

ESMIL
EQUIPMENT

EQUIPMENT AND TECHNOLOGIES
for wastewater treatment

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BELT FILTER PRESS

One-stop solution for those who appreciate high capacity and reliability.

- » An effective solution for mechanical dewatering of sludge from urban and industrial wastewater treatment plants and water treatment facilities.
- » Low operating costs, high performance and proven reliability.



WIDE RANGE OF USE

The belt filter press is widely used for dewatering sludge, slimes and suspensions from municipal treatment plants as well as from various industries, including:



food and processing industry;



pulp and paper mills;



leather and metallurgy industry;



water treatment plants;



biogas plants.

MAIN FEATURES AND ADVANTAGES OF ESMIL BELT FILTER PRESSES

✓ Energetic efficiency and low flocculant consumption.

Belt filter press is characterized by low power demand and flocculant consumption.

A wide range of power and performance of manufactured models ensures optimal equipment for each project.

✓ High degree of dewatering.

ESMIL belt filter presses achieve a high degree of dewatering by using tandem pressure rolls of various diameters in the pressing zone. The dewatered sludge of sewage treatment plants after the filter press reaches 20-28 % of dry solids content with an average dose of flocculant of 2-3.5 kg/tDS.

✓ Capacity and small size.

To reduce the hydraulic load on the filter press and to increase its capacity, mechanical dewatering complexes can be supplied with a thickener. Belt thickeners can be used both as a separate unit for sludge thickening to a dry solids content of 3-8 %, or installed above the belt filter press to increase the hydraulic capacity of the complex.

BELT FILTER PRESS WITH THICKENER

MESH BELTS

are made of high quality polyester with optimum features for sludge filtration

STAINLESS STEEL FRAME

is made of durable rolling elements made of AISI 304 or AISI 316 steel, joined by welding and bolted joints

PNEUMATIC SYSTEM OF MESH BELTS TENSION

based on regulators and cylinders to create smooth and safe pressure control

FILTRATE DISCHARGE TRAYS SYSTEM

made of stainless steel arranged in a cascade to divert the entire volume of the formed filtrate and wash water

INTELLECTUAL PNEUMATIC CONTROL SYSTEM OF MESH BELTS

based on a pneumatic island, cylinders and sensors controlled by a controller for smoothly controlling the position of the belt during operation and increasing its service life

SYSTEM OF ROLLERS

made of stainless steel and durable carbon steel coated with special plastic and polyurethane to create high dehydration pressure and to control belt movement

GRAVITY DEHYDRATION ZONE INTENSIFICATION SYSTEM

consisting of plastic and stainless steel cultivators with adjustable position for an optimal free water outlet process of under the gravity action

CAKE REMOVING KNIVES

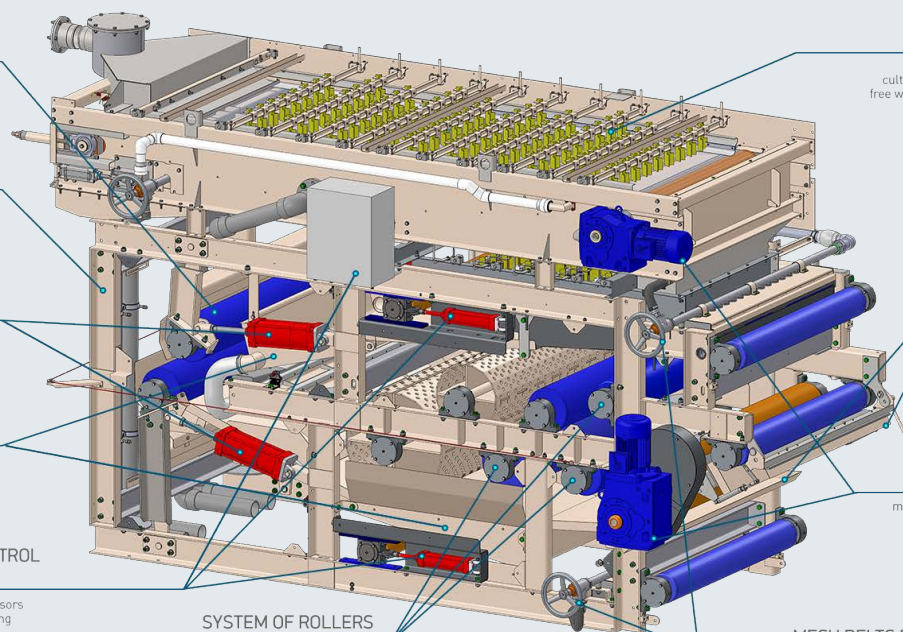
with pneumatic pressuring made of PE for efficient and gentle removal of dehydrated sludge out of mesh belts

GEAR-MOTOR DRIVES OF MESH BELTS

manufactured by leading world manufacturers, VFD belts' speed control

MESH BELTS RINSING UNITS

with self-cleaning nozzles and optimized water flow for cleaning of filtration pores



EASE OF MAINTENANCE AND OPERATION.

✓ Reliability and durability.

The main structural material used for manufacturing belt filter presses is stainless steel AISI 304 or AISI 316 further pickled and passivated. The shafts are made of robust carbon steel with a significant margin of safety and are covered (laminated) with wear-resistant RILSAN plastic. The produced filter presses are equipped with high-quality electric motors, bearings, sensors and control elements from well-known and reliable suppliers.

✓ Low noise and vibration level.

High sustainability of the equipment's design ensures low noise and vibration level generation. Belt filter press can be equipped with protective covers with flanges for the exhaust ventilation connection, which prevents the spread of odours.

✓ Ease of operation and maintenance.

Use of high quality components and time-tested technical solutions ensure a long service life of the equipment and minimize its maintenance requirements. Belt filter press construction allows for visual control of the dehydration process, convenience of maintenance and replacing wearout elements. The main parts are easily available and maintained with use of standard tools.

✓ Continuous automatic operation.

Smart pneumatic belt management system allows the equipment to operate continuously while increasing the life of belts and pneumatic components. Control system runs the dewatering complex in both manual and automatic modes. Setting of parameters and operating modes is intuitive and easy.

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INITIAL SLUDGE DISTRIBUTION ZONE

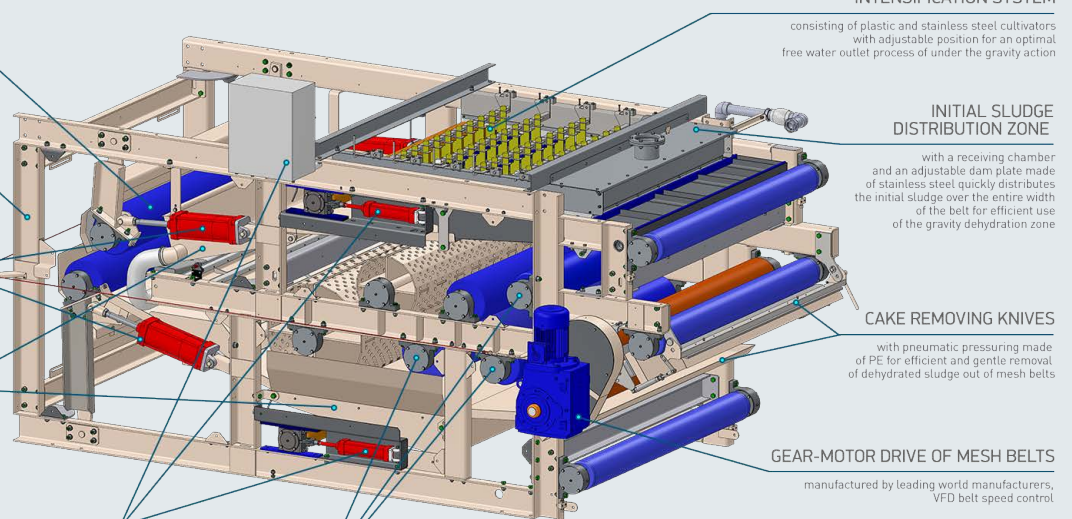
with a receiving chamber and an adjustable dam plate made of stainless steel quickly distributes the initial sludge over the entire width of the belt for efficient use of the gravity dehydration zone

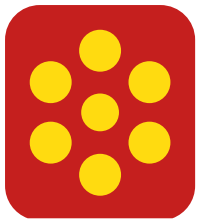
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SPECIFICATIONS

Parameter	Value
Capacity	
- dry matter, kg/t DS	200 - 1100
- initial sludge, m ³ /h	5 - 70
Belt width, mm	
Belt width, mm	600 - 2000
Drive power, kW	0,75 - 3,3
Weight, kg	2990 - 6600

The standard scope of delivery includes:

- » *thickener, dosing pumps for initial sludge and flocculant solution,*
- » *flocculant solution preparation station,*
- » *compressor,*
- » *washing water pressure boosting pump,*
- » *dewatered sludge conveying device.*



ESMIL Group
International Sales Department

+48 87 620 06 02
prodeko@esmil.eu