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%

BHS Filtration
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