



SIEBTECHNIK TEMA



SCREENING MACHINES PROCESS EQUIPMENT

Circular- and elliptical-motion screening machines
Linear-motion screening machines
Banana and excenter screening machines
Jigs und channel conveyors

Modern Classification



Elliptical-motion screening machine type E,
electronically controlled

Modern screening and process equipment for your individual requirements

Ever more stringent quality requirements for raw materials and end-products in industry call for modern technologies and more closely specified production processes.

SIEBTECHNIK not only offers a widely diversified product portfolio and an outstandingly proficient workforce but also international and industry-specific experience.

In the industrial preparation and processing of liquids and solids of the most varied kinds the quality of the screened material and the technology of the screening machine play a decisive role.

Modern screening systems are assessed according to screening quality, specific throughput per m² of screening surface, availability, labour costs and, last but not least, economic efficiency.

Whatever the requirement, SIEBTECHNIK has the right solution. Our screening machines are suitable for the break-down of grainy bulk materials into different grain classes. Aside from precise separation by grain size, screening in a broader sense also includes pre-screening, control-screening, dewatering and desludging.

Reliable and clean separation of heavy, light, large, small, dry, dusty or even wet and sticky screening material is always guaranteed.

Whether it is circular-, linear- or elliptical-vibration screening machines, heavy-duty screening machines, screening machines for use in the laboratory or special screening machines for your personal requirement, thanks to their performance and economic efficiency our screening machines offer high customer benefit.

We also build and supply special screening machines such as pre-separators, underwater screening machines, sand screeners, machines for all screenable materials, semi-mobile, stationary, with dust cover, for the classification of hot stone chippings and a whole lot more. Depending on the requirement, lengthways and crossways tensioned screen cloths, system screen panels by all the established manufacturers, perforated plates and heavy grids can be used on our machines.

SIEBTECHNIK screening and processing machines are user-friendly, uncomplicated to maintain and above all future-proof thanks to our specialised service personnel and a reliable spare- and wearing-part service for both new and older machines.

Linear-motion screening machines

Our robust solution for “large and coarse” requirements

SIEBTECHNIK linear-motion screening machines are used to screen and dewater grainy bulk materials. Drive is provided by either double unbalance gear units (type HG, HG-E, UHG), dual-shaft drives (type DWS, DZS, HN) or by unbalance motors (type HR, HR-E, MHR).

We build linear-motion screening machines with top- or bottom-mounted drive units for extreme requirements. This applies to wide machines (up to 5.5 m wide) or to extremely grainy feed material (e.g. granite with an edge length of approx. 1.2 m). Also high feed material temperatures and the demand for low residual moisture can be met with these machines.



Geared screen, type HG

Geared screens

We manufacture geared screens with one or more decks. Different gear unit sizes enable outstanding setting-up for your specific application. The balance masses and speeds can be adjusted in stages. This enables the linear vibration amplitude and acceleration of the gear box to be optimally adapted to suit the technical process requirements.

Our SIEBTECHNIK gear units are fast and easy to fit and offer high screening machine availability.

We recommend this drive concept for e.g. crusher load-relief screening, i.e. as a preliminary screen with high feed rates or coarse separating cut.

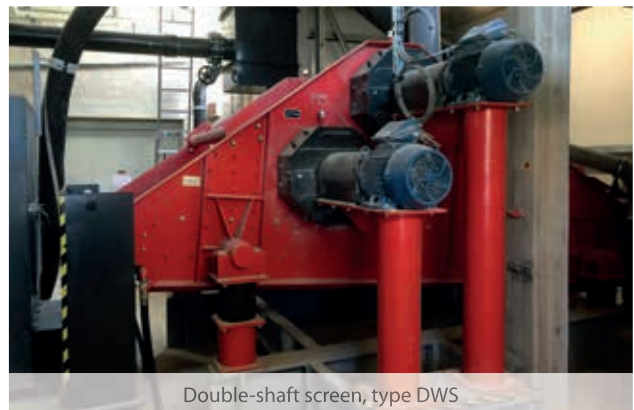


Screen with unbalance motors, type HR

Unbalance motors

An economical alternative to double unbalance gear units or the dual-shaft solution is a drive provided by two unbalance motors – specifically in the area of small nominal widths.

Two unbalance motors are driven in opposite directions. The resulting vibration of the screen box is therefore linear – as on the geared screen or the dual-shaft system. These largely smaller linear-vibration screens are used for e.g. the dewatering of sand, gravel, ore, borehole flushing and slag or in recycling.



Double-shaft screen, type DWS

Dual-shaft screen

The drive concept for double-shaft screens is based on the proven vibration generation of our circular-vibration machines – but in dual design. Two bearing-mounted drive shafts with unbalances are driven in opposite directions.

We recommend this drive concept for instance for the multi-deck screening of hot stone chippings at temperatures of up to 450 °C during the manufacture of asphalt and the low-pressure dewatering of sand.

Circular-motion screening machines

Our solution for classic applications

A SIEBTECHNIK circular-motion screening machine is the classic solution for process requirements in screen classification.

It is a freely vibrating screening machine that vibrates in a circle and is mounted on helical compression springs. Screen box and unbalance mass are optimally coordinated in their mass ratios. This enables a harmonic vibrating motion to be transmitted to the screened material at all points on the machine. Speed and vibration amplitude of the machine can be varied specifically to suit the product and so ensure a lastingly perfect screening result. The robust construction using and combining standard component parts ensures high flexibility and enables customer-focused solutions. Moreover, machines can be constructed with a low-maintenance running time and a long service life.



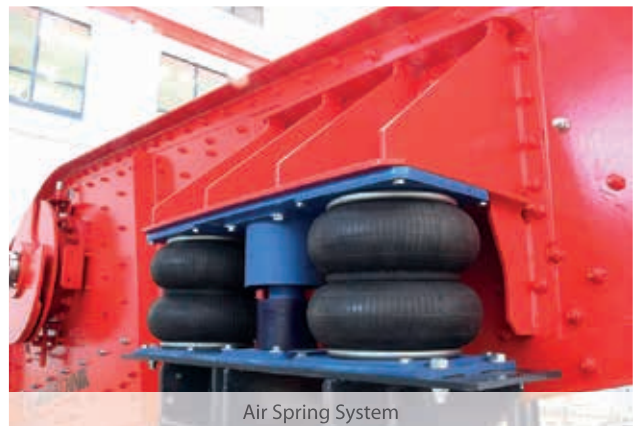
Circular-motion screening machine, type V

Our V (shaft with unbalance mass), VZ (cell drive) and VR (unbalance motor) series screening machines offer separation sizes of between 0.8 and 300 mm and a screening area of between 0.5 and approx. 60 m².

The screen panel tilt can be between 10° and 30°, and the screen set-up can comprise between one and three screen decks according to requirement.



Screen cloths with special accessories



Air Spring System

The screen box is set up to hold lengthways or crossways tensioned screen panels or for level screen decks and naturally also for system screen cloths by different screen cloth manufacturers. For dusty screening material we supply on request circular-motion screens with a dust cover or a closed dust protection box. Individually adapted screening aids in the form of beating devices or spraying systems are also available.



Vibration generation

The machines can be set up for a vibration amplitude of from 2 to 14 mm, depending on the product.



Unbalances with oil-level indication

Elliptical-motion screening machines

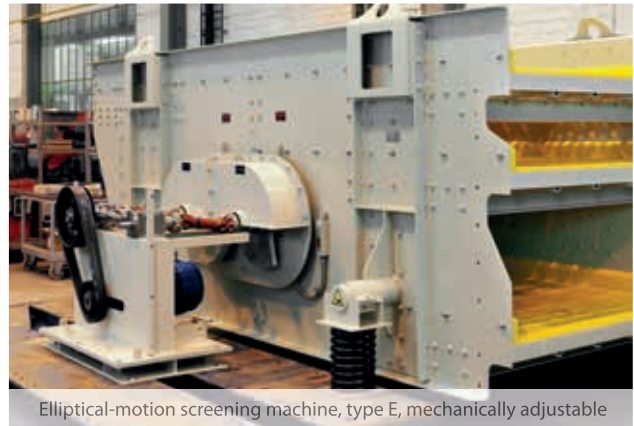
The king class of classifiers and up to any task – mechanical or electronic

The elliptical-motion screening machine combines the advantages of the linear- and circular-motion screen as well as enabling space-saving horizontal installation and high material throughput.

Both mechanical and electronic elliptical-motion screens can be selectively varied and adapted to operating conditions. This is done by, amongst other things, altering the throw angle essential for transport speed and by adaptation of parameters important for acceleration of the machine, such as vibration amplitude and speed.

The electronic elliptical-motion screening machine enables the speed and the throw angle to be adjusted while the machine is running: adjustment can be done manually on a touch panel or fully automatically via a profibus integrated into the plant control system – without having to stop the machine at all!

Our electronic elliptical-motion screening machines respond to changing operating situations easily and without any intervention whatsoever by you. So fluctuating feed quantities, automatic cleaning and ejection of terminal grains in programmed cycles are no problem. A consistent screening result is lastingly guaranteed. The electronic components are carefully selected for usual harsh operating conditions and are not prone to defect.



Elliptical-motion screening machine, type E, mechanically adjustable

Just as flexible as the electronic elliptical-motion screening machine is the mechanical elliptical-motion screening machine, but it is adjustable in its most essential vibration parameters only when at a standstill. SIEBTECHNIK elliptical-motion screening machines guarantee flexibility in the production process and ensure consistent product quality.



Elliptical-motion screening machine, type E, electronically controlled

Banana screening machines



Geared screen, type BHG, banana screening machines for screening potassium salt in China

High-speed screens giving outstanding separating accuracy

The SIEBTECHNIK banana screening machine is used for the screening of grainy bulk goods. Drive takes the form of either double unbalance gear units (type BHG), circular-vibration vibrating drives (type BV) or unbalance motors (type BHR).

The SIEBTECHNIK banana screening machine achieves good separating accuracy at an extremely high feed rate and with difficult-to-screen material.

Compared with conventional vibrating screens, the banana screen handles a considerably larger feed quantity for the same screen area.

SIEBTECHNIK banana screening machines are freely vibrating machines, that is, their vibrating circle diameter freely adjusts to suit the mass ratio of screen box and unbalance mass. Banana screening machines are designed to enable selection of a steep (approx. 75°) or shallow throw angle (approx. 40°). This flexibility enables different screen panel tilt angles, from steeply downwards (approx. 40°) through horizontal to gently upwards (approx. 5°), to be achieved on a single screening machine. Examples are combined classifying and dewatering screens in the salt industry (thin-layer screening followed by dewatering).

Their operational behaviour makes SIEBTECHNIK banana screening machines high-speed screens.

The steep screen-panel tilt enables a high transport speed to be reached.

A very thin layer forms, with most of the fine material being separated out through the long mesh holes. The screen tilt decreases in the middle and discharge sections, resulting in a reduced transport speed. In these sections excellent near-mesh-sized grain screening is achieved.

For example, the screen panel in the steep section can be tilted downwards at 25° to 40°, in the middle section at 15° to 25° and in the shallow section at 0° to 15° or even upwards at + 5°. The number of tilt stages and their angles can be fixed individually, as required (e.g. in the case of restrictions because of existing steel constructions).

Our BHG (double unbalance gear unit), BV (circular-vibration screen) and BHR (unbalance motor) series screening machines offer separation sizes of from 0.5 to 150 mm and a screen area of between approx. 1 and approx. 40 m². The machines can be set up for a vibration amplitude of from 2 – 14 mm, depending on the product. The screen set-up can comprise between one and two screen decks.

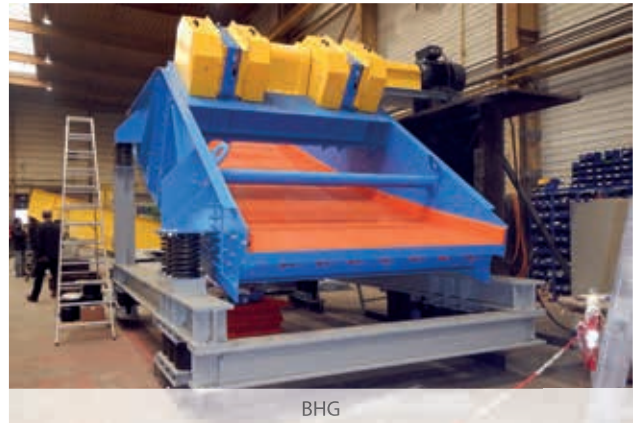
Banana screening machines

Geared screens

We manufacture geared screens with one or more decks. Different gear unit sizes enable outstanding setting-up for your specific application. The balance masses and speeds can be adjusted in stages. This enables the linear vibration amplitude and acceleration of the gear box to be optimally adapted to suit the technical process requirements.

Our SIEBTECHNIK gear units are fast and easy to fit and offer high screening machine availability.

We recommend this drive concept for e.g. classification of a feed material with a high undersized-grain content.



Unbalance motors

An economical alternative to double unbalance gear units or the construction with one or two drive shafts is a drive provided by one or two unbalance motors – specifically in the area of small nominal widths.

The resulting vibration of the screen box is therefore linear or circular.

These largely smaller banana screening screens are used for e.g. the classification of sand, stone chippings or in recycling.



Circular-motion screens

The drive concept for this banana screening machine is based on the proven vibration generation of our circular-motion machine.

A bearing-mounted drive shaft with unbalance masses is made to rotate in an opposite direction. The resulting vibration of the screen box is therefore circular – as on the usual circular-motion screen.

We recommend this drive concept for e.g. the control-screening of fine sand to separate out unwanted over-size grains.



Excenter screening machines

Whatever you give it to do, the result is always consistent screening performance

The SIEBTECHNIK excenter screening machine is ever ready for anything thanks to its fixed vibration amplitude. Excenter screening machines have been superbly proving their worth as pre-separators with stepped heavy perforated plates or a robust stepped grid under hard conditions for many years.

Unlike freely vibrating circular-vibration vibrating screens, excenter vibrating screens are rigidly mounted. This has the positive effect that the diameter of the vibrating circle is permanently sustained and is not reduced by too much feed material. Our excenter screening machines handle feed fluctuations or hard jolts caused by individual pieces of stone easily – they take them all in their stride. Support on rubber buffers on a framework, which in turn is mounted insulatingly against the steelwork, ensures reduced transmission of vibration to the steelwork.

By the use of components that are also used in other screening machines long-lasting and reliable pre-separation is guaranteed with our excenter screening machines.

Pre-separators are preferably used before the first crushing stage in stone quarries, ore mines and slag processing plants. The stepped screen area enables the screened material to be well restratified.

In the case of feed material with long, thin and pointed bits that tend to jam we recommend for optimum results a stepped grid with slots that get larger in the direction of transport. Also two-deck solutions are feasible and enhance the classifying process.

We build our excenter screening machines for you with nominal screen widths of up to 2100 mm and screen lengths of up to 6000 mm.

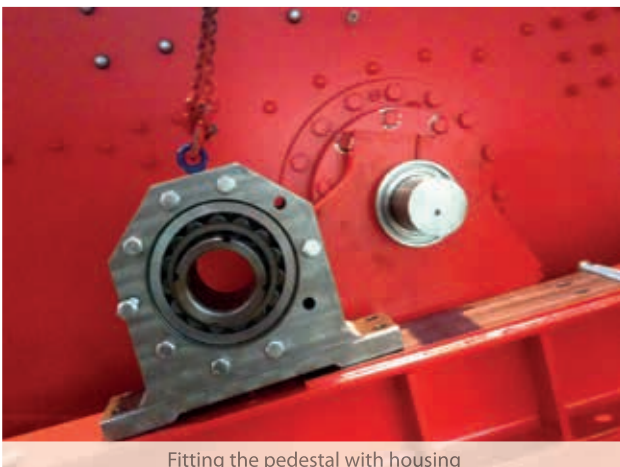
For efficient pre-screening with perforated plates or stepped grids.



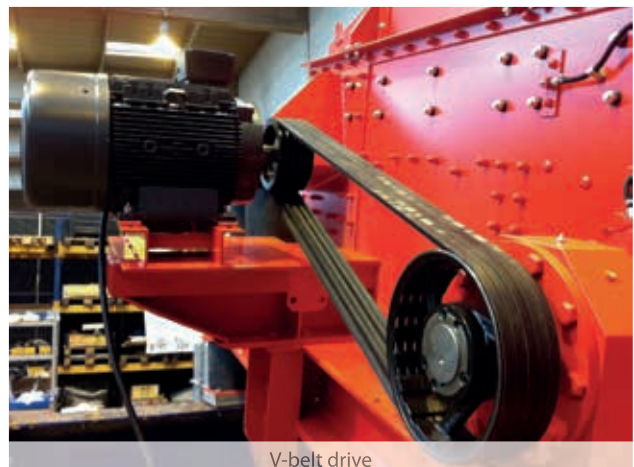
Excenter screening machine, type VS



VS for a pre-screening system



Fitting the pedestal with housing



V-belt drive

Multi-deck screening machines

Big performance in the smallest space

The SIEBTECHNIK multi-deck screening machine is used as a control or classifying screen for free-flowing, dry and/or grainy bulk goods. Thanks to its compact design we achieve a long, reduced-maintenance running time.

SIEBTECHNIK multi-deck screening machines come in two versions:

MHR multi-deck screening machine

Whenever dry material is to be classified as accurately as possible into a number of fractions, the MHR is the screen to use. The large number of nearly vertical throws, the lighter load on the decks and the large screen area enable finished products in analysis screen quality.

The test screening machine with a size of 500 x 1400 mm and with up to 7 decks is available at the technical screening centre in Muelheim Ruhr or as a hire screen for customer tests.



Multi-deck screening machine, type MHR

MDS multi-deck screening machine

For the pre-separation, enrichment and classification of difficult-to-screen bulk mineral materials. Also with a relatively high near-mesh-sized grain content and critical water content we recommend our multi-deck machines with up to 5 screen decks one above the other. The mostly monogranular screening, made possible by an especially steep screen deck tilt in the lower section, enables high specific screening performances and good classification accuracy, even with small screen holes. High-grade steel can be used as an alternative material to the usual standard steel.



Multi-deck screening machine, type MDS, made from stainless steel



Multi-deck screening machine, type MDS

Round screening machines

Adaptable fine-screening specialist

The SIEBTECHNIK CONFLUX type C round screening machine offers outstanding adaptation options to meet the most stringent requirements in fine-screening and ultrafine-screening technology. It is suitable for classifying, dedusting, dewatering and control-screening.

The CONFLUX is a tumbler screening machine with a variable screen set-up and a co-vibrating drive motor with changeable vibration exciter. Vibration patterns can be optimally adjusted to suit the screened material and obtain the required screening result by simply shifting the unbalance weights of the lower vibration cell.

Depending on the number of grain separations required, up to three drums can be mounted on top of one another and so a maximum of 3 separating cuts and 4 size fractions achieved. Oversize and undersize grains are removed sideways, at separate discharge outlets.



Round screening machine
type CONFLUX

Channel conveyors

Our vibrating machines for material transport, entirely without screening function

SIEBTECHNIK channel conveyors are used for the transport of grainy bulk goods. Drive is provided either by double unbalance gear units (type FG, FG-C) or unbalance motors (type FR, FR-C).

We build trough conveyors with top- or bottom-mounted drive units for extreme size requirements. The transport of coarse-grained or very hot feed material or the even loading of a downstream screening machine with feed material is nothing to these vibrating machines.



Channel conveyors, type FG on site

Channel conveyors with double unbalance gear units

Different sizes of double unbalance gear units enable outstanding setting-up for your specific application. The balance masses and speeds can be adjusted in stages, enabling the vibration amplitude and acceleration of the machine to be optimally adapted to suit the specific project requirements.

Our SIEBTECHNIK double unbalance gear units are fast and easy to install and offer high trough conveyor availability.

We recommend this drive concept for e.g. product distributor troughs that load downstream screening

machines evenly with feed material or for discharge troughs for coarse-grained material from material bunkers in e.g. pre-crushing systems.

Channel conveyor with two unbalance motors

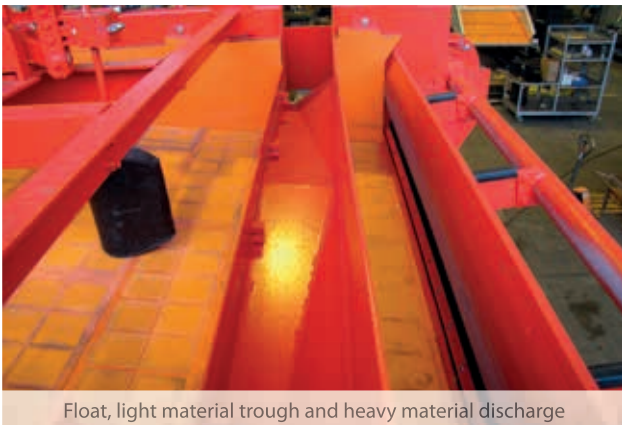
An economical alternative to a drive with double unbalance gear units is a drive with two unbalance motors – specifically for trough conveyors with small nominal widths. Two unbalance motors are driven in opposite directions, because of which the resulting vibration of the vibrating machine is also a linear one.

These largely smaller vibrating machines are used for e.g. transport of sand, gravel, ore and slag or in recycling.

Expert in density separation

The SIEBTECHNIK pulsator jig is specially designed for the separation of light material from heavy material in grain sizes > 1 mm. This includes the separation of harmful materials from e.g. sand and gravel, slags, building rubble and contaminated soils as well as the separation of different ores.

Available in different widths and lengths for individual adaptation to different feed quantities and for numerous areas of application.



Pulsator jig, type SK

Density separation is an essential component in the processing of minerals and in recycling. For successful separation by density, especially if there is only a slight difference in density, it is often not sufficient simply to whirl the material around in a counterflow. Rather it is necessary to provide a vertically pulsating flow through the material bed to allow the material to stratify. The mechanical excenter drive causes the top box, which is filled with water, to vibrate harmonically. The water pulsates in time with the vibrations and drives the strokes necessary for separation.

The feed material is shifted forwards towards the discharge point by the tilt of the screen panel, the strokes and the flow of headwater.



Special designs

Screening machines for the most diverse applications have been part of our product range for many years.

Even if you have seemingly unsolvable screening problems, you should consult us. At your disposal are a well-trained team of engineers and over 90 years of industrial experience

Our range includes, for example, the following special designs:



Linear-vibration screening machine, type HR

Hot standard screening machine

For the manufacture of standard asphalt-bound base and surface layers stationary, semi-mobile or mobile asphalt mixing systems are employed. These consist essentially of a dry drum, bucket conveyor, screening machine, aggregate silos, weighing and mixing equipment and a shipment loading system.

The aggregates, which make up about 80 to 90 per cent by weight of the asphalt formulation, are heated to the required temperatures in the burner-heated dry drum. The quality of the asphalt layer depends on, amongst other things, the quality of the binding materials and the correct grain composition of the largest component by volume, the grainy aggregates. For this reason the screening machine takes on a special importance.



Hot standard screening machine, type HN



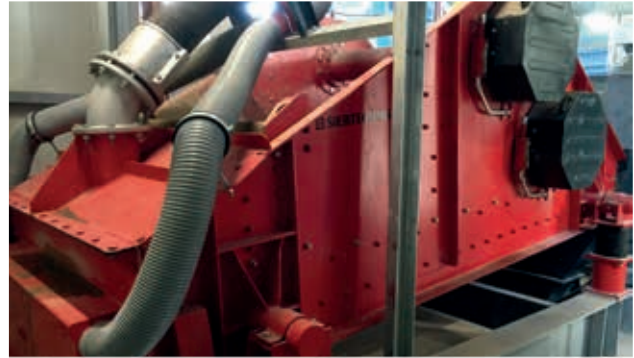
Fast access to the screen decks

The SIEBTECHNIK type HN screening machine has the advantage that the drive mounting is positioned outside the fixed dust guard enclosure and so outside the heating zone. Hot stone chippings at temperatures of up to 450 °C have been reliably screened with this system in numerous applications. Here the right choice of screen cloth and the kind of screen cloth tensioning is also important

The excellent accessibility of the machines in combination with dust guard covers that enable temperatures to be rapidly lowered are an important requirement for short down-times in cases of maintenance or repair. The dust guard available since 2001 in the new, split version with fully extendable chute carrier brings a further improvement on earlier systems here.

Low-pressure dewatering screening machine

To meet especial demand for low residual moisture in e.g. sand, our low-pressure dewatering screening machine is an interesting alternative. It delivers lower residual moisture levels than linear-vibration screening machines that are usually used for dewatering. This machine is based on the “dual-shaft screening machine” drive concept, because with this kind of vibration generation higher speeds can be reached. Higher speeds combined with a pneumatic low-pressure system have a marked lowering effect on residual moisture levels.



Low-pressure dewatering screening machine, type DWS-UE



Dewatering of sand



Dewatering of sand

Curved-screen installations

Our non-vibrating systems for the processing of suspensions.

SIEBTECHNIK curved-screen systems (type ZB or ZBB) are dynamic dewatering and classifying screens, even though they contain no mechanically moved parts. The systems consist of a stationary housing that is fitted with a concave-curved screen cloth.

They have been specially developed for the separation of solid materials from process or waste water and achieve optimum results at a low cost.

Material is fed pressurelessly either by static height or by external sludge pump. The suspension is fed into the feed chamber so as to ensure even charging over the entire width of the curved screen. The screen cloth slot apertures running across the direction of transport separate the liquid from the solids. Solids that are smaller than half slot width pass with the water into the underflow, so classifying the materials. The dewatered solid is discharged at the end of the curved screen. Curved-screen systems and screen cloths are mostly manufactured from 1.4301 material but can, if required, also be manufactured from 1.4571 material.

Motor-driven brush systems for cleaning screen cloths are optionally available.



Curved-screen system, type ZB

Accessories for screening machines

A wide range of accessories is available for all SIEBTECHNIK screening equipment. Whether it's a spraying system, wear protection, drive consoles, air suspension, counter-vibration frame, dust guard, dust covers, double unbalance gear units, hybrid suspension or special screen cloths, thanks to its decades of experience SIEBTECHNIK gets you the best result for your requirement. Naturally our machines can be perfectly combined and offer the optimum solution as a package.

Drive console

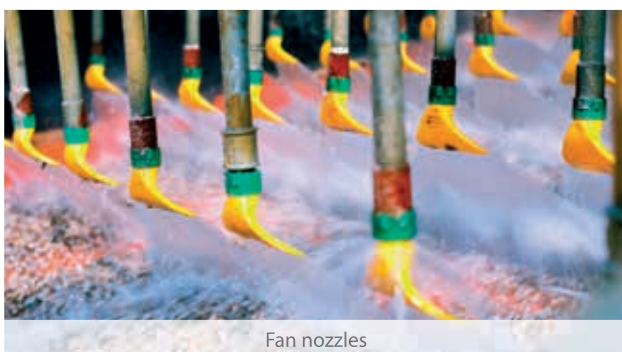
Motor and drive consoles are manufactured from profile steel and are constructed with a base plate for fastening to a platform or support structure. Through the addition of a three-phase motor, intermediate transmission, V-belt drive and safety covers they form a compact unit that conforms to safety-related requirements.



Drive console

Spraying system

With support structure and consisting of collecting pipe, distributor pipes for each deck and a shut-off valve and fan nozzles in offset arrangement to each deck and the necessary spray-water seals.



Fan nozzles

Air Spring System

As an optional alternative to the usual vibration isolation by spiral compression springs, SIEBTECHNIK offers, air spring system.

This consists of air bellows, including base and adapter plates. Passive buffers provide secure support during maintenance or for when the machine is stationary for longer periods. Regulating systems and a compressor are supplied in an aluminium safety box for individual parameter setting and monitoring. A hose kit ensures the necessary supply of air to the air bellows at the suspension points.



Air Spring System

Hybrid suspension

Hybrid suspension, consisting of spiral compression springs and rubber buffers, offers good vibration isolation, including a means of protection against the springs "going solid".

Counter-vibration frame

A well-known alternative to the optimised vibration isolation is the counter-vibration frame. With this system, too, extensive vibration isolation can be achieved. We offer this variant, which is manufactured from sheet and profile steel, likewise as an alternative to air suspension. It is designed to hold the screening machine and is supported on rubber springs and shock absorbers.



Counter-vibration frame

Accessories for screening machines

Dust cover

The dust cover is fitted only above the screening machine. It consists of roof-shaped segments from which usually rubber curtains extend into the screen box. This kind of dust seal is of a simpler construction than the dust guard but – especially in combination with a dedusting system – likewise offers considerable reduction in the amount of dust escaping from the screening machine.

Wear protection

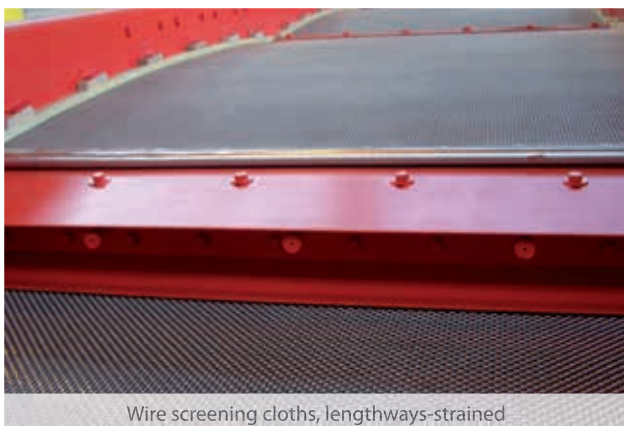
Cross-members are part-lagged with rubber, the surfaces that come into contact with the screened material being protected e.g. with 4 mm- or 8 mm-thick wear-resistant rubber.

Increased wear protection is optionally obtained if the hollows in the cross-members are filled with foam and protected with 4 mm wear-resistant rubber to prevent material from collecting on them. The back walls are often protected with 8 mm-thick wear-resistant rubber. Likewise available are alternative variants made from wear-resistant steel, ceramics or polyurethane.

Special screen cloths

Stepped slotted grid in segmental design with conical slot width for coarse separating cuts and robust applications. The stepped slotted grid is manufactured mainly from S235JRG2, while the top flanges that are exposed to the material are manufactured from HARDOX or a similar material.

The finger grid as a system component is individually manufactured for difficult-to-screen materials. Double-nose-perforated plates can screen slags clog-free with wires. Perforated plates are manufactured specifically to meet customer requirements. For difficult-to-screen material vulcanised rubber cloths and wire screening cloths in different design details are suitable. Tapered high-grade steel cloths offer a high dewatering performance.



Wire screening cloths, lengthways-strained



Dust frame

Dust guard

By “dust guard” we mean an enclosure for the whole of the screening machine. The aim is to prevent as much dust from escaping as possible. Either the screening machine is supported on a frame that also carries the dust guard made from steel segments or the dust guard is so robustly constructed at the suspension points that it carries the screening machine. Access to the screening machine is through doors on the feed and discharge sides. The underflow collecting funnel, which does not vibrate with the machine, can be bolted to the base frame of the dust guard and so also offers excellent protection against escaping dust.

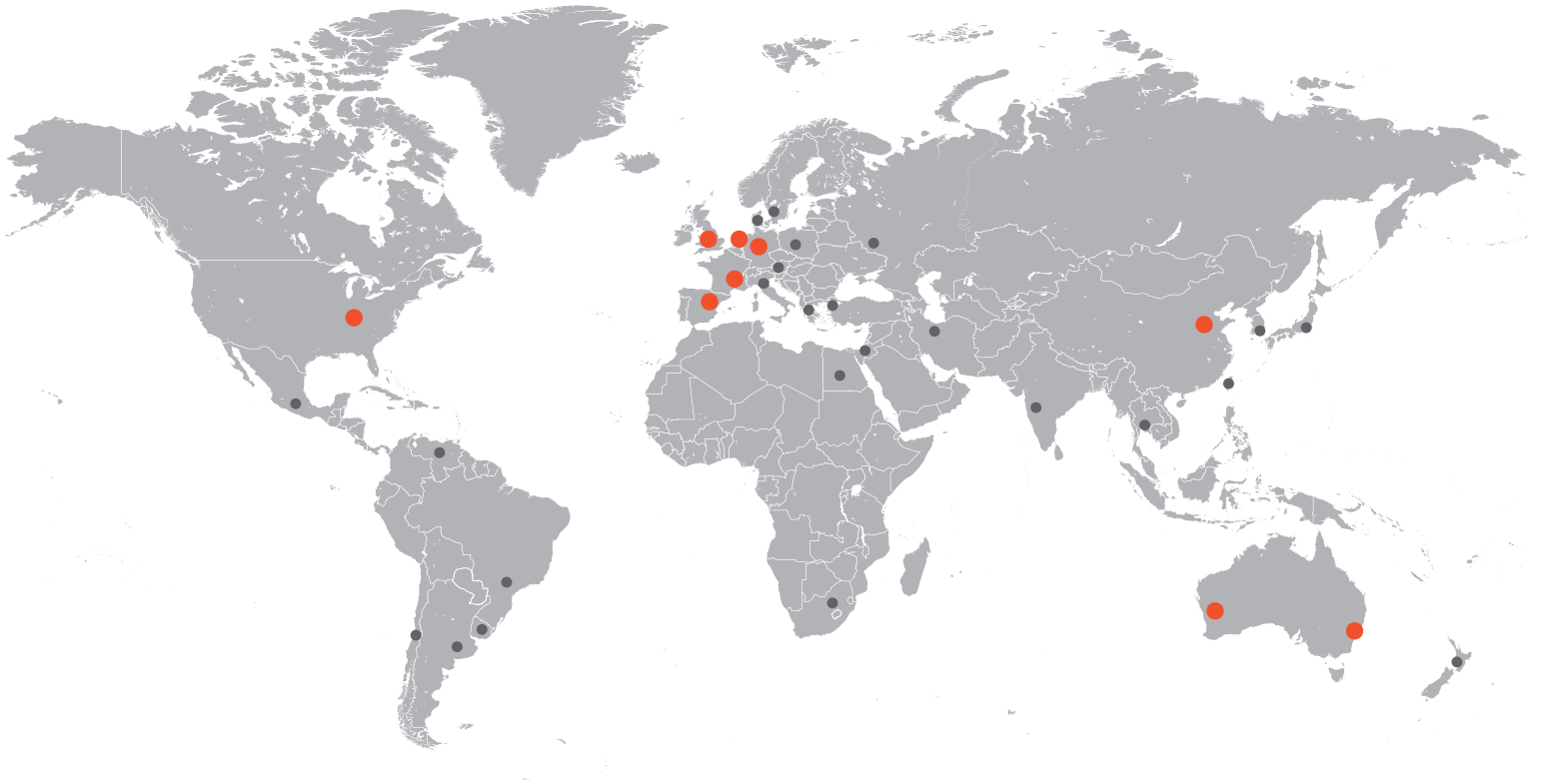
Double unbalance gear units

A SIEBTECHNIK double unbalance gear unit delivers the working torque necessary for the desired vibration amplitude of the screening machine. The gear unit is adjustable in stages by changing the number and form of the unbalance weights and can be driven within a speed range agreed with us.



Double unbalance gear unit and stepped slotted grid

One Solution. Worldwide.



SIEBTECHNIK TEMA provides more than 50 local support offices and facilities worldwide, with our main sites located in:

Mülheim an der Ruhr, Germany | Rijswijk / The Hague, The Netherlands | Daventry, Great Britain
Mundolsheim, France | Madrid, Spain | Sydney, Australia | Cincinnati, USA | Tianjin, China

We are experts in the field of solid-liquid separation and the processing of bulk materials

Automation | Channel conveyors | Crushing & Milling Equipment | Control Screening Machines
Decanter | Dryers | Laboratory Equipment | Pneumatic Tube Systems | Preparation Systems
Process Equipment | Pulsator Jigs | Pusher Centrifuges | Sampling Systems | Screening
Machines | Screen Worm Centrifuges | Sliding Centrifuges | Vibrating Centrifuges