

# Recycling Solutions

## Machines & Complete Systems

For the Effective Processing of Reusable Materials

**BHS**  
SONTHOFEN

TRANSFORMING  
MATERIALS  
INTO VALUE



The BHS-Sonthofen head office at the company headquarters in Germany

#### About BHS.

BHS-Sonthofen GmbH is an internationally operating company in the field of mechanical process technology. Every day, around 350 employees ensure that we remain a leading provider of intelligent recycling, mixing, shredding and filtration solutions – both at our headquarters in Sonthofen, Germany, and around the world. Our international customers hail from the building materials, recycling, chemical, pharmaceutical, food and feed industries as well as the energy and environmental sectors. At BHS, customers can get everything from a single source: from individual machines through to complete systems.

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



# TRANSFORMING MATERIALS INTO VALUE

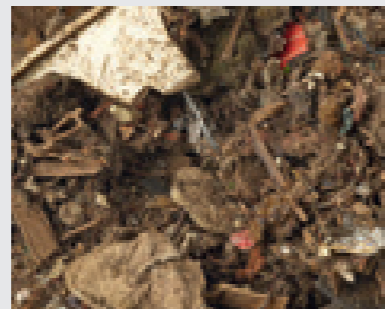
## Over 20 Years of Recycling Expertise

Our corporate objective is to help customers process recyclable materials in such a way that they can be utilized as secondary raw materials or for other purposes. BHS provides you with custom recycling solutions, from impact crushers to

single- and twin-shaft shredders through to complete, turnkey recycling systems. Customers benefit from our 100+ years of experience in crushing technology and engineering solutions from a single source.



Electrical and electronic waste



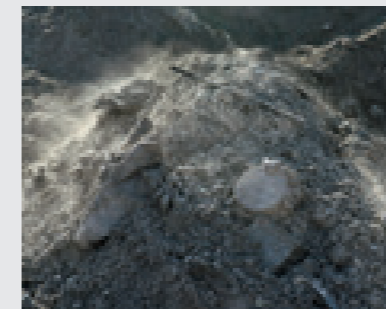
Shredder residue (ASR)



Slag



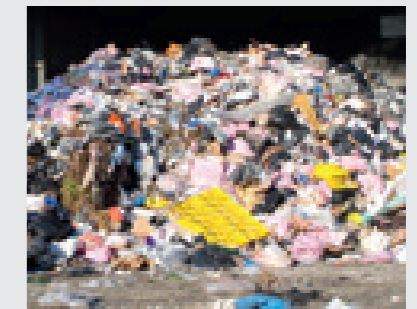
Metals



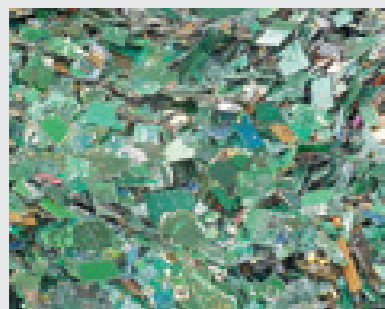
Ash from waste incineration



Glass



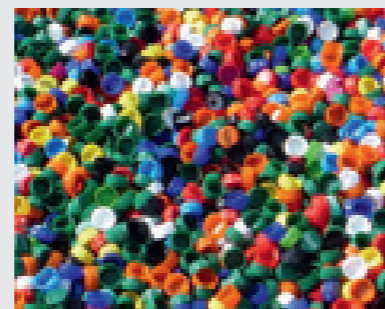
Household waste



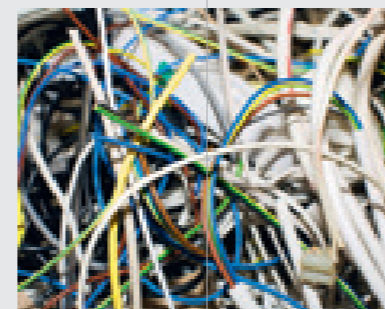
Circuit boards



File and data destruction



Plastics



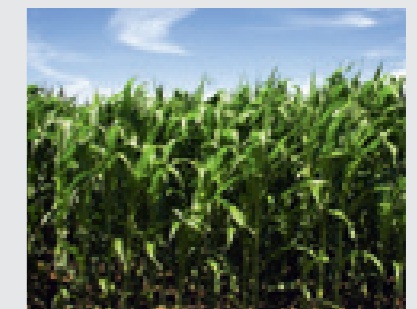
Cables



Tires



Commercial waste

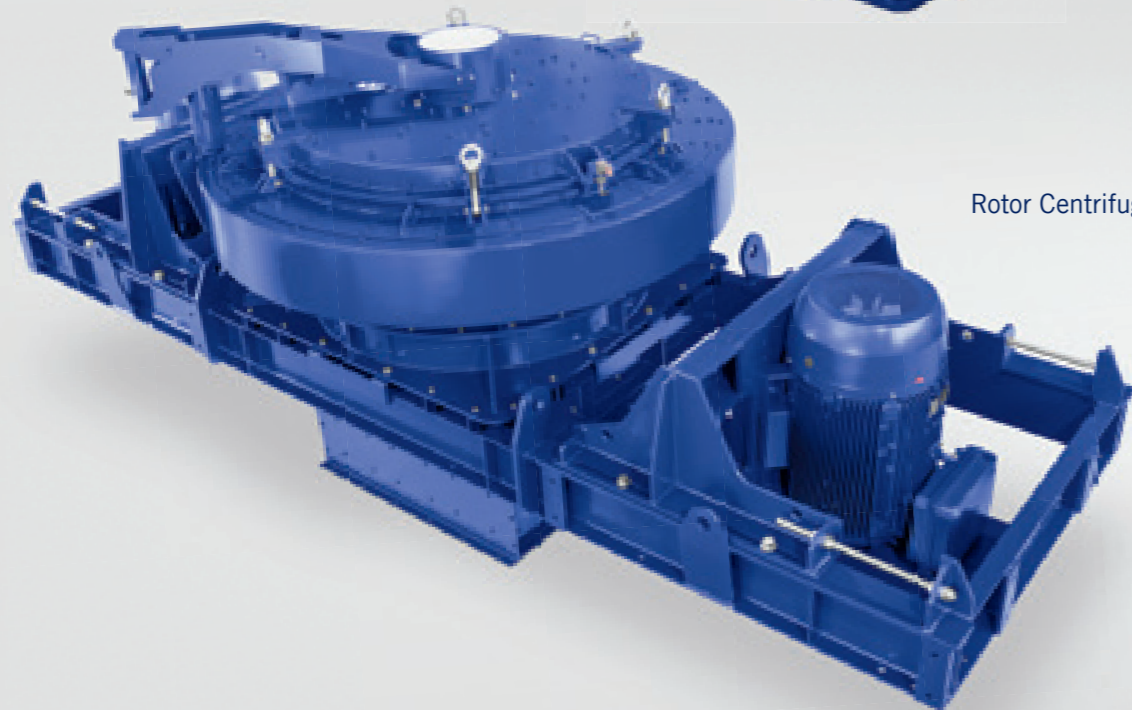
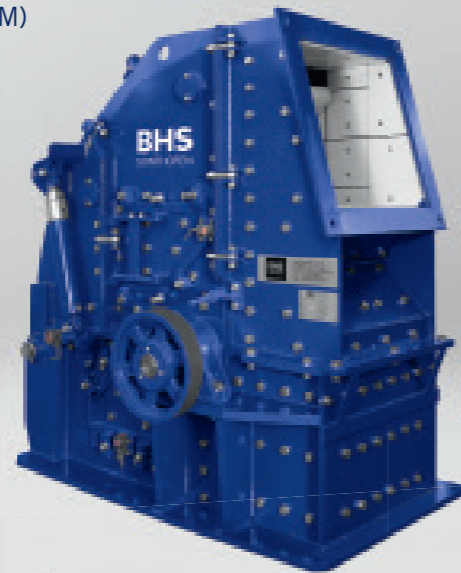


Renewable raw materials

# BHS Recycling Machines

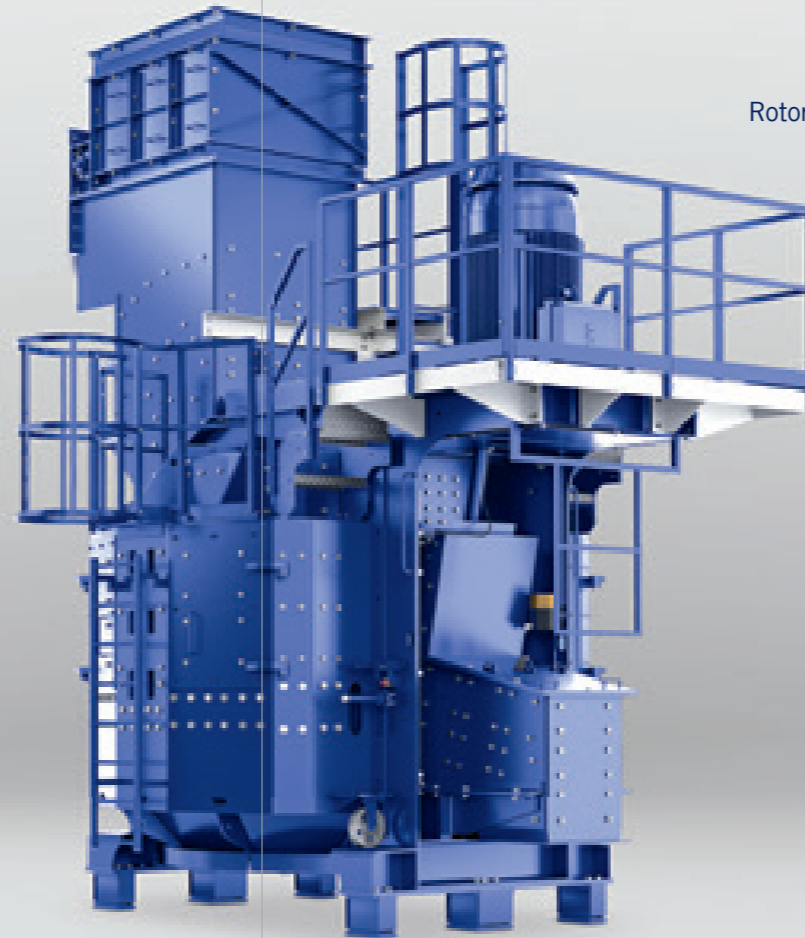
Impact Crushers

Impact Crusher & Impact Mill (PB & PM)



Rotor Centrifugal Crusher (RSMX)

Rotorshredder (RS)



Biogrinder (RBG)



Rotar Impact Mill (RPMV & RPMX)



# BHS Recycling Machines

Cutting and Tearing Shredders

Pre-Shredder (VSR)  
Rotary Shear (VR)



Universal Shredder (NGU)



SpeedCut Granulator (NGV)





Our system expertise.  
As customized as your application.

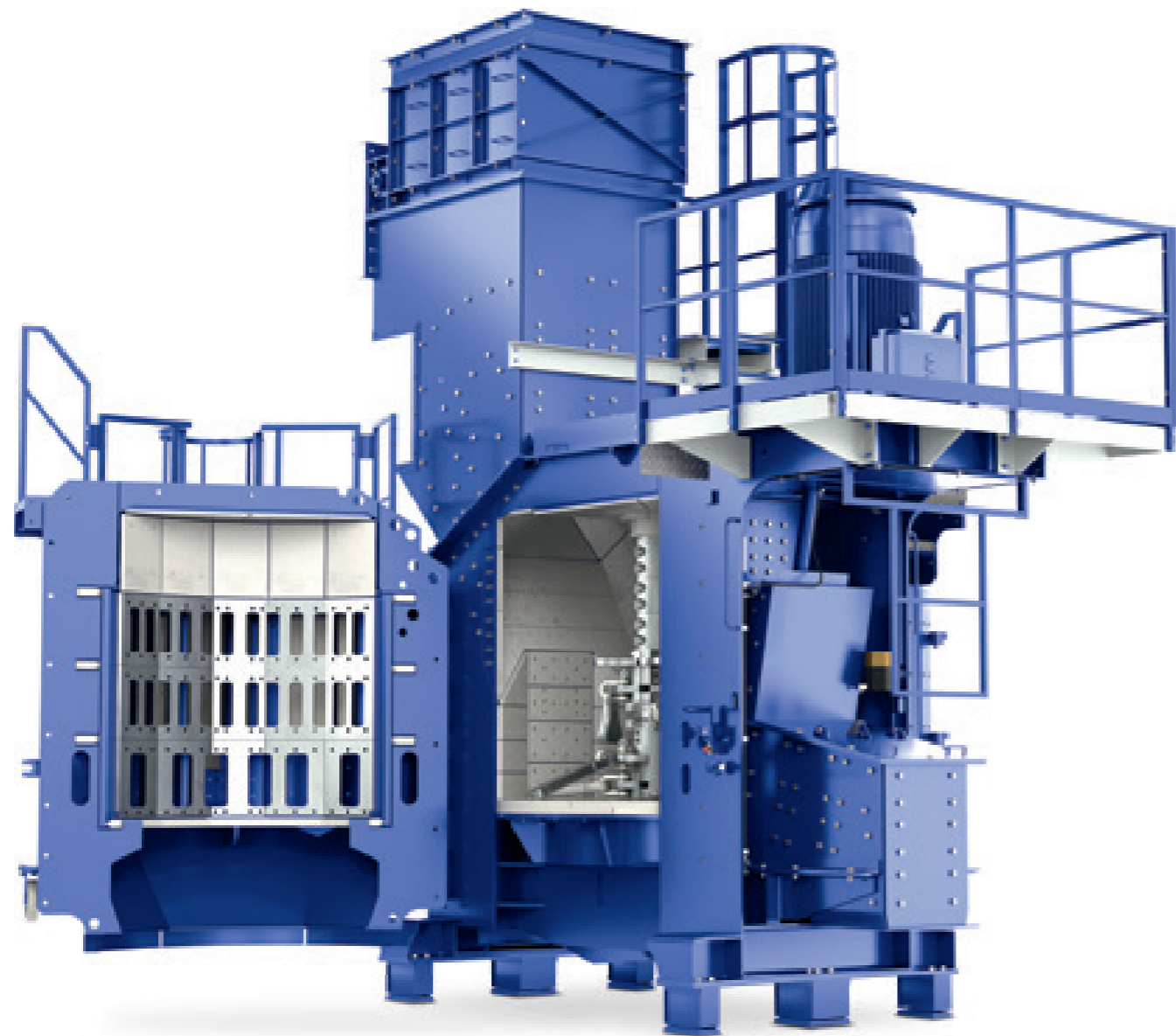
BHS is your reliable partner for intelligent, process- and customer-oriented recycling systems. Our experienced engineers are developing efficient, sustainable and forward-thinking recycling solutions.

From engineering to commissioning – the comprehensive service range of BHS covers all your needs from a single source. Our extensive engineering competence and in-depth process know-how provide you with a decisive competitive edge.

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

Turnkey BHS system for processing and refining metals derived from waste incineration plant slag and other metal-bearing materials. The system includes one impact mill of type PM 0806 and two rotor impact mills of type RPMV 1113 and type RPMX 1516.



**Rotorshredder (RS)**

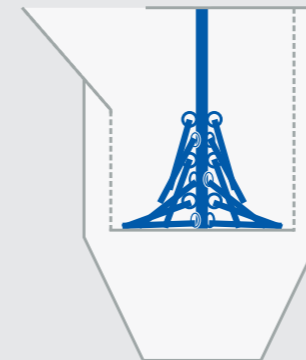
The Rotorshredder shreds, separates and isolates materials. The shredding tools exert a high intense stress on the input materials through impact, shock and shearing forces. This results in selective size reduction with the following features: Particle sizes are selectively reduced, composite materials are separated, brittle-hard materials are finely shredded, metals are exposed and cleaned and entangled materials are separated.

**Applications**

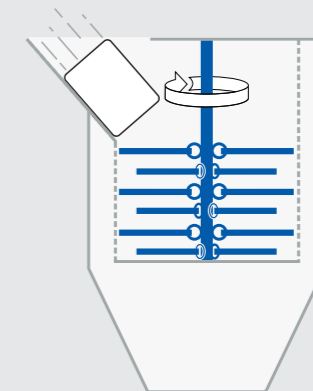
Electrical and electronic waste, shredder residue (ASR), slag, ash from waste incineration, metals, etc.

- » Pre-shredder and secondary shredder for a wide range of input materials
- » Continuous operation
- » Targeted, selective shredding
- » Disaggregation and separation
- » High throughput rate
- » Robust shredding tools
- » Generously dimensioned machine access space

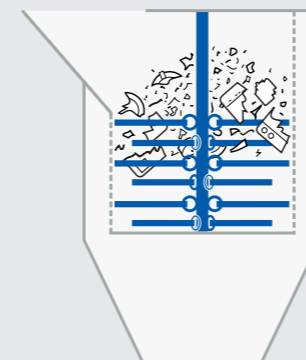
**Operating Principle**



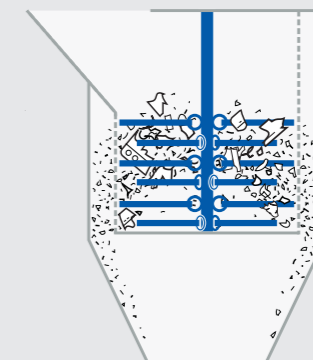
**1**  
The Rotorshredder in an idle state.



**2**  
In operation, the hammers are stabilized and horizontally aligned by centrifugal force.



**3**  
The fed-in input material is intensively shredded after entering the impact chamber.



**4**  
It takes just a few seconds of processing before the selectively treated material exits the working chamber through the grate.



**Impact Crusher & Impact Mill (PB & PM)**

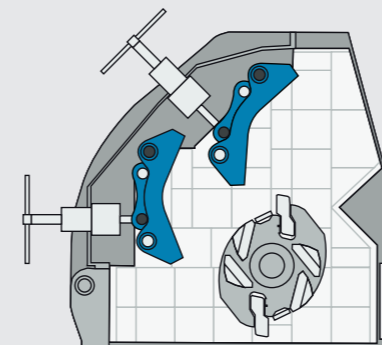
The impact crushers and mills are universal and economical solutions. The impact crusher reaches a very high level of crushing in the first as well as the second stage. This already creates a wide range of salable, cubical end products. The impact crusher can be repurposed into an impact mill for manufacturing fine grains by inserting a higher machine base and an additional grinding track. This flexible solution allows you to benefit from excellent crushing results and respond to changing project requirements at any time.

**Applications**

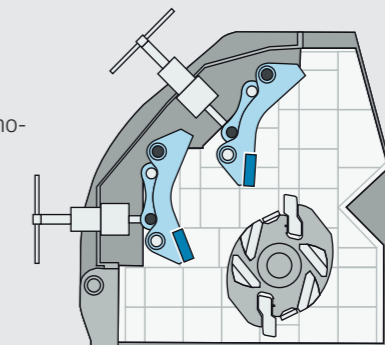
Slag, ash from waste incineration, glass, etc.

- » Can be used flexibly as a crusher or mill
- » Produces cubical end products
- » Powerful rotor
- » Robust impact plates
- » Patented mounting system for the baffle plates
- » Large feed opening
- » Universal, economical solution

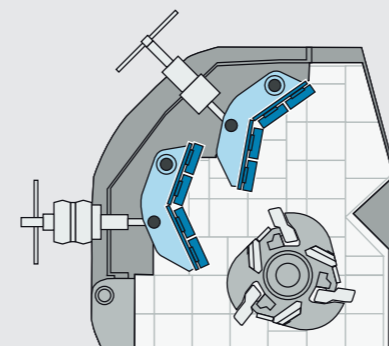
Flexible solution for any crushing application



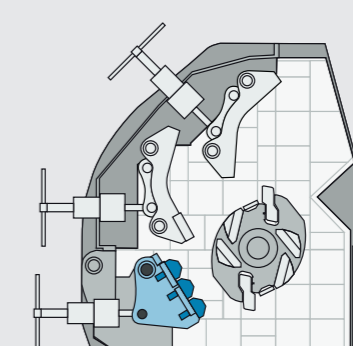
**Monoblock casting**  
Impact crusher design with baffle plates as monoblock casting.



**Monoblock casting with wear strips**  
Impact crusher design as monoblock casting with screw-fastened wear strips made of white cast iron.

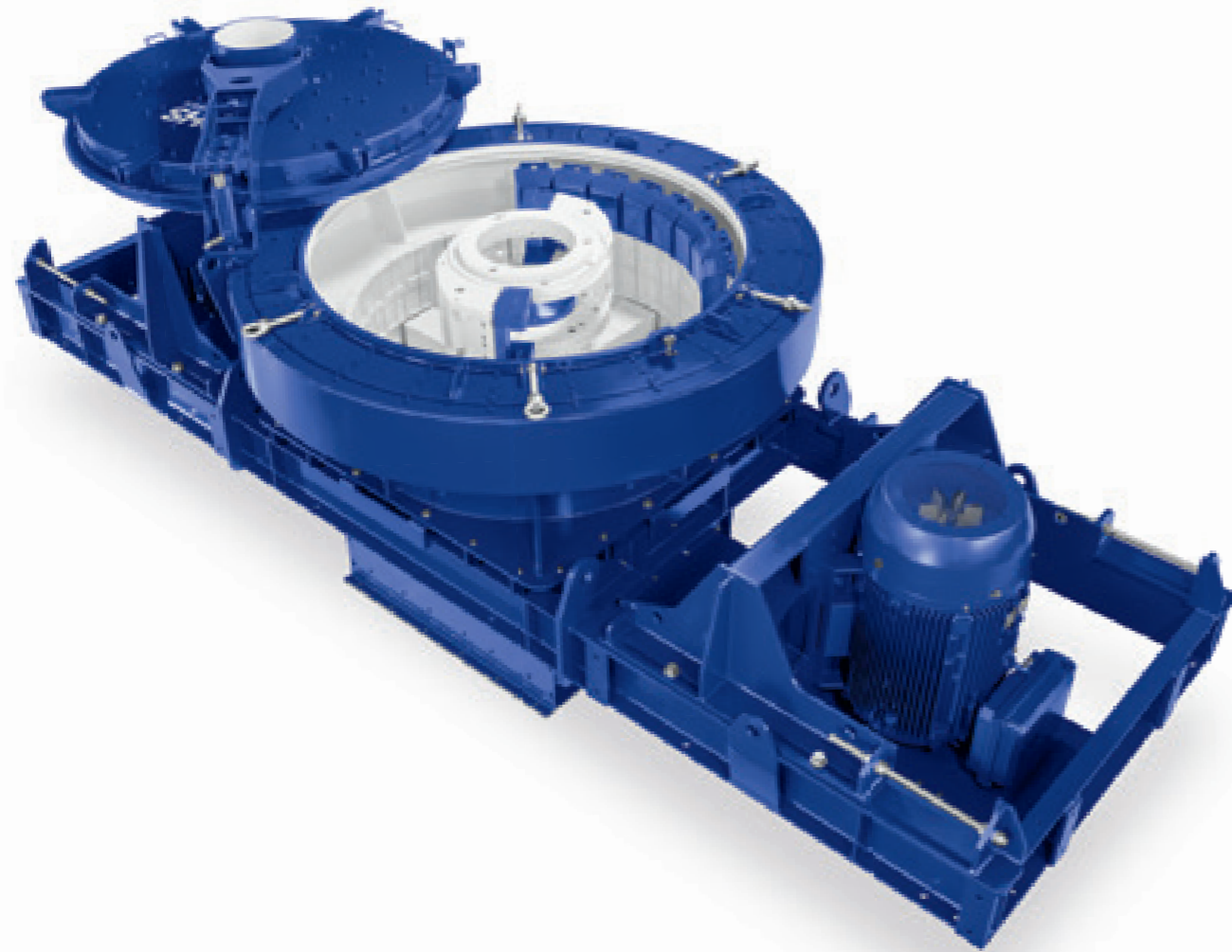


**Welded construction with wear elements**  
Impact crusher design with welded baffle plates and screw-fastened wear elements made of white cast iron.



**Impact mill with additional grinding track**  
The impact mill is equipped with baffle plates and an additional grinding track beneath the rotor shaft.





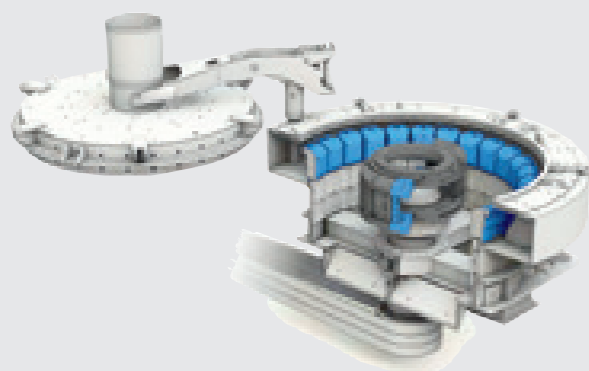
**Rotor Centrifugal Crusher (RSMX)**

The Rotor Centrifugal Crusher is a high-performance crusher with a vertical shaft. The total input material is accelerated to a high speed in the patented twin-chamber rotor and then thrown against a fixed impact wall. Due to the selective crushing effect, the machine is particularly well suited to cleaning materials.

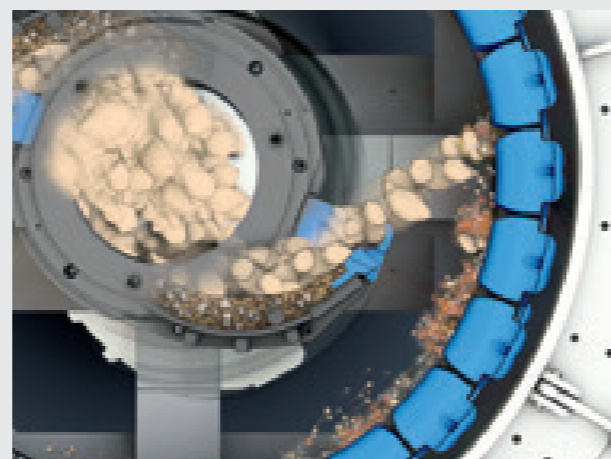
**Applications**

Slag, ash from waste incineration, glass, metals, etc.

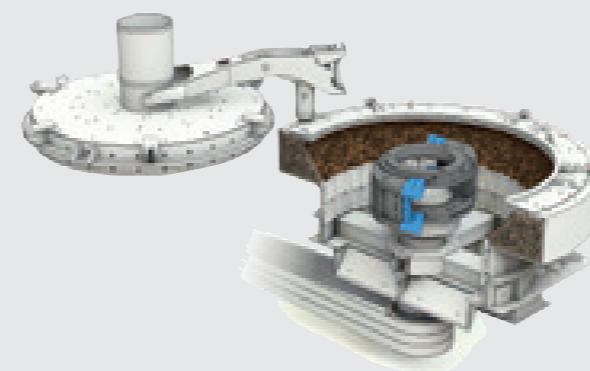
- » For crushing and separation
- » Cleaning metals
- » Consistent quality of end products
- » Targeted, selective size reduction
- » Globally proven twin-chamber rotor
- » Flexible operation with anvil ring or material bed



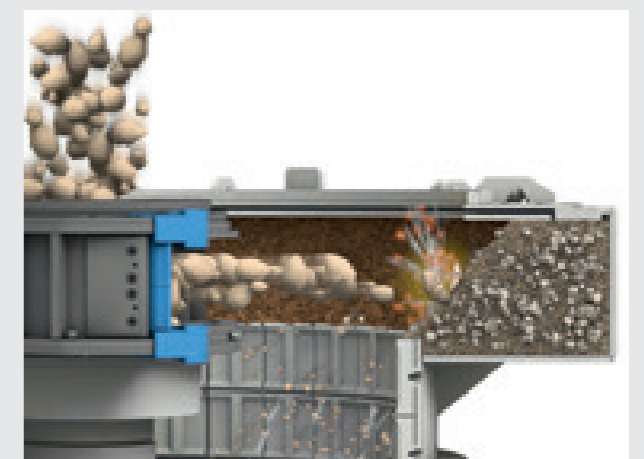
Design with anvil ring



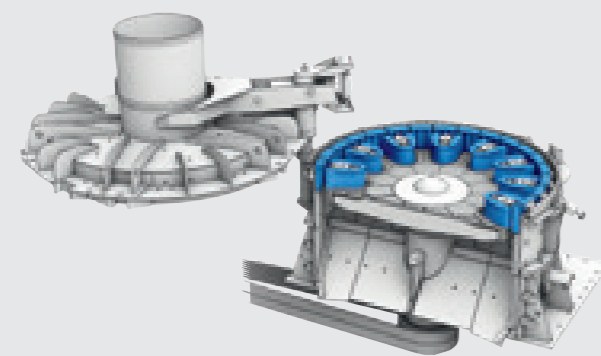
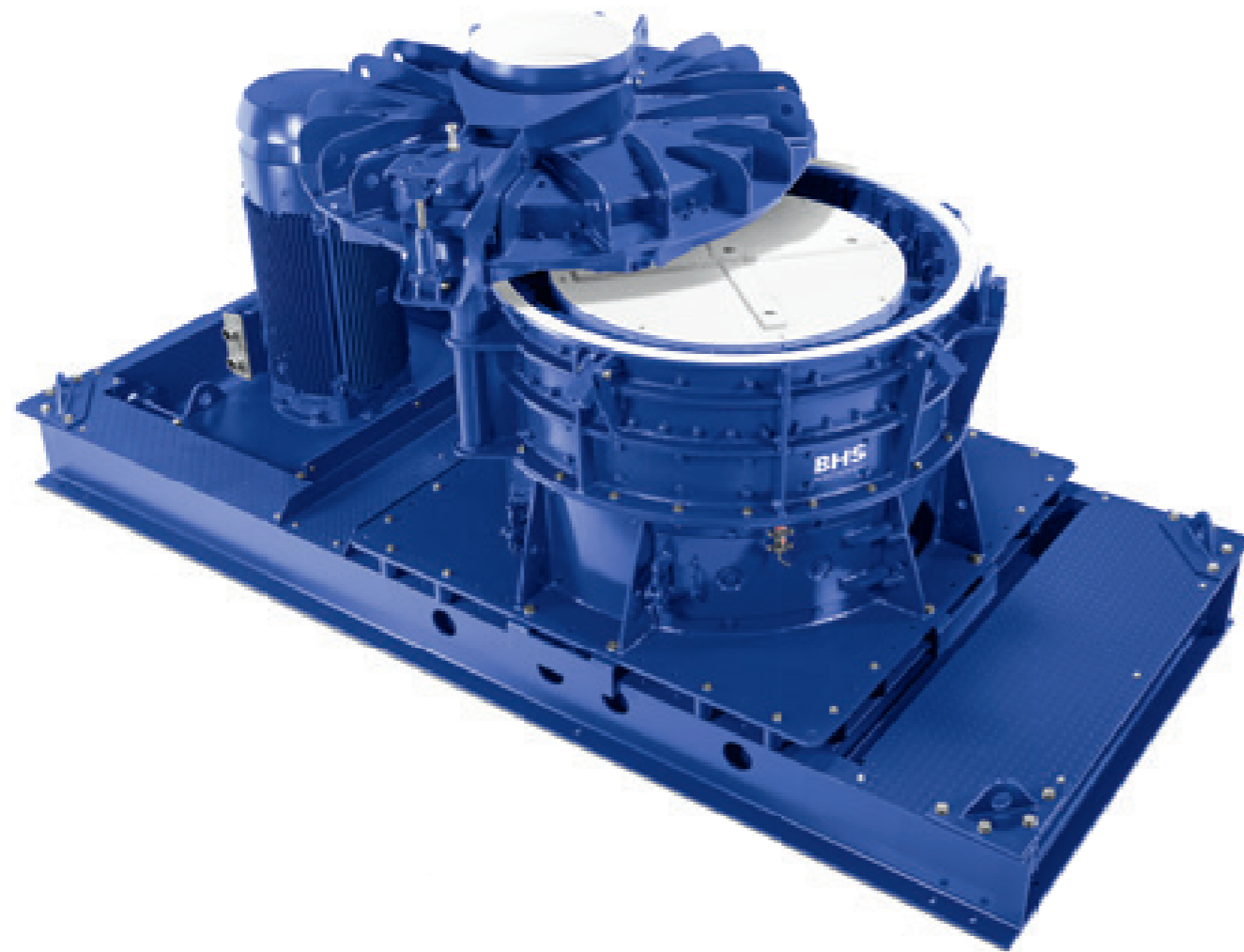
Operating principle with anvil ring



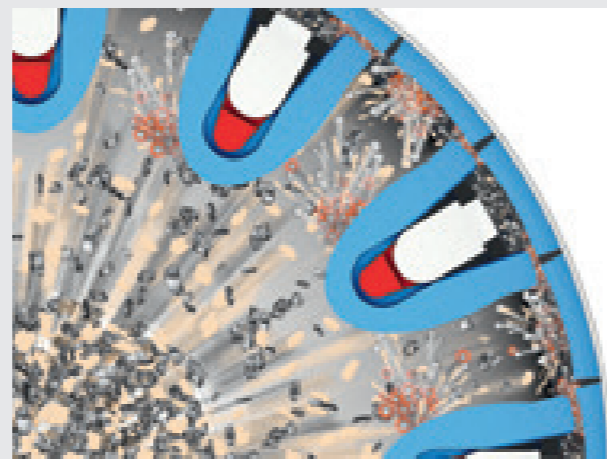
Design with material bed



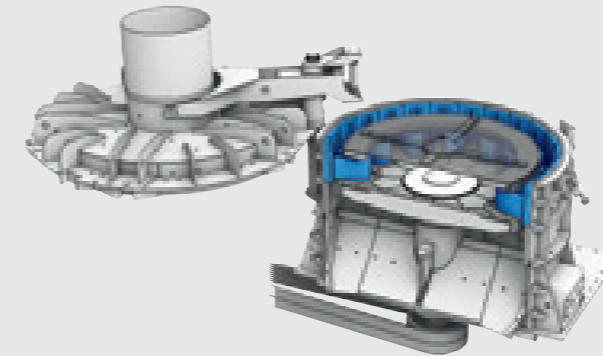
Operating principle with material bed



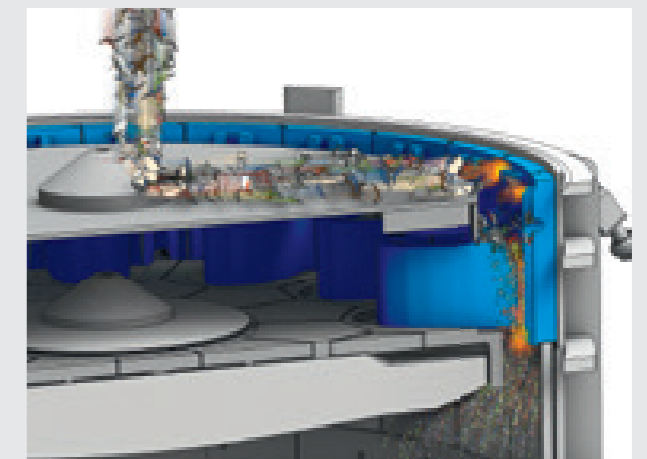
RPMV design



RPMV operating principle



RPMX design



RPMX operating principle

**Rotor Impact Mill (RPMV & RPMX)**

There are two versions of the Rotor Impact Mill. The RPMV model has a proven track record in the recycling industry as a ball shaper with a selective crushing effect. The RPMX model is a turbo ball shaper. It is used for the recovery of valuable materials that have previously been considered too fine and thus difficult to process, such as insulated copper wire.

**Applications**

Electrical and electronic waste, shredder residue (ASR), metals, slag, cables, etc.

- » Unique crushing principle
- » Selective crushing
- » Shaping of metals into balls
- » Separation of composite materials
- » High system availability



Swiveling screen unit



Working area

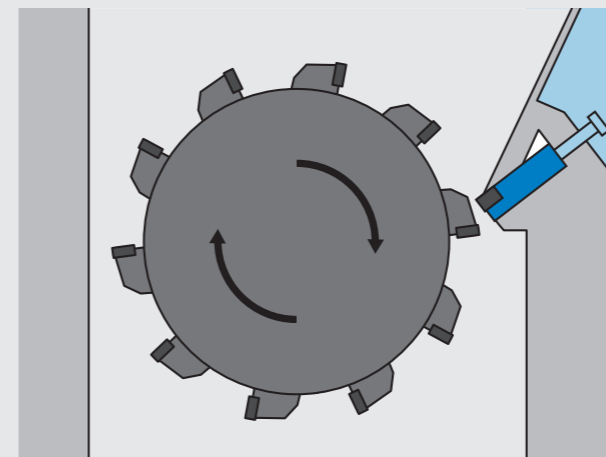
**SpeedCut Granulator (NGV)**

The Granulator is a high-speed single-shaft machine designed for the secondary granulation of low-density, light, elastic and brittle materials. The input material is cut between the rotor equipped with fly blades and the static blade seat. The final product has the desired particle size.

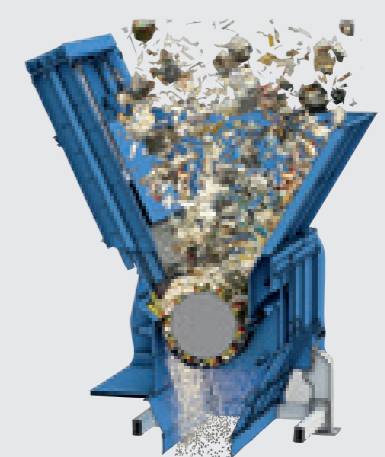
**Applications**

Refuse-derived fuel (RDF), residual shredder fractions (ASR), plastics, foils, etc.

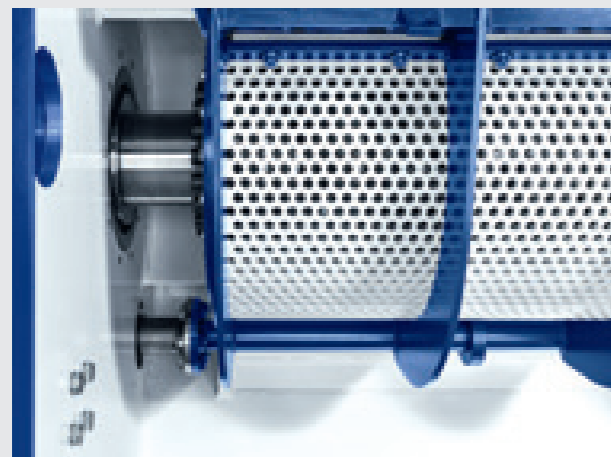
- » Primary and secondary cutter for low-density, light materials
- » Continuous operation
- » Consistent cutting quality
- » Flexible deployment through optional push-in unit
- » Very large shaft diameter
- » Segmented screen



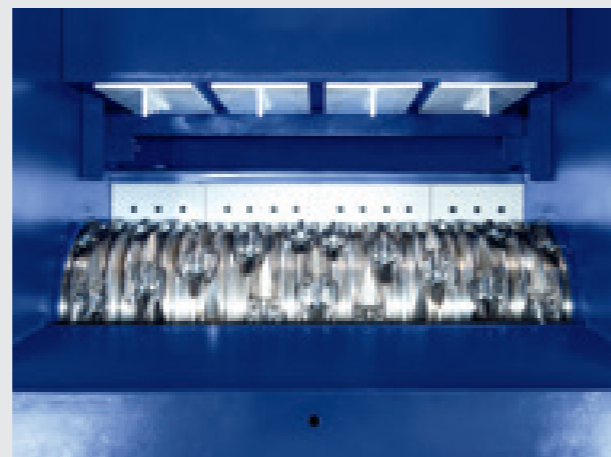
Static blade seat



Operating principle



Swiveling screen unit



Working area

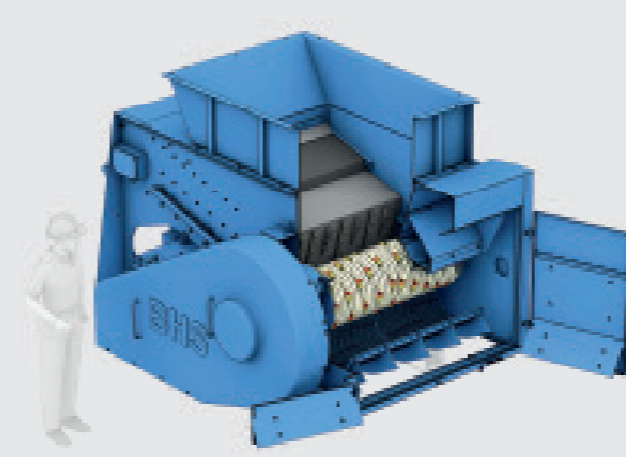
**Universal Shredder (NGU)**

The Universal Shredder is a high-speed single-shaft machine designed for pre- and post-cutting of any material that can be cut. It shreds the loaded material to a size between 10 and 120 mm.

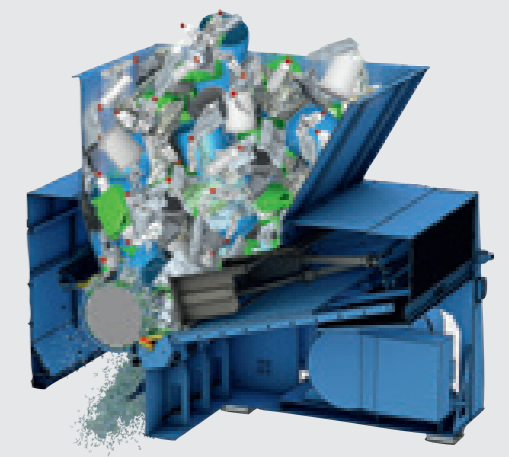
**Applications**

Cables, plastics, file and data destruction, etc.

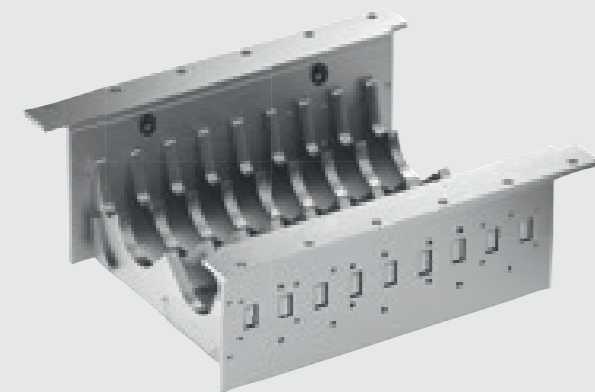
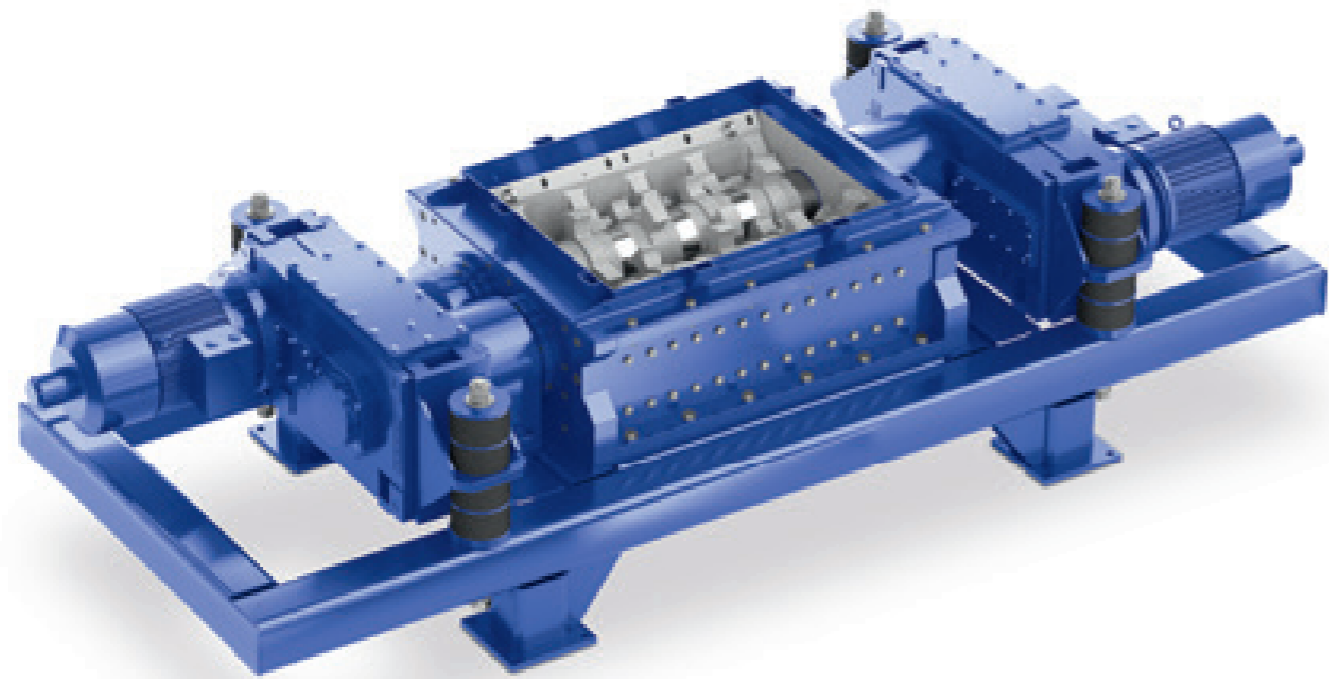
- » Pre-cutter and secondary cutter for a large number of input materials
- » Continuous operation
- » Consistent cutting quality
- » Moveable machine bench
- » Quick, convenient removal of contaminants
- » Swiveling screen support (hydraulic)
- » Manually adjustable cutting gap
- » Universal, economical solution



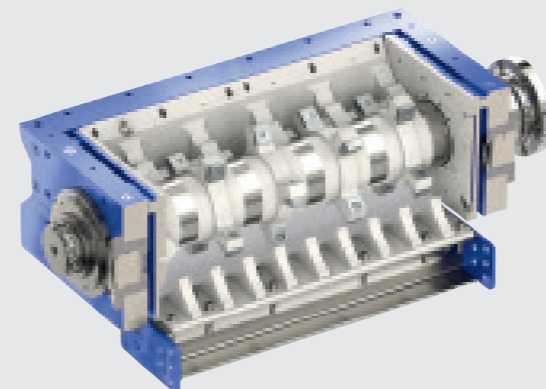
Design



Operating principle



Tearing table



Comb and machine housing

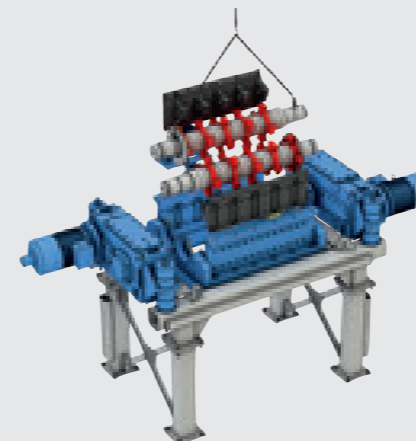
**Pre-Shredder (VSR)**

The Pre-Shredder is a low-speed twin-shaft shredder with high torque. Each shaft is equipped with rotating tools that reliably tear the input material. The machine is suited for the pre-shredding of especially large or voluminous materials.

**Applications**

Refuse-derived fuel (RDF), metals, household and commercial waste, bulky waste, electrical and electronic waste, etc.

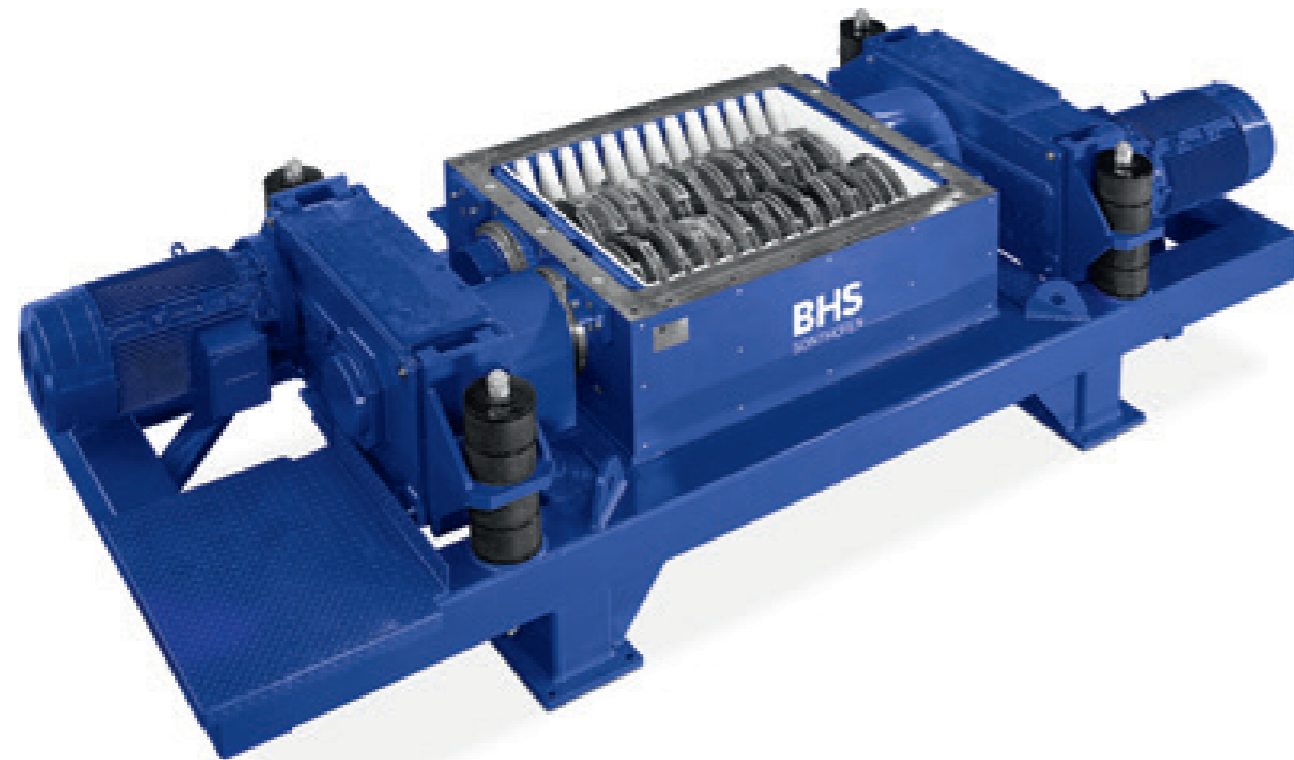
- » Pre-shredder for low-density, bulky materials
- » Flexible deployment through optional push-in unit
- » High system availability



Shaft changing



Operating principle



Torque buffering



Blades and scrapers

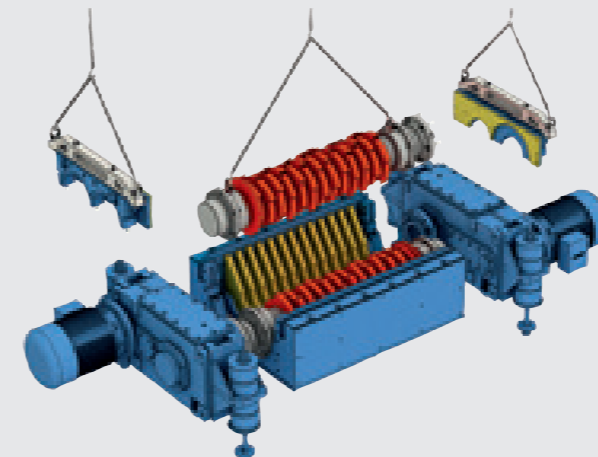
**Rotary Shear (VR)**

The Rotary Shear is a low-speed twin-shaft cutter with high torque. The machine is suited for cutting large or elastic materials into small pieces. It also reduces large-volume input materials as well as parts with high unit weights. The Rotary Shear reliably achieves a very high level of cutting.

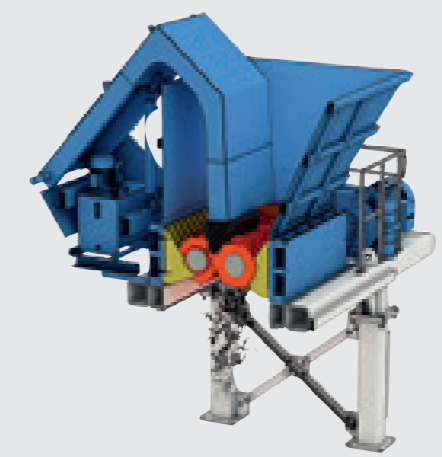
**Applications**

Tires, household and commercial waste, cables, metals, plastics, etc.

- » Pre-shredder for a wide range of input materials
- » Flexible deployment through optional push-in unit
- » Consistent cutting quality
- » High throughput even when processing low-density, bulky materials
- » Efficient quick change system
- » One-piece machine housing (no screw connections)



Quick changing system



Operating principle



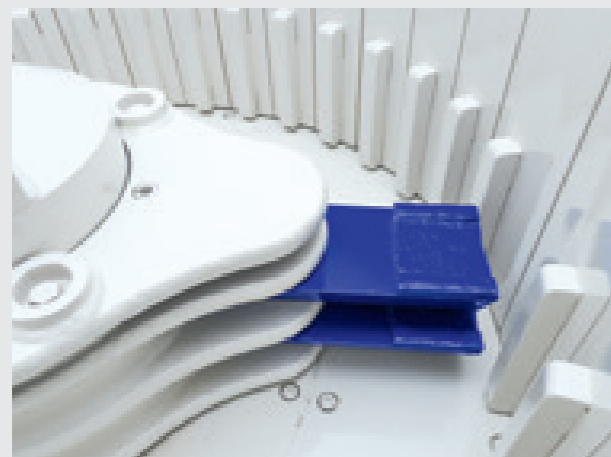
**Biogrinder (RBG)**

The Biogrinder is used for the 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.

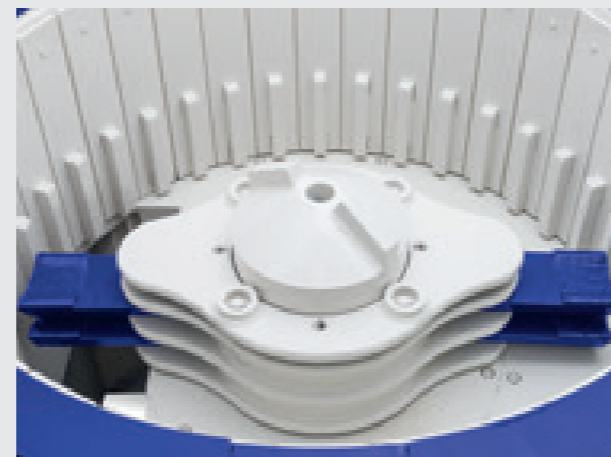
**Applications**

Organic waste, manure, corn straw, corn silage, grass, sugar beet, green rye, EFB (Empty Fruit Bunches), etc.

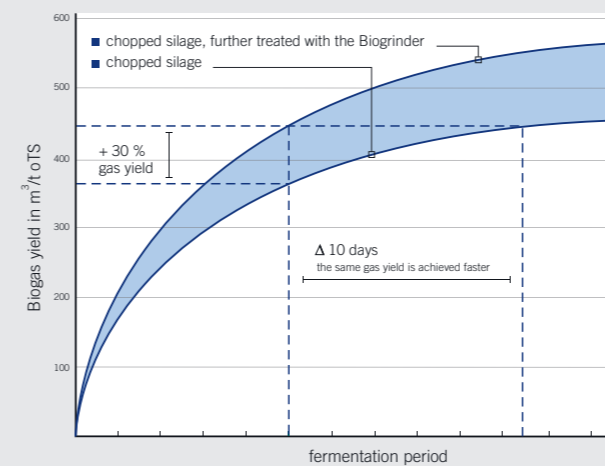
- » Efficient substrate processing
- » Continuous operation
- » Unique operating principle
- » Wide range of possible applications
- » Higher gas yield
- » Impervious to contaminants
- » Lower energy consumption
- » High throughput



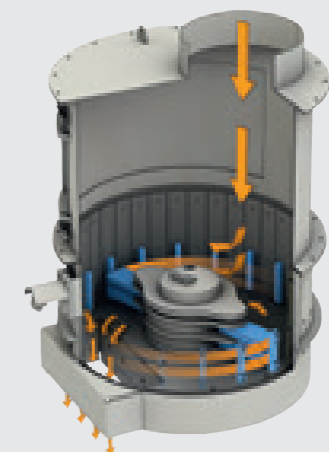
Rotor and stator bars



Working area



Producing biogas with the Biogrinder:  
Increase gas yield by up to 40%



Operating principle

**Our tests. Your investment security.**

BHS-Sonthofen operates a technical center at its headquarters in Sonthofen for individual testing. All of our recycling machines are installed there on an industrial scale. Drawing on our technology expertise, we are able to create optimal machine configurations. We are happy to do this in collaboration with interested parties.

Register for a test now  
[www.bhs-sonthofen.com/recycling-tests](http://www.bhs-sonthofen.com/recycling-tests)




The BHS-Sonthofen technical center at the company headquarters in Germany



# BHS FIELDS OF COMPETENCE



MIXING  
TECHNOLOGY



CRUSHING  
TECHNOLOGY



RECYCLING  
TECHNOLOGY



FILTRATION  
TECHNOLOGY

