

## SIDEBAR FILTER PRESSES



TÉCNICAS DE FILTRACIÓN S.A.

The **TEFSA sidebar filter presses** have been specially designed and developed to attend a smaller and medium cake production requirements, a sidebar construction that might be preferred by specific applications and customers, and in the possibility of operate the units **in manual execution (HPL-SL and HPL models), in semi-automatic operation (HPLE model) and in full automatic operation (EHC, EHR and EHPT models).**

Together with the sidebars filter presses technology we present **the main advantages** when comparing to other filtration alternatives:

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



All models in this range are available in standard the filtration pressure range of **6 to 16 bar** according th the requirements. Further special requirments of up to 60 bar are also available.

The broad range of alternatives is possible thanks for **the modern hydraulic power packs of our own design and construction, in manual or automatic operation, and to the possibility of including a manual or an automatic plate transport system.**

**The full manual filter presses (HPL-SL and HPL)** include as well manual hydraulic power packs, implying as well a full manual operation for the plate transport system a cake discharge processes.

**The semi-automatic filter presses (HPLE)** include a full automatic hydraulic power pack but still equipped with a manual plate transport system a cake discharge processes.

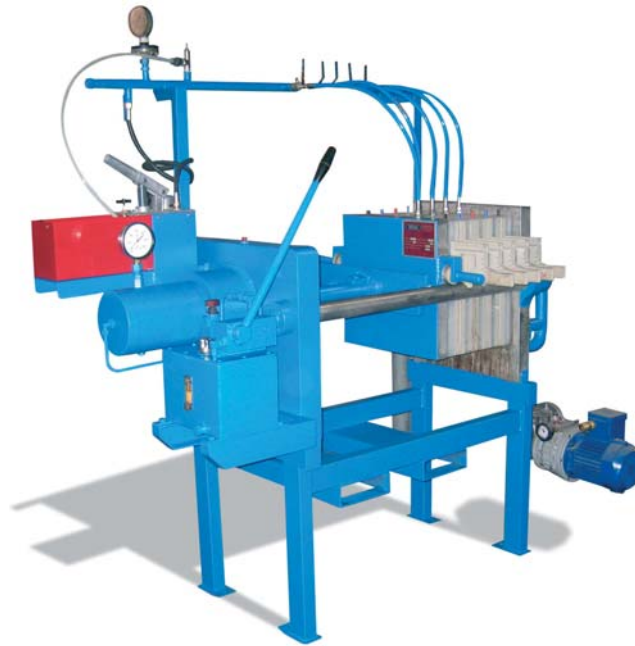
**The automatic filter presses (EHC, EHR and EHPT)** are operated fully automatically in all the filtration stages of the cycle, including the plate transport system which is carried out without the intervention of the operators.



In order to serve our customers effectively, TEFSA introduces the Global Filtration Service from our production to our after sales service, which allows us to satisfy the multiple necessities we are facing in our main areas of the commercial department.

## ■ Pilot Units.

The reduced size possibilities of the manual filter presses, or even full automatic units, with sidebar plate execution, has created the opportunity to use them a pilot unit for the testing and studies purposes and as movable units in order to attend multiple services in different areas within the plant.



## ■ Mining Area.

Integral solutions to different areas such as the ceramic industry, stone & sand washing plants, marble & granite applications, etc in form of a global solution for the customer and for small plants. The caolin and cement applications have as well been benefitted by a huge reduction in the residues to be handled and the possibility of reusing a vast volume of water.

In the process areas such as zinc plants, metal concentrates, gold mines, etc and other metalurgical applications, the TEFSA filter presses have been as well specially designed and engineered in order to reach the best customers requirements and satisfaction.



■ **Water Treatment Area.**

The increasing preoccupation and sensibilization for the environmental projects has been translated into the necessity of reducing as much as possible the effluents volume and as well to minimize the transport costs of those waste slurries. This reductions have been achieved in the processes of sludge dehydration with filter presses, in small sewage treatment works and all further industrial waste application of nearly all industries where small equipment is requested (galvanic industry, paint industry, etc).



■ **Industrial Area.**

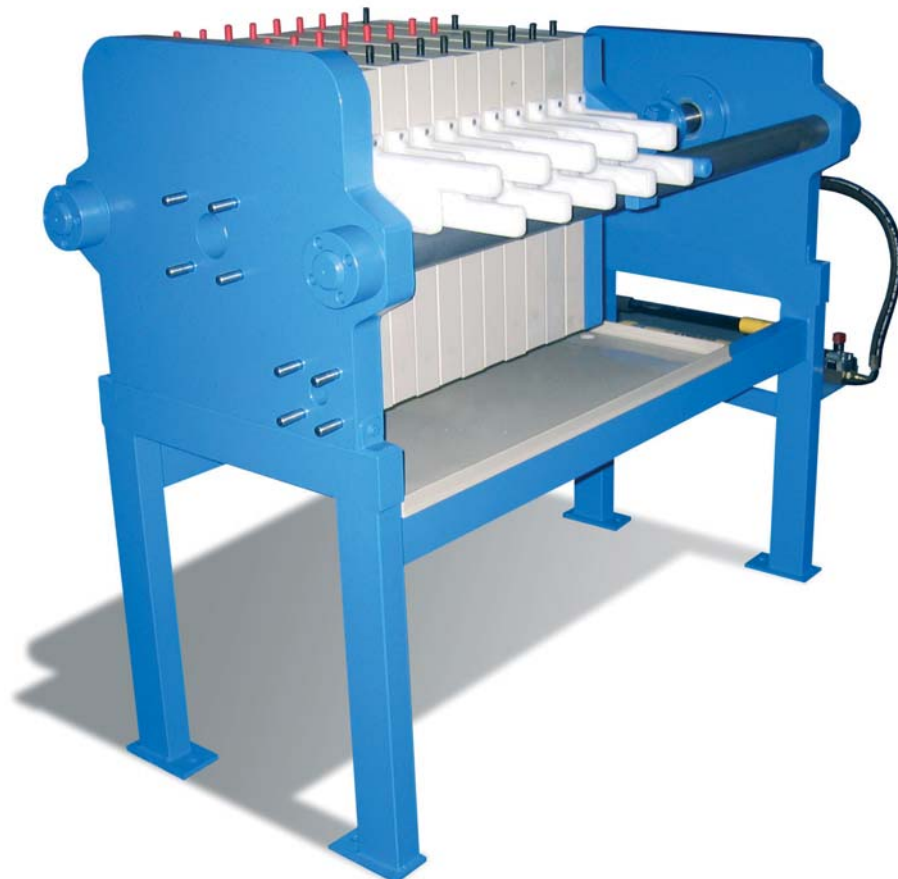
Multiple applications are clearly requesting the installation of a filter press as best or even only option. TEFSA gives service to the chemical industry in a vast and broad range of applications, from dyes-stuff, brines, resins to phosphates and etc. Other applications that are relevant in our main application list are related to the paper industry, pharmaceutical industry and food industry, adjusting our equipment design to each specific application necessity, up to full food-graded filter presses.

HPL-SL & HPL SERIES. The frames of the **HPL-SL and HPL** series are the most simple execution available in our **production program**. These units are designed to attend small filtration applications with a low quantity of cake production, specific applications with long cycle times or applications with eventual filtration requirements. Standard filtration pressures are 6, 12 or 16 bar; eventual solutions for requirements in specific application requesting up to 60 bar is available in our program.

These models include a manual hydraulic closing system with a cylinder return with spring device. The hydraulic hand pump responds to a compact design and is assembled on the oil tank provided at the filter press. The hydraulic circuit pressure remains constant during the filtration cycle by means of the blocking system included in all models, even when the cycle time is extremely long.

As in all filter press models, all plate size are normalized, generally made out of high density polypropylene and available in different sizes and cake thicknesses. For special executions we have available our own fabrication of aluminium, cast iron or stainless steel plates.

Size	HPL-SL			HPL			HPL-E		
	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)
300 x 300	20	1.7	25	20	1.7	25	20	1.7	25
470 x 470	20	5.2	82	30	5.2	82	30	5.2	82
630 x 630				30	14.6	226	40	19.6	304
800 x 800				40	34.3	530	50	43	666
1000 x 1000							60	83.5	1268
1200 x 1200							70	146.6	2243
1300 x 1300							100	253.5	3851

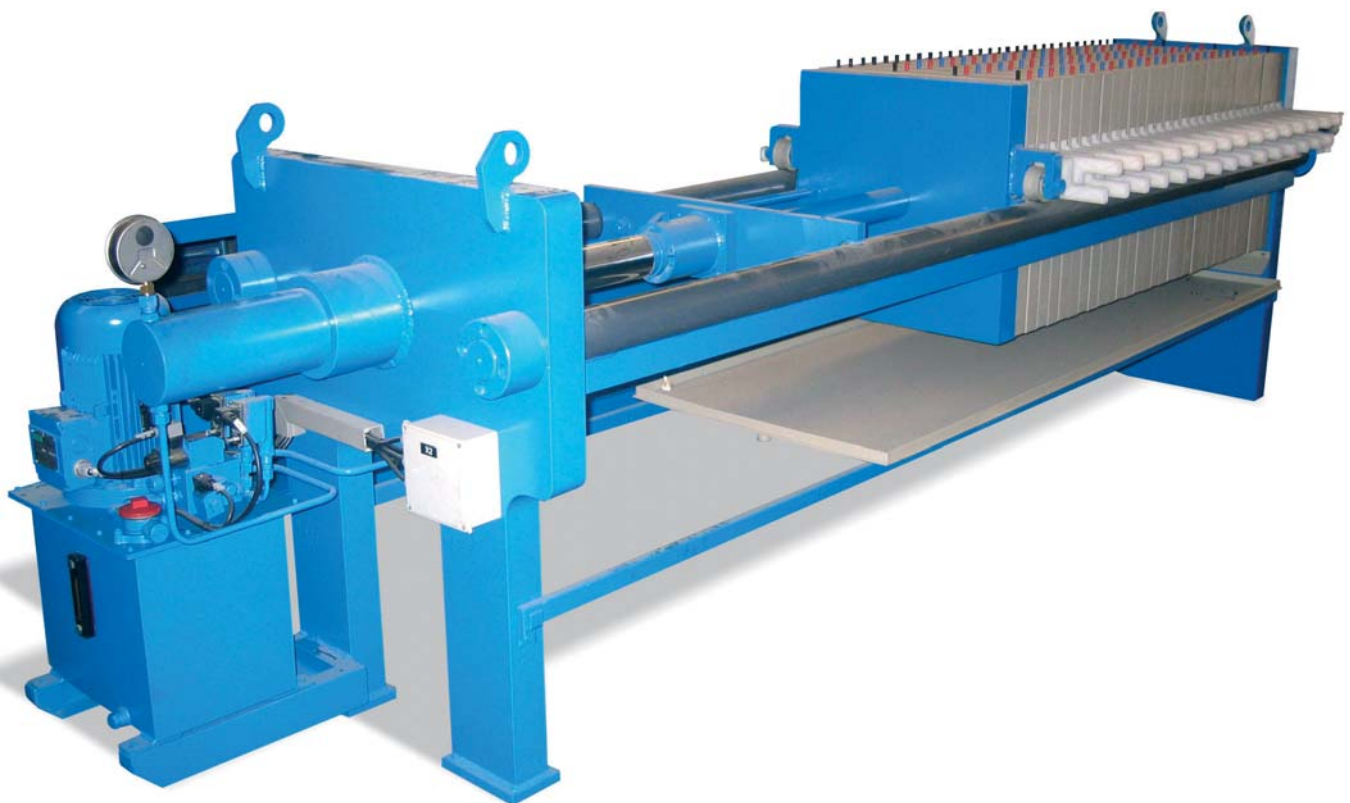


HPL SERIES. The filter presses of the **HPL series** are of similar frame construction as the manual HPL series, substituting the manual hydraulic power pack by a modern **electro-hydraulic group** which allows the filter press to advance in the automatization level, as well with standard filtration pressures of 6, 12 or 16 bar.

The press is provided with a double effect hydraulic cylinder, linked to the pressure piece.

The units with a plate size between 300 x 300 mm to 800 x 800 mm, are equipped with radial piston submerged hydraulic pumps and with electromagnetic distribution valves driven from the corresponding control panel. The units with bigger plate size are as well equipped with the larger conventional hydraulic power packs fitted with a gearing pump and a radial piston pump.

The hydraulic cylinder closing pressure is adjusted between a maximum and a minimum figure by means of the pressure switch actuating on the hydraulic circuit. In this way the optimum closing pressure will be guaranteed throughout the complete filtration cycle.





EHC, EHR & EHRM SERIES. The EHC and the EHR series complete the equipment range which are specially adapted for the continuous and autonomous filtration and separation processes for small to medium productions, mainly characterized by:

- Possibility to fully automatize the plant operation by means of the installation of a PLC power and control panel, designed to control the complete filtration installation including all auxiliaries (feeding pumps, automatic valves, level controls, polymer make up unit, etc).
- Lack of requested personnel needed to attend the equipment or the installation.
- Maximum reduction of the cake discharge process and overall time thanks to the use of fast-acting hydraulic power packs and to the installation of hydraulic pistons with large strokes.
- The plate pack opening process is carried out by using the hydraulic piston which will tear the plate pack open through the chain links joining all the plates.
- In order to facilitate the cake discharge in certain applications with adherent products, TEFSA offers the possibility to install the mechanical plate shaker (EHR series) which will favour the spontaneous discharge of the filter cake.
- The EHR and EHC series offers as well the possibility to install a multi pack option with alternative cake discharge (EHRM series); this would be applied to cases where a single press is requested with a large cake production and with a sidebar option; up to four pack of 25 plates each can be installed with plate size up to 1500 x 1500 mm.





EHPT SERIES. **The EHPT series** responds to the equipment range which has been specially adapted for applications where big cake productions are requested. As with the overhead filter presses, a big range of possibilities in plate size and number are available.

The filter press has the conventional double chain plate transport system installed at the sides of the filter press. A modern and reliable synchronization device gives the complete guarantee on the correct operation of the system.



Size	EHC			EHR			EHRM			EHPT		
	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)	Max. number of plates	Area (m <sup>2</sup> )	Vol. (l)
300 x 300												
470 x 470	25	6.6	103.2	25	6.6	103.2						
630 x 630	25	12.1	187.2	25	12.1	187.2						
800 x 800	25	21.1	326.4	25	21.1	326.4	3 x 25	63.3	979	50	42.2	652.7
1000 x 1000	25	34.3	526.8	25	34.3	526.8	4 x 25	137.2	2107	60	82.4	1265
1200 x 1200	25	52	796.3	25	52	796.3	4 x 25	208	3185	75	156	2389
1300 x 1300	25	60	926.3	25	60	926.3	4 x 25	240	3705	100	240	3705
1500 x 1500	25	83	1272	25	83	1272	4 x 25	332	5088	125	415	6360

TEFSA cares and adjusts the equipment design and the filtration process based on the exact case necessities and requirements of each customer and the experience in the field. In order to satisfy all necessities, multiple variations are available.



## DESIGN VARIATIONS:

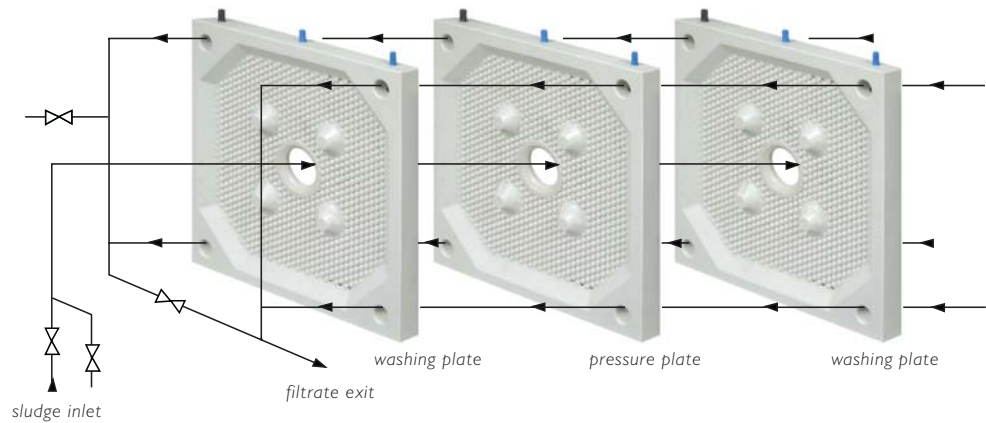
Open Execution.

- Easy inspection of the filtrate quality.
- Easy detection on a determined filter cloth damage.
- Possibility to cancel a chamber by means of spigots.

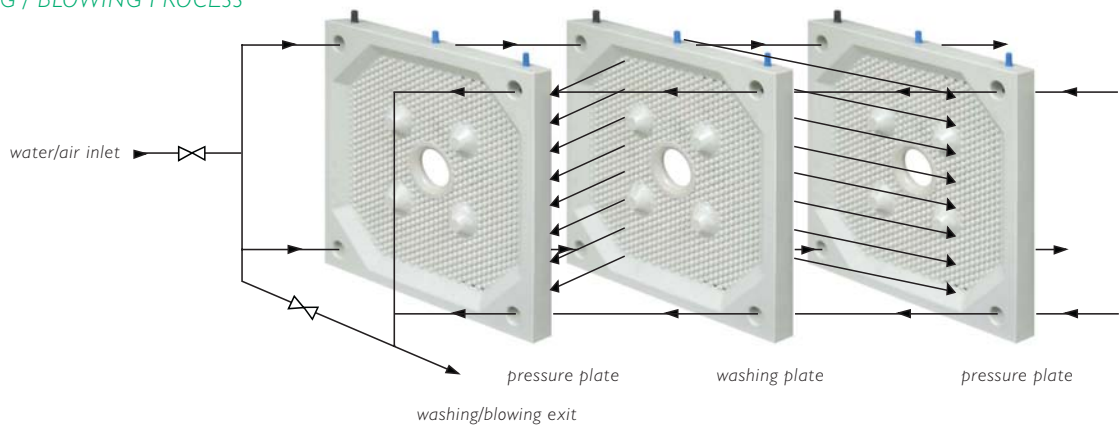
Closed Execution.

- Ideal to operate with toxic/dangerous products.
- Ideal to avoid contact with the filtrate and protect it against eventual contaminations.
- Excellent possibility to have cake washing and/or blowing processes before discharge.

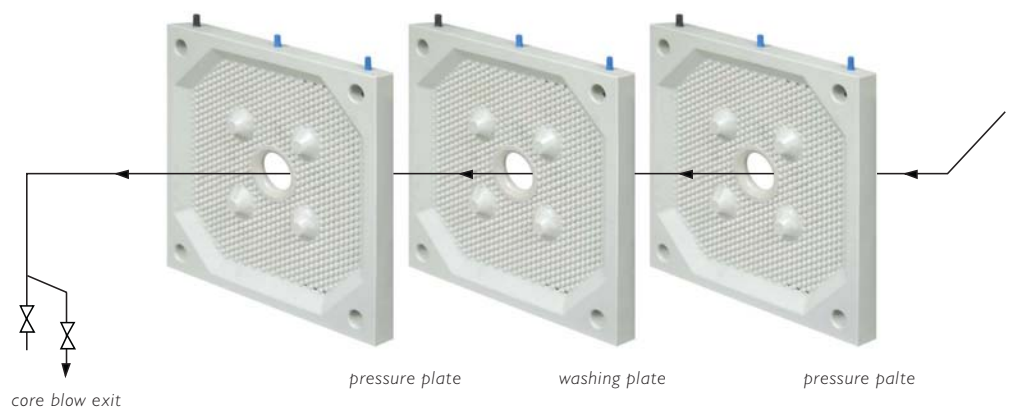
### FILTRATION PROCESS



### CAKE WASHING / BLOWING PROCESS



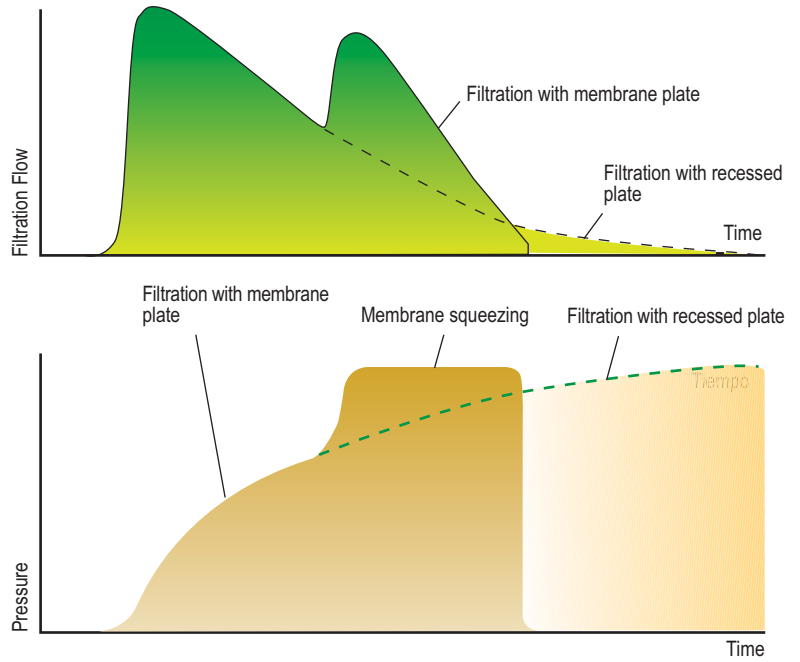
### CORE BLOW PROCESS



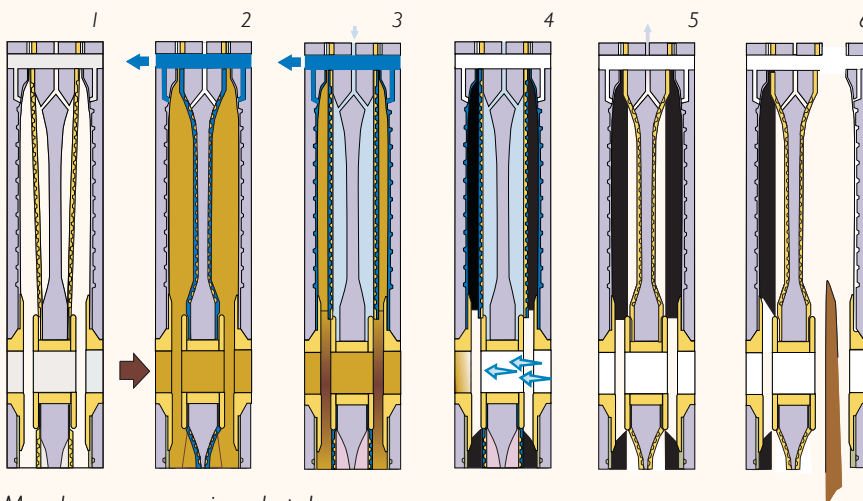
## PROCESS VARIATIONS:

Recessed plate execution vs Membrane plate execution.

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



Filter press with membrane plates execution



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

Membrane squeezing sketch



## Sidebar 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.**

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



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