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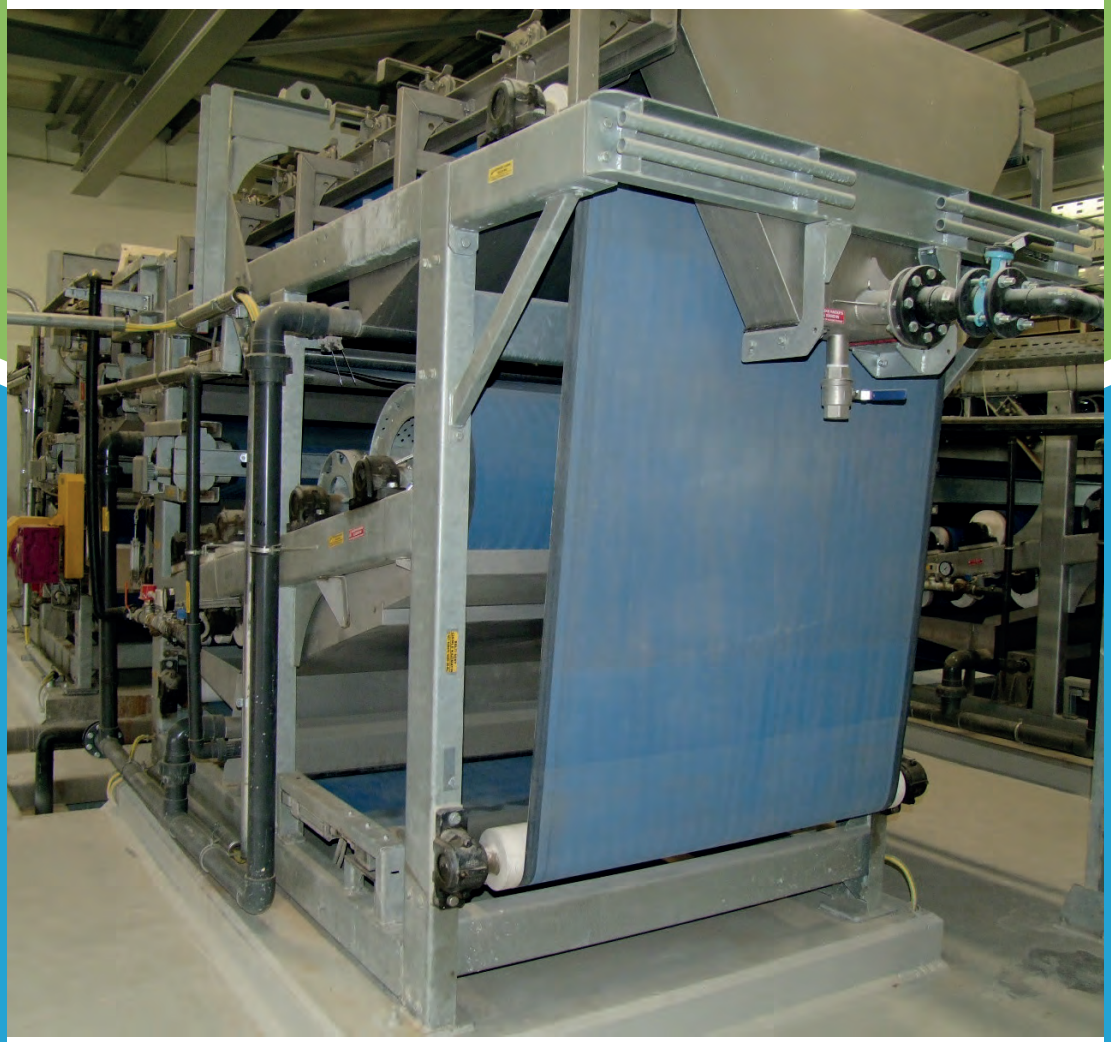
BELT PRESSES



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BELT PRESSES

General Description and Intended Use

It is used to dewater chemical or biological treatment sludge arising out of treatment of industrial or domestic wastewater in wastewater treatment plants or to remove the solid materials from water in other industries. It is one of the most preferred dewatering equipments in high capacities as it dewaters sludge with high flow rate with low energy consumption.

Belt press is fed with conditioned sludge to obtain dewatered sludge. Conditioned sludge flows on filtering belt. Filtrate water released as a result of conditioning is filtered through the pores of the belt, flows into drip pan and discharges. Belt surface is always cleaned with pressured water to prevent clogging of belt pores. Dewatered sludge is poured into the equipments such as trailer, truck etc. and moved away.

Working Principle Of Equipment

They are equipment carrying out high capacity dewatering with a belt resistant to the pressure tightened between the drums.

Belt presses are continuous feed, mechanical dewatering equipments. Chemical conditioning procedure is carried before feeding the sludge to the belt press. One of the important factors affecting the efficiency of the belt press is the conditioning of the sludge. Chemically conditioned sludge is fed stable to the belt pres. Therefore, feed pump and polymer pump are selected as frequency inverter. Stable feeding of the sludge directly affects the initial cake thickness. The sludge fed to the belt press firstly goes to gravity drainage (pre-dewatering section) section. In this section, free water in the sludge is removed from the sludge due to gravity. In this section, a substantial portion of the containing water is removed.

The sludge is poured to the lower belt after passing pre-dewatering section. The two tightened belts between the drums compress the sludge and filter the water. The sludge dewatered by compressing between the drums reaches the section where polyethylene scraper plate is present after passing through the last drum of the belt press. Polyethylene scraper plate scraps the sludge on the belt and pours it to the equipments such as trailer, truck etc. Dewatered sludge is moved away from the system with a transportation system such as a belt conveyor, screw conveyor etc. according to the project. The belt is cleaned with pressured water nozzles while passing through washing section. Filtered water removed from the sludge in all stages of the belt press is collected with pans. Filtered water arising out of compression is sent to the beginning of the wastewater treatment plant to be treated.

TECHNICAL SPECIFICATIONS

BELT WIDTH (mm)	BELT RATE (m/dk)	INSTALLED POWER (kW)	WASH WATER REQUIREMENT (m^3/h)	WASH WATER PRESSURE (bar)	AIR REQUIREMENT (L/dk)	AIR PRESSURE min-max (bar)	SLUDGE INLET CONNECTION (DN)	TOTAL WIDTH (mm)	TOTAL LENGTH (mm)	TOTAL HEIGHT (mm)
1000	1-4	1,1	7	6	100	6-8	80	~2100	~5000	~2600
1500	1-4	1,5	11	6	100	6-8	80	~2600	~5000	~2600
2000	1-4	2,2	14	6	100	6-8	100	~3100	~5000	~2600
2500	1-4	2,2	18	6	100	6-8	100	~3600	~5000	~2600

- It is manufactured with different capacities according to customer's request or industry.
- According to the sector, a long-life belt which is resistant to corrosive structure and tension is preferred.
- There are necessary OHS protection sheets in order to prevent interfering in the movable parts manually.
- Filtering feature of the belts is increased by cleaning lower and upper belts with special design nozzles.
- There are a torque switch and an emergency button available for the safety of the employees and the equipment. In case of excessive loading or compulsion in the equipment, the torque switch is activated and stops the system.
- In case of loosening or breaking in the belt, the switch is activated and stops the system since there will be no signal for loosened and broken belt from the proximity switches.
- In case of slipping of the belt, belt tie mechanical switches activate and replace the belt in the required position thanks to moving drum with piston.
- Pre-dewatering is provided thanks to special designed sludge guide wings in the sludge inlet section.
- A better dewatering is provided with perforated drums and compression drums.
- Solids entry into the system is prevented by strainer that placed in clean water line.
- Pressure of the incoming water is kept under control with pressure transmitter placed in the clean water line.
- Air dryer is used to prevent damage to the pneumatic equipments on the machine, caused by dry and oil-free air coming from the line.
- Water is fed to the special-design nozzles on the equipment depending on the time thanks to solenoid valve placed onto clean water line.
- Air blowers are used to enable the belts of belt press to have suitable tension.
- Sludge cake thickness is adjusted with the aim of cake thickness drums.
- In the event that sludge feeding structure is not used for a long time, the sludge in the container is discharged through discharge valve under the container.

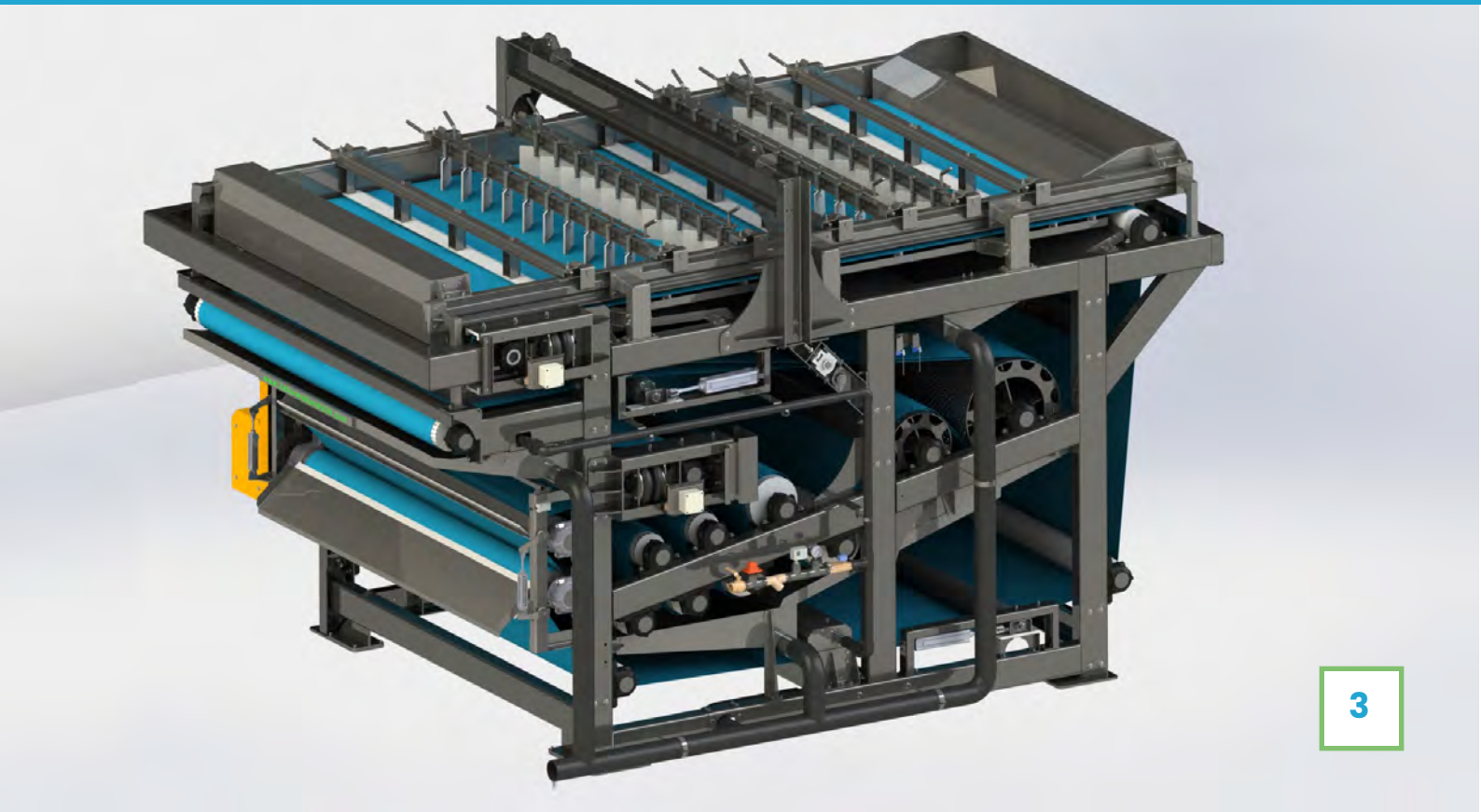
Advantages

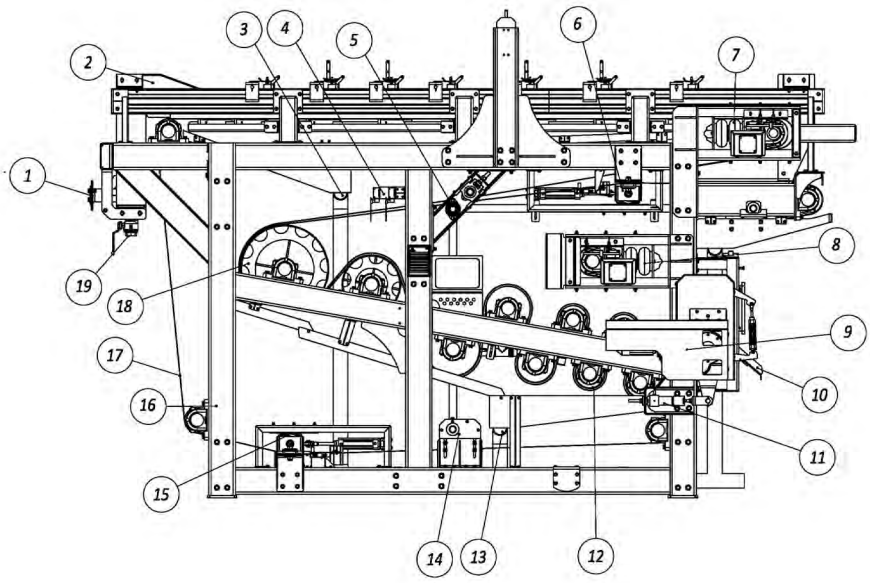
- Continuous Operation Opportunity,
- High Capacity Sludge Dewatering,
- Obtaining Sludge Cake with High Solidity,
- Low Operation and Maintenance Costs,
- Various Belt Alternatives According to the Industry,
- Providing High Dewatering with Low Chemical Substance Use,
- Obtaining High Solidity and Low Sludge Disposal Cost,
- Possibility to Control and Follow the System Operation over SCADA,
- Easy Transportation and Mounting,
- Long Operation Life,
- Low Energy Consumption.

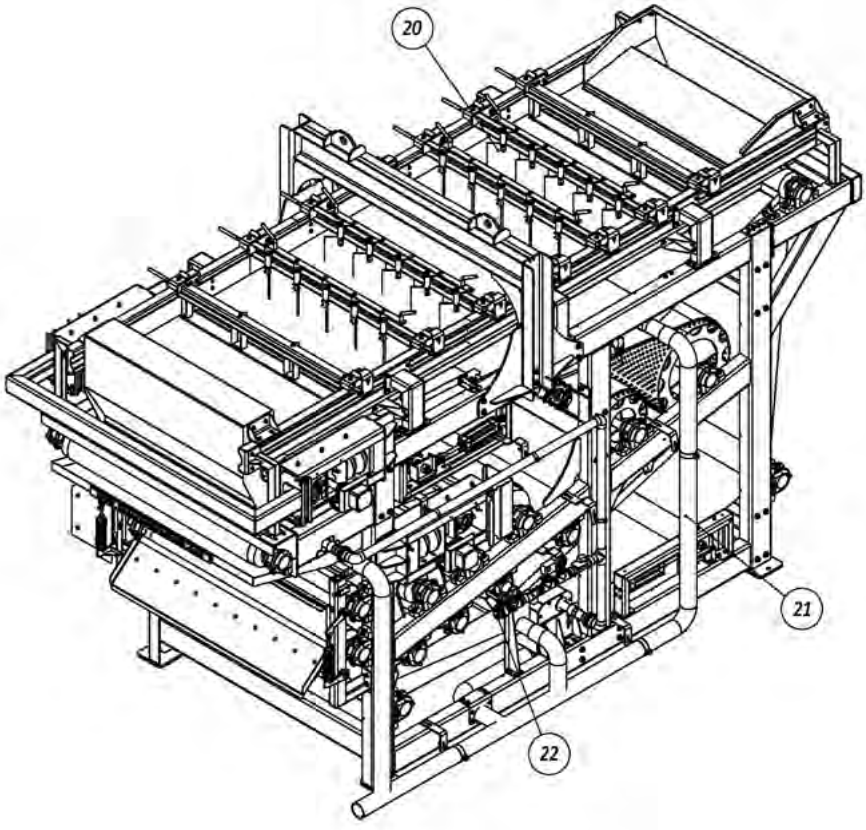
Accessories

- Pre-Dewatering System
- Manual Valve
- Strainer
- Pressure Adjustment Valve
- Special - Design Nozzle System
- Manometer
- Air Dryer
- Solenoid Valve
- Belt Loosening and Breaking Proximity Switch
- Belt Tie Switch
- Torque Safety System
- Emergency Button
- Frequency Converter
- Local Power and Control Panel
- Special-Design Side Cover for Moving Parts*
- Intervention and Maintenance Platform*
- Dosage System and Sludge Feeding Pumps*
- Flow Meter*
- Waste Inlet Chute*
- Waste Container*

* Optional accessories are defined.







No	Part Name
1	Sludge Inlet Line Connection Flange
2	Inlet Distribution Structure
3	Drip Water Outlet
4	Belt Slipping Switch
5	Sludge Cake Thickness Adjustment Drum
6	Upper Belt Slipping Guide Drum
7	Upper Belt Tightening Blower
8	Lower Belt Tightening Blower
9	Motor / Reducer
10	Sludge Scraper
11	Torque Safety System
12	Compression Drum
13	Drip Water Outlet
14	Special-Design Wash Nozzle System
15	Lower Belt Slipping Guide Drum
16	Frame
17	Belt
18	Perforated Drum
19	Discharge Valve
20	Special - Design Sludge Guide Wings
21	Drip Water Outlet
22	Clean Water Inlet

Material Details

- Frame: They can be manufactured as S235JR + Hot Dipping Galvanized Coating, S235JR + Epoxy Paint, DIN 1.4301 (AISI 304) or DIN 1.4401 (AISI 316).
- Drip Water Pan: They can be manufactured as DIN 1.4301 (AISI 304) or DIN 1.4401 (AISI 316).
- Belt Material: Polyester is used.
- Perforated Drums: They can be manufactured as Hot Dipping Galvanized Coating, DIN 1.4301 (AISI 304) or DIN 1.4401 (AISI 316).
- Compression Drums: They can be manufactured as S235JR + Rilsan Coating.
- Guide Drums: They can be manufactured as S235JR + Rubber Coating.

"Different materials can be preferred in accordance with the request of the customer."

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