



Outotec Larox[®] FFP

Increasing volume, while saving energy

Outotec Larox[®] pressure filters are widely used in mining and metallurgical operations, where the trend towards finer grinding in concentrators and stricter requirements towards tailings disposal has resulted in more difficult dewatering, requiring an increased use of pressure filtration.

Outotec Larox FFP - Fast Opening Filter Press is one of the largest membrane filter presses (filtration area up to 991m²) in the market offering various improvements in customers' processes through increased volume, savings in energy and maintenance costs. Even cake distribution (due the top feed design) is the key factor for succesful air drying and good process performance. FFP is the most simple robust of the Horizontal Filter presses on the market today, offering improved quality, with lower cost and shorter delivery time.

Benefits

- High capacity
- Simple installation, operation and maintenance
- Flexible, fully automatic operation
- Consistent performance
- Automatic adjustment for process changes
- Outotec proven control system
- Diagnostics for fast trouble-shooting
- Remote access possibility for operation improved support

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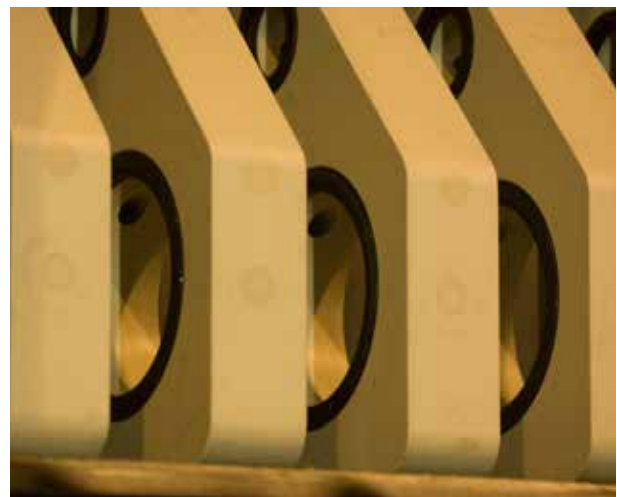
The FFP combines the existing benefits of membrane technology and sidebar design with improved mechanical and process performance. Outotec Larox FFP has short technical operation times providing high through put. It is specially designed for high pressure filter cake air blowing further minimising process times and reduces wear and tear

The consistent performance of this horizontal filter press provides the required cake moisture needed for concentrates and tailings disposal. The operation of the filter is steady, even and fully automatic.

The plate design

The plates, heart of each filtration technology, are designed to optimise process performance and especially the effect of the filter cake air blowing.

This results in lower cake moistures, and reduced wear and tear. Safety and process consistency is further enhanced by cloth flushing after each cake discharge keeping the plate sealing area and cloth surface clean. The plates are manufactured from PP with replaceable outlet ports and exchangeable rubber diaphragms.



The huge filtrate and drying air outlet ports are designed to keep air velocities low during blowing to avoid damage from abrasion. All sealings of the FFP are designed as flexible lip seals, which require much lower sealing forces than in any other filter press.

Mechanism

The fast opening mechanism is designed to work without the need of hydraulic synchronisation systems.



Synchronisation is ensured by the mechanical design of the skeleton itself allowing very high opening and closing velocities shortening the cycle times.

Shifting device

A significant reduction in technical time has been achieved by introducing a one-stroke opening system. All filter plates are connected via banana links to the moveable pressure plate of the filter.

Fast opening system

Quick acting side cylinders move the pressure plate between the open and closed positions at the same time opening the plate pack in a single stroke. The locking system's pins connect the moveable pressure plate to the sidebar in the closed position. With the sidebars taking the loads, the required closing force to ensure the sealing of the plate pack is applied by a short-stroke high pressure cylinder for higher safety. Providing separate hydraulic actuators for fast pack movement and sealing, and utilization of variable displacement hydraulic pumps considerably reduces power requirements and maintenance costs.

Cloth flushing and shaking

A cloth flushing and shaking system is located above the plate pack. The cake is discharged with assistance of cloth shaking. The positioning of the flush bars enables the efficient flushing of the filter cloth when the chambers are open. The water removes residual cake pieces and cleans the sealing edges to ensure trouble-free operation.

Further the positioning of the flush bars combined with the design of cloth hanging bars allow fast and trouble free cloth exchange without the need of removing any bars or lifting the whole plate out. The cloth can be changed at a set of 10 cloth at once if needed.

Automation

Outotec automation system with visual user interface increases safety, smoothes the operation, troubleshooting and reporting,

Optional remote access combined with enhanced reporting system can be provided to support the operation in preventive maintenance.

Outotec Larox FFP 3512 - large scale equipment for tailings dewatering

Based on the well proven FFP 2512 series, the new FFP 3512 has been developed providing even higher capacity. Fulfilling the increased demand in tailings handling and considering the design demands, the footprint has been kept the same following exchangeability of two filter series. Based on Outotec's track record the equipment has been designed taking the high demands for filter plant operations into account focusing further on an unique plate design for fast, reliable filter operation.



The Outotec Larox FFP unique mechanical design of the skeleton allows very high opening and closing velocities that shorten cycle times.

High capacity

- Filtration areas up to 991m²
- Fast reliable pack opening
- Latest technology filter plates designed for mining conditions

Automatic operation

- Automatic adjustment for process changes
- Consistent performance
- Remote control possibility

High availability

- Outotec Larox proven control system
- Diagnostics for fast trouble-shooting
- Improved Maintenance with quick and easy access to all components



Filter cloth logistics is key factor in Outotec Larox Filtration Plant design. Filter cloth replacement is a simple reversal of the removal process allowing rapid safe cloth replacement.

Outotec Larox FFP		1 516	2 512	3512
Filtration area	m ²	108 – 252	288 – 576	831-991
Filter volume	m ³	1.9 – 6.4	5,4 - 15,4	16,74-19,98
Filtration area/ chamber	m ²	3.6	9.6	13,4
Available frame sizes	chambers	30-40-50-60-70	30-35-40-45-50-55-60	62-74
Main dimensions				
Overall length	mm	10 250 – 18 050	12250 – 19 300	19 450
Overall width	mm	3 530	5 950	5 950
Overall height	mm	4 240	3 870	3 870
Overall weight	t	47 – 70	121 – 160	160-170
Installed power (hydraulics)	kW	18.5	90	90

The technical data is subject to change without notice.

Outotec provides leading technologies and services for the sustainable use of Earth's natural resources. As the global leader in minerals and metals processing technology, Outotec has developed over decades many breakthrough technologies. The company also provides innovative solutions for industrial water treatment, the utilization of alternative energy sources and the chemical industry.

Outotec shares are listed on NASDAQ OMX Helsinki.

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