

# OVERHEAD FILTER PRESSES



TÉCNICAS DE FILTRACIÓN S.A.



- **SUPERIOR DESIGN ENSURES HIGHER SAFETY.**

Overhead filter presses present a triangle shaped force distribution instead of the conventional linear distribution. This design provides stronger and safer frame constructions capable of holding up to 175 plates of 2000 mm x 2000 mm.

- **MECHANISMS SIMPLIFICATION: LESS MAINTENANCE.**

The overhead filter press has a more simple plate transport mechanism. It is housed between the overhead I-shaped beams. This characteristic has the following advantages:

- Longer life of the transport mechanism with less maintenance.
- Installation of one sole transport mechanisms which avoids synchronization problems.
- Placement of all transport mechanisms in the cleanest area of the filter press, avoiding contamination and interference with the product.

- **INSPECTION FACILITY AND DISCHARGE IMPROVEMENTS.**

The overhead filter press allows the following improvements:

- Easier inspection, better cake discharge and easier overall maintenance.
- Reduction of cake residue on the frames of the plate leading eliminating leakage.



## ■ EASIER ACCESS WHEN CHANGING FILTER CLOTHS.

The overhead filter press allows complete all-round access to the entire plates and filter cloths surfaces, offering the following advantages:

- No need to retrieve or disassemble the plate from the filter press.
- No requirements for an overhead crane or further auxiliary devices.
- No need to have a second plate pack for time saving purposes.
- A quicker filter cloth changing process.
- Operation can be carried out with only one operator.



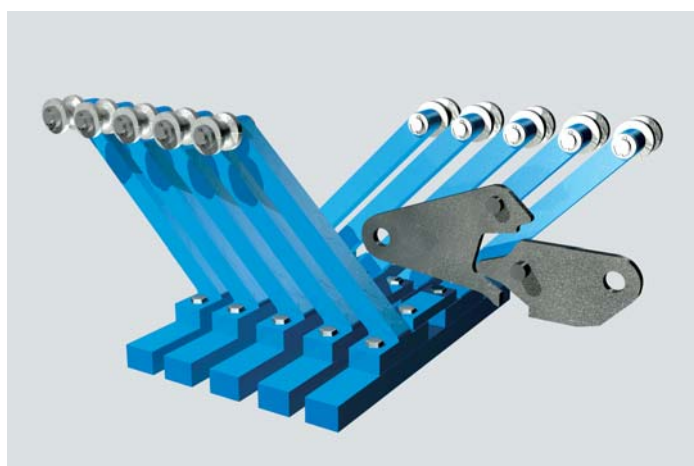
*Cake discharge*

The **PSEH automatic plate transport system** is based on a cable with carriage with two way movement. The plates are transported one by one within the discharge area. On one side of the press the drive is placed with the corresponding motor-reductor connected to the cable transmission shaft and linked by a clutch by means of an elastic coupling.

- Individual and consecutive plate transport system.
- Excellent discharge control and cake inspection.
- Plate transport mechanism reduction with minimum maintenance requirements.
- PSEH-SL and PEH-SL models are available with sidebars on higher level.



*PEH transport mechanism*



*PSEH transport mechanism*

Size	PSEHSL			PSEH			PEH		
	Max. number of plates	Area (m <sup>2</sup> )	Vol. (l)	Max. number of plates	Area (m <sup>2</sup> )	Vol. (l)	Max. number of plates	Area (m <sup>2</sup> )	Vol. (l)
800 x 800	75	81	1.075	90	97	1.290	75	81	1.075
1000 x 1000	90	156	2.144	120	208	2.858	125	216	2.978
1200 x 1200				140	337	4.309	150	362	4.617
1300 x 1300				150	423	5.394	150	423	5.394
1500 x 1500				160	608	8.528	160	608	8.528
1500 x 2000							160	776	10.210
2000 x 2000							160	1.066	13.483

*available sizes and capacities*



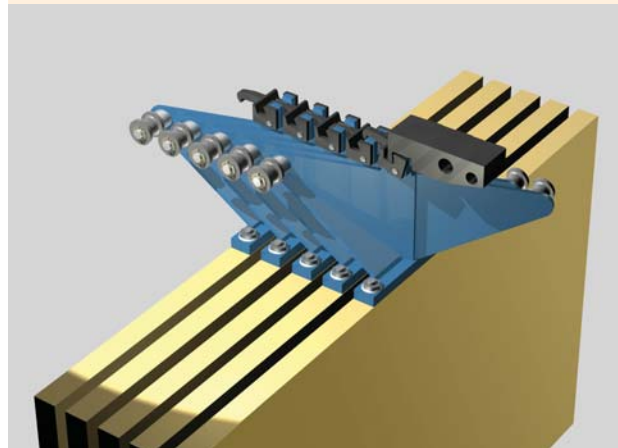
# Automatic Plate Transport: PEH and PSEH Systems

The **PEH automatic plate transport system** is based on a double chain system with transport hooks that slide over the plate transport carriages.

Each transport hook engages a plate during the continuous movement of the system, achieving a complete plate pack discharge in a very short period of time.



*PEH transport mechanism*



*PSEH transport mechanism*

Continuous plate transport system.

- Extremely fast discharge due to the high speed of the system which can be regulated by the frequency variator.
- Ideal for installations with short filtration cycles and with large solids production.
- Plate-to-Plate transport guarantee on the complete plate pack by means of the interlocking system.



Hydraulic power pack



- **Hydraulic Power Pack.** Engineered by TEFSA with the latest technology and modern security devices so that the piston operation can reach the correct closing pressure during the complete filtration cycle time. The unit is connected to all the elements and accessories of the installation in order to improve personnel and plant safety.
- **Drip Trays.** Optional equipment available in manual and automatic operation for drip collection and any leaks produced during filtration and plate decompression processes.
- **Photoelectric Light Curtains.** Optional equipment so that the operators are protected during the filter press closing process and for maintenance and supervision purposes during plate transport phases.
- **Automation.** The robust design of TEFSA filter presses together with our own fabrication of the power and control panels allows us to deliver completely automatic installations with processes and protocols adjusted to each plant's requirements.



- **Filter Cloths.** Each filter press will be equipped with the most suitable filter cloth according to the product to be handled in order to obtain the best filtration and operation of the filter press.
- **Membrane Squeezing System.** TEFSA provide a highly secure system using water for the membrane squeezing process with a maximum pressure of 16 bar. The compression and decompression is carried out with a pump in a closed circuit. Our special design avoids risk of rupture and allows a visual control of the process' status. Even for special cases with squeezing pressures of up to 60 bar in the membrane filter press processes, our equipment is the safest and best technology.
- **Automatic and Integrated Filter Cloth Washing System.** This unit is designed in a U-form frame manufactured in stainless steel. It is positioned on top of the motorized carriage and automatically moves alongside the filter press. During the washing phase the system centers the plates within the washing frame. Each plate is washed on both sides at the same time at a design pressure of 110 bar. Once the complete plate pack has been cleaned, the washing device returns to the original parking position at the hydraulic frame end.

*Integrated filter cloth washing system*





■ **TWO MAIN VARIATION IN THE PLATE DESIGN ARE AVAILABLE:**

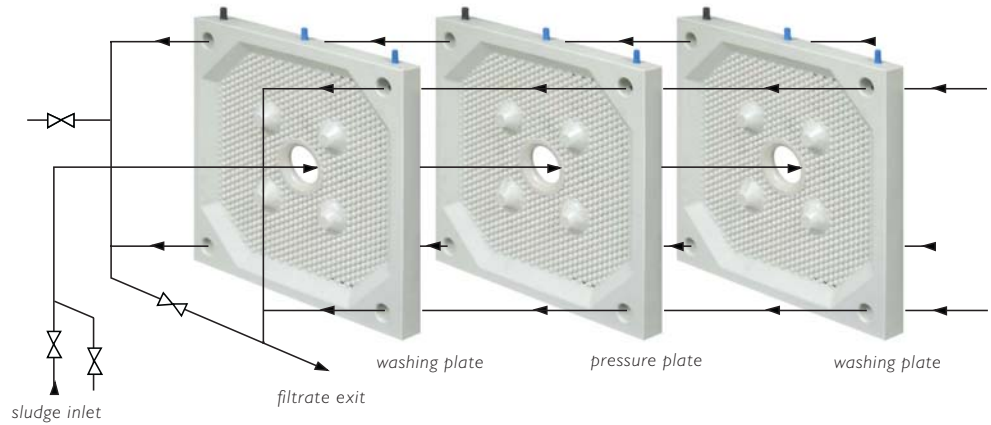
**Open Execution.**

- Easy inspection of the filtrate quality.
- Easy detection of damage on a determined filter cloth.
- It's possible to isolate a chamber by means of spigots.

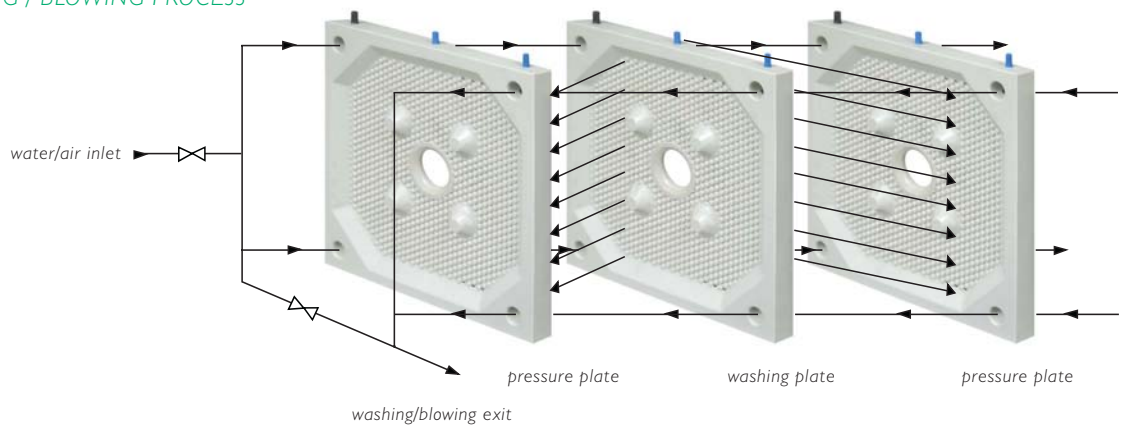
**Closed Execution.**

- Ideal to operate with toxic/dangerous products.
- Ideal so as to avoid contact with the filtrate and protect it against contamination.
- Possible to have cake washing and/or blowing processes before discharge.

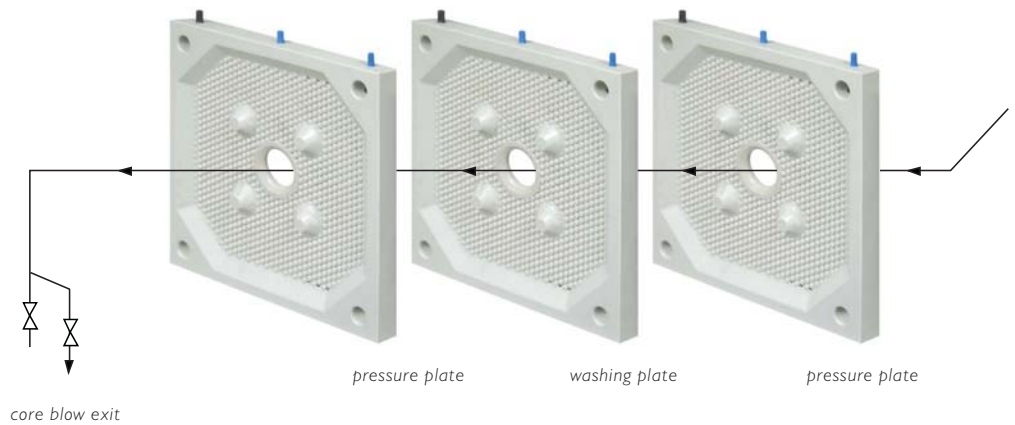
**FILTRATION PROCESS**



**CAKE WASHING / BLOWING PROCESS**



**CORE BLOW PROCESS**

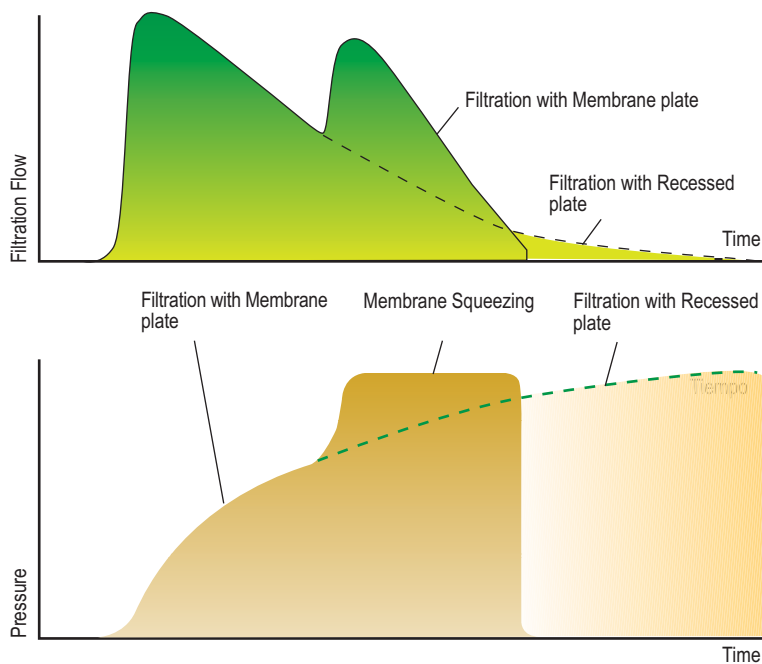




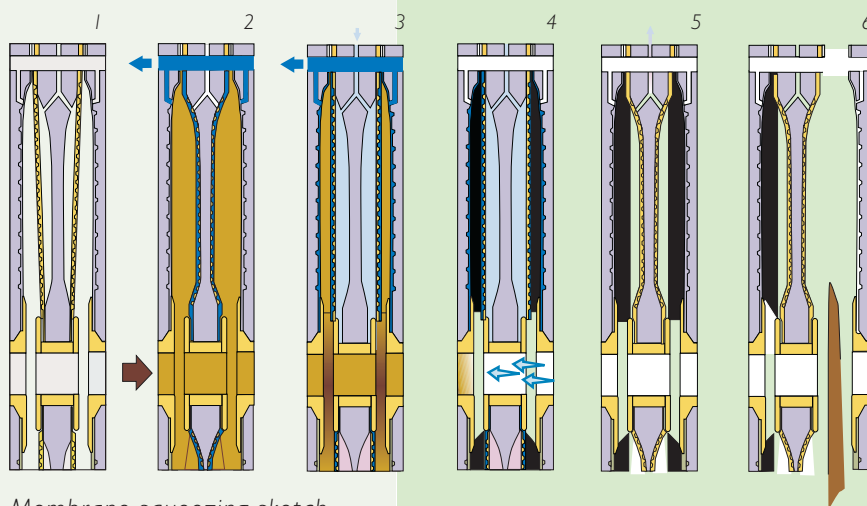
**PROCESS VARIATIONS:**

Recessed plate execution vs Membrane plate execution.

- Filtration time reduction.
- Higher cake dryness achieved.
- Higher filter press productivity.
- Maximum process flexibility: ideal for product washing process.

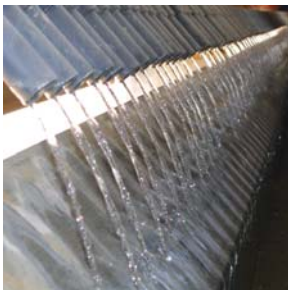
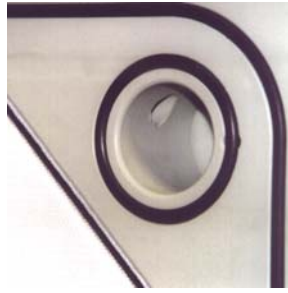


Filter press with membrane plates style



- 1-Initial position
- 2-Filtration
- 3-Membrane squeezing
- 4-Core blow
- 5-Membrane decomposition
- 6-Cake discharge

Membrane squeezing sketch



In order to serve our customers effectively, **TEFSA introduces the Global Filtration Service** from production to our after sales service. This allows us to service the all our customers' multiple commercial and technical requirements.

The main advantages of filter presses when compared to other filtration alternatives are:

- Highest possible dryness rate.
- Low polymer (and other reagents) consumption.
- Low power consumption.
- Extremely long life of the equipment.
- Low maintenance work and costs.







## ■ MINING AREA.

Filter presses are an integral part of the **Ceramic Industry, Stone & Sand Washing Plants, Marble & Granite Applications, etc.** The **Kaolin and Cement Applications** have also benefited by a huge reduction in the residues handled and the opportunity of reusing a large volume of water.

In the process areas such as zinc plants, metal concentrators, gold mines, etc and other metallurgical applications, TEFSA filter presses have been specially designed and engineered in order to provide the best outcomes for our many satisfied customers.



## ■ WATER TREATMENT AREA.

There is increasing sensitivity for the environment and this has translated into a requirement of reducing effluent volumes from water and waste water treatment plants. Also, by reducing water content in de-watered cake, transport and dumping costs are minimized. Significant reductions in moisture content have been achieved with filter presses in sludge de-watering especially in small to médium sewage treatment works and other industrial waste treatment applications in nearly all industries where small scale treatment takes place (galvanising industry, paint industry, etc).



## ■ INDUSTRIAL AREA.

Many customers are require the installation of filter presses as their best or even their only option. **TEFSA services the Chemical Industry** with a broad range of equipment for a broad range of applications, for treating dyes-stuff, brines, resins to phosphates and etc. Other industries that we have supplied filter presses to include the **Paper Industry, Pharmaceutical Industry and Food Industry.** In each case we adjust our equipment design to the specific application. We can meet all the standards set for full food-grade and pharmaceutical-grade rated filter presses.



## Overhead filter presses



**TÉCNICAS DE FILTRACIÓN S.A.**

FILTER PRESSES  
BELT FILTER PRESSES  
VACUUM BELT AND VACUUM DRUM FILTERS  
PRESSURE LEAF AND PRESSURE CANDLE FILTERS  
THERMAL SLUDGE DRYING



**COMERCIAL LASMERT S.A.**

THICKENERS / DECANTERS  
SLUDGE CONDITIONERS  
PNEUMATIC AND DOSING PUMPS  
HEAT EXCHANGERS



**MEDIOS FILTRANTES, S.A.**

FILTER PRESS FILTER CLOTHS  
BELT PRESS BELTS  
SELF CLEANING FILTERS  
BAG FILTERS  
CARTRIDGE FILTERS  
PAPER FILTERS  
BASKET FILTERS  
PLATES



**ECOTEC**  
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GAS WASHING AND ASPIRATION SCRUBBERS  
ODOR REMOVAL SYSTEMS  
NON CORROSIVE VENTILATION  
PLASTIC WORKS (PVC,PP,GRF AND MIXED)  
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