

**binder+cö**

wet processing



we process the future



Processing Technology



## SAND TRAP AND DOUBLE SAND TRAP



### TASK

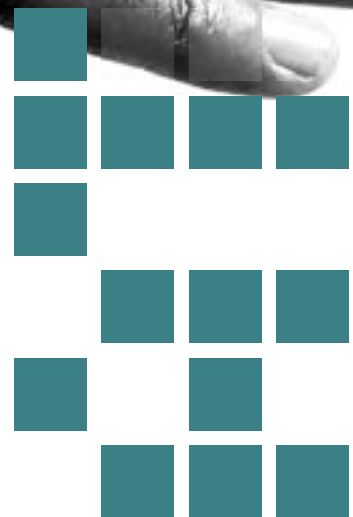
Sand traps serve for the cleaning and simultaneous dewatering of sand from upstream screening machines with spray facilities as well as for the recovery of fine sand. With double sand traps, a certain share of fine sand is excavated separately via a bucket wheel. This sand can be returned to the main excavated material depending on demand. By means of changes in the rotation speed of the two independently driven bucket wheels, the grain size distribution of the sand can be corrected in the lower range.

### FUNCTION

The basic function of the sand trap corresponds to that of the bucket wheel. The solutions offered by Binder+Co here are aimed at an optimum cleansing effect of the sand, the separation of the elutriable components as well as the recovery of fine sand. This is achieved by means of correspondingly large "pool" surfaces and special feeder conveying screws. With double sand traps thus an additional delivery of the fine sand to the corresponding bucket wheel is achieved. In order to bring about the required fine sand recovery, the ends of the sand trap troughs are fitted with individually adjustable overflow edges. Grain sizes down to the lower limit of 40  $\mu\text{m}$  as well as sand products with corrected grain size distribution are the result.

### TECHNOLOGY

The technical design of Binder+Co's sand trap is characterised by low maintenance and operating costs in combination with high availability. Double sand traps are driven by means of two planetary gears which independently of each other drive one bucket wheel each together with the corresponding conveying screws. This enables the operation of the two wheel bodies at different rotation speeds and thus an optimum dewatering effect. The machinery is powered by an electric motor and belt drive. The planetary gears are fitted with hollow shafts and directly drive the two central main shafts of the wheel body which are mutually supported. These main shafts are supported by robust spherical roller bearings on the trough body.





## BUCKET WHEELS



### TASK

Bucket wheels serve the cleansing and simultaneous dewatering of sand and gravel products from upstream screening machines with spray facilities or from suction or compressed-air excavators. During this procedure gravel can be taken up with an edge length up to 120 mm.

### FUNCTION

The feed slurry is transported to the bucket wheel by a wear-protected feed chamber, and the bucket wheel scoops the sand by means of the buckets on the wheel body. The buckets are fitted with wear-proof, exchangeable lateral and frontal scoop blades as well as conical PU slotted-hole screen mats.

Binder+Co's bucket wheels are characterised by special run-off chambers in the wheel body. They are equipped with additional suction chambers which, in combination with a load-dependent speed controller, ensures optimum drainage. Crucial for the recovery of fine sand are the independently adjustable overflow edges fixed on both sides of the bucket wheel.

### TECHNOLOGY

High availability and lowest possible maintenance and operating costs determine the technical design of Binder+Co's bucket wheels. The driving mechanism of the bucket wheel is actuated by a planetary gear which is in turn belt-driven by an electric motor. The planetary gear is equipped with a hollow shaft and drives the main shaft of the bucket wheel directly. The bucket wheel shaft is supported by means of robust spherical roller bearings on the trough body. The trough is made of solid, welded steel plates and equipped with a run-off support. The body of the wheel is also made of solid steel plates and bolted to the drive shaft.



## DEWATERING SCREWS - SPIRAL CLASSIFIERS



### TASK

Dewatering screws clean and simultaneously drain sand from screening machines with spray facilities. Spiral classifiers are usually used for classification of suspensions. The result is a dewatered sand product (coarse material) and waste water (fine slurry).

### TECHNOLOGY

The key component is the electrically driven conveying screw. To avoid undesirable eddies and to achieve a best possible dewatering effect, reduction gears and bevel gears ensure the corresponding slow and continuous operation. To avoid excessive strain after standstill times, the conveying screw can be raised and lowered slowly after renewed start-up.

The sufficient distance between the bottom of the tank and screw facilitates the formation of a cushion of material along the whole length and thus reduces wear on the bottom of the tank.

The underwater bearing is protected against penetration by water and foreign bodies by means of 6 seals. Special cast-iron wearing plates are bolted on to the screw blades and are individually replaceable.



## DEWATERING SCREENS



### TASK

Dewatering screening machines can be in single or double-decker versions. In the double-decker version the top deck can be used either for protection or for screening.

### FUNCTION AND TECHNOLOGY

The screen decks which are constantly inclined towards the discharge end guarantee optimum dewatering effects in combination with the slotted-hole screen rear panels. The inclination of the deck can be adapted according to need.

The vibration characteristics of the machinery can be optimised by means of adjustable unbalanced masses.

The low-noise, rubber hollow springs reduce the occurring dynamic power, possess optimum starting and coasting features, do not require any limit stop restrictions, and achieve long service lives.



## HIGH PERFORMANCE

Binder+Co has been a much sought-after international partner in the treatment of bulk materials for many years. Core competencies, such as screening technology, are co-ordinated with each other in plant concepts in order to deal with the broadest demands in dry, wet and semi-wet screening. The portfolio of expertise in the field of wet processing includes:

- **Bucket wheels of the BSR series**

Ten basic types of bucket wheels are offered for simultaneous cleaning and dewatering of sand and gravel.

- **Sand traps of the BSF series**

The range consists of three design series of sand traps for simultaneous cleaning and dewatering of sand from screening machines with spray facilities and for recovery of the fine sand.

- **Double sand traps BDSF**

Double sand traps allow a share of fine sand to be excavated separately by means of a second bucket wheel body and thus the grain size distribution of the coarse sand product can be corrected.

- **Dewatering screws – spiral classifiers**

For the simultaneous cleaning and dewatering of sand from screening machines with spray facilities or for dewatering cycloned sands. Spiral classifiers are usually used for classification of suspensions.

- **Dewatering screening machines**

- **Double-shaft log washers of the BDSW series**

For washing strongly contaminated raw materials, breaking up brittle grain and loamy clumps, and separating light materials.

- **Single-shaft log washers BESW**

For diluting brittle grain and loamy lumps in pre-drained sand products.

- **Attrition machinery**

For dissolving and cleaning sand of highest quality.

- **Jigging machines**

For separating light materials from gravel.



With its broad product range and many years of process-engineering know-how, Binder+Co is a leading provider in dry, wet and semi-wet processing of bulk materials.

- Processing Technology
- Environmental Technology
- Bagging Technology

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Binder+Co's know-how in processing bulk materials and recycling materials is demonstrated in its broad range of special machinery, which is used world-wide in the extractive, construction and chemical industries. Furthermore, the company provides comprehensive solutions – from project development, design, production and assembly to commissioning.

A broad range of single machines and considerable know-how in classification and dewatering of bulk materials enables Binder+Co to utilise just the right products for the right task.

The special strength of the Austrian company lies in its more than 50 years experience in providing customised solutions for specific customer needs.



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