

BHS-Filtration Inc.

*Thin-Cake Solid-Liquid Separation,
Cake Washing & Drying Technologies*

**BHS Vacuum Belt Filters:
Continuous-Indexing & Rubber Belt**

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APPLICATIONS FOR CHEMICAL, ENERGY, & ENVIRONMENTAL

Pressure & Vacuum Filtration

Batch & Continuous Operation

High Solids to Clarification

Cake Washing & Drying

Automatic Discharge of Wet/Dry Cake or Concentrated Slurry

BHS TECHNOLOGIES

Candle Filter:

Clarification

Pressure Plate Filter:

Clarification

Vacuum Belt Filter:

High Solids, Continuous

Rotary Pressure Filter:

High Solids, Continuous

BHS Vacuum Belt Filter Technologies: Continuous-Indexing & Rubber Belt Filter

Continuous-Indexing

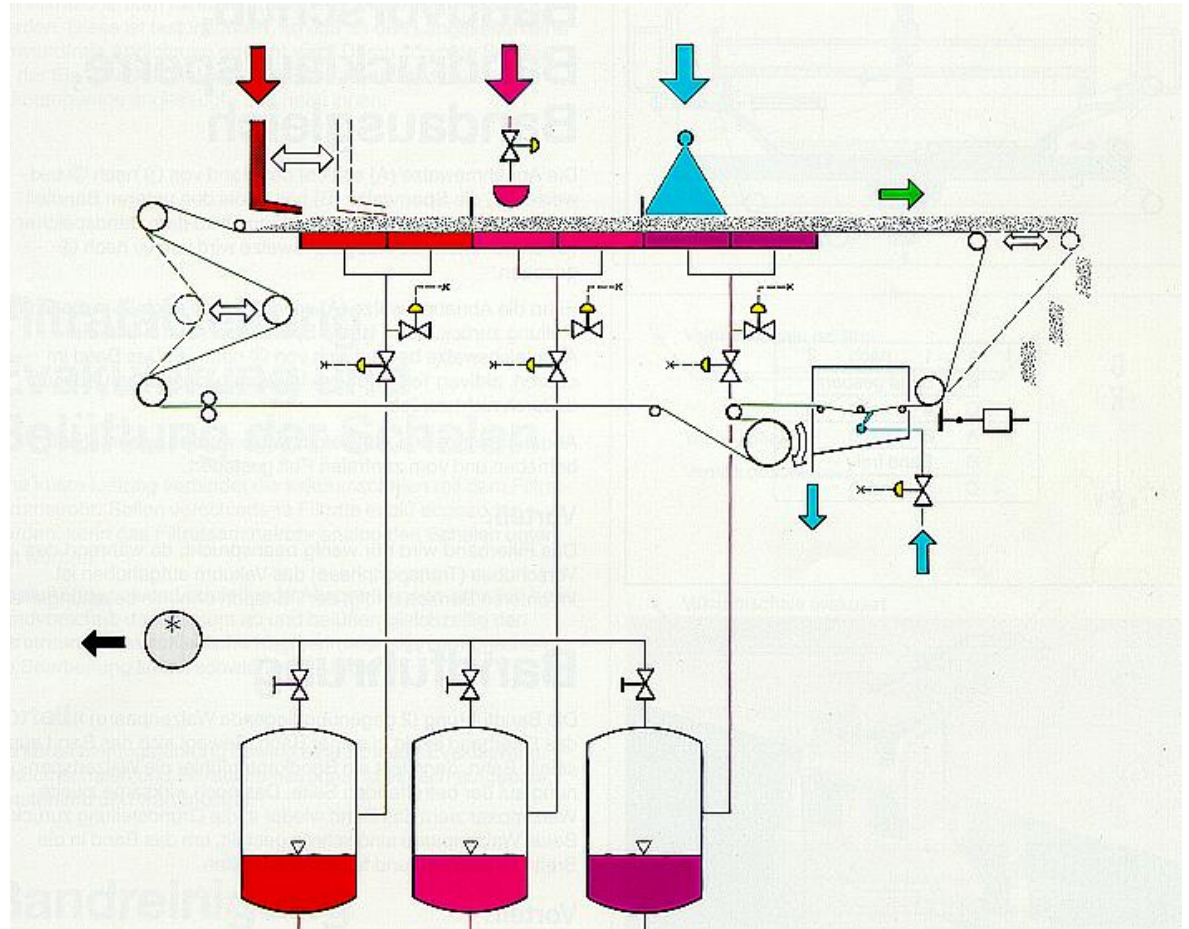
- **Continuous slurry feed**
- **Indexing belt movement**
- **Up to 45 m² filter area**
- **Electric or pneumatic drive**
- **Dewatering, cake washing, steaming, and pressing**
- **For small to medium size throughputs**
- **No sealing media (water, air)**

Rubber Belt Filter

- **Continuous slurry feed**
- **Continuous belt movement**
- **Up to 200 m² filter area**
- **Electric drive**
- **Dewatering, cake washing, and steaming**
- **Higher throughput per m² for high efficient filters**
- **No water or air required for belt support**

BHS Continuous-Indexing Schematic Operation

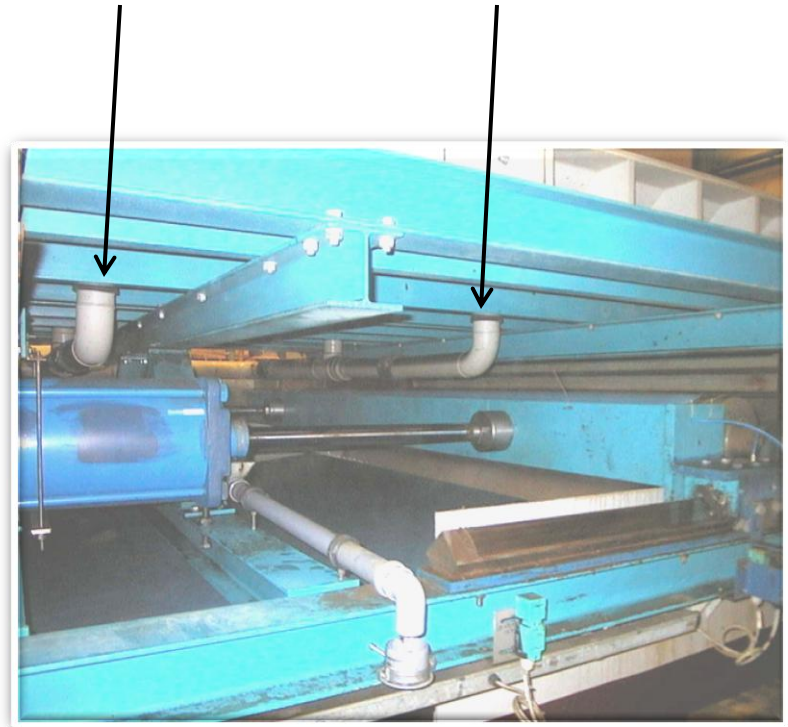
- Belt movement by electric drive
- No rubber belt
- The vacuum trays are fixed in place
- Each tray has a filtrate outlet



Vacuum Tray & Filtrate Outlets



Fixed Filtrate Outlets & One Outlet for Each Zone



Suspension Feed: Fixed Feed

- **Feed of the suspension is continuous by the feed device**
- **The suspension is evenly spread on the filter cloth by a weight loaded weir plate**
- **Typical Solids Loading for Gypsum = 55%**



Cake Washing & Drying Techniques

- **Cake Washing Liquids:**
- **Overflow devices for liquids with solids***
- **Spray nozzle systems for solids-free liquids ***
- **Vacuum Drying**
- **Convection Drying**
- **Steam Blowing**
- **Cake Pressing**
- **Combination**



Cake Discharge



- **Cake discharge from the BHS 12 m² belt filter**
- **Cake Depth = 50 mm**
- **Moisture < 10 %**
- **Chlorides < 100 ppm**

BHS Belt Filter (45 m²) for 32 tons/hr dry gypsum



Innovation

BHS Rubber Belt Filter



**The Newest Expansion of the BHS Technologies
to Meet the Needs of the FGD Industry**

BHS Rubber Belt Filter for Gypsum: 90 m²



BHS Rubber Belt Filter

- Continuous vacuum filtration
- Efficient washing of the cake
- High throughputs
- Low consumption of sealing water
- **No sliding water required**
- Rubber belt width from 1.2 m to 4.2 m
- Filter area up to 200 m²

Technical Details



- **Dry support of the rubber belt by roller system**
- **Standard operation of seal belts with water**

Advantages of the Roller System

- **No water or air required for belt support**
- **Lower drive power required compared to water or air support resulting in smaller motor sizes**
- **No risk of damaging the rubber belt by uneven distribution of water or air**
- **Minimum wear**
- **High operational reliability**
- **Low maintenance requirements**

Summary of BHS Turnkey Projects

- **Description of Installation**
- **Process Definition**
- **Project Engineering**
- **BHS Vacuum Belt Filter**
- **Vacuum Package**
- **Filtrate Package**
- **Gypsum Hydrocyclones**
- **Wastewater Cyclone**

- **Fines Recovery & Candle Filters**
- **PLC Controls**
- **Turnkey Packaged Skids**
- **Performance Guarantee**
- **Lab & Pilot Testing**
- **Start-Up & Commissioning**
- **Process Support**
- **Spare Parts & Mechanical Support**