

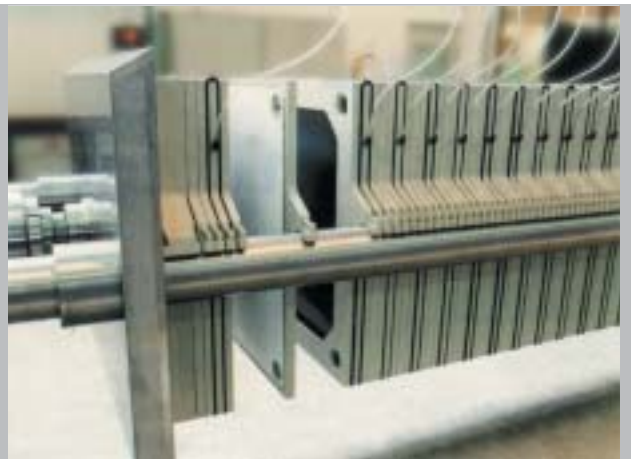
JVK Filtration Systems filter eleme

SPECIAL DESIGNS

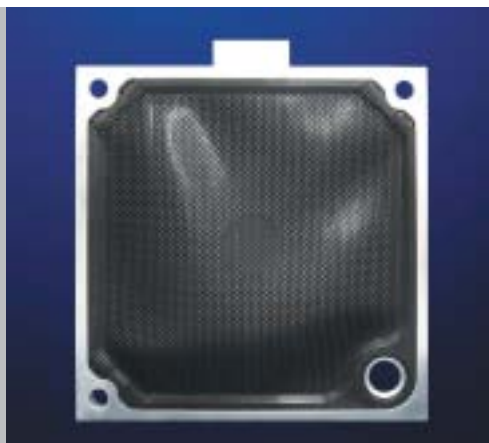
APPLICATION IN SPECIAL INDUSTRIES



Membrane plate in combination with filter plate and frame for blood plasma filtration 815 x 815 mm.



Filter press with filter plate combination for blood plasma filtration



Aluminum chamber plate 1200 x 1200 mm in combination with FKM (VITON) membranes



Filter press with membrane- and combination chamber plates 1200 x 1200 mm. Filtration of metal pigments with solvents, 16 bar squeezing pressure



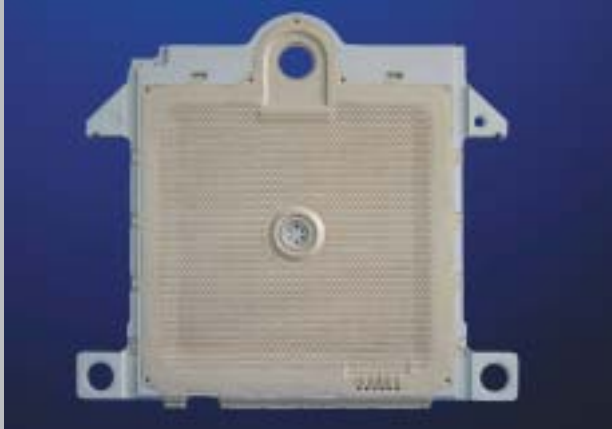
Membrane- and combination chamber plate 1200 x 1200 mm. PVDF plate and EPDM membrane are electric dischargeable. Application at extremely high temperatures and/or with aggressive chemicals.



Filter press with PVDF membrane- and combination chamber plate 1200 x 1200 mm, application Metallurgy, chemistry etc.

SPECIAL DESIGNS

APPLICATION IN SPECIAL INDUSTRIES



Membrane chamber plate 1500 x 1500 mm for LASTA filter presses (Ishigaki). Application mining industry, metallurgy etc.



Combination chamber plate 1500 x 1500 mm for LASTA filter presses.



Membrane and combination chamber plate 1500 x 1500 mm for SALA filter press. Application mining-, chemical industry, metallurgy, etc.



SALA filter press with JVK membrane- and combination chamber plates 1500 x 1500 mm



Membrane chamber plate 2000 x 2000 mm for filtration of flotation suspensions in mining industry, metallurgy etc.



Combination chamber plate 2000 x 2000 mm with maximum chamber volume for high throughput. Abrasion protection at the slurry feed hole.

SPECIAL DESIGN

HIGH PERFORMANCE MEMBRANE CHAMBER PLATE FOR HIGH SQUEEZING PRESSURE UP TO 6,0 MPa

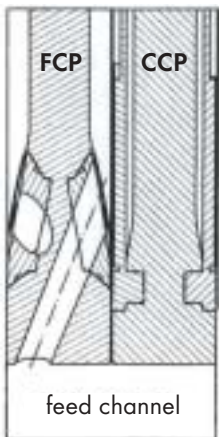
PATENT No. DE 102 21 061 world-wide applied.

With exchangeable, non perforated membranes

APPLICATION

This plate system can be used in all industries

- cooling – heating - temperature control of the filter cake
- squeezing pressure up to 6,0 MPa (60 bar)
- full automatic operation in the filterpress with perfect cake discharge
- the cake thickness 20–50 mm depends on the squeezing pressure



feed hole with inlet nozzle for cloth clamping

OPERATION

- the chamber gets filled by the feed chamber plate (FCP) only
- the filter cloth is clamped leakage-free by a feed nozzle
- the cake is squeezed by the compression chamber plate (CCP)

ADVANTAGES

- extremely high dry solid content in the cake
- no perforations in the membrane
- no blockage of feedport by optimal cake discharge
- full automatic filtration cycle
- any wanted suspension inlet in every chamber possible
- long life time of the membrane
- simple installation
- safe sealing
- use of drape over filter cloth



feed- and combination chamber plate 1500 x 1500 mm



feed- and combination chamber plate 2000 x 1500 mm



filter press with high performance membrane chamber plates 1500 x 1500 mm up to 5,0 MPa (50 bar)

SPECIAL DESIGN

HORIZONTAL MEMBRANE CHAMBER PLATE

PATENT No. DE 19905674

Filter press with horizontal filter plates set-up

JVK presents a new developed membrane chamber plate system for tower filter presses with easy replaceable membranes.

For the stability and the compensation of the thermal expansion the membrane plates are flexible supported by a steel frame.

APPLICATION

This plate system can be used in many industries.

The typical operating conditions are:

- filtration pressure up to 0,6 MPa (6 bar)
- squeezing pressure up to 1,5 MPa (15 bar)
- filtration temperature up to 90°C



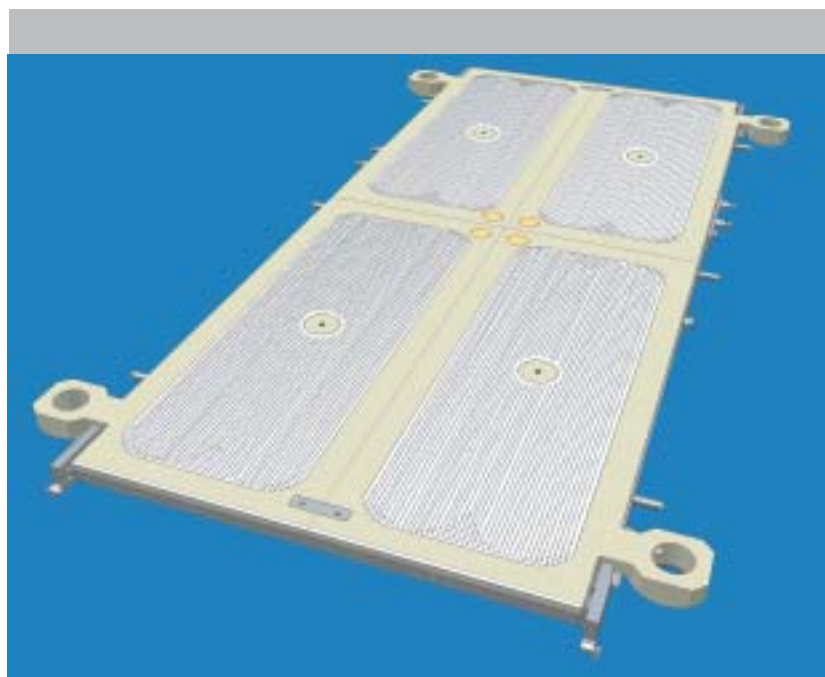
Horizontal membrane plate 2000 x 1000 mm
view on abrasion resistant PE drainage grid



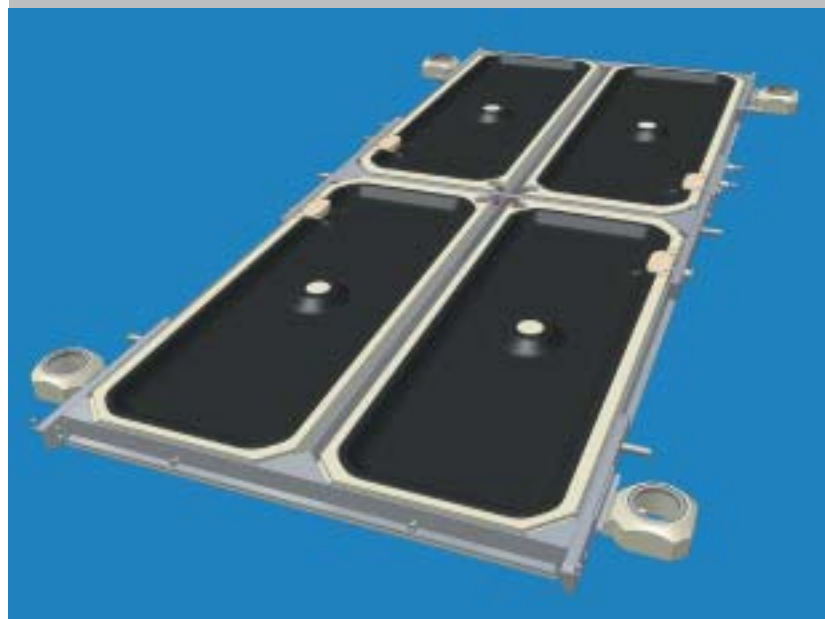
Horizontal membrane plate 2000 x 1000 mm
membrane view

ADVANTAGES

- simple conversion of existing plates without reconstruction of the filter press
- fast and easy installation
- minimum 2 chambers per plate with small membranes
- long life time of the small membranes
- fast exchange of the membranes inside the filter press possible
- low weight of the plate
- corrosion resistant PP core plate, easy to clean
- one piece moulded plate
- grid drainage made from abrasion resistant PE



Horizontal membrane plate 4000 x 1700 mm
view on abrasion resistant PE drainage grid



Horizontal membrane plate 4000 x 1700 mm
membrane view



Available in the sizes:
2000 x 1000 mm
4000 x 1700 mm
Special designs possible

SPECIAL DESIGN

CAKE DRYING WITH MEMBRANE CHAMBER PLATES

PATENT No. DE 3713419

APPLICATION

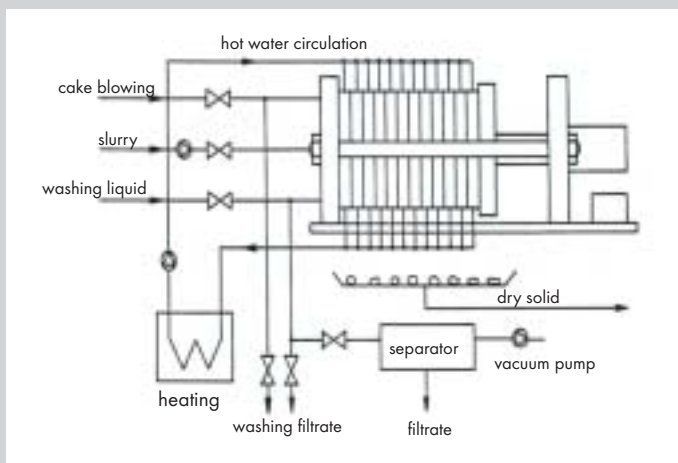
- Cake drying with JVK membrane chamber plates combines dewatering and drying in one filter press only
- the cake drying with heated membranes is patented
- after filtration the cavity between membrane and core plate is filled with hot water or steam to heat the membrane
- the generated water vapor from the filter cake is removed by vacuum or by pressure shocks with hot dry air
- the permanent cake shrinkage is compensated by the expanding membrane keeping the heat contact to the cake
- washing, sterilizing and cake blowing before drying process is possible with this new JVK System
- special membranes with high thermal conductivity and fast heat transfer have been developed



membrane chamber plate 500 x 500 mm



membrane chamber plate 1500 x 1500 mm



ADVANTAGES

- for the process steps of filtration and drying no additional drier is necessary
- easy conversion of existing filter presses to cake drying system
- this new development allows to use also a mixed package
- possibility to work with normal membrane chamber plates instead of special filter plates
- the cake volume is not reduced by separate heating plates
- treatment of different batch sizes by constant product quality
- minimum thermal losses
- due to the drying in the filter press there is no risk of explosion or dust combustion
- no protection against abrasion and corrosion needed
- low disposal costs by maximum weight and volume reduction of the cake



filter press for cake drying with membrane chamber plates
1200 x 1200 mm

SPECIAL DESIGN

MEMBRANE CHAMBER PLATE FOR THE SUGAR INDUSTRY

PATENT No. DE 19905674

APPLICATION

- Use in carbonated lime filtration from first stage of carbonization
- full automatic filtration cycle and cake release
- for all kind of filter presses in raw juice filtration of sugar beets
- for filter presses 1000 x 1000 mm to 1500 x 1500 mm with corner-, center-, or bottom feed port
- membrane plates for tower filter presses with stainless steel frame, plate sizes 2000 x 1000 mm and 4000 x 1700 mm, patented design
- in the sugar industry more than 3000 filter plates are successful in operation



Horizontal membrane filter plate 2000 x 1000 mm membrane view



Horizontal membrane filter plate with stainless steel frame drainage grid made from abrasion resistant PE

MEMBRANE PLATES IN TOWER FILTER PRESSES

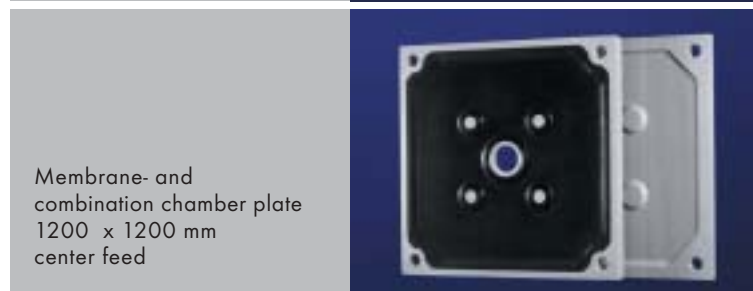
sizes [mm x mm]	feed port	support bosses	cake thickness [mm]
2000 x 1000	corner	0	45
4000 x 1700	lateral	1	45

Usual press capacities:

1,3 to 1,8 m³ total volume and 34 m² bis 47 m² filter area



Membrane- and combination chamber plate 1200 x 1200 mm corner feed



Membrane- and combination chamber plate 1200 x 1200 mm center feed

MEMBRANE FILTER PLATES IN FILTER PRESSES

Sizes [mm x mm]	feed port	support bosses	cake thickness [mm]
1000 x 1000	center	0	50
1200 x 1200	corner	0/1	50
1200 x 1200	center	4	50
1200 x 1200	bottom	1	40/50
1300 x 1300	top	1	50
1500 x 1500	corner	1	50
1500 x 1500	center	4	50

Usual press capacities:

1,6 to 3,2 m³ total volume and 70 m² to 145 m² filter area

ADVANTAGES

- increase of throughput up to ca. 400 % compared to normal recessed plates
- reproduceable lower residual moisture in filter cake in the range of 25% - 32%
- reproduceable de-sweetening results of around 0,1% can be achieved easily
- very short cycle times realized by using special developed elastomere membrane material for high temperatures
- very long life time under rough operation conditions by one piece moulded plates
- process safety by large filtrate outlets, blockage by filtercloth or crystallization extremely reduced
- overhang filter cloth and elimination of support cloth contributes to additional cost savings



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