working chamber<br>(height) | Feed opening<br>inside dimensions <sup>1)</sup><br>(H x W) | Drive power<br>(max.) |
|---------|-------------------------------|-----------------------------|--|-----------------------|
| RS 2018 | 2,000 mm                      | 1,800 mm                    | 600 x 1,200 mm<br>900 x 1,200 mm                           | 110 - 400 kW          |
| RS 3218 | 3,200 mm                      | 1,800 mm                    | 1,500 x 1,500 mm   | 110 - 400 kW          |

Dimensions and weights

| Type    | A <sup>2)</sup> | B <sup>2)</sup> | C        | D        | E        | Weight <sup>3)</sup> |
|---------|-----------------|-----------------|----------|----------|----------|----------------------|
| RS 2018 | 5,000 mm        | 6,000 mm        | 3,100 mm | 3,850 mm | 2,000 mm | 30,600 kg            |
| RS 3218 | 5,700 mm        | 6,700 mm        | 3,000 mm | 5,130 mm | 2,430 mm | 42,500 kg            |

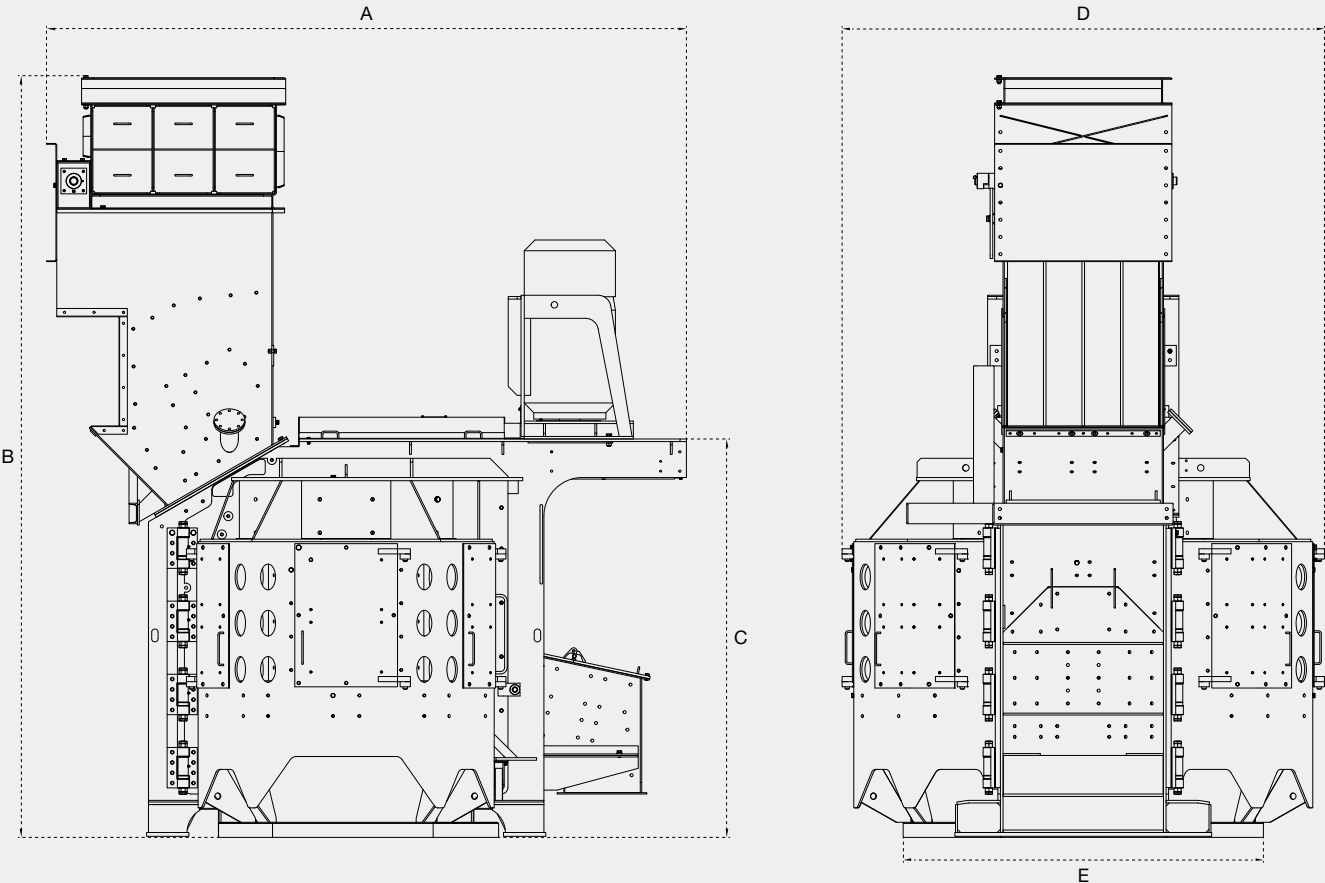
<sup>1)</sup> Not suitable for crushing solid parts of high strength. The maximum input size is equivalent to about two thirds of the feed opening.

<sup>2)</sup> Different data may apply depending on the feed hopper that is used.

<sup>3)</sup> Weight for standard design including feed and discharge hoppers.

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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