coperion

Highly efficient washing installations

System technology for a functioning circular economy.

herbold

We develop customized machines and plants for efficient plastics recycling.

Our washing plants wash, separate, and dry contaminated, used, and mixed plastics, producing clean and high-quality recyclate. For over 40 years, we have specialized in plastics recycling, developing tailored solutions for our customers. Our proven technologies are used worldwide to recycle plastic waste in an economicaly viable and energy-efficient way. We are one of the leading innovation drivers, developing, testing, and manufacturing our solutions in close proximity to our customers. After shipping and commissioning, we continue to provide you with competent service and know-how in plant operation.

Technical center key to success

What counts for us is not theory, but practice. This is why we test new or familiar processes and applications together with you in our technical center. So you know right from the beginning that your system is working to your complete satisfaction. You have a tricky application? Then let's talk about it and we'll test the requirements.

At the beginning is your application.
The steps to joint project success.

We know from experience: Nothing in the recycling business is off the shelf. Every project and every customer is individual. The guarantee for a successful realization of a recycling project:

→ 1. A comprehensive research of all framework conditions such as input and output of the plant
→ 2. Successful testing of customer requirements
→ 3. The correct conception of the plant
→ 4. Process optimization of the concept to ensure that product quality and cost-effectiveness are right for you

Our services

↓

Advice
Research of the framework conditions
Input/output

↓

Testing in the technical center
Mass balance
Product quality

↓

Concept optimization
Optimum product quality
and economic efficiency

↓

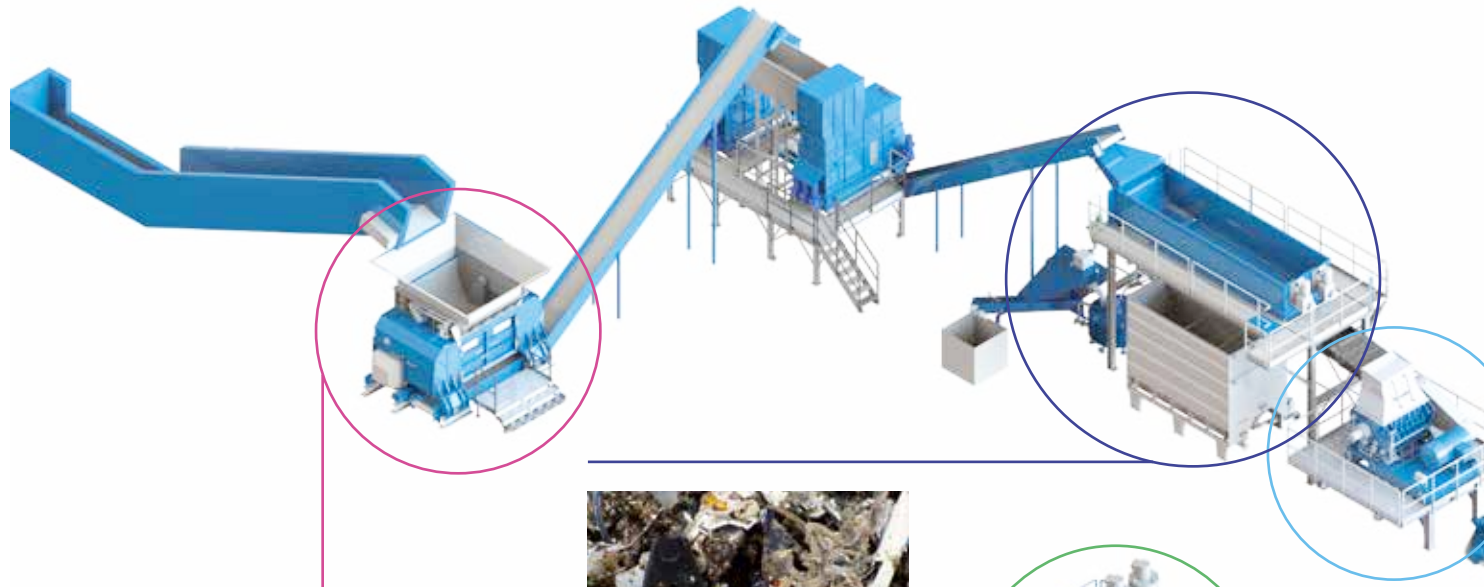
Our solution

The result
A system customized to your requirements with:

→ Clean and high-quality regrind that can be perfectly processed further
→ Best possible performance
→ Highest availability
→ Costs that keep you competitive

Herbold System Solutions.
Modular and flexible.

Herbold washing lines for contaminated plastics are characterized by their modular design. This allows a gradual expansion and optimization of existing facilities.

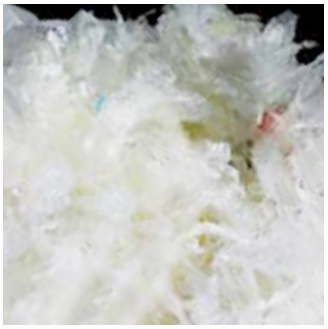


Pre-shredding
The Herbold shredders for pre- shredding and debaling of the feed material can be used in both dry and wet operation. As impurities in the input material are often unavoidable in the first process stage, the machine is very robust and designed for a long service life. In addition to its high capacity, the shredder convinces with its maintenance-friendly design.

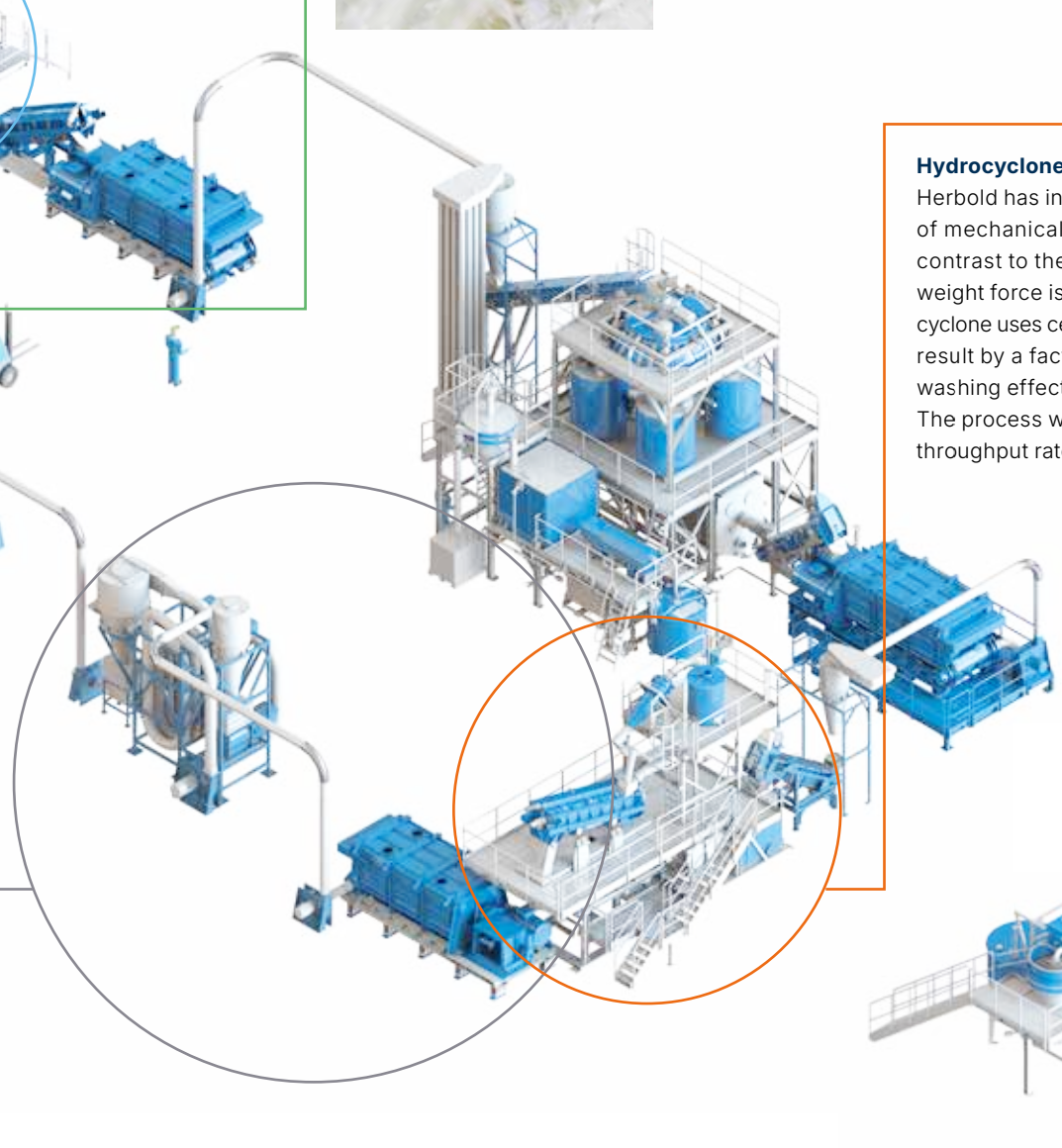
Pre-wash stage
The multi-stage Herbold pre-wash unit detects coarse foreign bodies and reduces the mineral content in order to protect the following machines from damage. Furthermore, the material is carefully pre-washed.

Drying
Herbold's mechanical dryers are designed for high throughput rates at a low final moisture content. The high impact energy separates impurities such as paper. Depending on the feed material, very low moisture levels are achieved either completely mechanically or in combination with a downstream thermal dryer. To further process the material in an extruder in an energy-saving way.

Size reduction and washing
The material is size reduced and simultaneously washed in the wet granulator. Friction during the grinding process ensures excellent washing of the flakes. The double cross cutting action is one of the most important features, which enables a scissor cutting action with a high quality cut of the flakes and thus also dissolves dirt pockets. A subsequent friction washer separates the impurified water and other contaminants from the flakes.



Silo
The Herbold silo is particularly suitable for materials with poor flow properties. With the continuously working agitator arm and the discharge screw, we avoid bridging and enable problem-free discharge to the next unit.



Hydrocyclone separation stage
Herbold has introduced the hydrocyclone in the field of mechanical separation in plastics recycling. In contrast to the separation tank, where the simple weight force is used for density separation, the hydrocyclone uses centrifugal forces to improve the separation result by a factor of 12. Furthermore, an additional washing effect is achieved by the generated friction. The process water is continuously cleaned at a high throughput rate and thus cleaned of contamination.

Flow Diagram
Film Washing Line

Pre-Shredding, Washing, Grinding

→ Shredder

→ Gravimetric Dosing

→ Pre-Washing Unit

optional

Hot-Wash and Hydrocyclone-Density Separation

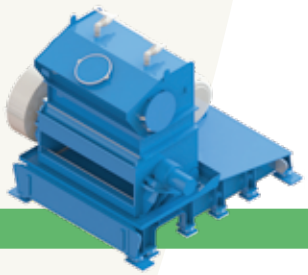
→ Hydrocyclone-Density Separation

→ Hot-Wash

Drying, Bagging

→ Mechanical Drying

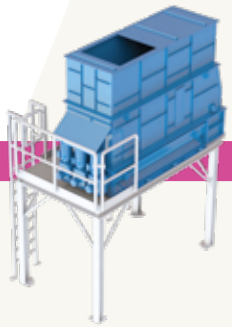
Process Water Treatment



→ Granulator

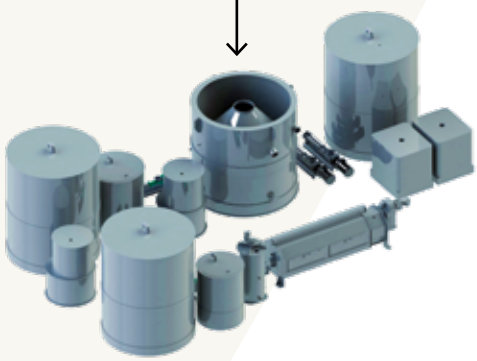
→ Friction Washer

→ Extended Water Treatment



→ Silo

→ Mechanical Drying



→ Water Treatment

→ Thermal Drying

→ Silo

Flow Diagram
PET Washing Line

Hot-Wash with Separation and Hydrocyclone-Density Separation

→ Hydrocyclone-Density Separation *

→ Hot-Wash *

Air Classification, Screening and Flake Sorting

→ Step Dryer *

→ Gravity Separator

→ Fine Separation

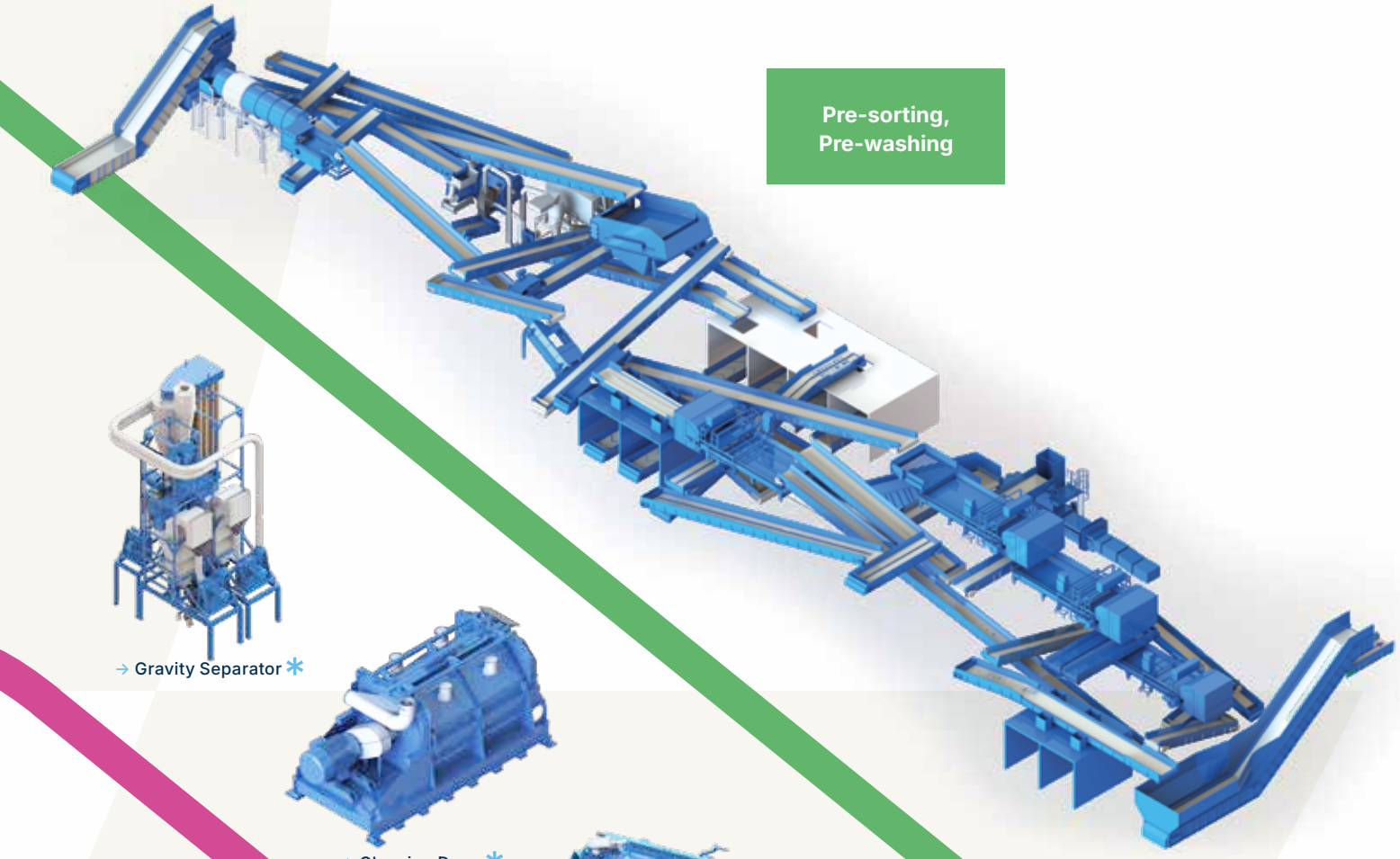
Water Treatment

*

→ Process Water Treatment

→ Extended Water Treatment

Pre-sorting, Pre-washing



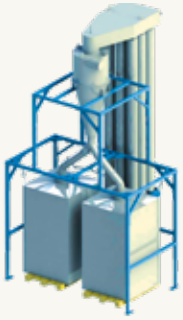
→ Gravity Separator*

→ Cleaning Dryer*

→ Friction Washer*

→ Silo

→ NIR Flake Sorting



→ Big Bag

Grinding, Fine Separation

Core competence – well thought out down to the last detail.

Pre-wash Unit VWE

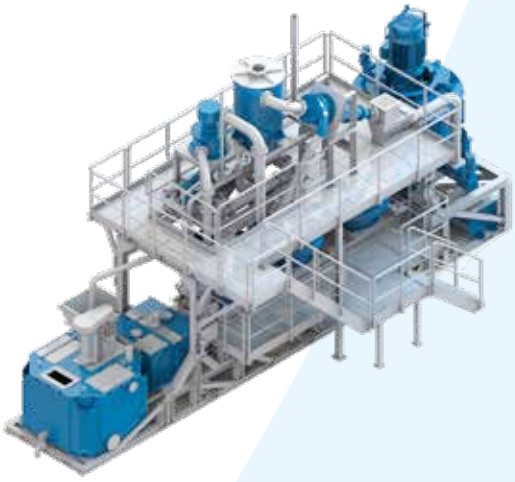
- → Combination of a heavy material separator with a prewash.
- → In three process steps with a special upflow function, we remove foreign bodies such as minerals, metal, glass, sand or other heavy materials.
- → Extremely dirty material can be processed in this way.
- → Comprehensive pre-cleaning protects the downstream system components, extends the running time, prevents expensive downtimes and reduces service costs.

SB Wet Granulator

- → Uniform forced feeding by screw conveyor.
- → This means that the granulator always operates at optimum capacity and minimizes the fines content.
- → We achieve a 30–50% higher throughput rate.
- → Optimum energy performance ratio.
- → Reduces your operational costs by up to 30% lower specific energy consumption.
- → Due to the closed material feed, the noise level is reduced.

Hot-Wash Stage

- → Removes odors, adhesive and liquid residues, sugar, soda, etc.
- → Process parameters such as material quantity, temperature, residence time and detergent can be set individually depending on the degree of soiling.
- → Temperature can be controlled from 60-90°C depending on the material.
- → End result is recycled material of higher quality.
- → Separate hot water circuit reduces operating costs.



Hydrocyclone Separation Stage

- → Compared to classic float-sink tanks, the hydrocyclone achieves an approx. 12 times higher selectivity due to centrifugal forces.
- → In addition, the turbulence creates high friction and an additional washing effect.
- → This results in a higher final quality of the recycled material and thus a higher selling price can be achieved.
- → The increase in quality also protects the extruders and granulators used in subsequent process steps, which increases the service life and reduces ongoing operating costs.

Step Dryer

- → Achieves excellent drying results and reduces residual moisture to <1%.
- → The multi-stage, gentle drying process minimizes the formation of fines compared to conventional centrifugal dryers.
- → Sophisticated flow design leads to high efficiency and low energy consumption, which reduces operational costs.
- → Especially suitable for PET and rigid plastics.

Thermal dryer

- → Perfect for drying thin films to a minimum residual moisture-content.
- → The drying results are significantly better due to an optimized air flow and heat input – drying is highly efficient.
- → While at the same time we can optimally utilize the required energy, thereby reducing the energy supply.
- → This reduces ongoing operational costs.

The result: clean and high-quality regrind that can be perfectly processed into new products in the plastics processing industry.

Examples of materials that can be processed with Herbold machines

- → Agricultural film
- → Film from industry, trade, household
- → Thin film, stretch film
- → HDPE bottles
- → Oil bottles and containers
- → PET bottles
- → Barrels, containers from household, trade, industry
- → Containers
- → Bottle crates
- → Bins
- → Bumpers
- → Battery boxes
- → Fiber materials such as big bags

Let's talk about your next project!

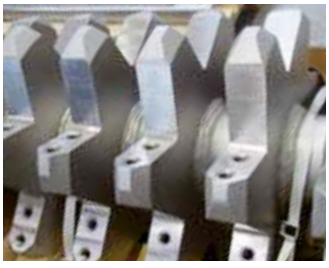
Send us an e-mail with all information to: herbold@herbold.com
or you can call us at +49 6226 932-0

Reference
Systems

Spare Parts
Management

Quick troubleshooting due to competence and experience as well as a comprehensive stock of spare parts
Maintenance and break downs can be common place for recycling equipment especially with the mix of materials and stress of heavy duty applications. To ensure your companies success, to limit down time and to keep your equipment operational, your supplier must have a competent staff, superior service and large spare parts inventory. With our extensive equipment knowledge, experienced staff and comprehensive spare parts inventory Herbold Meckesheim is able to react quickly to all of your service requirements. Our services include spare and wear parts inventory, field service, factory refurbishing, installation, training, and commissioning. Let our staff assess your needs and quickly resolve your equipment issues or problems.

→ Spare and wear parts
→ Inspections and troubleshooting
→ Repairs
→ Installations
→ Maintenance service
→ Commissioning and training



Spare Parts
With the help of our computer system our comprehensive stock of spare and wear parts is continuously checked and updated in regard to availability and inventory turnover. This enables us to execute purchase orders in most cases on the same day and to dispatch the ordered parts to our customers all over the world with the desired delivery service. Our ability to deliver spare and wear parts is not restricted to our own machinery, we are also able to provide such parts for machines from other manufacturers in order to guarantee a smooth operation. By arrangement, we are also prepared to stock the most important, even special spare and wear parts in our warehouse. Herbold also offers a blanket purchase order program allowing for quantity discounts on spare parts. Ask your spare parts representative how this program can benefit you.

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B-600803-EN-Herbold-Washing Lines

herbold

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