RS Rotorshredder

Crushing,
disaggregating
and separating

Powerful . Versatile . Selective

BHS
SONTHOFEN

RS Rotorshredder

Selective crushing
The crushing tools of the machine exert an intense stress on the input material through a combination of impact, punching and shear forces. This results in selective size reduction with the following effects:
- Particle sizes are reduced in a targeted manner
- Composite materials are disaggregated
- Hard and brittle materials undergo intense size reduction
- Metals are stripped
- Tangled materials are separated and singled out

Simple tools
The BHS Rotorshredder does not use any cutting tools that are susceptible to wear but 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 future will safeguard your investment.

Continuous operation
The BHS Rotorshredder operates in a continuous mode. This makes it easy for it 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 input into the crushed material and preventing any plastics from melting.

Extraction of solid parts
Individual solid parts that cannot be shredded in the machine are isolated from the composite structure and discharged separately.

Easy to service
Two large maintenance doors provide easy access to the interior of the BHS Rotorshredder. This allows quick replacement of worn parts.

Flywheel
We optionally equip the Rotorshredder with a large flywheel capable of automatically compensating for brief mechanical or electrical peak loads. This protects the machine and avoids peaks in the power consumption.

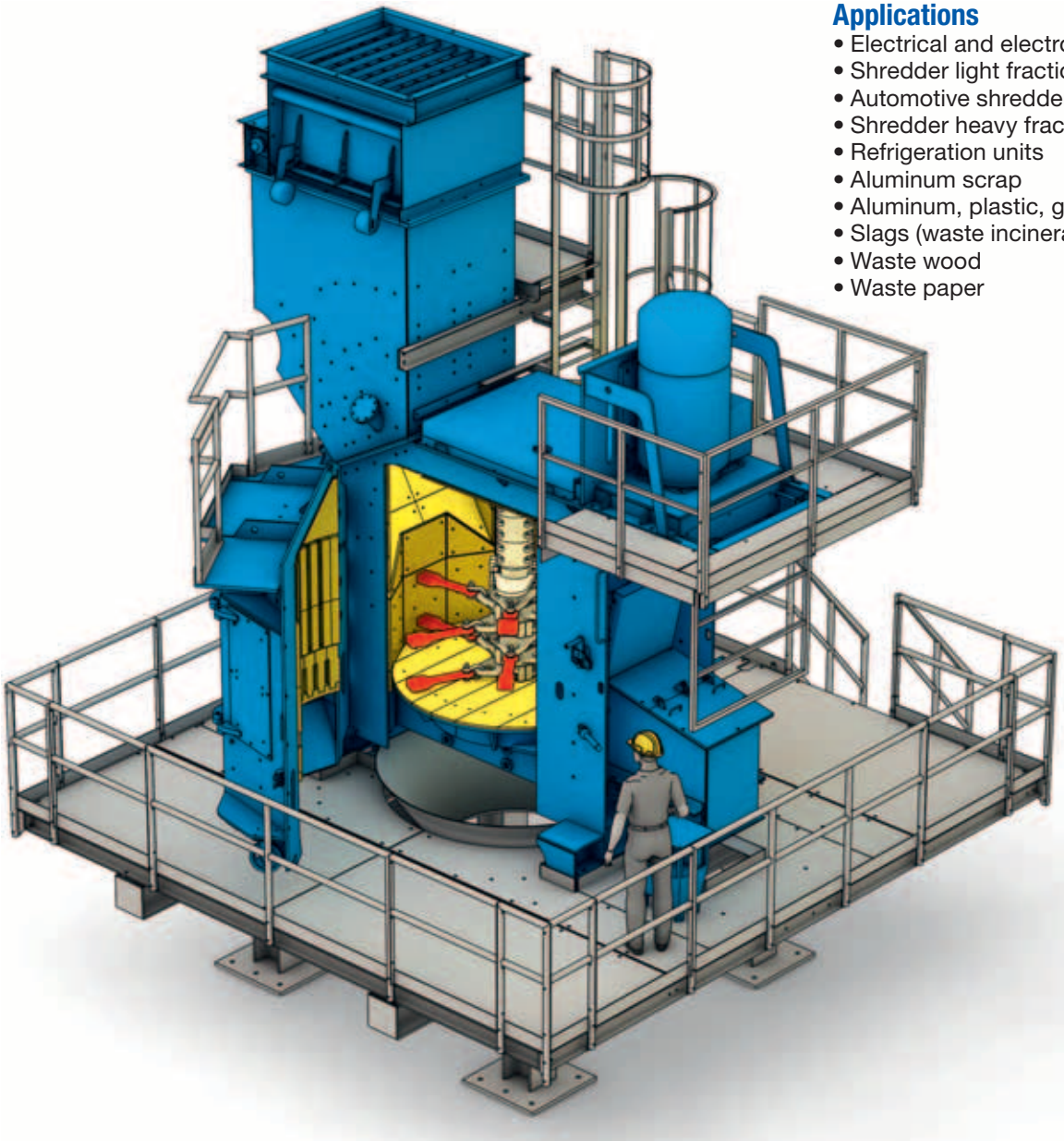
Global service
With technical customer support and a large spare parts warehouse for all common machine types and also for older machines, BHS offers its customers fast and reliable service worldwide.

Crushing tests at the BHS test center
The in-house BHS test center in Sonthofen provides customers the excellent opportunity of conducting crushing tests with customer-specific materials, enabling solutions to be developed for even the most challenging problems. We would be pleased to advise you.

Over 120 years of experience
BHS-Sonthofen started building machines in the 19th century and has been systematically upgrading them ever since. Our customers benefit from this wealth of experience and the innovative technologies. Our products are well-engineered and have proven their worth in a wide range of practical applications.

www.bhs-sonthofen.com

Function & operating principle



Applications

- Electrical and electronic waste (WEEE)
- Shredder light fraction (SLF)
- Automotive shredder residues (ASR)
- Shredder heavy fraction (SHF)
- Refrigeration units
- Aluminum scrap
- Aluminum, plastic, glass/ceramic composites
- Slags (waste incineration slags, metal slags)
- Waste wood
- Waste paper

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 fastening of the tools to the shaft also serves the purpose of overload protection.
The Rotorshredder can optionally be equipped with a flywheel for energy storage.

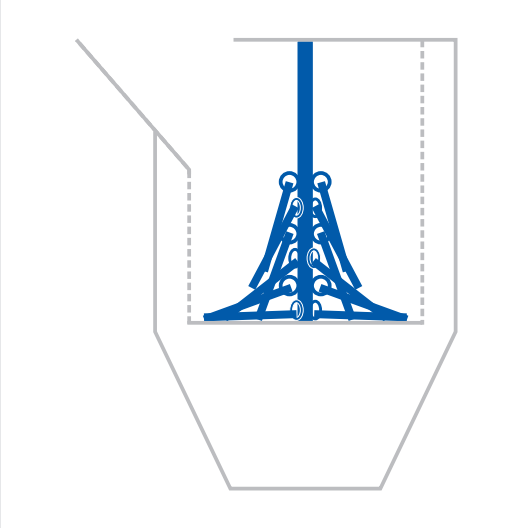
The cylindrical chamber features a double wall comprising a sturdy slotted grid on the inside. The size of the gaps in this grid can be varied to suit the customer's requirements. The input material is fed into the chamber from above. As the material enters the range of the tools, it is subjected to intense impact, punching 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

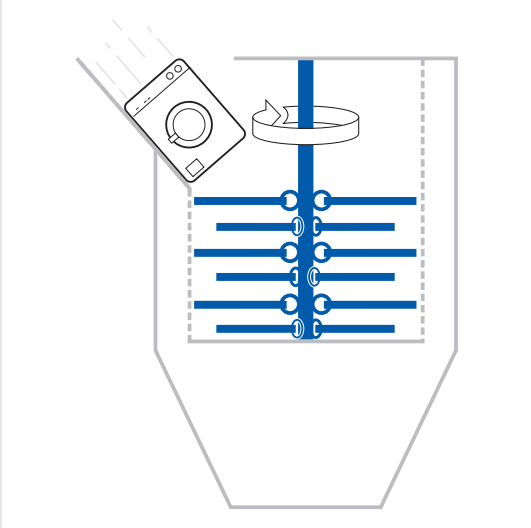
The EU directive on WEEE recycling requires certain components containing harmful substances to be separated.
The BHS Rotorshredder is able to separate these components, such as batteries, capacitors, printed circuit boards, etc., from the composite structure without destroying them completely. The harmful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

Example of the crushing process with a washing machine in the RS Rotorshredder

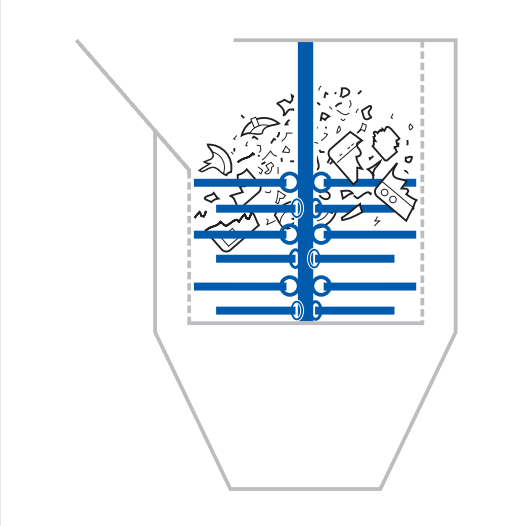
The degree of crushing and the intensity of stress on the material can be adjusted. The shredder comes in three different sizes that can be configured according to your needs. In this way, we can meet nearly any requirement with regard to throughput capacity, degree of size reduction, disaggregation results and maximum feed size.



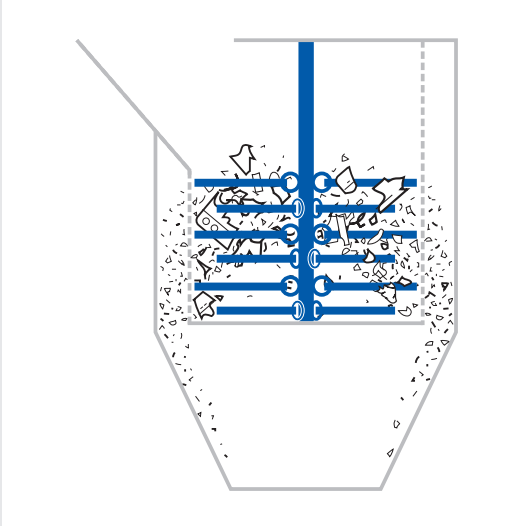
1. RS Rotorshredder at rest



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.



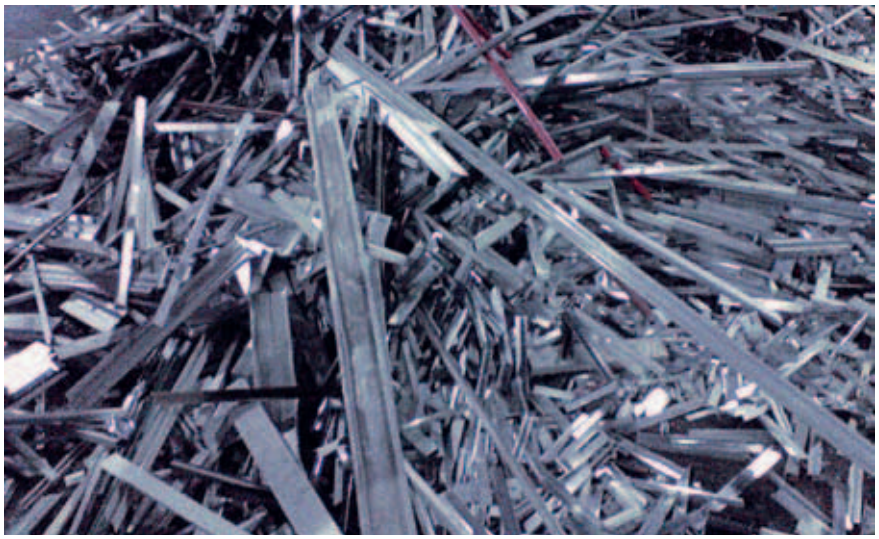
4. After just a few seconds the selectively processed material leaves the chamber through the slotted grid.

Typical applications

Input materials

WEEE

Shredder light fraction



Aluminum scrap

Material output after automatic sorting

Iron

Non-ferrous metals

Plastics

Iron

Non-ferrous metals

Plastics

Aluminum precrushed in the Rotorshredder (RS)

Rubber fraction (from window profiles)

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

Plant engineering & recycling plants

Expertise in plant engineering

We design and implement complete recycling plants or plant components for a wide variety of applications. Our experienced specialists are at your side to determine the best possible processes for your requirements. We will be happy to help you by performing tests at our test center in Sonthofen and by analyzing and optimizing the efficiency of your overall process solution. You get a modern, future-proof solution. Numerous references testify to our expertise.

Recycling plant for shredder light fraction and WEEE with Rotorshredder of type RS 2018 operated by a customer in southern Germany

Erection of a recycling plant in western France with a Rotorshredder of type RS 2018 for recycling shredder light fractions

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

Application of a type RS 2018 Rotorshredder at a recycling company in Japan

Installation of a complete BHS recycling plant for crushing secondary metals in Austria. The plant is centered on a Rotorshredder of type RS 1515, shown here without its final sound-proof enclosure.

Future-proof process solutions

Construction and assembly of a complete BHS recycling plant in France. The WEEE plant is equipped with a BHS Rotorshredder of type RS 2018 (shown here during installation) …

… for processing of WEEE in the first recycling stage (here with enclosure and upstream/downstream components).

The second major component of the plant is a BHS rotor impact mill of type RPMV 1113 for fully mechanized processing of the 0-20 mm fine fraction in the second stage. The BHS recycling plant for WEEE has a total capacity of 4 t/h.

Performance data

Type	Working chamber (diameter)	Working chamber (height)	Feed opening inside dimensions [1] (H x W)	Drive power (max.)
RS 1515	1500 mm	1500 mm	700 x 535 mm	110-200 kW
RS 2018	2000 mm	1800 mm	600 x 1200 mm 900 x 1200 mm 1200 x 1200 mm	110-400 kW
RS 3218	3200 mm	1800 mm	1500 x 1500 mm	110-400 kW

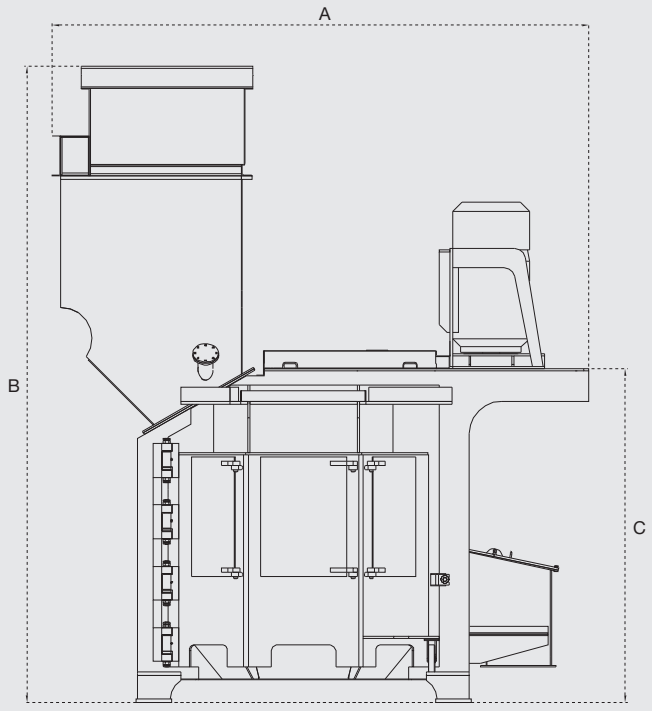
[1] Not suitable for crushing solid parts of high strength. The maximum input size is equivalent to about two thirds of the feed opening.

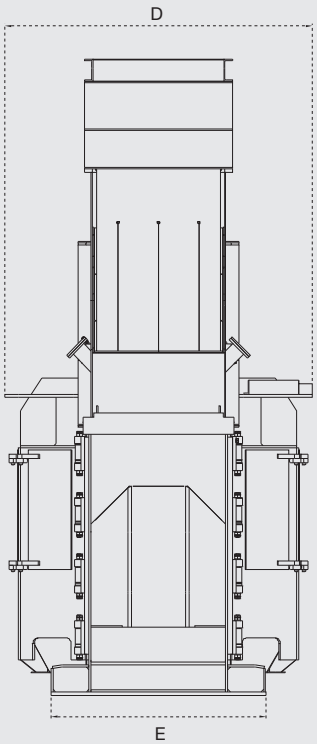
Dimensions and weights

Type	A [2]	B [2]	C	D	E	Weight [3]
RS 1515	4500 mm	5600 mm	2600 mm	2200 mm	1800 mm	19000 kg
RS 2018	5000 mm	6000 mm	3100 mm	2900 mm	2000 mm	28600 kg
RS 3218	5700 mm	6700 mm	3000 mm	4300 mm	2300 mm	40500 kg

[2] Different data may apply depending on the feed hopper that is used.
[3] Weight for standard design including feed and discharge hoppers.

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





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

BHS product and service range:

Mixing technology
- Twin-shaft batch mixer
- Twin-shaft continuous mixer
- Single-shaft continuous mixer
- Laboratory mixer
- Mobile concrete mixing plants
- Continuous concrete mixing plants
- Retrofitting concrete mixing plants
- Mixing plants for the waste disposal sector

Crushing technology
- Impact crusher & impact mills
- Rotor impact mill
- Rotor centrifugal crusher
- Mobile crushing plants
- Stationary aggregates plants

Recycling technology
- Impact crusher & impact mills
- Rotor impact mill
- Rotor centrifugal crusher
- Rotorshredder
- Biogrinder
- Recycling plants

Filtration technology
- Rotary pressure filter
- Indexing belt filter
- Rubber belt filter
- Autopress
- Candle filter
- Pressure plate filter
- Lab filters & pilot filters
- N2 circuit for filters
- Filtration plants

Worldwide service
- Tests in our BHS technical center
- Engineering – process engineering & consulting
- Spare parts & service

How to find us:

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

BHS SONTHOFEN
EXPERIENCE AND INNOVATION