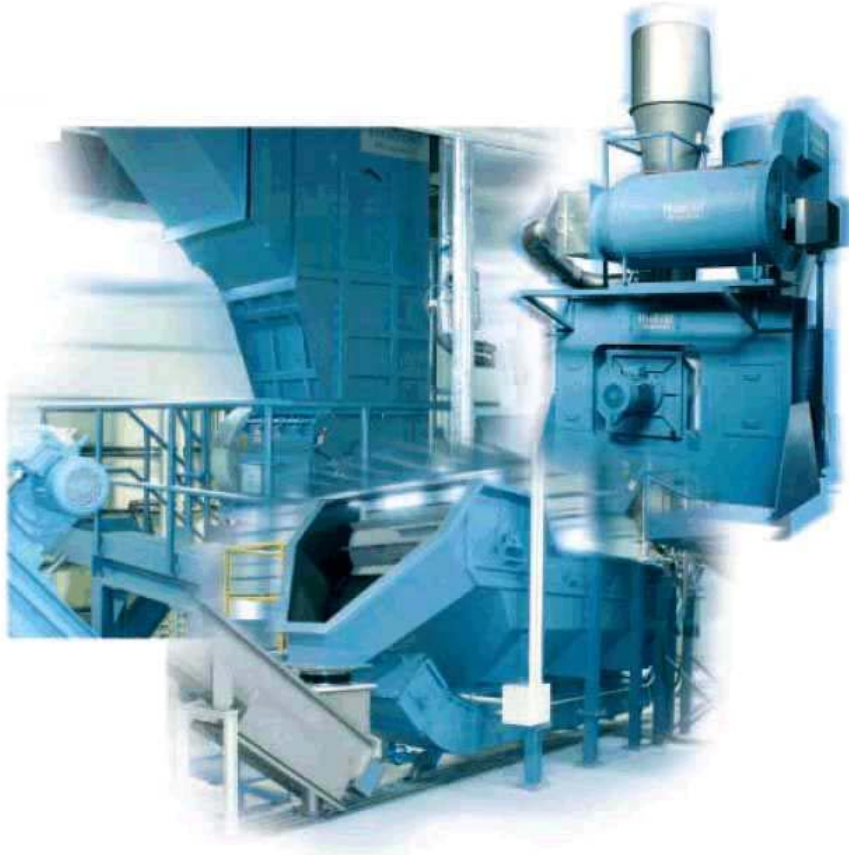
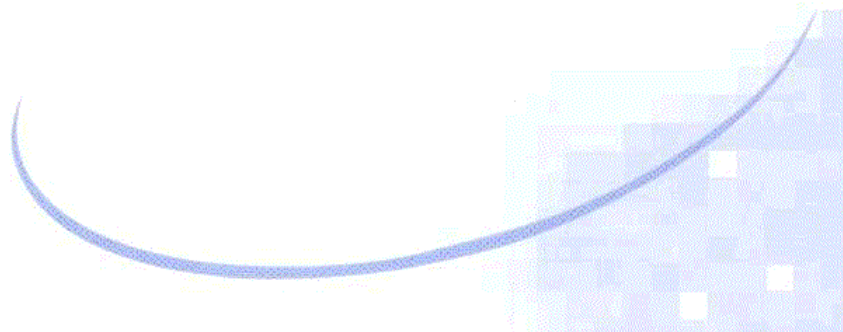


Herbold Washing Lines

Modular Washing Lines for Contaminated Plastics



- With a modular system from a simple wet granulator to a turnkey industrial washing line
- Components for the optimization of existing washing plants
- Wear resistant dry or wet shredders for highly contaminated materials with foreign bodies
- Optimized drying steps for thin and stretch films



Modular System: Step-wise Extension, Optimization of Existing Plants



Debaling

- For the pressed bales of different materials – e.g. bottles or postconsumer plastic waste, Herbold Meckesheim offers debalers that facilitate the subsequent classification of the material and the manual sorting or the mechanical separation of coarse foreign materials via rattle screen or trommel.

*Debalers for bottles:
SZ type with view into the debaling tools*



Shredder with feeding conveyor and buffer conveyor

Pre - Size reduction

- Depending on the type of feed material and its degree of contamination, Herbold Meckesheim can rely on a range of highquality machines designed and developed by Herbold. Our product range of pre-size reduction systems comprises guillotine cutters, two-shaft or single-shaft shredders.

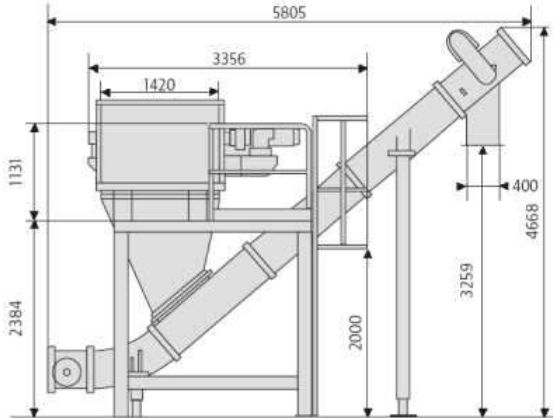
The Herbold HOG-shredder of the HGM series is insensitive to foreign matters

- For the processing of highly contaminated materials with an extreme content of foreign substance, Herbold Meckesheim managed to develop a new machine that has proved to be insensitive to foreign matters to a high degree and has a long lifetime.



HGM 60/145

Durability, Efficiency, Effectiveness



Drawing of a pre-washing container with scrape conveyor for removing the dirt fraction

Pre-washing step for separating coarse foreign bodies

- The pre-washing steps of Herbold Meckesheim are superior to every conventional metal separation or detection. However, not only metals are automatically separated with great reliability, but also any other high contamination.

Size-reducing and washing

- A high cleaning effect is achieved by the double cross cutting geometry of the granulator. By adding water to the cutting chamber, the grinding process creates an intensively washing through friction. At the same time, wet granulating avoids blocking of the screens and protects the material during the cutting process.



Wet granulator with maintenance table. Machine is fed by the above part. The reduced and washed material falls into a friction washer

Intensive washer with mechanical cleaning and screen drum



Separating of dirty water, separating of paper, intensive washing

- The material washed and reduced at the same time in a wet granulator falls into a dewatering screw that separates the dirty water. A fast running screw of the dewatering screw is used for plastics contaminated with paper for spinning of paper pieces pulped from the pre-washing and wet grinding step. Any remaining paper, which has not been spun off in this step, will be finally separated in the friction washer.

Customer and Material Oriented Solutions

Separation steps, Separation tank – Hydrocyclone plants

The Herbold separation tanks are designed in size and shape in such a way that no turbulences are disrupting the separation process. Appropriate discharge devices carry the material (swim and sink fraction) into the down stream equipment.

A separation quality in the ppm range (e.g. with PET bottles) is reached by a second separation step consisting of hydrocyclone systems. Depending on the application of the separation steps, a swim/sink tank, hydrocyclone-separation-plant can be used in combination or separately.



Flotation tank with scrape conveyor



Part of a hydrocyclone plant



Mechanical dryer

Mechanical drying

The mechanical Herbold dryers are highly efficient units based on the centrifugal principle. With these systems excellent drying results are reached so that many materials do not need any additional thermal drying.

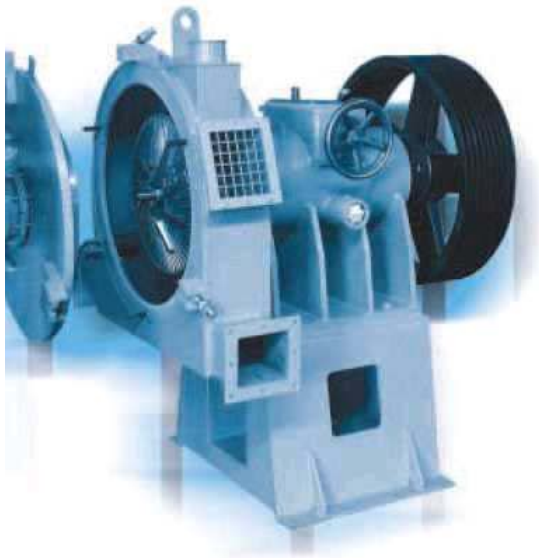
Thermal dryer



Thermal drying

A thermal dryer can be added after the mechanical dryer if necessary, in order to reduce any residual moisture on the material surfaces. To ensure a minimum energy consumption the unit is equipped with a multi-stage switch for different degrees of temperatures. As an option, the heating aggregate can be carried out by oil, gas, electrical heating or by hot air from the plant's heating system.

Single Components or Complete Plants



Compactor unit of a Plastcompactor

Drying and compacting

- With complicated materials such as stretch film or foam materials a sufficient mechanical and/or thermal drying is not possible without the use of an enormous amount of energy. The solution to this problem is the HV Plastcompactor. By the use of friction between the compactor discs, the material is heated, dried and at the same time compacted. When the material from PET bottles is compacted, it is crystallized at the same time. With all applications, bulk density and free flowing characteristics are greatly improved.

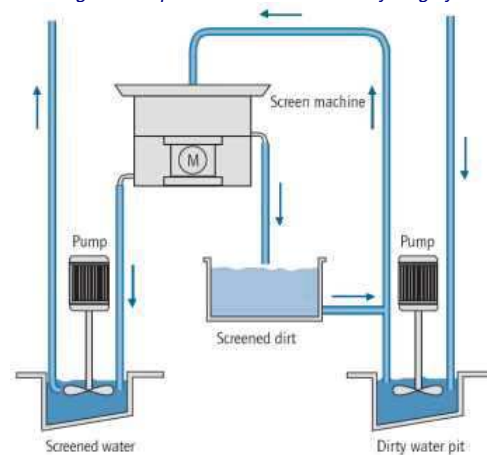
Water treatment

- The dirty water from a washing process is collected, cleaned and then re-circulated that significantly reduces the amount of fresh water that would have been needed. Herbold Meckesheim offers all elements for this circulation.

Herbold round silos



Drawing of a simple mechanical water recycling system



Storing

- An essential component of a complete recycling plant for plastic waste is the storing of these materials. Herbold Meckesheim offers the appropriate storing systems for all granulated materials, especially poor flowing materials such as fractions from film or mono- and multi filaments. For storage of up to 60 m³ there are rectangular silos and for smaller amounts of up to 20 m³ round silos are available.

The Result: Clean and High-quality Ground Material



PET bottles

The Herbold Meckesheim washing plants concept is based on the building block principle and can be extended step by step to the needs of the customer and to the materials that have to be recycled and can be adapted to the required capacities by modification or extension.



Post consumer films

Herbold Meckesheim also offers special plants:

- For pharmaceutical companies
- Mobile plants
- Components and customized plants

Examples for materials that can be recycled with Herbold washing lines:

- Agricultural films
- Post consumer films from industry, commerce, households
- Thin films, stretch films
- HDPE- bottles, oil bottles and containers
- PET bottles
- Post consumer drums, containers from households, commerce, industry
- Containers, bottle crates, bins
- Car bumpers
- Battery cases
- Fiber materials such as big bags, fishing nets, and many other dirty plastics



Customized plant:
Compact Washing plant for pharmaceutical containers



Existing plants – also from our competitors – are replaced and optimized with components of Herbold Meckesheim washing plants.

For special applications such as the recycling of PET-bottle flakes which correspond to highest quality demands, Herbold Meckesheim additionally offers special units, e.g.:

- Sorting cabins
- Automatic colour and material separation plants
- Pre-washing units
- Hot washing steps with filtering of dissolved glues
- Air separation units like zig-zag sifters and whirl sifters

For the recycling of PET bottles ask for our brochure for PET bottles Modular Washing Lines!

Specifications are not binding and subject to change without notice.
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