

**INNOVATIVE
PROCESS SOLUTIONS**
TECHNOLOGY LEADER
IN METAL RECOVERY



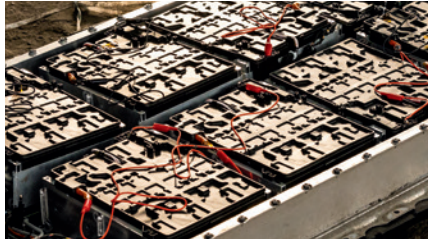
TRANSFORMING
MATERIALS INTO VALUE

RECYCLING TECHNOLOGY

Process solutions, machines, and turnkey plants – for a wide range of applications.



Metalliferous composites



Lithium-ion batteries



E-scrap (WEEE)



Shredding-Mixing-Pumping (SMP)



Industrial & commercial waste



Biomass

With its “Recycling Technology” division, BHS-Sonthofen is a globally active process solution technology and system provider for customers in the recycling and waste disposal industry.

Through innovations, we increase the recovery rate of secondary raw materials, thus creating sustainable added value for our customers and protecting natural resources.

Global

With several international subsidiaries and various sales partners, we are there for our customers all over the world.

Technology

We have been developing and optimizing recycling processes and machinery for more than 20 years. Today, we offer the largest technology portfolio on the market: A broad machine portfolio, innovative process solutions, turnkey plants, modern separation and sorting technology, and integrated control solutions.

Your one-stop provider

With our numerous experts, we provide support throughout the entire process from consulting, process development, and profitability analysis through to the planning and commissioning of turnkey recycling plants and processes.

 [Get more details](#)

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

OUR EXPERTISE

From the individual machine to the turnkey plant,
100% competence in every detail.



- ✔ Crushing and shredding
- ✔ Inerting
- ✔ Drying and mixing
- ✔ Classifying and sorting
- ✔ Controlling

PROCESS SOLUTIONS FOR GENERATING THE HIGHEST OUTPUT QUALITY WITH MAXIMUM RECOVERY

Our mission: Transforming materials into value

We support companies in the recycling and environmental industries worldwide to produce more and better with our machines and process solutions: From crushing, inerting, drying and mixing, classifying and sorting, to controlling – with our many years of expertise in the field of processing metalliferous composites, we adapt our standard process solutions to individual customer applications to achieve the best results in terms of output quality and recovery rates.

Our portfolio

BHS offers stand-alone machines, process solutions, turnkey plants, separation and sorting technology, and control and automation solutions perfectly tailored to individual requirements. With the largest technology portfolio on the market, our process engineering know-how, and a modern test center, we ensure the best results for our customers.

Benefits at a glance

- ✔ Comprehensive range of solutions
 - ✔ Turnkey recycling plants from one source
 - ✔ Consulting for process engineering
 - ✔ Test center for customer-specific tests
 - ✔ Worldwide sales and service
-

WIDE RANGE OF APPLICATIONS

In-depth process expertise.

Process solutions and machines

Metalliferous composites	Industrial waste	Biomass
Shredder residues	Shredding - mixing - pumping	
Electrical waste	Gypsum plasterboards	
Batteries	Metal sludges & dusts	
Light metal scrap	Industrial & commercial waste	
Incinerator bottom ash		
Metal slag		
Ironworks slag		

Impact crushing

We have been perfecting our impact crushers since 1912. Their range of application extends from the first to the third crushing stage. This results in a wide range of end products ready for sale.

Inert crushing

Inert crushing is suitable for the safe processing of lithium-ion batteries and other toxic wastes. It is performed in an inert atmosphere to prevent fires, explosions, and hazardous gas leaks.

Drying

Our core competencies include drying, in particular contact drying and other heat treatment processes. We keep the product in constant movement to ensure high process efficiency, even at high temperatures.

Sorting and classifying technology

We offer a wide range of classifying and sorting technologies that are selected and applied depending on process requirements for our process solutions.


Control system

Tailor-made control solutions with clear process visualization and an intuitive operating concept – both for new recycling plants and for the modernization of existing plants.

INNOVATIVE PROCESS SOLUTIONS

Maximum safety – high quality results.

One solution, one partner. Maximum recovery and highest output quality. Optimize your recycling processes with innovative process solutions from BHS. Our experts accompany the entire process from consulting, process development, and profitability analysis through pilot testing to the planning and commissioning of turnkey recycling plants. We can find the right recycling solution for virtually any need.



 Get more details

 [www.bhs-sonthofen.com/
recycling-technology/all-solutions](http://www.bhs-sonthofen.com/recycling-technology/all-solutions)

TARGETED, SELECTIVE CRUSHING AND SHREDDING

High crushing effect - selective disintegration.

Advantages

- ✔ Generating valuable end products
 - ✔ Targeted, selective size reduction
 - ✔ Superior machine technology
 - ✔ Low resource consumption
 - ✔ Maximum operational reliability
-

Shredding, disintegrating, separating, ball shaping: From a broad machine portfolio, we find the optimal size crushing solution for customer-specific input materials.

1 | Rotorshredder

- Shredding, disaggregation, and separation
- Intensive treatment of the input material
- Targeted reduction of particle size, separation of material composites, exposure and cleaning of metals, separation of entangled materials

2 | Rotor impact mill

- Ball shaping, cleaning, disaggregation and separation of composites
- High-performance crusher with vertical shaft
- Worldwide unique crushing principle
- High energy load to the feed material

3 | Impact crusher & impact mill

- High degree of crushing in the first and second stage
- Impact mill for the production of fine grains
- Universal, economical solution for the processing of brittle-hard materials

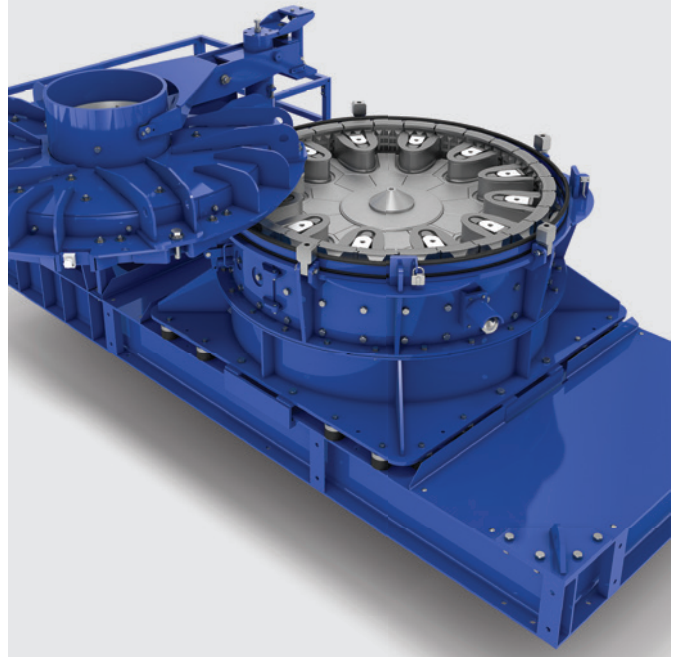
4 | Rotor centrifugal crusher

- Selective crushing and refining
- All types of minerals, from soft to hard and fragile to extremely abrasive
- High quality end products

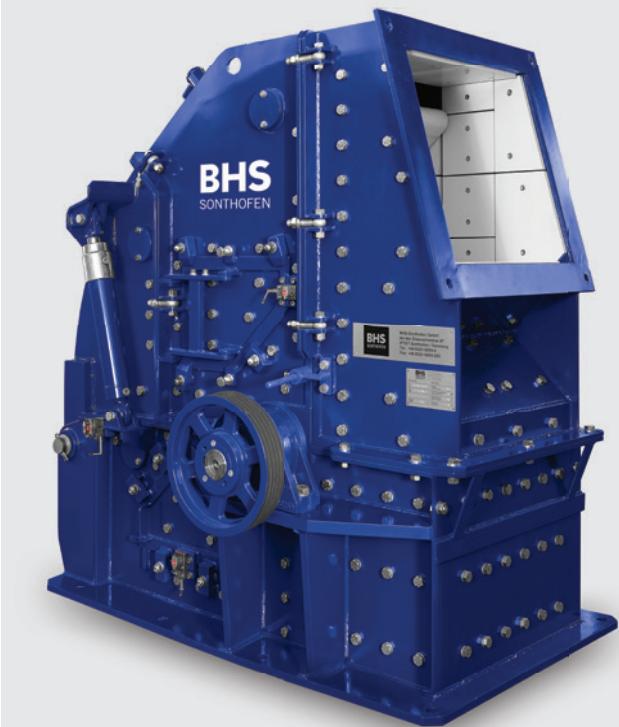
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CONTROLLED INERT SHREDDING

Safely shred drive batteries and problematic waste materials.

Advantages

- ✔ Consistent shredding results
 - ✔ Safe shredding process
 - ✔ High throughput rates
 - ✔ High machine uptime
 - ✔ Low operating costs
-

When shredding potentially hazardous valuable materials, residual materials, and waste – such as lithium-ion batteries or toxic materials – an inerted working chamber is ideal. This is the only way to reliably prevent fires, explosions, hazardous gas leaks, and undesirable chemical reactions.

For the safe and process-stable processing of these challenging materials under a protective atmosphere, BHS offers two specially designed machine solutions. Both are available in an inerted version and ensure the highest level of health and safety for your employees.

1 | Rotary shear

- Low-speed, high-torque twin-shaft shredder
- Optimal for bulky materials or elastic feed materials
- Clean and consistent cutting quality

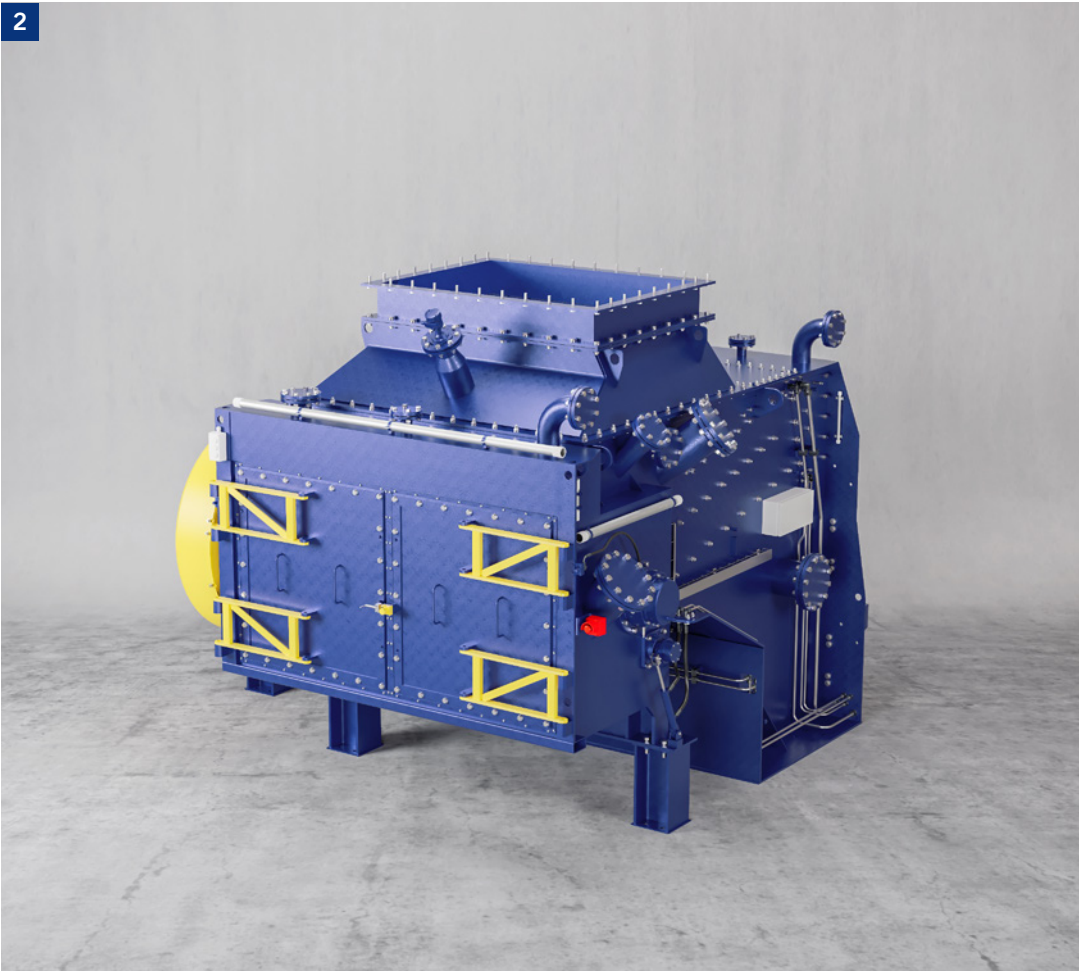
2 | Universal Shredder

- High-speed single-shaft shredder
- Pre-shredder and secondary shredder for a wide range of applications
- Output size between 10 and 120 mm

1



2



RELIABLE CLASSIFICATION AND SORTING

Proven classifying and sorting technology.

Advantages

- ✔ Sophisticated classifying and sorting technology
 - ✔ Generating valuable end products
 - ✔ Full-service provider
 - ✔ Low maintenance requirements
-

With our portfolio of classification and sorting technology, we offer you precisely coordinated processes from a single source. Our experts develop robust sorting and classification solutions that are precisely tailored to your specific requirements. Our focus is on efficiency and process flexibility for metal recovery.

1 | Zigzag Sifter

- Precise separation of coarse and fine fractions
- Flexibly adjustable separation boundary
- Dry, energy-efficient classification

2 | Circular Screen

- Efficient screening for particles smaller than 18 mm
- For all powdery, granular, and pellet-shaped materials in a dry state

3 | Separating Table

- Precise density separation for maximum material quality
- Separates feed material into two main fractions (light and heavy fractions)

1



3



2



EFFECTIVE DRYING

High drying capacity with optimized energy consumption.

Advantages

- ✓ Adjustable process parameters
 - ✓ Short drying times
 - ✓ Homogeneous temperature and product moisture
 - ✓ Operation under vacuum and high pressure
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Our vacuum dryers feature short drying times and low energy consumption. The dynamic drying process ensures homogeneous temperature and moisture distribution in the working chamber. By applying a vacuum, the evaporation point is further reduced.

1| Horizontal dryers

- The blade shape and angle are matched to the specific product in order to optimize the transfer of heat between the product and container wall
- Low distance from wall and optional wall scrapers for efficient drying, even with highly viscous products
- Designs featuring one-sided mounting and a large front door make inspection and cleaning simple

2| Vertical dryers

- Gentle spiral mixing ensures short process times with maximum product protection
- Optional fully heated mixer further reduces drying times
- Ideal solution for applications that require absolute product purity achieved using a seal positioned outside the product chamber



TURNKEY SOLUTIONS

For leading-edge productivity.

Competent engineering and innovative system concepts

From the initial concept all the way to the turnkey plant: We accompany you on your journey towards the ideal technology solution. Our engineers take care of the machine design, the plant layout and all the details that turn the individual components into a complete whole. In accordance with customer wishes, we find the right complete or partial solution for almost every requirement, as an excerpt from our references shows.

The logo for REMONDIS, featuring the word "REMONDIS" in white uppercase letters on a dark blue rectangular background.The logo for VEOLIA, consisting of a white circular icon with a stylized 'V' inside, followed by the word "VEOLIA" in white uppercase letters.The logo for BASF, featuring the word "BASF" in white uppercase letters.The logo for TSR, featuring the letters "TSR" in white uppercase letters on a dark blue rectangular background.

THE METAL COMPANY

The logo for A Jansen bv, featuring the text "A Jansen bv" in a white, italicized serif font on a dark blue rectangular background.The logo for dhz, featuring the lowercase letters "dhz" in white, with a stylized dark blue graphic element below the letters.


YOUR ONE-STOP PROVIDER

Consulting and support on process solutions from BHS.

Consulting and process support from A to Z

BHS-Sonthofen accompanies the entire process, from the initial consultation to project execution and commissioning. We are there as your professional partner throughout the project. Benefit from having a designated contact person and a small number of contact points. Our experts create a project based on your specific design and documentation requirements and implement it from start to finish. Defined tasks and specific tools ensure that the project is completed efficiently.

 Get more details

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

Maximum safety and results of high quality

At BHS, tailor-made recycling plants including our own machine and control technology come from a single source. All plant components are therefore optimally matched to each other. This results in efficient plant operation with high process reliability.



TESTING AND DEVELOPMENT AT PRODUCTION SCALE

Cutting-edge recycling technology on 1,800 m².

Testing with customer material forms the basis for efficient recycling. Our test center at the company headquarters in Sonthofen offers ideal conditions: State-of-the-art recycling technology along with separating and sorting technology on 1800 square meters. This is where we perform tests and develop solutions – and we are very happy to do so in the presence of our customers.

Tests for a wide range of requirements

All recycling machines are available at the test center in production scale. Here, our experts test a wide variety of customer-specific input materials, from incinerator bottom ash to electronic scrap to including gypsum waste. Based on the test results, we prepare your individual profitability calculation and develop an appropriate process.



Engineering and development

Our engineers work closely with universities and research institutes, such as the Fraunhofer Institute, to continuously develop our intelligent, process-oriented recycling methods. In addition, we stand by our customers as a competent development partner when it comes to working out an efficient process for new tasks.

Test center equipment

1 | Impact crushers

- Rotorshredder (RS)
- Rotor impact mill (RPMV & RPMX)
- Rotor centrifugal crusher (RSMX)
- Impact crusher & impact mill (PB & PM)

2 | Pre-Shredding

- Pre-Shredder (VSR)

3 | Classifying and sorting technology

- Overbelt magnet
- Zig zag sifter
- Air separating table
- Coarse screening machine
- Fine screening machine

Advantages

- ✓ Complete product portfolio in production scale
 - ✓ Tests that deliver industrial-scale results
 - ✓ Mapping of complex processes
 - ✓ Simulation of comprehensive process flows
 - ✓ Profitability analyses
 - ✓ Facilities for customer training
-



[Get more details](#)


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

ON THE SAFE SIDE

Original spare parts and expert service.

Reliable operation without unwanted disruptions is a key criterion for a system to deliver added value. As a manufacturer, we not only offer reliable equipment, but have also developed a spare parts and service program that provides you with full peace of mind at all times.

 [Get more details](#)

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

BHS original spare parts – wide assortment of components in stock

Even small parts can have a big impact if they break. BHS ORIGINAL PARTS meet the highest standards in terms of quality and are designed to work seamlessly with our machines and systems. Take advantage of the speedy delivery of 10,000+ spare parts available in stock and reduce your downtimes to a minimum.

Become a contract customer – enjoy benefits

Are you looking for service and support that meets your specific needs? Our LONG-LIFE service contract not only extends the service life of your equipment, but also reduces operating costs and keeps your machinery budget in check. This means that both the operational safety and reliability of your machinery remain at the highest level.



BHS
SONTHOFEN

ORIGINAL PARTS

 BHS ORIGINAL PARTS Hotline

Our service team

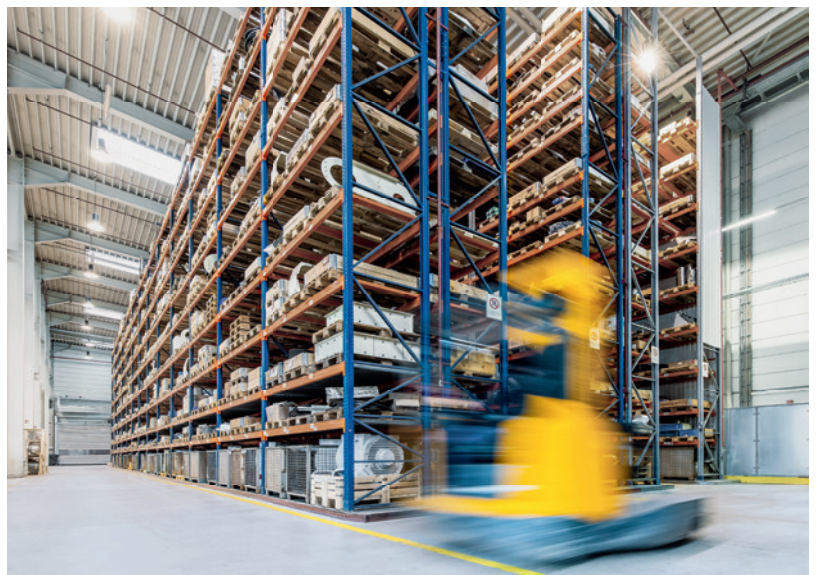
would be glad to assist you.

 **(+49-8321) 6099-521**

 service@bhs-sonthofen.com

Mon. – Thu. 7 am – 5:30 pm (CET)

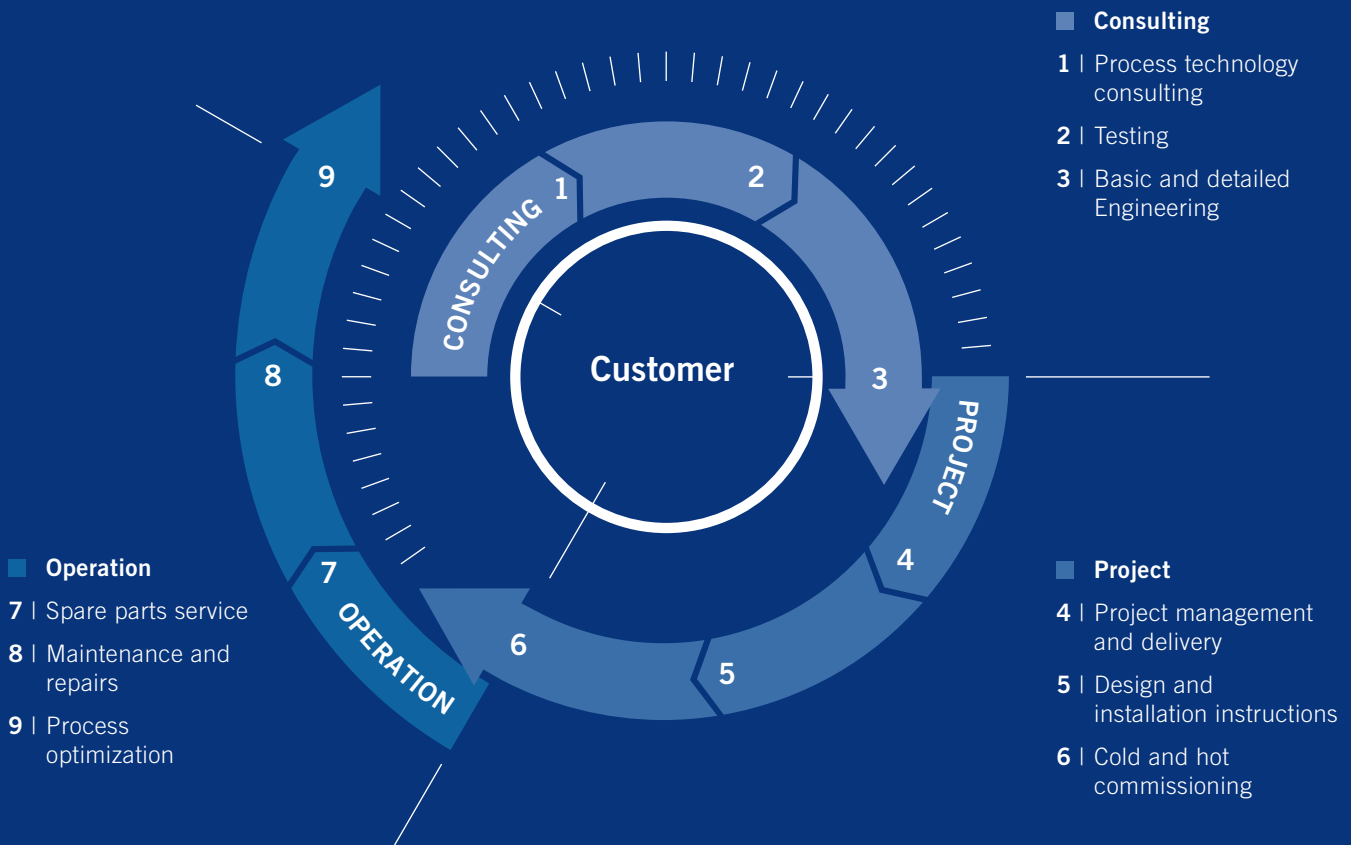
Fri. 7 am – 3:30 pm (CET)

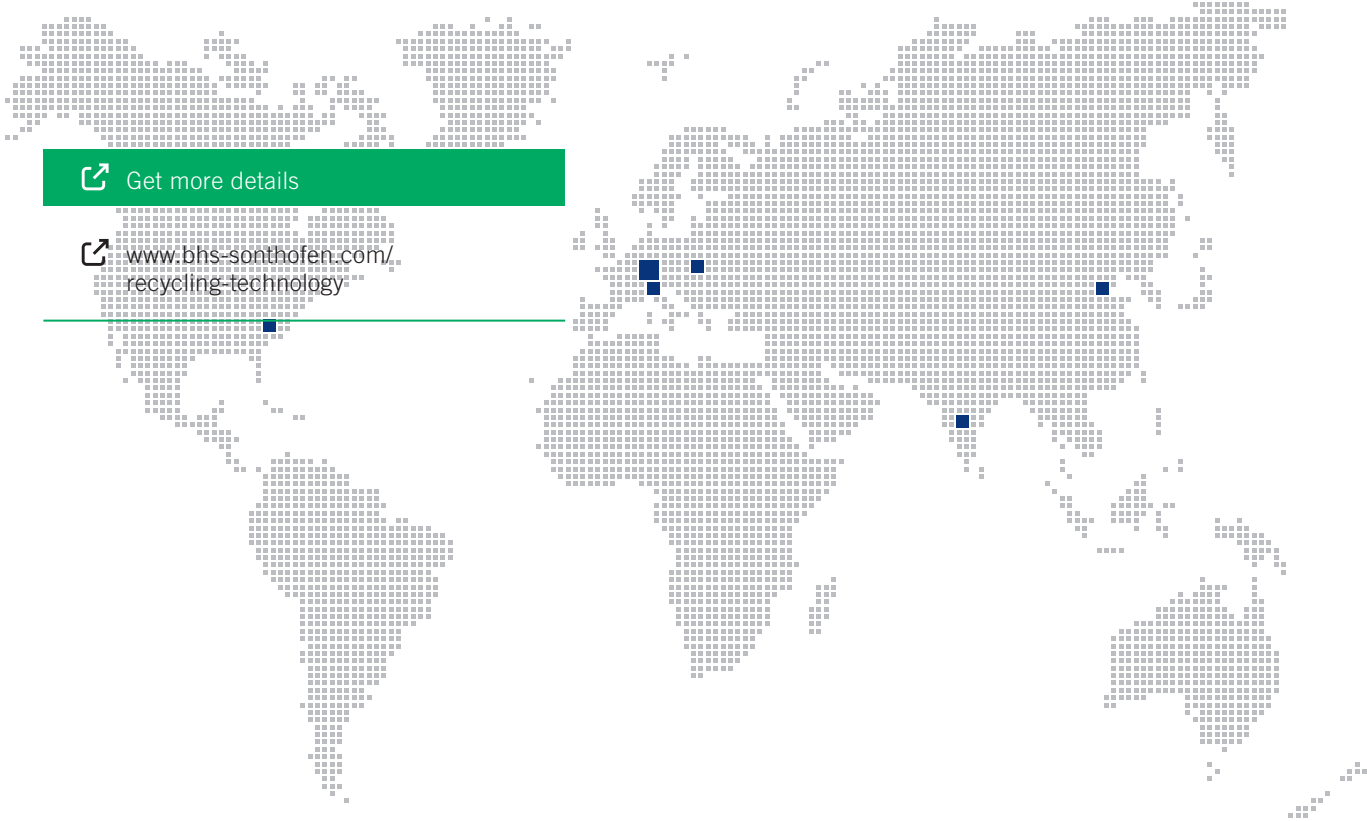


WE ARE THERE FOR YOU - FAR BEYOND THE PROJECT IS OVER

Customer satisfaction is one of our top goals.

Speed, reliability and professionalism are key factors in achieving efficient recycling processes throughout the life cycle of your process technology solution. Take advantage of our comprehensive range of top-quality consulting and further services to achieve maximum system availability.





Get more details

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