WE CREATE CLARITY

MSE FILTERPRESSEN® YOUR TRUSTED PARTNER FOR FILTRATION

product catalog
For more than 40 years, companies worldwide have valued our experience in the manufacture of filter presses. We have made it our mission to secure our company’s long-term success and to make a positive contribution to the environment. We combine the latest technologies with decades of experience to make our filter presses even more efficient. Only with an optimal solid-liquid separation can suspensions of various kinds be converted into reusable resources. This contributes to a reduced environmental impact and also to an ecologically, socially and economically sustainable way of life. This is how we create innovations which we can build on in the future.

MSE Filterpressen® is an owner-managed company which, since its foundation in 1978, has specialised in the development, manufacture and worldwide sale of mechanical filtration systems in the field of solid/liquid separation.

Maximum flexibility - customized to your specific needs

The MSE Filterpressen® product portfolio is just as diverse as the different application areas in which the filter press is used. These range from chamber filter presses, membrane filter presses and stainless steel filter presses to automated and (semi-)mobile filter presses. The MSE Filterpressen® has a wide range of products to meet different customer requirements. Each filter press differs in the design of the filter plates, the surface coating and the degree of automation, but not in the filtration principle.

MSE Filterpressen® value retention – simply „Made in Germany“

Your trusted partner for filter press technology

Our filter presses are widely used in industrial production for the separation of sludge, chemical substances and petroleum. Also in the field of municipal waste water treatment. Filter presses have also been making a major contribution to the separation of solid-liquid substances in the production of raw materials for decades, for example in the pharmaceutical, chemical and petrochemical industry as well as the food and mineral industry.

Made in Germany

One of the major successes of MSE Filterpressen® is the main plant in Remchingen. This is where the complete planning, development and manufacture of our filtration systems is done. In addition to our qualified and experienced planning and production team, short coordination and decision-making paths are our key to success. This guarantees a high quality and efficient product, from which our customers above all benefit.
Since 1978, MSE Filterpressen® has been operating as an owner-managed company true to its philosophy “Reliable and Efficient”. Two words that lay the foundation for ensuring the highest quality and production standards as well as for the innovative strength of a brand “Made in Germany”. A promise that gives our customers the certainty that they have chosen the right product. The MSE Filterpressen® stands above all for the reliability and longevity of its products. Our references underpin the vast experience we have and the trust our customers put in our know-how.

YOUR BENEFITS
- 40 years of experience in planning, development and construction of filter presses
- Competent service (from consulting, to the handling, up to maintenance)
- High performance range with full vertical integration and high value retention (Made in Germany)
- Successively optimized processes in order to be able to offer the best possible customer benefits
- Technically trained and experienced staff as guarantor for the consistently high quality
- Close cooperation with well-known suppliers in the selection of filter plates and filter cloths
- Economical and efficient design of your filter press through an upstream execution of laboratory tests and test series
- High filtration quality, high filtration rate, high degree of dewatering and maximum washing efficiency

With the filter press plants of MSE Filterpressen®, you get a well-proven and innovative solution for industrial separation processes. Therefore, we combine the latest technologies with decades of experience to make our filter presses even more efficient. Crucial factors for choosing the right supplier are factors such as low investment, a high filtration rate, a high degree of dewatering and a high dry matter content. Our solid/liquid separation specialists use their in-depth expertise to engineer and provide filter press plant solutions that are individually tailored to regional and application requirements. Whether you’re automating new equipment or upgrading to extend the lifecycle of existing systems, we find the ideal solution for you.
MSE FILTER PRESSES WITH MAXIMUM FLEXIBILITY

INTERNATIONAL EXPERIENCE WITH COMPREHENSIVE OEM EXPERTISE

MSE Filterpressen® offers a wide range of filter presses with sidebar technology suitable for both standard and medium duty and for heavy-duty performance levels. Maximum flexibility is provided by choosing between simple manual to fully automated MSE filter press designs. MSE filter presses are upgradable in terms of modules and features and can be customized to your specific needs and requirements.

SELECTION OF THE RIGHT FILTER PRESS FOR OPTIMUM SOLID-LIQUID SEPARATION

The number, type and size of the movable plate package is determined by the medium to be filtered and thus determines the format of the filter press. MSE filter presses can be used for a variety of applications due to their design specific variability. The size of the solid particles to be separated using special filter cloths extends from the µm range (e.g. enzymes) to the mm range (e.g. sewage sludge). MSE Filterpressen supplies filter plate sizes from 400x400 mm for small (mostly) functional laboratory filter presses for pilot projects up to 2000x2000 mm for large filter presses (e.g. for use in the chemical industry as well as mining).
In addition to its simple and inexpensive design, the chamber filter press is also a powerful and reliable filter press. The type of suspension to be filtered (e.g., mining, chemical or pharmaceutical industry) is irrelevant. In order to meet the different requirements of industry and municipalities, MSE chamber filter presses are designed for this in modular design. The solid and heavy-duty steel filter press frame, which consists of the following main components, forms the basis: Feeding stands with filtrate outlet (head piece), hydraulic stands with locking cylinder (pressure piece), cross beam and side rails on which the individual filter plates are arranged accordingly including filter cloths.

The chamber filter press can be configured as required depending on the series. These include, for example, automatic plate transport, a vibrating device or core blow-out and/or core rinsing. Taking different influencing factors into account, chamber filter presses achieve a solids content in the filter cake from 30 to over 50 percent. The intelligent filtration principle leads to immense cost savings in the waste water sector, for example. The operation of the chamber filter press is designed for a feed pressure of up to 30 bar in order to successfully filter even the finest particles.

## HIGH PERFORMANCE AND HIGH DEGREE OF CONFIGURATION FOR YOUR CHAMBER FILTER PRESS

The chamber filter press can be configured as required depending on the series. These include, for example, automatic plate transport, a vibrating device or core blow-out and/or core rinsing. Taking different influencing factors into account, chamber filter presses achieve a solids content in the filter cake from 30 to over 50 percent. The intelligent filtration principle leads to immense cost savings in the waste water sector, for example. The operation of the chamber filter press is designed for a feed pressure of up to 30 bar in order to successfully filter even the finest particles.

### BENEFITS OF MSE CHAMBER FILTER PRESSES

- Individual adaptation to fulfill different process requirements and specific customer requirements
- High degree of configuration
- Compact and robust design for a flawless and reliable filtration operation
- High level of security through the use of the latest security techniques
- Good price / performance ratio

### Table: MSE Chamber Filter Presses KFP 400 - 2000

<table>
<thead>
<tr>
<th>Size</th>
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Membrane filter presses have a great influence on the dryness of the solid by using membrane technology in the filter plates. Through the use of membrane technology, the membrane filter press achieves the lowest residual moisture in the filter cake compared to conventional separation methods. This makes the membrane filter press a powerful and the most widely used system.

**MEMBRANE TECHNOLOGY AS A SOLUTION - IF TIME AND DEGREE OF DEWATERING ARE CRUCIAL**

Depending on the degree of dewatering, different dry matter contents (dry matter content - percentage by weight of dry material in the filter cake) can be achieved in the filter cake by squeezing with membrane plates. The range of achievable dry matter contents extends from 30 to over 80 percent.

Membrane filter presses not only offer the advantage of an extremely high degree of dewatering; they also reduce the filtration cycle time by more than 50 percent on average, depending on the suspension. This results in faster cycle and turnaround times, which lead to an increase in productivity. Even with partially filled filter chambers, excellent dry matter results can be achieved thanks to membrane technologies. This even applies with abrasive media, for example, pump wear is decreased by reduced feeding pressure (6-8 bar depending on the suspension) without affecting the final result.

**MSE MEMBRANE FILTER PRESS**

**MFP 400 - 2000**

### TABLE: MSE MEMBRANE FILTER PRESS FEATURES

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<th>Size</th>
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MSE FULLY AUTOMATIC FILTER PRESS
VFP 400 - 2000

The fully automatic filter press ensures continuous operation and allows an unmanned production in solid-liquid separation. Fully automatic filter presses are specifically designed for applications in which a continuous operation and fast cycle times are essential and therefore crucial. MSE fully automatic filter presses provide a high degree of automation while providing uninterrupted operation at the same time. The option of the simultaneous filter plate opening system, for example, helps to realise a particularly fast cake release reducing the cycle time to a minimum. The result is a high-speed filter press that allows increased production per unit area of filter. For this reason, these machines are used in applications with highly filterable products where high filtration speeds are required. These include, e.g. mining concentrates and residues.

OPTIONS FOR A FULLY AUTOMATIC FILTER PRESS

MSE also has several systems/plants for fully automated filter presses. This means that we have the right solution for all applications. All systems are self-monitoring and can be parametrised by the operator and optimised accordingly. In essence, there are 3 different systems. These include, e.g. the vibration device with eccentric beams and a simultaneous filter plate opening system, the vibrating device for individual filter plates and the spreader clamp/spreader cloth version.

FULLY AUTOMATIC FILTER PRESSES FROM MSE INCREASE PRODUCTIVITY AT THE SAME TIME REDUCING PERSONNEL COSTS

The operating time of a fully automatic filter press is 24/7. Although a daily check of the filter press is necessary. This only involves personnel costs of about 2 hours per day which is well below the value of a manually operated filter press.

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BENEFITS OF MSE FULLY AUTOMATIC FILTER PRESSES

- High level of automation and at the same time trouble-free operation
- Extraordinary versatility through extension modules and other automation options
- Simple and economical filtration thanks to the highest degree of dewatering and shorter cycle time
- Low personnel costs due to fully automatic execution
- High level of security through the use of the latest security technology
- Especially suitable for highly filterable products with high filtration speed
- Meet the standards of industry and community
MSE SEMI-AUTOMATIC FILTER PRESS
SA-FP 400 - 1200

The filter press with two-hand control is used in particular when the space on site is limited or a higher degree of automation is not required. Accordingly, a conventional version of the protective device is no longer effective.

REDUCED PROCUREMENT COSTS AND SIMPLE OPERATION - THE FILTER PRESS WITH TWO-HAND CONTROL FROM MSE

Based on the safety technology requirements, an intelligent two-hand control is implemented, for example, for moving the filter plates by means of automated plate transport. This functional principle thus prevents the operator from reaching into the working area. Complicated mechanical designs including further safety measures are not necessary. The combination of two-hand control, plate transport and the elimination of further attachment measures reduces the procurement costs and also guarantees consistently simplified operability with complete protection against mechanical hazards.

FUNCTIONAL PRINCIPLE

To operate the filter press, both operating elements of the control panel must be operated simultaneously by hand. This includes, for example, the closing and opening of the system, the swivel plates as well as the operation of the automatic filter plate shifting device. Electric push-buttons are used as operating elements. When one of the operating elements is released, the filter press stops. Operation is only resumed after both operating elements are operated again at the same time. This ensures that the operator is outside the danger zone during operation of the filter press. A "misuse operation" of both operating elements is not possible due to the design.

### BENEFITS OF MSE SEMI AUTOMATIC FILTER PRESSES

- Cost-effective alternative by eliminating complex designs and assemblies
- Simplified operation due to the intelligent operating principle of the two-hand control panel with emergency stop button
- Fulfill the special safety standards of EN 574
- Particularly space-saving architecture

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MSE ATEX FILTER PRESS
AFP 400 - 2000

On the one hand, ATEX filter presses differ only slightly from conventional filter presses. The basic architecture, the working principle and process engineering are identical. However, the difference is in their structural protection measures. Here, the ATEX filter press, with its specific requirements, complies with the ATEX directives. As a result, these types of filter presses are designed for a high level of safety and explosion protection.

ATEX „ATMOSPHERES EXPLOSIBLES“

ATEX derives its name from the French term "ATmosphères EXplosibles". It consists of two EU directives governing explosion protection and thus the equipment and working environment in an environment with an explosive atmosphere. ATEX filter presses are especially used in filtration processes in the chemical, petrochemical, oil and gas extraction, mining, food and waste water sectors. With their design, as well as the selected materials, they comply with all the requirements of the ATEX certification in potentially explosive areas.

**BENEFITS OF MSE ATEX FILTER PRESSES**

- Use of an individual filter press frame for grounding electrostatic charges
- Special filter plate systems (CGR), which derive damaging electrostatic charges based on their material composition and sealing and consequently enable a much longer service life of the filter plates
- Special filter cloths that allow the grounding of electrical charges through the conductive fibers
- Use of special low conductivity plastics, e.g. PVDF, antistatic TPE and PP
- Use of aluminum-free paint
- Use of special hydraulic power units, cabling, safety light curtains, control cabinets, valves and sensors for the ATEX area

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MSE STAINLESS STEEL FILTER PRESS
EFP 400 - 2000

The stainless steel filter press meets the high hygiene and purity standards of the food and pharmaceutical industries with regard to its surface properties. On the one hand, stainless steel filter presses differ only slightly from conventional filter presses. The basic architecture, the working principle and process technology are identical. However, the difference is in their structural protection measures. Depending on the application area (chemical, pharmaceutical or food industry), certain guidelines must be adhered to. MSE stainless steel filter presses comply with the high hygiene and purity standards both in design and processing. With the stainless steel filter press, all components in contact with the product (with the exception of the filter plates) are covered with high-quality stainless steel. This also provides optimum protection against corrosion. In special cases, the filter presses can be made entirely of stainless steel or is stainless steel-plated.

**FDA-COMPLIANT SOLID-LIQUID SEPARATION WITH THE MSE STAINLESS STEEL FILTER PRESS**

A large number of materials with different properties are used in the food sector in particular. Here, especially care must be taken to ensure that no ingredients are released into the food. The law stipulates a FDA certification for this. Accordingly, all materials used must be FDA-certified. The FDA certification stands for high purity and durability. Each component such as the filter plates, filter cloths and piping systems complies with the FDA guidelines. This contributes to high hygiene and safety requirements. MSE Filterpressen also supports you in clarifying all necessary conformity declarations in order to counteract the increasing directives in the food and beverage industry.

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**ADVANTAGES OF MSE STAINLESS STEEL FILTER PRESSES**

- High quality design
- Protection against corrosion
- FDA certified version for food contact
- Long life span
- Easy cleaning
- Also meet the special standards in the chemical, food and pharmaceutical industries

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MSE RUBBERISED FILTER PRESS

GFP 400 - 2000

On the one hand, rubberised filter presses differ only slightly from conventional filter presses. The basic architecture, the filtration principle and process technology are identical. However, they differ in their surface properties. Based on the decisive properties of the flexible material, the rubberised filter press is mainly used for the filtration of particularly aggressive suspensions and environments. The aggressive suspensions include, for example, solvents or acids. In this context, the conventional painting of the steel parts is no longer sufficient.

THE RUBBERIZED FILTER PRESS OF MSE AS PROTECTIVE MEASURES AGAINST AGGRESSIVE SUSPENSIONS

In a complex process, the load-bearing filter press components are coated with a layer of 3mm thick plastic. In the case of the rubberised filter press, the hydraulic stands, feed stand, pressure plate and supporting beams are hard rubberised and the smaller components are made of polypropylene. It is also possible to rubberise only the components in contact with the product, such as the feed stand and the pressure plate. The composition of the rubber coating depends on the special surface requirements of our customers.
MSE HOT FILTER PRESS
HFP 400 - 2000

The hot filter press combines the standard process steps of a membrane filter press, (filtration, filter cake washing and squeezing), with the additional function of a thermal filter cake drying (TCD). As a result, all process steps are carried out in one plant, the hot filter press. Dewatering and drying of the resulting filter cake is thus done without a downstream drying process. Cost-intensive and time-consuming vacuum contact drying is therefore no longer necessary.

FUNCTIONAL PRINCIPLE OF THE HOT FILTER PRESS - MSE HIGH-TEMPERATURE FILTER PRESS WITH THERMAL FILTER CAKE DRYING

In the basic version, the technical design corresponds to a conventional filter press with a plate pack of membrane plates. Filtration, washing and pressing out are carried out as usual. In contrast to the conventional method, the system consists of membrane filter plates and heat exchanger plates, which are installed alternately in a filter press (see illustration). For thermal drying, hot steam and/or oil is applied to the working space behind the membrane and the filter cake is thermally dried accordingly.

The advantage of this process is that a high dry matter content (DM content) of over 90% is achieved. On the one hand, the combination of membrane filter plate and heating plate reduces energy and dewatering costs at comparatively low procurement costs. On the other hand, experience has shown that it guarantees low residual moisture in the filter cake.

### ADVANTAGES OF MSE HOT FILTER PRESSES (TCD)

- Filtration and thermal drying in one machine
- High dry matter content in the filter cake can be realized
- Saving of downstream drying processes / drying plants and thus comparatively low investment costs
- Shorter cycle times, reduced drainage costs and low specific energy consumption

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MSE MOBILE FILTER PRESS PLANT
MO-FP 400 - 1200

Mobile filter presses are particularly suitable for dewatering sludge from several plants at regular intervals or for compensating capacity peaks and bottlenecks. The fact that mobile filter presses are not subject to approval obligation and are therefore quickly and unbureaucratically available is particularly interesting. MSE mobile filter presses are fully equipped and immediately ready for operation after connection of the sludge, water and power supply.

TECHNOLOGY OF MOBILE FILTER PRESS PLANTS

Mobile filter press plants can be implemented in many different designs. Chamber filter presses or membrane filter presses (with 16 bar or 25 bar operating pressure) are optionally available and depending on the application, the appropriate feed pump (piston membrane or eccentric screw pumps). The sizes of the mobile filter presses are available up to a maximum size of 1200. This corresponds to about 300 chambers and about three cubic meters of chamber volume. The mobile filter presses are delivered on a semi-trailer or truck trailer, according to the dimensions and the permissible weights pursuant to the StVZO [Road Traffic Licensing Regulation]. The conditioning of the sludge is mainly carried out with polyelectrolytic flocculants (PE). Further methods are lime conditioning and dosing of solid filter aids. The plants are therefore equipped with suction and pressure-side inline mixers. The PLC plant controls the conditioning parameters in proportion to pressure and/or volume.

EXTRAORDINARY VERSATILITY DUE TO EXPANSION AND AUTOMATION OPTIONS

All filter press plants are equipped with the necessary equipment such as sludge feed, polymer preparation plant, screw conveyor for cake transport, etc. One operator is sufficient to operate a mobile filter press plant. However, the operator's tasks are limited to monitoring the plant and unloading the filter press after each batch.

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**MSE SEMI-MOBILE FILTER PRESS PLANT**

**SMFP 400 - 1500**

Especially in rapidly changing markets, it is all the more important to rely on a partner with many years of market and expert knowledge. With semi-mobile container plants, similar to mobile filter presses, we support you in defying the rapid changes on the market and preventing the risk of losing your core business. Semi-mobile filter presses can be used flexibly and are also quickly ready for operation. Especially for temporary projects, the required container plant can be made available in an uncomplicated manner. Wherever construction progress requires it. Furthermore, the semi-mobile filter press is fully equipped and immediately ready for operation after connecting to sludge, water and power supply. MSE Filterpressen® plans and manufactures the plants for individual customer requirements. In this way, the best possible result can be achieved for every task.

**TECHNOLOGY OF SEMI-MOBILE FILTER PRESS PLANTS**

The semi-mobile filter press plant from MSE is available in various designs. Chamber filter presses or membrane filter presses (with 16 bar or 25 bar operating pressure) are optionally available and depend on the application, the appropriate feed pump. The sizes of the semi-mobile filter presses are available up to a maximum size of 1500. This corresponds to about 100 chambers, i.e. about three cubic meters of chamber volume. The conditioning of the sludge is mainly carried out with polyelectrolytic flocculants (PE) analogue to the mobile filter press. Further methods are lime/iron conditioning and dosing of solid filter aids. The plants are therefore equipped with suction and pressure-side inline mixers. The PLC plant controls the conditioning parameters in proportion to pressure and volume.

All filter press plants are equipped with the necessary equipment such as sludge feed, polymer preparation plant, screw conveyor for cake transport, etc. One operator is sufficient to operate a semi-mobile filter press plant. However, the operator’s tasks are limited to monitoring the plant and unloading the filter press after each batch.

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**BENEFITS OF MSE SEMI-MOBILE FILTER PRESSPLANTS**

- Extraordinary versatility through expansion modules and automation options
- Adaptation to the fulfillment of various process requirements as well as specific customer requirements (for example, choice of container number, degree of automation according to performance requirements)
- Compact and robust design for trouble-free and reliable operation
- Simple and economical filtration through maximum flexibility and mobility
- Sludge conditioning by means of the suction and pressure side inline mixers equipped in the systems
- Complete filtration system in container construction for economical and flexible operation
- Steel and concrete construction is eliminated, thus massive cost savings
- Stainless steel execution on request

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<thead>
<tr>
<th>Size</th>
<th>Pressure (bar)</th>
<th>Max. chamber vol.</th>
<th>Filter cake thickness</th>
<th>FilterCloth Acidification</th>
<th>FilterCake blow drying</th>
<th>FilterCloth washing</th>
<th>FilterCake washing</th>
<th>Plate shifter</th>
<th>Core blowing/ core rinsing</th>
<th>Spreader cloth</th>
<th>Vibrating device I</th>
<th>Vibrating device II</th>
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On the one hand, mobile laboratory filter presses differ only insignificantly from conventional filter presses. The basic architecture, the working principle and process technology are identical. Due to their size and the accompanying uncomplicated handling, they were specially developed for test filtration and laboratory analyses. The dimensioning of filter presses often requires laboratory and/or pilot tests to be carried out. This allows the filtration properties of the feed medium to be evaluated and design data to be collected.

THE LABORATORY FILTER PRESS FOR DETERMINATION OF IMPORTANT PARAMETERS

Using the laboratory filter press, all necessary parameters can be determined easily and cost-effectively. The handy design allows the press to be used on site at the customer's premises. The aim of using a laboratory filter press is also to investigate new tasks for suspension and cake treatment in order to be able to offer customer-specific production solutions. On the basis of the fundamental investigations, the filtration properties of the suspension are evaluated and the representative results are scaled up accordingly using a developed process concept for the design of a regular production filter press. MSE laboratory filter presses offer a variety of methods to investigate the filtration, washing and dewatering behaviour in filter cakes.

- Full customization to meet a wide variety of process requirements as well as specific customer needs
- Use of polypropylene filter plates in chamber, or membrane design
- Use of special filter cloths corresponding to the application for a meaningful filtration result
- Delivery of the unit with feed pump, manual hydraulic pump and complete piping system for uncomplicated and fast operation
- Handy design and flexible positioning of the laboratory filter press for operation by mounting the entire assembly on a mobile cart
- Execution in stainless steel or individually painted steel
FULLY CUSTOMIZABLE FILTER PRESS - FOR EVERY POSSIBLE APPLICATION

From a basic set-up that can be upgraded with a broad range of pre-configured modules to a fully customized filter press – MSE provides the optimum filter press solution.

LONG-TERM PROVEN MODULES AND FEATURES

By integrating preconfigured modules, customers benefit from shorter delivery times and lower investment costs without compromising on quality, safety and performance.

PRE-CONFIGURED AND TAILOR-MADE SOLUTIONS

MSE Filterpressen® can be configured to meet specific customer requirements in a variety of sizes and formats, as well as custom automation techniques and digitization options. These features, depending on the specific cycle time requirements, the filter press size and the desired level of automation, complement the basic variants to meet a wide range of process requirements and customer requirements.

OPTIMIZATION OF PRODUCTIVITY BY USING INTELLIGENT MACHINE CONTROL

MSE Filterpressen® guarantees top performance by providing state-of-the-art automation technologies and digitalization and measurably reduce gaps due to automation in many different production process steps. By using automation and expansion modules from MSE, you can reduce downtime thanks to features such as filter cloth washing, shakers, and disk transport units that allow to optimize your productivity.

AUTOMATION MODULES FOR FILTER PRESSES

The purpose of the automatic plate shifter is to move the filter plates (patented sectional emptying), whether they are moved individually or assembled together as a package in order to empty the filter press. The plate shifter leads through the automatic laying of the filter plates for the emptying of the chambers to a clear facilitation of the handling and/or with larger presses, the moving of the filter plates is only then possible. The MSE plate shifter is extremely robust. Thanks to sophisticated technology, the system requires only a few moving parts and is therefore low-wearing. A hydraulic drive ensures low loading of the plate arms. The MSE plate shifting device can be combined with the option of a vibrating device (II) for unmanned and automatic operation.

The swivel plate / drip plate for filter presses is mainly used in automatic or manual designs in order to catch the filtrate escaping from the filter plates during filtration and thus to ensure controlled drainage of the dripping water into the filtrate drain channel. These prevent droplets from reaching conveyor belts or cake waste containers. The respective drip trays are located underneath the plate pack. In addition, the closed drip trays discharge the cleaning water when cleaning the filter plates and filter cloths in the press. To empty the filter press, the drip trays must be swivelled up (automatically) / removed (manually) to expose the discharge chute for the filter cake.

The industry-leading filter cloth washing system from MSE Filterpressen® is a device that uses PLC logic controls to ensure fully automatic cleaning of filter cloths without operator intervention. The cleaning is done using water that is sprayed on the surface of the filter cloths at a high pressure. The system works completely automatically and also prevents excessive contamination of the filter cloths. This is particularly important in the edge or sealing area of the filter cloths. The filter press works more efficiently with a consistently good condition of the filter cloths and less operating effort. The service life of the filter cloths may potentially be significantly extended.
The automatic filter cake release aid is used for unmanned filter cake discharge. MSE also has several systems/plants for fully automated filter presses. This means that we have the right solution for all applications. All systems are self-monitoring and can be parametrised by the operator and optimised accordingly. In essence, there are 3 different systems. These include, e.g. the vibration device with eccentric beams and a simultaneous filter plate opening system, the vibrating device for individual filter plates and the spreader clamp/spreader cloth version.

Membrane filter presses have a great influence on the dryness of the solid by using membrane technology in the filter plates. A flexible, impermeable membrane attached to the carrier body compresses the cake in the chamber after the feeding process is complete. The membrane technology not only offers the advantage of an extremely high degree of dewatering. Furthermore, the filtration cycle time is additionally reduced, on average by more than 50 percent, depending on the suspension through the membrane filtration. This results in faster cycle and turnaround times, which lead to an increase in productivity.

Filter cake washing is an optional processing step in the filter cake post-treatment in combination with the membrane technology. This involves a chemical/physical treatment of the filter cake or replacement of the filtrate still contained in the filter cake with a washing medium. The washing medium is introduced during filter cake washing through a washing plate on an inlet side of the filter chambers.

Many filtration processes produce substances that adhere very strongly to the fibres of the filter cloths. Gypsum and other lime compounds in particular reduce the permeability of the filter cloths. Long filtration times, reduced throughput and poorer filtration results are just some of the consequences. However, these contaminants cannot be removed simply by cleaning with the high-pressure filter cloth washing plant. MSE Filterpressen® offers various solutions for fully automatic, chemical filter cloth cleaning (filter cloth acids) for filter presses, chamber filter presses, membrane filter presses and the various filter press derivatives.

If, after filtration, a liquid suspension remains in the turbidity channel, it can removed reliably and transported back to the storage tank in order to prevent blockages and rehydration of the discharged cake when the filter press is opened.

If, during filtration in the filter press, the suspension in the turbidity channel, which tends to sedimentation, compresses to a paste-like mass, for example, this cannot be squeezed out by core blowing alone. After feeding is completed, operators can remove this sediment by rinsing the core. The rinse medium, mostly water, flows through the turbidity channel and absorbs the solids deposited there.

The drying of the filter cake is done using compressed air. The compressed air of the pressure plate shoots through the filter cake to the wash plates. The residual water drains off via the filtrate drains provided for this purpose. The compressed air presses part of the capillary water out of the filter cake. In this context, the adhering capillary water between filter cloth and filter cake is reduced. This leads to an improvement of the dissolving behaviour and the dry matter content (DM content) in the filter cake.
EXPANSION MODULES FOR FILTER PRESSES

MSE Filterpressen® offers the possibility to heighten your filter presses by individually adapted rack devices (platforms / racks). Depending on the requirements of the location, various changes to the height of a filter press are possible. The filter press frame can be increased up to 400mm. This allows you, e.g., to use a mobile container for collecting the accumulating filter cake under the filter press. The statics of the filter press are not affected here. If the working height is greater, a foundation for the desired height can also be built underneath.

According to the "Test laws for chamber filter presses", a filter press must not only be secured on the operating side (by means of safety light barriers), but also on the rear side or made inaccessible (safety technology for filter presses). MSE Filterpressen offers several safety variants.

- safety light barrier, incl. rear step protection
- monitored sliding door
- monitored safety door

In order to optimally prepare the chamber filter press or membrane filter press for its long machine life right from the start, an appropriate paint finish is therefore of utmost importance. Depending on the area of application or ambient conditions of the filter presses, however, further measures may be necessary to protect against corrosion (corrosion protection). MSE Filterpressen® offers a wide range of surface protection variants:

- Extraction hood (In order to keep the stress of the plant operator as low as possible, a protective hood is placed on the filter press next to the shielding attached around it. This is equipped with a flange connection through which the resulting odours or gases can be extracted)
- Splash guard curtain
- Filter cake guide plates
- Splash and contact protection PP clear
- Epoxy resin coating Layer thickness 450 µm
- Hard rubber coating

In the versatile applications of a chamber filter press and membrane filter press, breakthroughs of the filtrate can occur from time to time. There are different options available in order to keep the contamination of the environment as minimal as possible. With a splash guard, the filter press can be operated as cleanly as possible.

- sliding doors
- plastic tarps
- the front cover of the filter press is either covered with a grid or with transparent plastic plates
- the upper cover is available as a rollable tarpaulin or with an extractor hood

What’s your separation challenge?
FILTER PLATES AND FILTER CLOTHS

Filter plates for chamber filter presses and membrane filter presses are primarily chemically resistant and pressure-resistant plastic plates made of PP. Special materials for higher temperatures up to +130°C and for lower temperatures down to -10°C are also available for continuous operation. Filter cake thicknesses and filter plate thicknesses are freely configurable depending on the application and filtration conditions. The plate size vary from 400mm x 400mm up to 2000mm x 2000mm with a cake thickness of 15mm up to 50mm and thus allow an optimal adaptation to the filtration tasks. The criteria for selecting the right filter plate specifically include:

- Chemical resistance
- Differential pressure resistance
- Temperature stability
- Filter cloth support
- Drainability (grooves, nubs, with/without membrane technology)
- Handling

Filter cloths are textile fabrics, and in cake-forming filtration, have the task of separating the solids from a (chemically aggressive and tempered) suspension, while the solids-free filtrate can flow off through the fabric. Depending on the application, the filter cloth edges can consist of fabric edges, e.g. felt, one-sided edge sealing (EPR) or only of filter cloth. Filter plates and filter cloths in drip-proof design (CGR) are available to seal a plate pack to the outside. Depending on the application and field of application, there are filter cloths with different permeabilities, structures, designs (overhang filter cloth, push-through filter cloth, CGR) and materials. MSE Filterpressen GmbH will be happy to help you select the best filter cloth to optimise your filtration process.

MAXIMUM EFFICIENCY THROUGH LONG-TERM EXPERIENCE

For the various liquid-solid separation processes MSE Filterpressen offers the ideal solution for components for filtration systems. The range of filter elements completes our product portfolio with the goal of maximum efficiency of the filter press.

SELECTION OF DECISIVE PROCESS PARAMETERS

When choosing the ideal filter range, MSE, based on its decades of experience, considers all variables of the process, such as the medium to be filtered, pH, temperature, pressure, solids concentration, desired residual moisture content and filtration time.

FILTER PLATES

FILTER CLOTHS
CONVEYOR SYSTEMS FOR FILTER PRESSES

The task of conveyor systems for filter cake discharge is as varied as the products to be filtered. The filter cake discharge not only fulfills the transport task of the accumulating filter cake. It also includes further process steps such as: crushing, cooling, weighing, dosing, compressing, mixing, discharging and much more. Driven conveyor systems such as conveyor belts, conveyor screw systems or trough chain conveyors with hoppers, which are adapted and connected directly under the filter press (installed on a platform), can be used for filter cake transport.

The discharged filter cake is thus transported directly to the appropriate storage facilities. A distance of over 60 metres in length and 10 metres in height can be easily achieved. Depending on the customer’s requirements and the conveying task, it is possible to convey the filter cake horizontally, sloping or vertically. In addition, refinements or special designs, e.g. according to ATEX guidelines, are possible. The conveying capacity of the respective systems depends in particular on the diameter, the speed and the product properties.

FLEXIBLE SOLUTIONS

MSE Filterpressen® designs a filter cake discharge for you which is tailored to your requirements with regard to installation, conveying task, material composition and integration into the production process. Only a filter cake discharge that is optimally adapted to the filter press and the material to be conveyed will work efficiently. MSE Filterpressen® manufactures most of the discharge system in-house. At the same time, we work with renowned German manufacturers of conveyor plants.

CONVEYOR SCREWS

Spiral screw conveyors are a simple and reliable way of transporting the dewatered filter cake horizontally, at an angle and in special cases even vertically over defined distances. Depending on the task and product characteristics, we offer single-shaft, twin-shaft or multi-shaft screw systems. The screw conveyors consist of a screw housing, a screw beam and a drive unit.

TROUGH CHAIN CONVEYORS

Trough chain conveyors transport the dewatered filter cake in a closed trough and, in comparison with other conveying elements of the same conveying capacity, are particularly convincing due to their more favourable overall cross-section. Because of their design, these conveyors are characterised by a closed, dust-tight design and are particularly variable in terms of line layout. Depending on the conveying task, horizontal or sloped conveying is possible. The filter cake discharge can also be carried out individually.

CONVEYOR BELTS

Conveyor belts are used for a gentle as well as low-wear material transport with low space requirements. Especially larger conveying distances and quantities can be advantageously bridged with the aid of the conveyor belt. The design is essentially dependent on the conveying quantities and filter cake properties. The conveyor belts are manufactured as sheet steel constructions or in tubular frame designs according to customer requirements, for example as modular chain or ascending conveyor belts, etc. Depending on the conveying task and requirements, two-part or multi-part troughed or flat belt sections in different material designs for the disposal of puncture-proof filter cakes are then possible. As a rule, the deflection station is designed as a belt tensioning drum.

VORTEILE VON FÖRDERSYSTEMEN FÜR MSE FILTERPRESSEN®

- Umfangreiche und individuelle Ausstattungsmöglichkeiten für einen effizienten Betrieb
- Eine lange Lebensdauer und geringe Storfalligkeit gewährleisten einen zuverlässigen Betrieb mit hoher Verfügbarkeit
- Filterkuchenaustausch an beliebiger Stelle ausführbar
- Wartungsfreundliche Konstruktion und eine schnelle Verfügbarkeit von Ersatzteilen reduzieren die Stillstandzeiten
- Korrosions- bzw. Verschleißschutz nach Kundenwunsch
- Ex-geschützte Ausführung nach ATEX-Richtlinie 94/9/EC lieferbar
APPLICATIONS FOR FILTER PRESSES

DEcisive factors in the selection of the right filtration method

Factors like high filtration quality, a high degree of drainage and a high dry matter content (DM content) play a decisive role in choosing the right filtration method. The filter press is one of the oldest process filters and still remains a pioneer in solid/liquid separation today, however, ahead of centrifuges, decanters and belt filters. Especially when it comes to the highest level of filtration efficiency and maximum degree of dewatering of various filter media.

Depending on the application, filtration with filter presses has different functions as a mechanical separation process:

- Purification of raw materials and products as well as separation of by-products
- Recycling of solvents and unreacted reactants
- Removal of impurities from waste water
- Extraction of recyclable materials and raw materials

MSE has a broad range of filter press solutions for the dewatering of solids in various industrial sectors. These include:

MSE SERVICE - WHEN YOU CAN RELY ON A STRONG PARTNER

Service means for us to exceed the expectations of our customers

Founded in 1978, MSE Filterpressen GmbH stands for quality and reliability in the field of mechanical solid-liquid separation. With know-how and innovative strength, we develop filter presses and complete systems for specific filtration applications at our location in Remchingen. Thanks to our decades of experience in the filtration industry, we at MSE understand service as an absolute customer focus in order to be able to offer you an adequate and targeted solution even in the case of difficult procedural problems.

CONSULTING & SUPPORT

Do you require professional and personal advice and support on one of our diverse areas? Our qualified team is at your side to address all questions and concerns.

SPARE PARTS

Benefit from our wide range of spare and wear parts for your filtration system and quick spare parts supply to ensure trouble-free operation.

LABORATORY TESTS

Various testing series and simulations are carried out using the original medium in order to achieve an even more precise result under the most realistic conditions possible.

REPAIR & OVERHAUL

Your current operational situation does not allow for new investment? We have the solution for you with our maintenance and overhaul package, which includes the planning, the conversion and modernisation while taking into account the CE conformity.

MAINTENANCE & SAFETY CHECKS

Regular maintenance and safety checks are essential factors to guarantee the optimal technical availability of your filtration system. Our services in the field of maintenance & safety inspections include inspection, maintenance and repair.

INSTALLATION & COMMISSIONING & TRAINING

Our support does not end with the delivery. Our team accompanies you in the timely and professional installation & commissioning of your filtration system. In addition, you will receive a basic training program for proper operation.

We provide solutions, not only machines.
MSE FILTERPRESSEN® - PRODUCED IN GERMANY AND USED WORLDWIDE

FOR BEST ECONOMY AND MAXIMUM EFFICIENCY - OVER THE ENTIRE LIFE CYCLE

MSE filter presses are still among the highest quality capital goods in the field of mechanical solid/liquid separation - not least because of their reliability and productivity. The average life time of an MSE filter press has proved to be more than 30 years. Due to the massive steel construction designed using the Finite Element Method (FEM), filter presses from MSE require less maintenance and the costs for spare and wearing parts are reduced to a minimum.