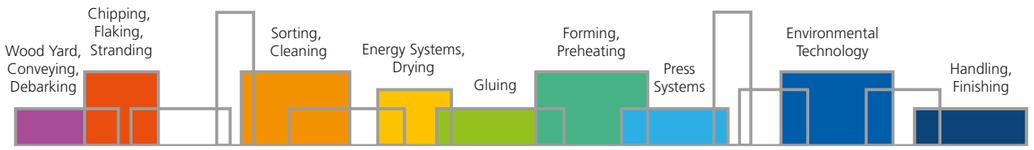
DIEFFENBACHER
MOVE FORWARD. TOGETHER.

Let’s build your plant

Products and solutions for the wood-based panel industry

FIND IT **FASTER**

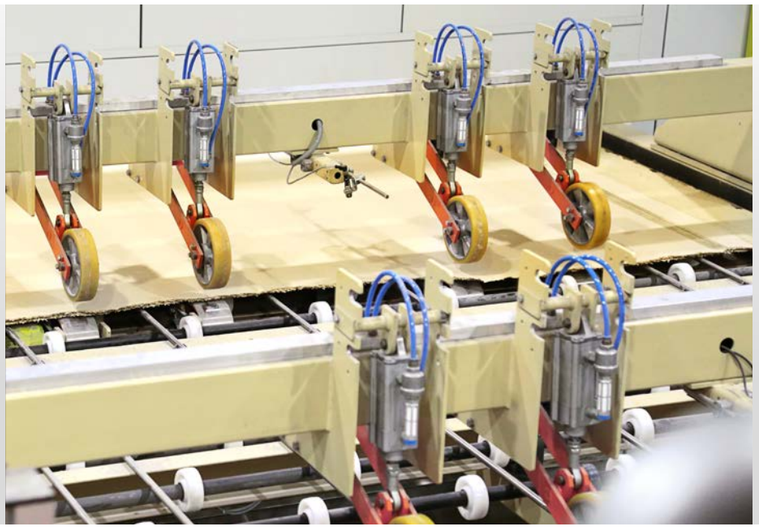
This graphical element will be your navigator and help you to easily find the solutions you are looking for.



FROM YOUR FIRST IDEA

**Want to produce high-quality particleboard, MDF, OSB or LVL?
Tell us about your ideas. Based on your needs we carry out in-depth analyses to define a plant concept that perfectly meets your requirements. Together we plan and design your highly efficient wood-based panel plant.**

THROUGH FIRST BOARD



During the installation and start-up phase we will always stay close to you. We celebrate the production of the first board together and optimize your production process. When we leave your site, your staff has been trained and is ready for full-load operation, as is your plant.

TO EFFICIENT PRODUCTION

New Dieffenbacher plants deliver the next level of plant efficiency, but we can also help you to stay ahead of your competition in later lifecycle phases. Annual reviews, predictive as well as planned maintenance, repair and spare parts services and training courses ensure the efficiency of your plant.

AND HIGH-QUALITY OUTPUT

We deliver premium quality to enable you to deliver premium quality to your customers. With Dieffenbacher technology and services you can always be sure that your plant is at the forefront of the wood-based panel industry, and that your products will make your customers happy.

WITH A STRONG PARTNER.

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Close cooperation helps us move forward together. We are your strong and reliable partner supporting you throughout the entire lifecycle of your plant. As a fifth-generation family-owned company with more than 145 years of experience, we have always proven continuity and commitment to our partners.

INCREASE UPTIME CONTINUOUSLY

Service that can do more

To ensure that your plant runs trouble-free for the long term, you need a partner who goes the extra mile for you. Not only are we there quickly if something goes wrong, but we also look ahead together with you and optimize production efficiently.

With individual service packages, digital support systems and regular training, we provide you with the tools you need to get the most out of your plant.

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DIEFFENBACHER
LIFECYCLE SERVICES

MAXIMIZE UPTIME WITH PREVENTIVE SERVICES

Machine Inspections and Performance Tracking
Regular inspections are part of preventive maintenance. We help you analyze risks and weak points. We work on site to help you identify optimization potential. Working remotely via our TEO tool, we are your optimization coach.

Process Optimization
A plant performance analysis is carried out to evaluate the status of your plant. Based on the results, production bottlenecks can be eliminated and the plant's productivity can be optimized.

Individual Spare Parts Packages
Our service specialists define individual spare and wear parts packages for your plant. They take care of the processing of all logistical matters, including issuing of all necessary export and import documents.

Training
Through individual on-site trainings and annual trainings at our headquarters in Eppingen, Germany, your staff gets deep knowledge about machine operation and production processes, preventing mistakes in daily business.

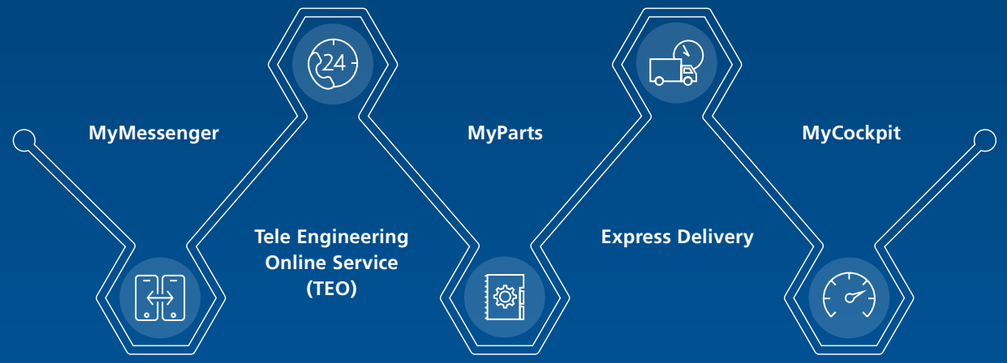
Inventory Management
We help you keep your inventory up to date. Spare parts condition checks and discontinuation controls are part of our inventory management offer, as is storage consulting.

MINIMIZE DOWNTIME WITH REACTIVE SERVICES

MyMessenger
With your smartphone, use our easy-to-use messenger app to contact your team members and instantly discuss your maintenance issues with us. Every solved problem is documented, making it easier to resolve similar issues in the future.

MyParts
Our digital spare parts catalog covers spare parts identification and plant documentation. You can easily identify, select and request spare parts and view the corresponding documentation.

MyCockpit
MyCockpit provides you with available plant data on mobile devices. Relevant people receive the information they need with a quick glance.



Tele Engineering Online Service (TEO)
TEO is our online remote diagnostic tool that provides 24/7 access and support worldwide. Via TEO, our Dieffenbacher experts can access all components of your plant for immediate troubleshooting.

Express Delivery
A selection of critical and common spare parts is labeled as express parts. If we receive your express parts order before 10 a.m., your delivery will be shipped on the same day.

DRIVE EFFICIENCY

FURTHER

Modernization solutions for tomorrow

Modernizations are crucial to make existing plants fit for the future. Our solutions are tailored to your business. We make your plant more efficient in terms of consumption, processes and productivity so that you can continuously improve the profitability of your products.

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HOW CAN WE HELP YOU
ACHIEVE MORE WITH YOUR PLANT?

The economy is changing. Additional requirements, new guidelines and technical innovations make continuous modernization essential. Let us help you create a custom modernization concept for your specific components, individual machines and complete plants. With Dieffenbacher you can remain competitive.

COMPONENT EXCHANGE
Old or faulty components undermine your plant efficiency. Dieffenbacher quickly replaces individual plant components with new ones adapted to your plant.

PLANT EXTENSION
The demands placed on wood-based panel plants are growing dynamically. A plant extension helps you keep pace with the development and increase your capacity to meet changing requirements. This can make your plant even more profitable.

PERFORMANCE OPTIMIZATION
Don’t overlook optimization potential during ongoing plant operation. We can develop custom solution concepts for you, implement them and support you in monitoring their success.

INTEGRATION AND NETWORKING
Industrial plants or entire production sites must increasingly be automated and networked. We assist you in integrating our modernization solutions into your existing processes and in automating existing plants. With Dieffenbacher you are ready for tomorrow.

PLANT RELOCATION
Give your company added flexibility. We make plant relocations possible with design, planning and timely implementation services. Benefit from our experience with large-scale relocation projects.

CUSTOM CONVERSION PACKAGES
Planning extensive changes to your processes? Let us support your goals with a needs analysis and custom conversion concepts.

NORBORD OSB PLANT RELOCATION FROM CANADA TO SCOTLAND

Disassembly: Grand Prairie, Alberta, Canada

Installation: Inverness, Scotland

MAKE YOUR PRODUCTION SMARTER

Digital solutions that simplify your daily routine

Digitalization and automation make your life easier. With permanent condition-monitoring, self-controlled production solutions and the MyDieffenbacher platform, you can make faster and safer decisions, work efficiently and increase the productivity of your plant.

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THE FUTURE OF PANEL PLANTS—TODAY

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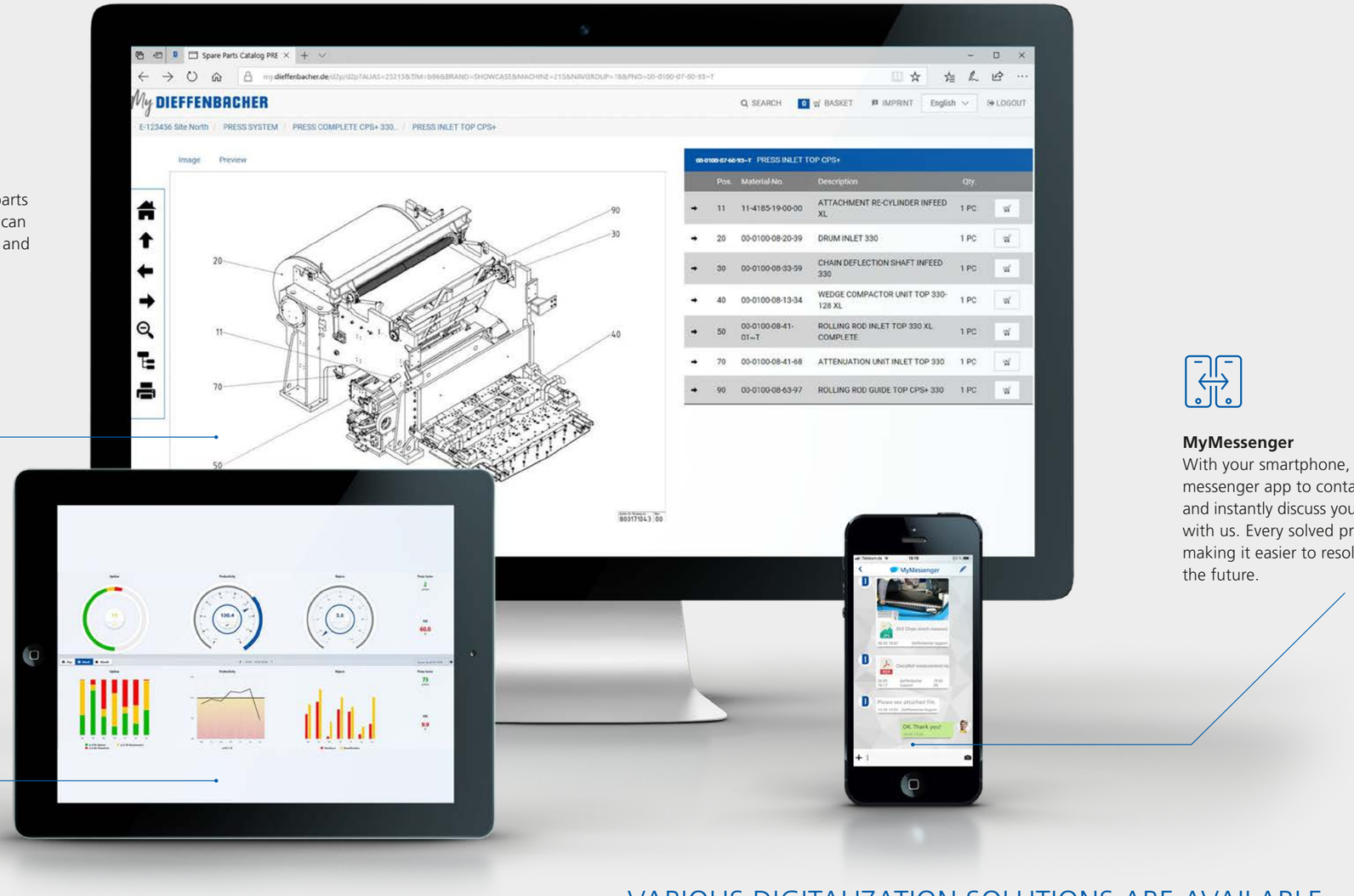

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MyCockpit
MyCockpit provides you with available plant data on mobile devices. Relevant people receive the information they need with a quick glance.

VARIOUS DIGITALIZATION SOLUTIONS ARE AVAILABLE

Permanent condition-monitoring:

- Distance indicator counts the press's total kilometers achieved to date
- Steel belt alignment index calculated from belt tracking behavior
- Monitoring of control loop condition
- Gearbox temperature tracked over time
- Identification of the pressure insulation's wear
- Visualization of trends in chain elongation
- Etc.

Contact us for more information.

Self-controlled production solutions:

- Intelligent forming line reaction in case of production interruptions, e.g., automatic stopping and controlled restarting
- Automatically adjusted surface-layer ratio
- Automated speed control based on material temperature
- Automation of standard processes: press calibration, emptying press after stop, etc.
- Automatic mat-moisture control
- Etc.

BUILD BETTER PRODUCTION LINES

High-performance solutions for new plants and plant optimizations

Browse through our portfolio on the following pages and build a profitable future with our broad range of products and solutions. Contact us whenever you need assistance. We are happy to support you in making the best decisions for your long-term success.

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Professional Solutions for OSB

Through the “OSB Logyard Alliance” with Holtec, Dieffenbacher completed its product range in the OSB area. Holtec, a well-known supplier of logyards, works closely with Dieffenbacher to design, manufacture and install logyards tailored to the customer’s OSB plant requirements. This includes the debarking, log conditioning system, and OSB strander right through to the waste disposal system. Everything can be manufactured and supplied from a single source.

For over 45 years, log processing has been a way of life for Holtec. Holtec has the knowledge and experience from designing, manufacturing and installing over 300 logyard systems.

OSB LOGYARD Alliance

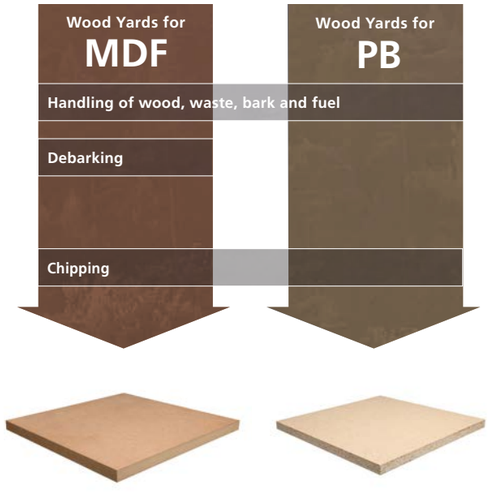
DIEFFENBACHER HOLTEC

Wood Yard Technology

Wood is a renewable resource and the basis for producing wood-based panels, cellulose and paper, pellets and numerous other products. Due to regional climate differences, raw material scarcity and increasing cost pressures, substitutes for classic round wood in the production of wood-based products are increasingly attractive.

Modern wood yards supplied by Dieffenbacher provide optimal plant flexibility. Depending on the application, functions such as debarking and cleaning can supplement loading, storage, dosing and conveying. Our proven drum chipper serves as the ideal first reduction stage for a variety of wood assortments. High-quality chips are the result. This intermediate bulk product can be used fully automatically and reliably for subsequent processes in the production of PB, MDF and OSB boards, as well as pellets and cellulose products.

Dieffenbacher reliably supports you from project planning to implementation and far beyond. We develop efficient, turnkey wood yard solutions that meet your requirements. Precise matching of individual components enables optimal performance of your plant, while robust machines designed for 24/7 work ensure maximum availability and low operating costs.



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MAIER® SCC Storage Cross Chain Conveyor

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- Pellets and briquettes
- WPC/WFC
- Pulp and paper

Description

The SCC Storage Cross Chain Conveyor enables storing and conveying of round wood and slabs, loaded by crane. The conveyor is executed with a closed bottom plate, integrated side wall and driven chains. Different singularizers can be mounted downstream from the SCC:

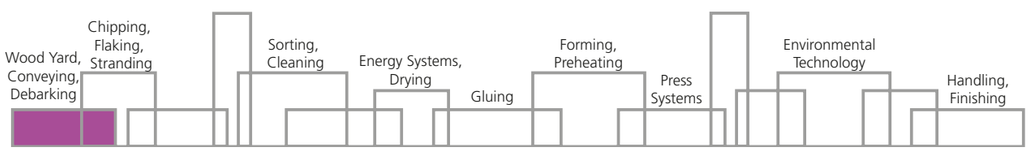
- LS Log Singularizer separates logs by inclined installation and increased conveying speed.
- SBS Slab Bundle Singularizer is executed as a movable table beneath the SCC. The bundles can easily be opened in extended table position. The loose slabs are fed to the line by retracting the table.

Customer benefits

- High storage volume
- Effective dosed conveying and singularizing of round wood and slabs
- Designed for challenging conditions and heavy-duty loads during 24-hour continuous operation
- Solid and reliable execution, low maintenance
- Working speed freely adjustable by frequency converter

Technical features

- Number of chains can be adapted to material length
- Heavy-duty chains with reinforced carriers guided in U-shaped beams with integrated wear protection
- Welded steel chains in North American design with high breaking load
- Driven via shaft-mounted gear motor, incl. torque support
- Execution with right or left guiding wall available



MAIER® DPC Dumping Pit Chain Scraper

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- Pellets and briquettes
- WPC/WFC
- Pulp and paper

Description

The DPC Dumping Pit Chain Scraper is designed for direct loading of wooden bulk materials. The material is usually loaded by front loader or truck. The DPC acts as a buffer and equalizes bulk material flow with an inclined section. Large heavy-duty horizontal feeding section and subsequent inclined trough with high side walls and reinforced chains with carriers transport the dosed material to the subsequent conveyers.

Customer benefits

- Designed for challenging conditions and heavy-duty loads during 24-hour continuous operation
- High storage volume, easy loading of even big volume of materials
- Tailor-made solutions
- Solid and reliable execution, low maintenance
- Working speed freely adjustable by frequency converter

Technical features

- Heavy-duty endless chains with lateral guidance on both sides and reinforced carriers
- Integrated cleaning of chain and the carriers
- Plastic side guiding rails for reduced wear and friction of the chains
- Discharge hopper and transition plate for easier material transmission to the following conveyor
- Drives with torque overload monitoring

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MAIER® VFC Vibration Feeding Conveyor

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- Pellets and briquettes
- WPC/WFC
- Pulp and paper

Description

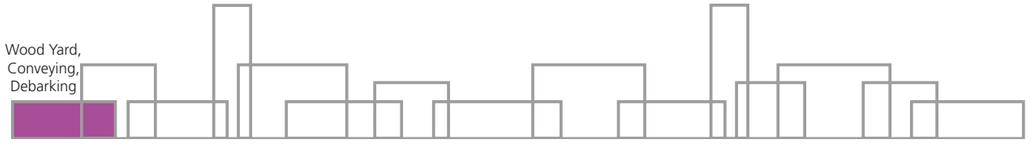
The VFC Vibration Feeding Conveyor is designed for continuous dosed conveying of different bulk materials. The material is usually loaded by front loader, crane or prefeeder. The VFC is used for transport of different kinds of materials to the subsequent feeders or directly into the machine.

Customer benefits

- Designed for challenging conditions and heavy-duty loads
- Solid and reliable execution
- Resonance drive for low energy consumption
- Low maintenance and service-friendly

Technical features

- High conveying volume possible
- Heavy-duty welded trough with reinforced bottom plate
- Resonance drive supported by solid springs and stabilizers
- Execution with feeding hopper, screening zone, metal detector or other required features possible



MAIER® VDT Vibration Dosing Table

Application

- Panel boards (PB, MDF, OSB)
- WPC/WFC
- Pellets and briquettes
- Recycling
- Biofuels

Description

The VDT Vibration Dosing Table is designed for challenging conditions at the wood yard. The material is usually loaded by front loader or truck. The VDT acts as a buffer and equalizes bulk material flow. The material is further transported to the subsequent feeders.

Customer benefits

- Designed for challenging conditions and heavy-duty loads
- Solid and reliable execution
- Resonance drive for low energy consumption
- Low maintenance and service-friendly

Technical features

- High capacities available
- Heavy-duty welded trough
- Resonance drive supported by solid springs and stabilizers
- Heavy-duty bottom plate

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MAIER® FBC Feeding Belt Conveyor

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- Pellets and briquettes
- WPC/WFC
- Pulp and paper

Description

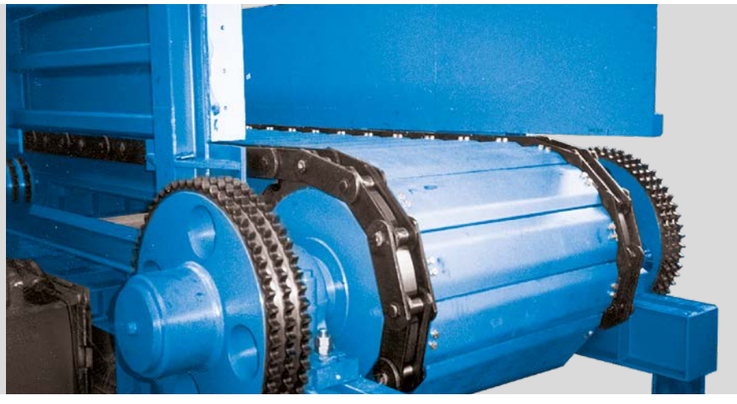
The FBC Feeding Belt Conveyor is designed for continuous transport of logs and other wooden materials to the subsequent conveyor or directly into the machine. The material is usually loaded by grapple, upstream longitudinal or cross feeders. The conveyor is executed as a welded trough with heavy-duty feeding belt.

Customer benefits

- Solid and reliable execution, designed for challenging conditions and heavy loads
- Tailor-made solutions
- Low maintenance and service friendly
- High transport volume
- Feeding hopper for easy material loading

Technical features

- Heavy-duty welded trough with reinforced supporting frame
- Execution with integrable wooden trough for metal detector; removal zone with swiveling walls or doors for metal-contaminated logs or cleaning zone is possible
- Roller sections consist of roller rows mounted on damping elements
- Reinforced damped plates in the feeding areas
- Reverse operation



MAIER® SPC Steel Plate Conveyor

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- Pellets and briquettes
- WPC/WFC
- Pulp and paper

Description

The SPC Steel Plate Conveyor is designed for continuous transport of heavyweight logs and other wooden materials to the downstream conveyor or directly into the machine. The material is usually loaded by grapple, upstream longitudinal or cross feeders. The conveyor is executed with welded trough and driven chains with specially formed reinforced steel plates.

Customer benefits

- Solid and reliable execution, designed for challenging conditions and especially heavy-duty loads
- Tailor-made solutions
- Low maintenance and service friendly
- High transport volume
- Feeding hopper for easy loading

Technical features

- Heavy-duty welded trough with reinforced supporting frame
- Heavy, special shaped wear-resistant steel plates with extra high section modulus, screwed for easy disassembly
- Steel plates glide on damped longitudinal beams, therefore the reinforced chains are only loaded by tension forces
- Steel plates glide on plastic slide rails to minimize friction and noise
- Reverse operation possible

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MAIER® CBC Chain Bed Conveyor

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- Pellets and briquettes
- WPC/WFC
- Pulp and paper

Description

The CBC Chain Bed Conveyor is designed for continuous transport of heavyweight wooden logs to the subsequent conveyor. The material is usually loaded by grapple, upstream longitudinal or cross feeders. The conveyor is executed as a welded trough with driven parallel-running reinforced chains.

Customer benefits

- Solid and reliable execution for high uptime
- Designed for challenging conditions and heavy-duty loads
- High transport volume
- Tailor-made solutions
- Low maintenance and service friendly
- Feeding hopper for easy loading (optional)

Technical features

- Heavy-duty welded trough
- Integrated or separate log feeding section executed as a reinforced steel hopper available
- U-shaped guiding beams with integrated wear protection
- Special welded steel chains in North American design with high breaking load
- Reverse operation (optional)



MAIER® RS Cleaning Zone

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- Pellets and briquettes
- WPC/WFC
- Pulp and paper

Description

The RS Cleaning Zone is designed for separating loose bark and other impurities from the conveying material. Depending on the application, the RS is executed with various numbers and forms of discs or rollers and can be integrated into different kind of horizontal conveyor systems.

Customer benefits

- Effective cleaning of impurities and challenging contaminations
- Designed for difficult conditions and heavy-duty loads
- Robust and reliable execution
- Modular solution, easy integrable

Technical features

- Different shapes of discs (elliptic/star, etc.) and rollers
- Reinforced chains between the disc shafts
- Chain tensioning device with polymeric wear plates
- Single or multiple drives, different shaft rotation speed possible
- Reverse operation possible

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MAIER® MRE Rotor Debarker

Application

- OSB boards
- Panel boards (PB, MDF)
- Pellets and briquettes
- Pulp and paper

Description

The MRE Rotor Debarker offers the efficient continuous debarking of round wood. The logs are laterally fed into the trough, set into rotating motion by long rotors with debarking tools and moved to the discharge area by the tilt of the rotors.

Customer benefits

- Highly efficient debarking due to interaction between rotation, friction and surface moistening of logs
- Constant high capacity: up to 70 t/h b.d.
- Precise control of debarking process and processing quantities
- Fully automatic operation
- High machine availability

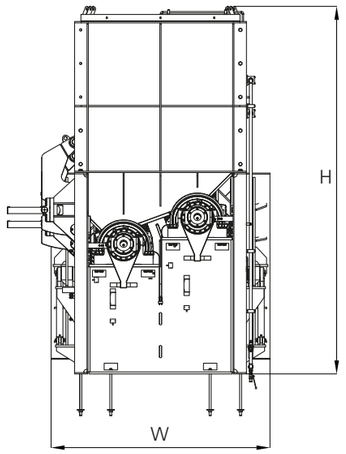
Technical features

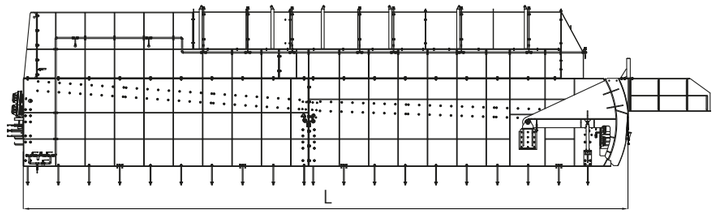
- Hydraulically adjustable, stepless closing gate for the control of processing material quantities and regulation of the debarking quality
- Two or four one-piece rotors, according to machine size
- Speed of each rotor variable and individually adjustable
- The debarking tools (cams) are screwed and individually exchangeable
- Water spray system for the reduction and suppression of dust, as well as cleaning and moistening the logs for better sliding
- Central hydraulic unit for all drives and functions of the debarker

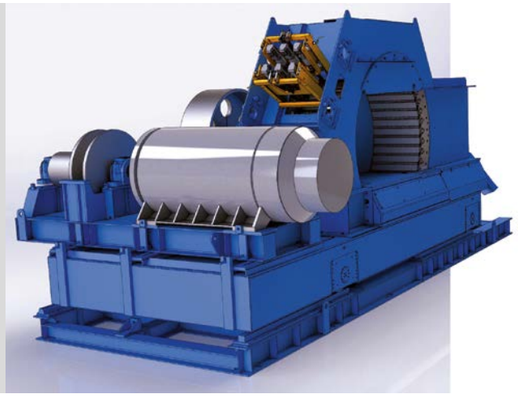
MRE Rotor Debarker

Type	Number of sections pcs.	Number of rotors per section pcs.	Rotor length m	Rotor diameter with cams[1] mm	Number of debarking cams per rotor pcs.	Drive hydraulic unit kW	Drive auxilary functions kW	Drive discharge roller kW	Drive heating kW	Drives cooler + cooler pump kW	Capacity[2] approx. t/h b.d.	Dimensions[3] m (L × W × H)
MRE 800-1	1	2	12	950	180	2 × 45	22	7.5	4 × 1.4	3 + 4	25–35	16.4 × 3.3 × 5.3
MRE 800-2	2	2	9	950	135	4 × 45	22	7.5	4 × 1.4	3 + 4	40–50	23.4 × 3.3 × 5.3
MRE 800-3	2	2	12	950	180	4 × 45	22	7.5	4 × 1.4	3 + 4	60–70	29.4 × 3.3 × 5.3

1) Rotor body diameter for all machine types—820 mm
2) Depending on infeed material and required debarking result
3) Dimensions of basic machine; height without sub-frame.







SmartRING Stranders

Dieffenbacher and Kadant Carmanah Design signed a cooperation agreement in 2013 for the supply of disc and ring stranding systems for engineered wood applications outside of North America.

The strander division of Kadant (formerly Carmanah), which celebrated its 100th year in business in 2013, is outstanding in the supply of disc and ring stranders to the engineered wood industry with installations in North and South America, Europe, the UK-, and New Zealand.

Application

Production of flakes/strands for the production of engineered wood products including OSB, OSL, etc.

Description

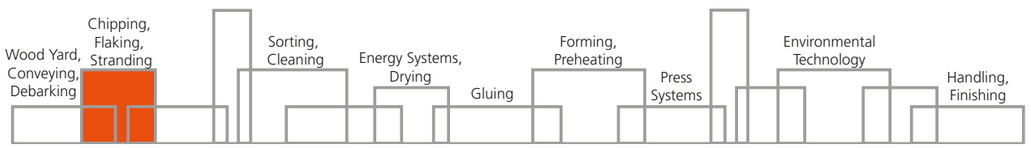
The SmartRING Strander produces high-quality and consistent strands and is designed for easy adjustment of strand parameters. Maintenance is straightforward, and wear components are easily replaced to ensure downtime is minimized. Additionally, several features in the SmartRING platform, monitor knife installation and subsequently identify issues and, if necessary, act to minimize the potential of serious machine damage or catastrophic failure.

Customer benefits

- Consistent strand quality through real-time adjustment to forward ring velocity
- Wear components quickly and easily replaced as required
- Knife change procedure automated through nutrunner system
- Option to utilize disposable knives
- Safety features minimize the potential of serious machine failure

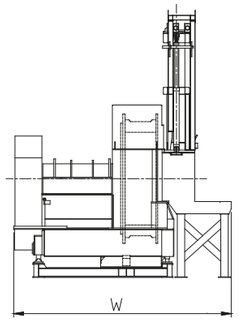
Technical features

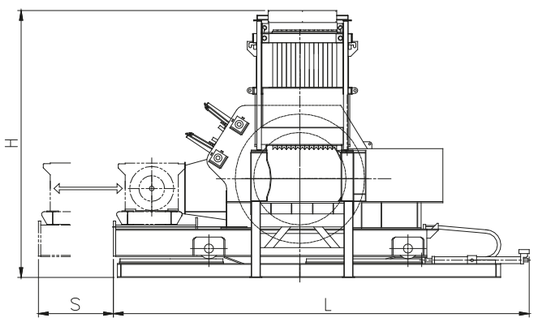
- Real-time ring RPM monitor to adjust forward ring velocity during cutting cycle
- Automated nutrunner system ensures knives adequately clamped prior to operating
- Replaceable knife holding and clamping components eliminate the need for ring grinding allowing for more consistent cutting geometry and fewer fines produced over the ring's life
- Ring design to allow complete replacement in 10-hour period
- Designed to accommodate plate or disposable knives



SmartRING Stranders

Type		28/81 SmartRING Stranders	32/88 SmartRING Stranders
Number of knives		44	48
Ring assembly weight, approx.	t	7.3	8.5
Ring	rpm	370	334
Ring and arbor work	t/m^2	13.2	17.5
Motor size	kW	900/1,100 (pine/hardwoods)	1,100/1,350 (pine/hardwoods)
Drive type		Power bands V-belts	Power bands V-belts
Total weight, approx.	t	54	60
Dimensions (L × W × H)	mm	9,235 × 4,830 × 5,505	9,500 × 4,935 × 5,540
Traverse way (S)	mm	1,665	1,805





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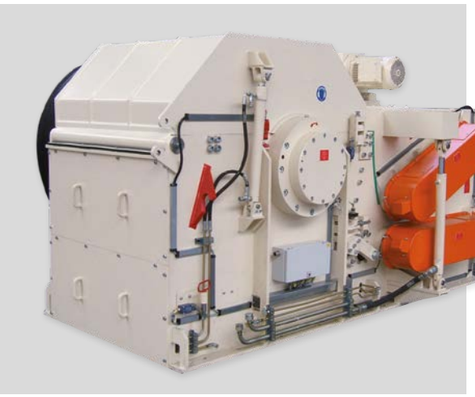


MAIER® HRL Drum Chipper

Application

- Panel boards (PB, MDF, OSB)
- Biomass and renewable fuels
- WPC/WFC
- Pulp and paper

Description

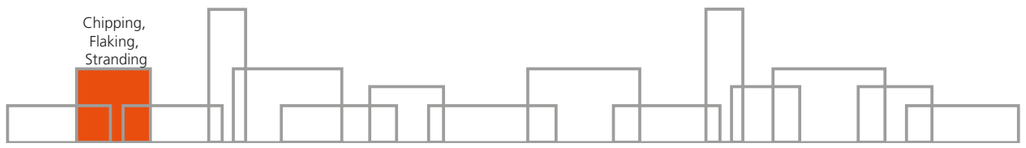
The HRL Drum Chipper is a tried-and-trusted solution for the production of high-quality chips from different wood assortments. The material is gripped horizontally by specially toothed infeed rollers and continuously fed to the chipping rotor. The knives of the rotor cut the material to the required chip length. The chipped material passes an individually adapted refractioning grid.

Customer benefits

- Free choice of wood assortment: round wood, log ends, slabs and offcuts, veneer residues or waste wood
- Constant high chip quality; chip length of 4 – 180 mm possible
- Special machine solutions for production of maxi-chips, micro-chips and biomass such as HRL-OSB, HRL-M, HRL-B
- Robust, long-term reliable, low operating costs due to simplified maintenance
- Energy-efficient size reduction
- Essential parts of the machine wear-protected and exchangeable

Technical features

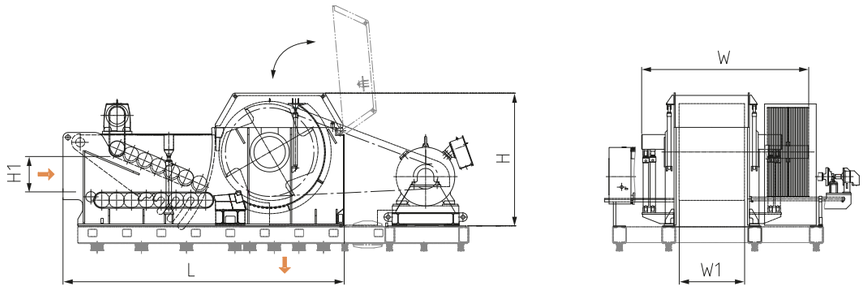
- Aggressively shaped infeed rollers with narrow running gaps
- Chipping rotor with slewable knife clamping plates for quick and easy knife exchange
- Regrindable wear plates under the chipping knives
- Counter knife screw-fastened, regrindable, once turnable
- Wear-resistant refractioning grid individually perforated



HRL Drum Chipper

Type[1] Rotor/Infeed opening mm Ø / H1 × W1	Main drive kW	Infeed roller drive (upper/lower) kW	Capacity[2] rm/h	Capacity[2] t/h b.d.	Chip Vol.[3] m³/h	Dimensions[4] m (L × W × H)	Weight[4] approx. t
HRL 450 / 150 x 500	30–45	2.2/2.2	20–24	6–7	40–47	1.6 × 2.2 × 1.2	1.9
HRL 600 / 200 x 650	55–75	3/3	34–40	10–12	67–80	1.6 × 2.4 × 1.3	5.5
HRL 800 / 250 x 650	75–110	5.5/5.5	44–50	13–15	87–100	2.4 × 1.7 × 1.4	7.5
x 800	90–132	5.5/5.5	54–64	16–19	107–127	2.4 × 1.8 × 1.4	8.3
HRL 1000 / 350 x 800	110–160	7.5/7.5	74–87	22–26	147–173	2.8 × 2.1 × 1.7	11
x 1000	132–200	7.5/7.5	94–110	28–33	187–220	2.8 × 2.3 × 1.7	13
HRL 1200 / 450 x 800	200–315	11/11	97–114	29–34	193–227	3.5 × 2.5 × 1.9	14
x 1000	250–355	11/11	117–140	35–42	233–280	3.5 × 2.7 × 1.9	15.5
x 1200	250–355	11/11	144–170	43–51	287–340	3.5 × 2.9 × 1.9	17
HRL 1400 / 550 x 1000	315–500	15/15	144–170	43–51	287–340	4.2 × 2.6 × 2.1	22
x 1200	355–500	15/15	177–210	53–63	354–420	4.2 × 2.8 × 2.1	24
x 1500	400–630	15/15	220–260	66–78	440–520	4.2 × 3.1 × 2.1	26
HRL 1600 / 600 x 1000	400–500	18.5/18.5	157–187	47–56	313–373	4.4 × 2.7 × 2.1	30
x 1200	500–630	18.5/18.5	193–227	58–68	386–453	4.4 × 2.9 × 2.4	33
x 1500	500–800	18.5/18.5	240–284	72–85	480–567	4.4 × 3.2 × 2.4	37
HRL 1800 / 750 x 1000	630–800	18.5/18.5	200–234	60–70	400–467	5.1 × 2.9 × 2.5	34
x 1200	630–800	18.5/18.5	240–287	72–86	480–573	5.1 × 3.0 × 2.5	37
x 1500	630–1,000	18.5/18.5	300–354	90–106	600–707	5.1 × 3.3 × 2.5	40
HRL 2000 / 850 x 1200	800–1,250	22/22	274–324	82–97	547–647	5.7 × 3.4 × 2.7	60
x 1500	800–1,400	22/22	340–400	102–120	680–800	5.7 × 3.7 × 2.7	66
x 1700	800–1,400	22/22	384–454	115–136	767–907	5.7 × 3.9 × 2.7	72
HRL 2400 / 1000 x 1500	1,000–1,600	22/22	400–474	120–142	800–947	6.8 × 3.9 × 3.0	83
x 1700	1,000–1,600	22/22	450–534	135–160	900–1,067	6.8 × 4.0 × 3.0	91

1) Individual machine sizes and motor power upon request 2) Referring to round wood with a density of 450 kg/m³ b.d., a 11 – 13 % filling ratio of the infeed, and a chip length of 40 mm 3) Chip volume flow based on a bulk weight of 150 kg/m³ 4) Dimensions and weight of basic machine without main motor



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MAIER® SMV Cutting Rotor / Rechipper

Application

- Combustion (energy from waste)
- Recycling
- Panel boards (PB, MDF, OSB)

Description

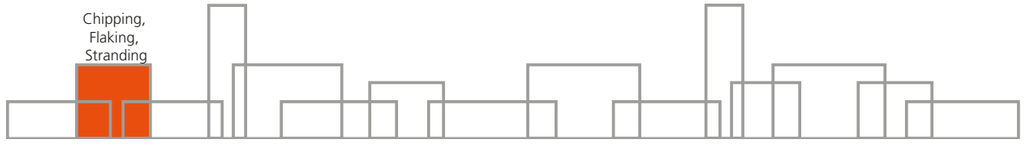
The SMV Cutting Rotor is an effective robust solution for the reduction of short-sized industrial waste wood, bark and fibrous raw materials into quality chips. The material is fed through the large vertical hopper, chipped by the knives of the rotor and further classified by an individually adapted refractioning grid.

Customer benefits

- Wide range of input material such as screened chip oversizes, short-sized industrial waste wood, bark, annual plants, cardboard waste and fibrous raw materials
- Output material size adjustable
- Energy-efficient size reduction
- Essential parts of the machine wear-protected and exchangeable
- Low-maintenance and service-friendly

Technical features

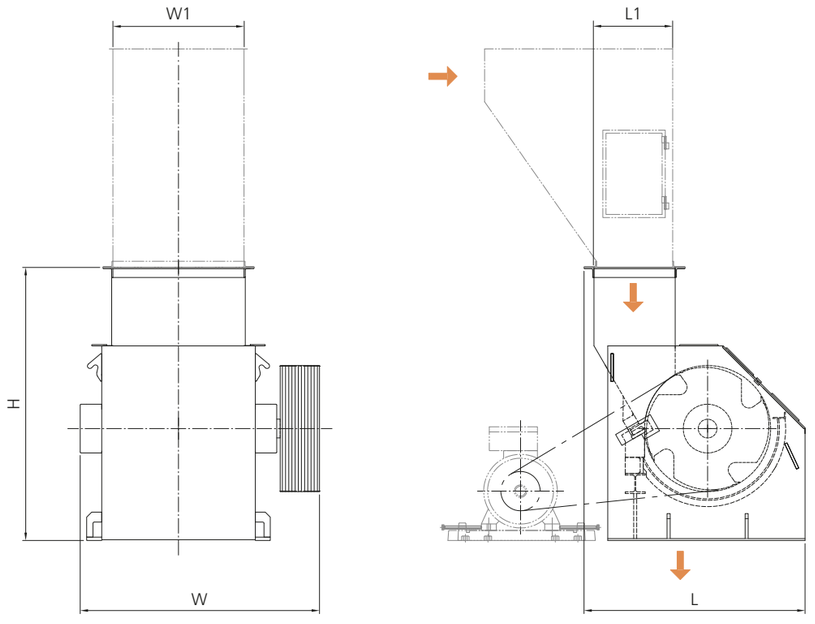
- Large vertical infeed hopper
- Chipping rotor in heavy-duty execution with wear protection
- Counter knife of high-quality special steel, regrindable and adjustable
- Narrow gap between the rotor and counter-knife, precise adjustable
- Easy access to the rotor for maintenance



SMV Cutting Rotor / Rechipper

Type Rotor / Infeed opening mm Ø / L1 × W1	Main drive kW	Capacity[1] t/h b.d.	Dimensions[2] m (L × W × H)	Weight[2] approx. t
SMV 450 / 200 × 650	22–55	1–4	0.8 × 1.0 × 1.1	1.9
SMV 600 / 300 × 650	45–90	2–6	1.1 × 1.0 × 1.4	2.6
SMV 800 / 350 × 800	55–132	4–8	1.5 × 1.2 × 1.9	4.2
SMV 1000 / 400 × 1000	90–200	6–13	1.8 × 1.4 × 2.2	6.3

1) Depending on input and size of output material
2) Dimensions and weight of basic machine without main motor and infeed hopper



MAIER® MGB Big Crusher

Application

- Panel boards (PB, MDF, OSB)
- Recycling
- Biomass and renewable fuels
- Combustion (energy from waste)

Description

The MAIER MGB Big Crusher is the ideal solution for the reduction of large-volume and bulky wooden material or other brittle residues.
Material is directly fed through the large infeed hopper, crushed between a slow rotating, large, toothed roller and aggressive crushing bars at the bottom of the crushing chamber.

Customer benefits

- Wide range of input material, from waste wood, railway ties, pallets and furniture to root stumps and electronic waste
- Output material: 100–500 mm, adjustable
- Insensitive against impurities and contaminations
- Robust, long-term reliable, low energy consumption and operating costs
- Easy overfloor installation

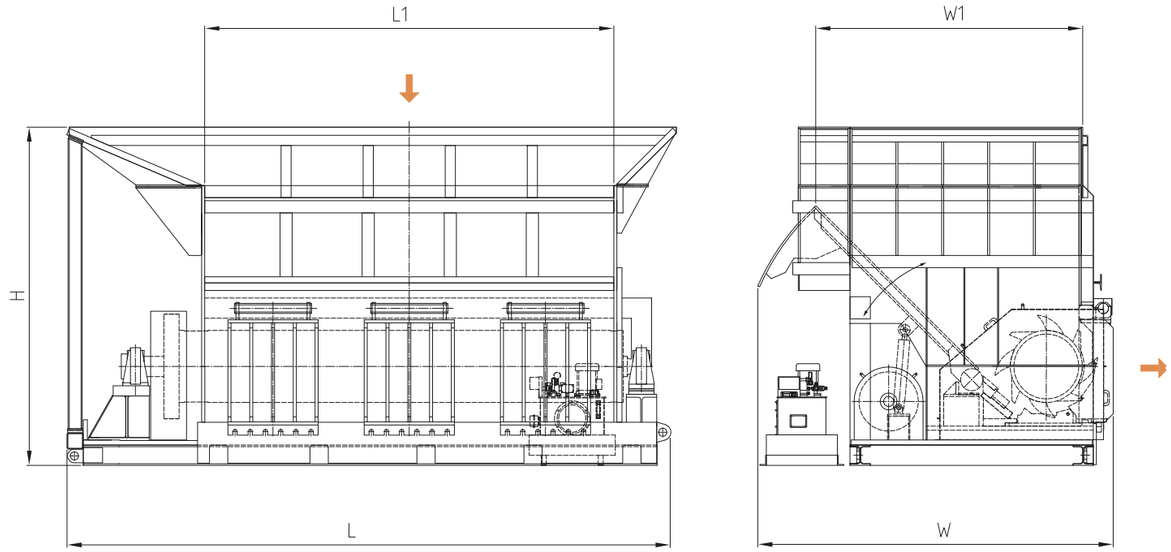
Technical features

- Large-volumed infeed hopper; available with hydraulically swiveling side wall
- Single-shaft-principle; power transmission to the crusher roller by electro-mechanical power train with hydro clutch
- Wear-protected crushing teeth at the crusher roller, individually shaped, can be re-armored when worn
- Easily exchangeable crushing bars with aggressive edges
- Discharge grate, segmented, in manually movable or hydraulically supported execution

MGB Big Crusher

Type[1] Power/Length kW/mm L1	Rotor[2] mm Ø	Rotor speed rpm	Main drive kW	Capacity[3] t/h b.d.	Hopper volume m^3	Hopper cross section m (L1 × W1)	Machine dimensions[4] m (L × W × H)	Weight approx.[4] t
MGB 32/3000	815	24	132	15–20	15	3.0 × 2.8	4.8 × 3.3 × 3.3	30
MGB 132/4000	1,025	24	132	20–25	20	4.0 × 2.8	5.8 × 3.3 × 3.3	35
MGB 160/4000	1,025	24	160	25–35	20	4.0 × 2.8	5.8 × 3.3 × 3.3	35
MGB 200/4000	1,025	21	200	35–40	20	4.0 × 2.8	5.8 × 3.3 × 3.3	35
MGB 200/5000	1,025	21	200	40–50	25	5.0 × 2.8	6.8 × 3.6 × 3.3	40

1) Individual machine sizes and motor power upon request
2) Varying depending on number and type of teeth
3) Depending on input and size of output material
4) Dimensions of basic machine with main motor and infeed hopper



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MAIER® SRH Beating Rotor

Application

- Combustion (energy from waste)
- Recycling
- Panel boards (PB, MDF, OSB)

Description

The SRH Beating Rotor is a reliable machine for the production of chips from recycled materials and brittle residues.

The material is gripped horizontally by special toothed infeed rollers and rushed with high kinetic energy between the fast rotating heavy beaters and the counter knife. The crushed material is further homogenized to the required size at the refractioning grid.

Customer benefits

- Wide range of input material, from industrial waste wood, pallets, reclaimed timber to saw mill residues and presorted recyclables
- Output material size individually adjustable
- Energy-efficient size reduction
- Insensitive to impurities
- Essential parts of the machine wear-protected and easily exchangeable

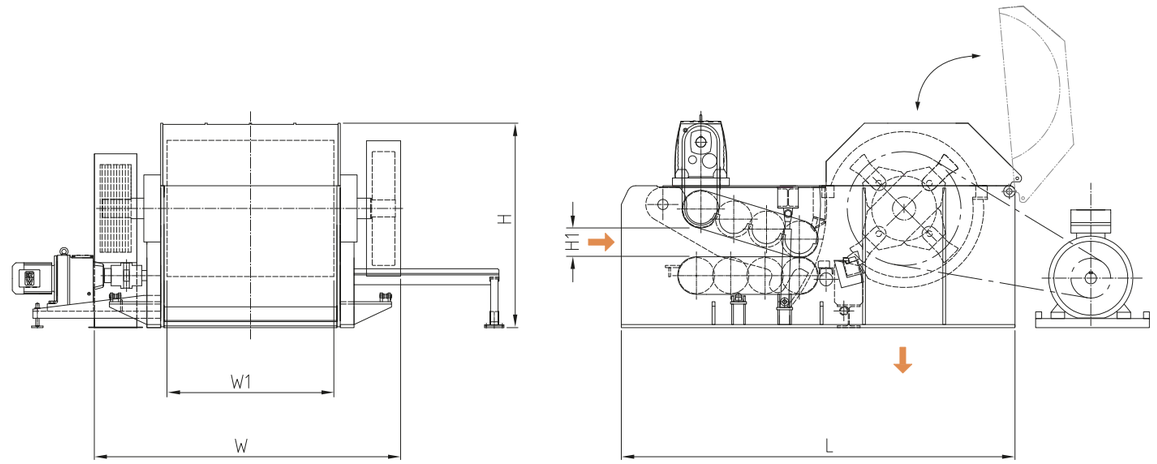
Technical features

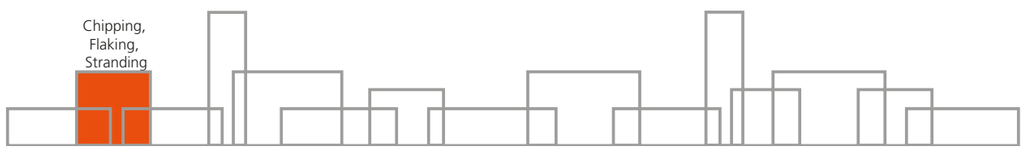
- Aggressively shaped infeed rollers with narrow running gaps
- Pendulum mounted heavy beaters, individually adapted, once turnable (see detail photo above)
- Rotor beaters and beater axes mounted in bushings
- Counter knife screw-fastened, regrindable, once turnable
- Wear-resistant refractioning grid, perforation individually adapted

SRH Beating Rotor

Type Rotor/Infeed opening mm Ø / H1 × W1	Main drive kW	Infeed roller drive (upper/lower) kW	Capacity[1] t/h b.d.	Dimensions[2] m (L × W × H)	Weight[2] approx. t
SRH 600 / 200 × 1000	75–110	2.2/2.2	3–5	1.6 × 1.4 × 1.1	5
SRH 1000 / 350 × 1000	110–160	5.5/7.5	5–10	2.6 × 1.4 × 1.7	10
SRH 1200 / 350 × 1300	250–315	5.5/7.5	10–35	3.5 × 1.7 × 1.8	16
SRH 1600 / 600 × 1500	315–450	9.2/11	30–55	4.8 × 3.1 × 2.6	28

1) Depending on input and size of output material
2) Dimensions and weight of complete machine without main motor





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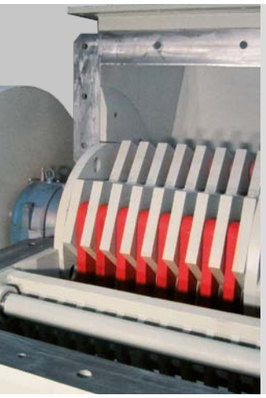


MAIER® SRV Beating Rotor

Application

- Combustion (energy from waste)
- Recycling
- Panel boards (PB, MDF, OSB)

Description

The SRV Beating Rotor is a cost-effective solution for the production of chips from pre-crushed recycling materials and brittle residues.
The material is fed through the large vertical hopper, crushed with high kinetic energy between the fast rotating heavy rotor beaters and the impact plate.
The crushed material is further homogenized to the required size by the refractioning grid.

Customer benefits

- Wide range of input material, from industrial waste wood, pallets, reclaimed timber to saw mill residues and presorted recyclables
- Output material size adjustable
- Energy-efficient size reduction
- Insensitive to impurities
- Essential parts of the machine wear-protected and exchangeable

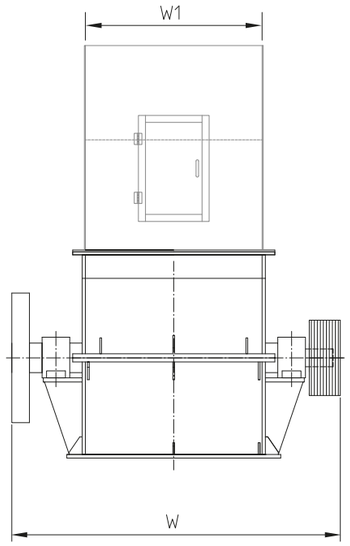
Technical features

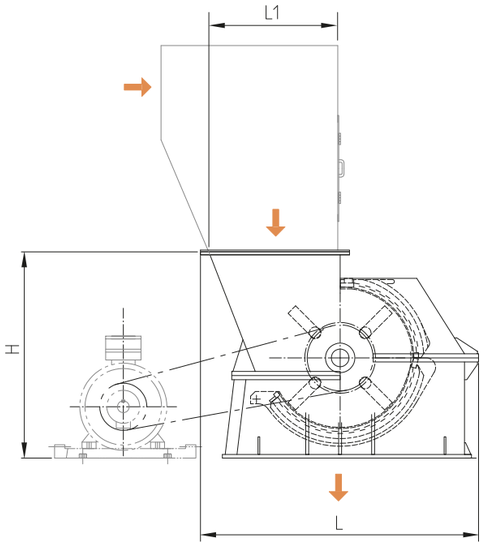
- Large vertical infeed hopper
- Pendulum-mounted heavy rotor hammers, individually adapted, once turnable
- Rotor beaters and beater axes mounted in bushings
- Exchangeable impact plate of wear-resistant special steel
- Wear-resistant refractioning grid, perforation individually adapted

SRV Beating Rotor

Type Rotor/Infeed opening mm Ø / L1 × W1	Main drive kW	Capacity[1] t/h b.d.	Dimensions[2] m (L × W × H)	Weight[2] approx. t
SRV 600 / 300 x 650	75–110	1–3	1.1 × 1.5 × 1.0	2.3
SRV 800 / 300 x 700	75–132	3–6	1.7 × 1.3 × 1.2	4.5
SRV 1000 / 700 x 1200	110–160	6–10	2.6 × 2.6 × 1.6	8.0
SRV 1200 / 850 x 1500	160–250	10–15	2.7 × 3.1 × 1.8	12.0
SRV 1200 / 850 x 2000	250–315	15–25	2.7 × 3.6 × 1.8	16.0
SRV 1600 / 850 x 2000	400–630	25–40	3.2 × 3.6 × 2.4	20.0

1) Depending on input and size of output material
2) Dimensions and weight of basic machine without main motor and infeed hopper





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MAIER® ClassiSizer

Application

- Particleboards
- Pellets and briquettes
- Biomass and renewable fuels (e.g., substrates for biogas production)
- Dust for combustion (energy and heat generation)
- WPC/WFC
- Recycling (wood and non-wood)
- Refuse-derived fuel (RDF)

Description

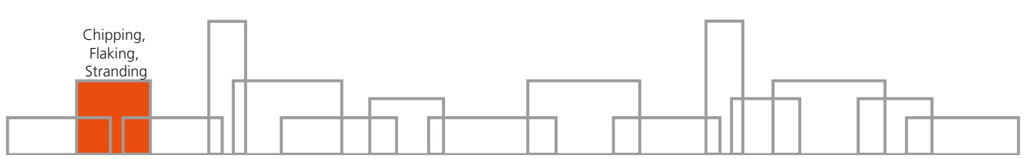
The ClassiSizer reduces input materials to the desired particle size in one step. The material is fed from above into the impact chamber where it is resized with high kinetic energy by the fast rotating rotor and interaction of the particles. The final calibration of material is realized by screens, perforated according to the application. The endproduct is collected in two discharge boxes and fed out by screws.

Customer benefits

- Input material ranging from small wooden particles to offcuts
- Feeding of inhomogeneous material mix possible
- Variable particle size and geometry of final material due to use of screens with different mesh sizes
- Energy-efficient size reduction due to impact technology (high kinetic energy)
- Easy maintenance due to direct access to the impact chamber
- Essential parts of the machine wear protected and easy exchangeable

Technical features

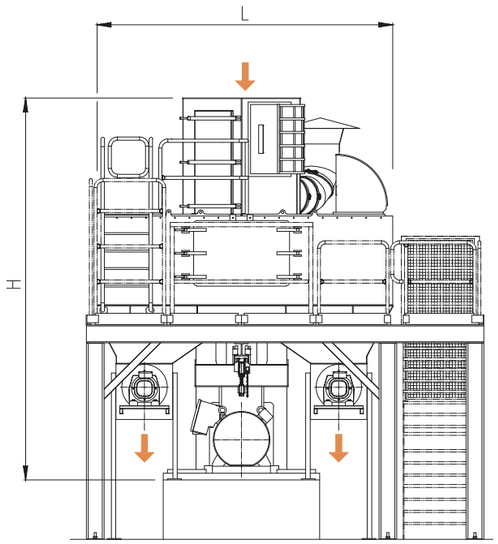
- Polygonal design of the impact chamber with wear-resistant flat screens for optimal impact effect, easy exchange of individual screen segments
- Rotor with impact elements; different adjusting angle and shape of impact elements depending on application
- Different drive concepts (direct drive, drive via gear box), according to the application
- Fulfillment of ATEX requirements due to different safety concepts (Q-boxes or explosion vans)
- Stand-alone unit; on-floor installation

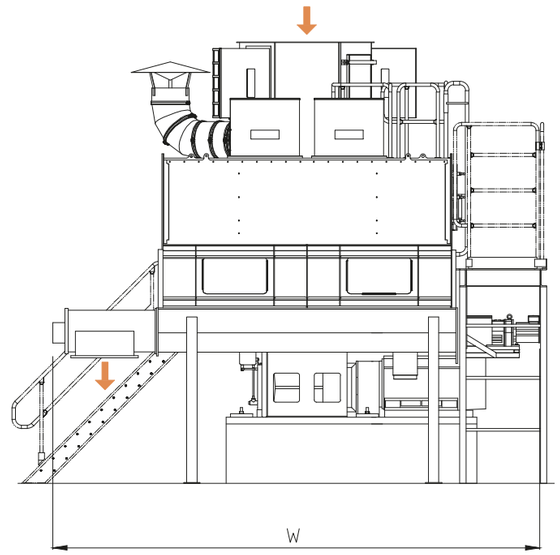


ClassiSizer—Dust Preparation

Type	Capacity[1] approx. t/h b.d.	Rotor beating diameter mm	Number of impact elements pcs.	Installed power[1] kW	Number of screens pcs.	Dimensions[2] m (L × W × H)	Weight[3] approx. t
CS 1200	1–1.5	1,100	10	132–250	12	3.0 × 5.5 × 4.1	14
CS 1600	2–3.5	1,500	10	250–355	16	3.7 × 6.2 × 4.9	28
CS 2000	3–5.0	1,860	12	355–630	14	4.1 × 6.6 × 5.2	36

1) Maximum values achieved when processing dry material (e.g., micro-chips, flakes, pre-crushed board residues) using 1.8 mm screens. Various screen perforations possible. Capacity depends on input and size of output material.
2) Dimensions of basic machine include screw conveyor without infeed chute and steelwork
3) Weight without motor and steelwork





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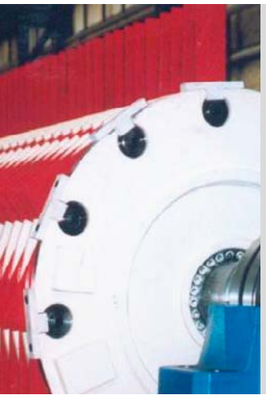
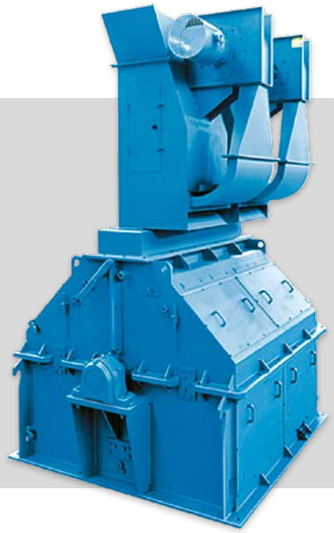




MAIER® MSZ Beating Flaker

Application

- Particleboards
- Recycling
- Pellets and briquettes
- Cement-bonded particleboards
- Pulp and paper
- Animal bedding
- Combustion (energy from waste)

Description

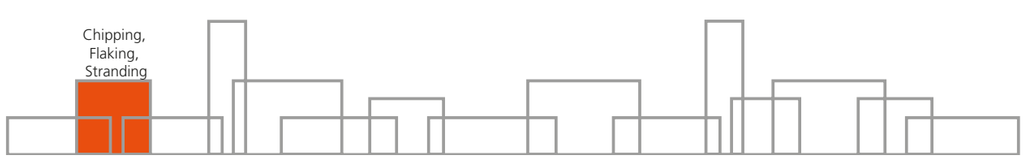
The MSZ Beating Flaker is a tried-and-trusted heavy-duty machine for effective processing of dry and wet wooden chips, shavings, pellets and renewable materials into slim quality flakes. After passing the VC Vibration Conveyor, the permanent magnet drum and the HPS Heavy Particle Separator, the material is milled and classified between the beaters of the fast rotating rotor and the alternately arranged grinding tracks and screens.

Customer benefits

- Adjustable fineness of final product, narrow particle size distribution
- Robust machine design, insensitive to impurities
- Easy and quick exchange of grinding tracks, screens and beaters
- Low wear and maintenance costs due to reverse operation; service-friendly
- High machine availability

Technical features

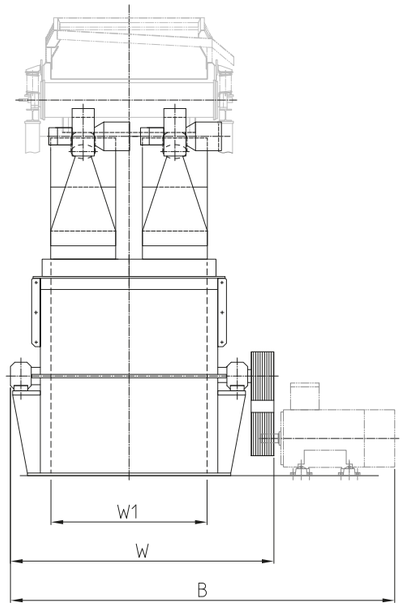
- Individually adapted screens and grinding tracks
- Pendulum mounted highly wear-resistant beaters that swivel in case of overload (machine protection)
- Easy exchange of rotor beaters and beater axes due to quick-change system
- Grinding tracks in divided execution; middle and lower grinding tracks laterally movable
- Optional hydraulic system for easier maintenance of screens and grinding tracks

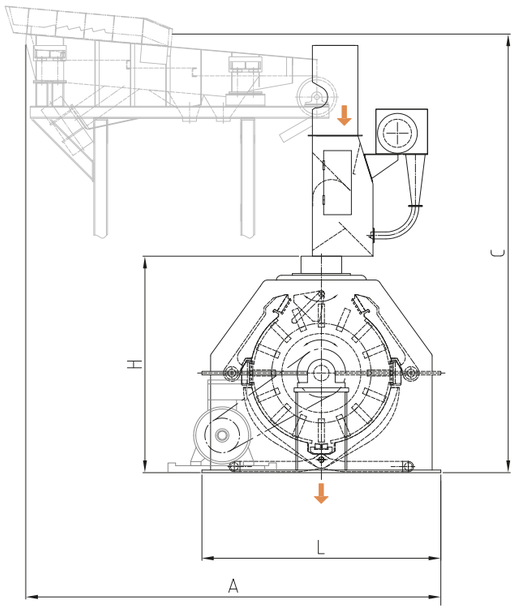


MSZ Beating Flaker

Type Rotor/Working width mm Ø / W1	Main drive kW	Capacity[1] t/h b.d.	Dimensions basic machine[2] m (L × W × H)	Dimensions complete system m (A × B × C)	Weight[2] approx. t
MSZ 800/600	75–110	1–2.5	2.0 × 1.8 × 1.8	2.9 × 2.2 × 4.1	3.5
MSZ 1000/1200	110–200	3–6	2.5 × 2.0 × 1.8	3.0 × 2.9 × 4.3	5.0
MSZ 1200/1600	200–315	5–9	2.7 × 2.5 × 2.0	3.1 × 4.2 × 4.6	8.0
MSZ 1200/2000	250–400	7–12	3.1 × 2.5 × 2.0	3.1 × 4.6 × 4.6	10.0
MSZ 1600/2000	355–500	10–18	3.1 × 2.8 × 2.4	3.1 × 4.8 × 4.9	15.0

1) Depending on input and size of output material
2) Dimensions and weight of basic machine without add-on units





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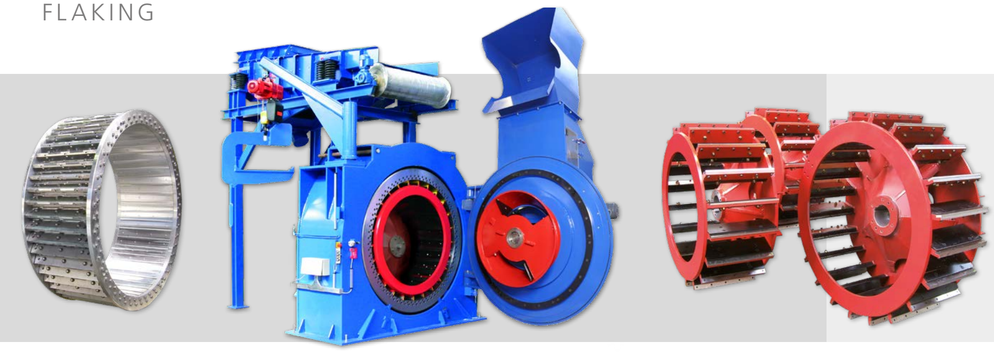
New design



MAIER® MRZ / MRZ HS
Knife Ring Flaker

Application

- Particleboards
- Pellets and briquettes

Description

The MRZ Knife Ring Flaker is a high-performance machine for the production of high-quality flakes. The MRZ HS High Speed enables the production of fine-cut flakes from micro-chips and lightweight materials on the dry or wet side.

After passing the VC Vibration Conveyor, the permanent magnet drum and the HPS Heavy Particle Separator, the chips are distributed in three dimensions (3D) across all areas of the flaking chamber by the unique FlowOptimizer. Finally, the fast-rotating main rotor guides the chips to the knives of the static knife ring where the chips are cut into flat, uniform high-quality flakes.

Customer benefits

- Optimized homogenous use of the complete knife ring width and circumference due to unique FlowOptimizer
- Constant uniform high-quality flakes, thickness from 0.3 mm, adjustable
- Customized machine executions for special applications (e.g., low density or homogenous boards) and different wood species (e.g., soft wood)
- Energy-efficient flaking with 12–20 kWh/t b.d.
- Essential parts of the machine wear-protected and easily exchangeable; high machine availability
- High-quality boards with optimum mechanical and optical properties

Technical features

- Optimized cutting conditions due to narrow gap between static exactly centered knife ring and rotor with precise bearing system, operating on one-shaft principle
- Improved knife ring design: optimized number of knives, free flake discharge channel, minimized number of wear parts
- Different knife ring and rotor designs possible; cutting speed from 45 up to 110 m/sec
- Unique FlowOptimizer technology for improved 3D material distribution
- MSA Automatic Knife Ring Grinding System (see page 62) and MRM Knife Ring Cleaning Machine (see page 60) for efficient maintenance available

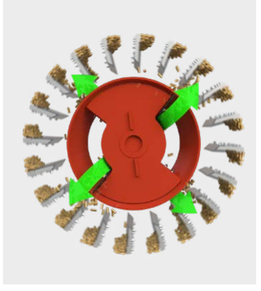
FlowOptimizer—developed to improve material feeding

The uneven material distribution in the flaking chamber is a well-known problem of the state-of-the-art knife ring flaker systems in the market. As a result, the total installed knife length cannot always be used evenly, causing uneven wear of the flaker components responsible for the cutting conditions and flake quality.

The new developed FlowOptimizer solves this problem with using "3D distribution technology," which ensures the optimum material distribution over both the complete knife ring width (knife length) and also the entire knife ring circumference.

The FlowOptimizer is a special distribution rotor integrated into the flaking chamber. The axially blown-in chips enter the inner chambers of the distribution rotor, are set into rotation, and are then guided via centrifugal forces through the openings at the front and rear of the system, towards the main rotor. This achieves optimum material distribution in the flaking chamber, allowing the uniform use of the total installed knife length.

Even material distribution over the complete knife ring width



Homogenous material distribution over the entire knife ring circumference

Optimum material distribution over the total installed knife length

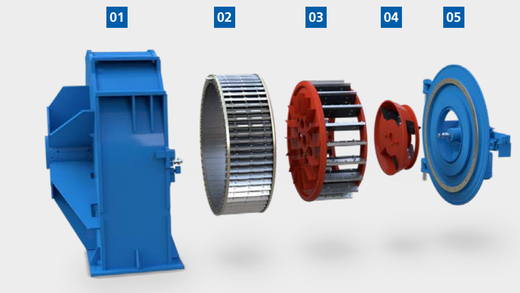
Benefits:

Optimization of flake quality and reduction of operating costs per ton of material produced.

- Increased flaker throughput by up to 25 % and extended service life of wear parts by up to 20 % by optimum use of the total installed knife length
- Improved flake quality by optimized adjustment of the flaking parameters due to uniform wear on the rotor and knife ring components (wear parts)
- Less regrinding of the cutting knives and rotor knives
- Reduced energy consumption by up to 20 % by optimum cutting conditions over a greater period of time
- Easy adaptation to different input materials and production conditions by adjusting the FlowOptimizer and varying its rotation speed

Easy Retrofit

- The FlowOptimizer is mounted with bearings in the flaker door. This makes the retrofitting of existing machines very simple: Only the door with the installed distribution rotor and newly designed heavy particle separator must be replaced.

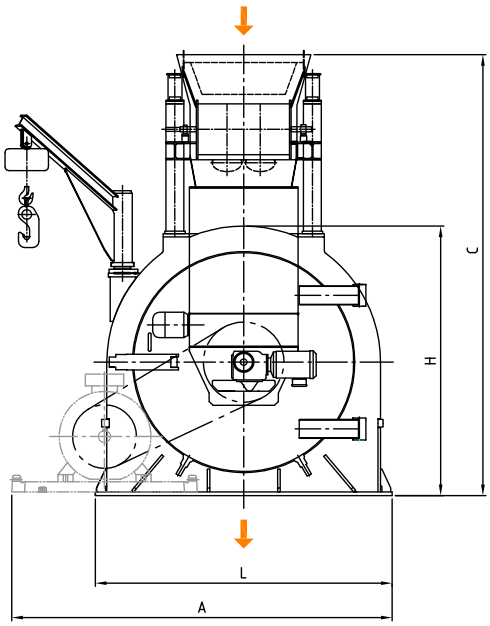


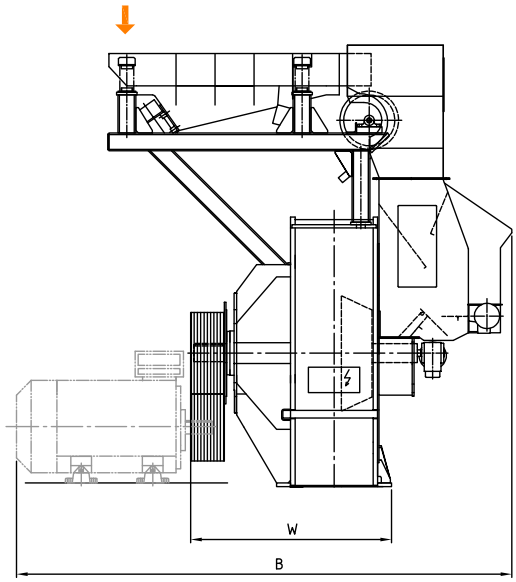
01 Machine casing
02 Knife ring
03 Main rotor
04 FlowOptimizer
05 Machine door

MRZ / MRZ HS Knife Ring Flaker

Type Ring mm Ø	Number of knives pcs.	Length of knife mm	Total knife length m	Number of rotor blades pcs.	Main drive kW	Capa-city[1] t/h b.d.	Self-propelled air volume[2] m³/h	Dimensions basic machine[3] m (L × W × H)	Dimensions complete system m (A × B × C)	Weight[3] t
MRZ 1200	50	464	23.2	18	160/200	4–12	8,000–11,000	2.2 × 1.5 × 1.9	2.9 × 3.8 × 3.3	6
MRZ 1400	60	464	27.8	21	250/315	6–17	9,000–14,000	2.4 × 1.5 × 2.1	3.1 × 4.1 × 3.5	8
MRZ 1500	64	548	35.1	23	315/355	7–19	11,000–15,000	2.5 × 1.7 × 2.4	3.3 × 4.5 × 3.7	9
MRZ 1600	72	648	46.7	25	355/400	8–23	12,000–16,000	2.9 × 1.8 × 2.5	3.4 × 4.6 × 3.9	10

1) Depending on input material and flake thickness
2) Depending on rotor design and rotor speed
3) Dimensions and weight of basic machine with V-belt pulley on machine side without add-on units





MAIER® MSF-PB Strand Flaker

Application

Particleboards

Description

The MSF-PB Strand Flaker is used in the particleboard manufacturing for the production of optimized core layer flakes. These flakes enable the production of boards with improved mechanical properties or reduced density.

After passing the VC Vibration Conveyor, the permanent magnet drum and the HPS Heavy Particle Separator, the macro-chips are distributed in three dimensions (3D) across all areas of the flaking chamber by the unique FlowOptimizer. Finally, the specially designed rotor guides the macro-chips to the knives of the adapted static knife ring, where they are reliably cut into the required slender flakes.

Customer benefits

- High-quality particleboards with improved mechanical properties or reduced density
- Reliable production of optimized core layer flakes
- Optimal homogenous use of the complete knife ring width and circumference due to unique FlowOptimizer
- Essential parts of the machine wear-protected and easy exchangeable; high machine availability
- Reduction of production costs

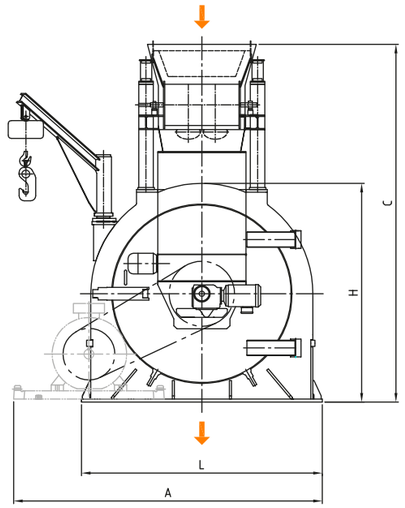
Technical features

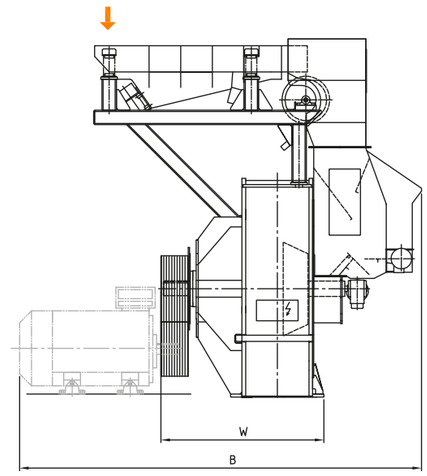
- Special rotor and knife ring design for receipt of required slender flakes
- Optimized cutting conditions due to narrow gap between static knife ring and rotor with precise bearing system, operating on one-shaft principle
- Unique FlowOptimizer technology for improved 3D material distribution
- Casing geometry adapted for required application
- Adjustable flake thickness

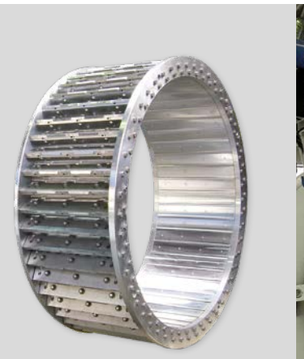
MSF-PB Strand Flaker

Type Ring mm Ø	Number of knives pcs.	Length of knife mm	Total knife length m	Number of rotor blades pcs.	Main drive kW	Capa-city[1] t/h b.d.	Self-propelled air volume[2] m³/h	Dimensions basic machine[3] m (L × W × H)	Dimensions complete system m (A × B × C)	Weight[3] t
MSF-PB 1200	50	464	23.2	12/18	160/200	4–8	7,000–9,000	2.3 × 1.6 × 2.1	2.9 × 3.5 × 3.4	6.7
MSF-PB 1400	60	464	27.8	14/21	250/315	5–11	9,000–12,000	2.5 × 1.6 × 2.3	3.2 × 3.7 × 3.5	8.7
MSF-PB 1500	64	548	35.1	15/23	315/355	6–13	11,000–14,000	2.6 × 1.8 × 2.5	3.3 × 4.0 × 3.8	9.7
MSF-PB 1600	72	648	46.7	16/25	355/400	7–15	12,000–15,000	3.0 × 1.9 × 2.7	3.5 × 4.2 × 4.0	10.7

1) Depending on input material and flake thickness
2) Depending on rotor design and rotor speed
3) Dimensions and weight of basic machine with V-belt pulley on machine side without add-on units







MAIER® MSF Strand Flaker

Application

OSB, SSB and other panel applications

Description

The MSF Strand Flaker enables the energy-efficient continuous production of high-quality strands for OSB from greenwood and pre-cleaned recycling maxi-chips.
After passing the VC Vibration Conveyor, the permanent magnet drum and the infeed hopper, the maxi-chips are guided by the heavy-duty rotor to the static knife ring and cut into uniform flat strands.

Customer benefits

- High-quality OSB by using maxi-chips from low-cost wood assortments (cripple wood, pre-cleaned recycling wood, etc.)
- Energy-efficient strand-flaking
- Fast and easy knife ring exchange
- High machine availability
- Cost-efficient solution for entering OSB markets and gradually increasing existing production capacities

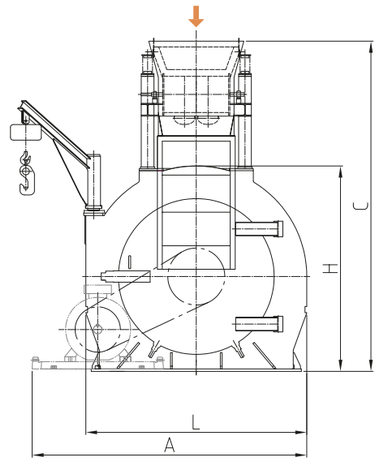
Technical features

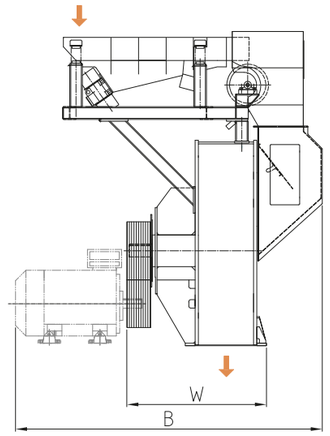
- Processing of maxi-chips (80–140 mm)
- Adjustable strand thickness
- Optimized strand discharge channel and knife-holder geometry
- Rotor and knife ring specially designed for optimal material distribution and strand quality
- Static reinforced knife ring with optimized number of knives
- VC Vibration Conveyor (see page 68) included

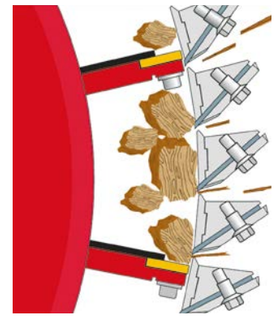
MSF Strand Flaker

Type Ring mm Ø	Length of knife mm	Number of knives pcs.	Total knife length m	Number of rotor blades pcs.	Main drive kW	Capa-city[1] t/h b.d.	Self-propelled air volume m³/h	Dimensions basic machine[2] m (L × W × H)	Dimensions complete system m (A × B × C)	Weight[2] approx. t
MSF 1400	464	60	27.8	7	250/315	4–10	8,000–10,000	2.5 × 1.6 × 2.3	3.2 × 3.5 × 3.5	8.5
MSF 1500	548	64	35.1	9	315/355	5–12	10,000–13,000	2.6 × 1.8 × 2.5	3.3 × 3.8 × 3.8	9.5
MSF 1600	648	72	46.7	11	355/400	6–13.5	11,000–14,000	3.0 × 1.9 × 2.7	3.5 × 4.0 × 4.0	10.5

1) Depending on input material and flake thickness
2) Dimensions and weight of basic machine with V-belt pulley on machine side without add-on units







2-stage OSB technology

HRL-OSB Drum Chipper in combination with the MSF Strand Flaker for the production of OSB strands

HRL-OSB Drum Chipper

MSF Strand Flaker

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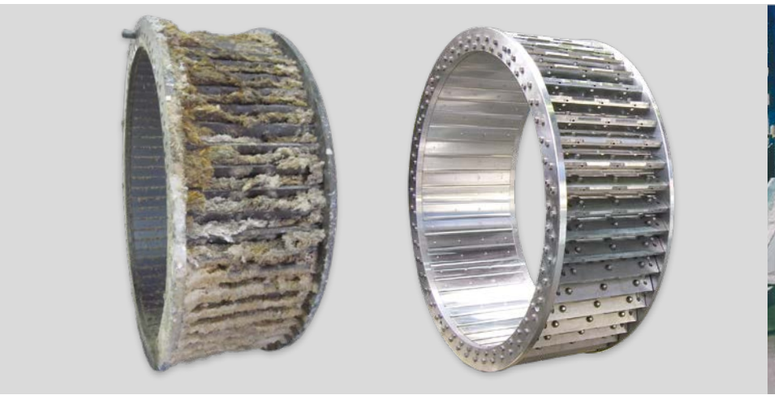


MAIER® MRM Knife Ring Cleaning Machine

Application

All industries using Knife Ring Flakers and MSF/MSF-PB Strand Flakers

Description

The MRM Knife Ring Cleaning Machine is an automated PLC-controlled system for economical and environmentally friendly cleaning of all common flaker knife rings. The machine includes the ring removal and rotating device as well as the high-pressure cleaning and drying system.

Customer benefits

- Highly efficient cleaning
- Easy, safe and clean maintenance of knife rings
- Reduction of maintenance time and operating costs
- Closed machine cabin for clean operation
- Installation without foundation possible

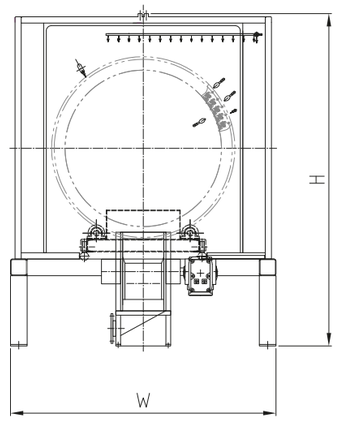
Technical features

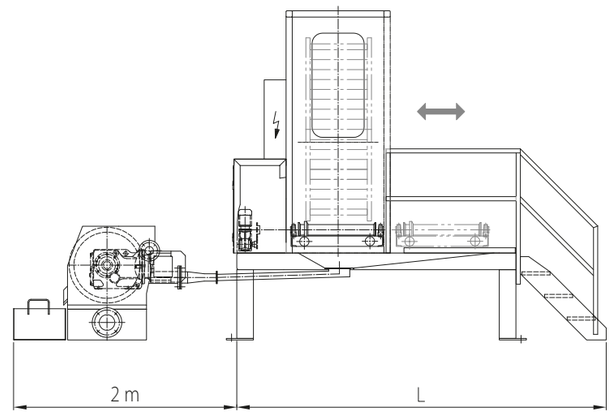
- High-pressure nozzles for optimal cleaning
- Uniform cleaning due to the rotating knife ring
- Short cleaning time
- Cleaning program adjustable by PLC control
- Integrated drying system

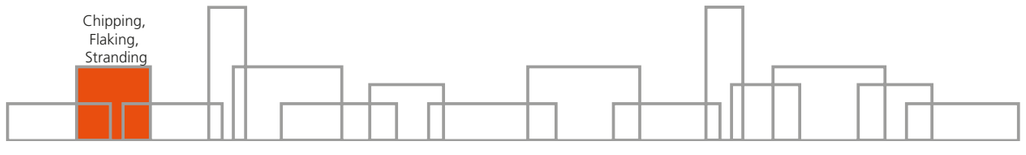
MRM Knife Ring Cleaning Machine

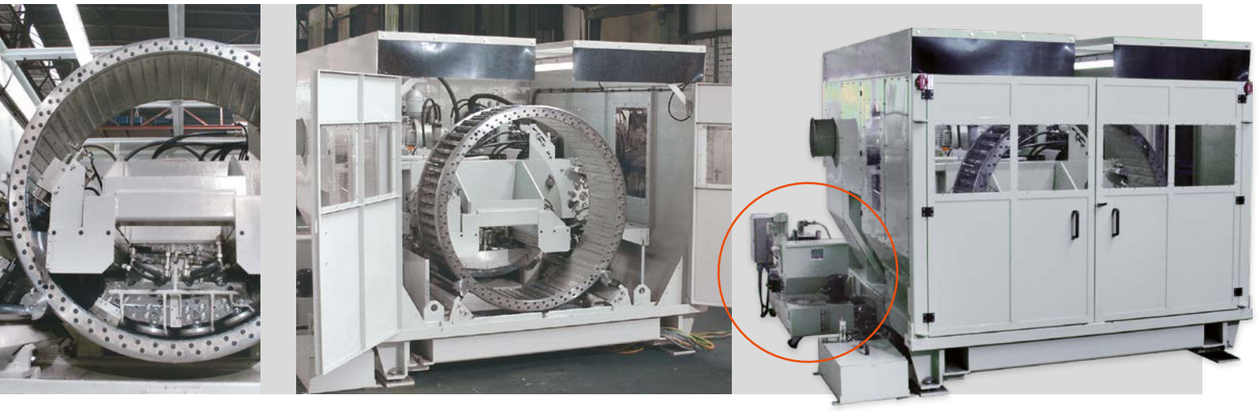
Type	Knife ring mm Ø	Knife ring cleaning time[1] min.	Dimensions[2] m (L × W × H)	Weight[2] approx. t
MRM 1400	1,400	15–25	3.2 × 2.3 × 3.0	2.3
MRM 1500	1,500	20–30	3.5 × 2.6 × 3.2	2.7
MRM 1600	1,600	25–35	3.8 × 3.0 × 3.5	3.1

1) Depending on the chosen cleaning program and the degree of the ring pollution
2) Dimensions and weight of complete machine with base frame









MAIER® MSA Automatic Knife Ring Grinding System

Application

All industries using Knife Ring Flakers and MSF/MSF-PB Strand Flakers

Description

The MSA Automatic Knife Ring Grinding System enables the automated PLC-controlled precise regrinding and adjusting of knives in all common types of knife rings.

Customer benefits

- Precise regrinding with adjustable relief angle
- Short regrinding time due to multi-disc grinding head
- Reduced operating costs
- Optimized flake quality due to precise and variable adjustment of knife protrusion
- Environmentally friendly due to emulsion cleaning system

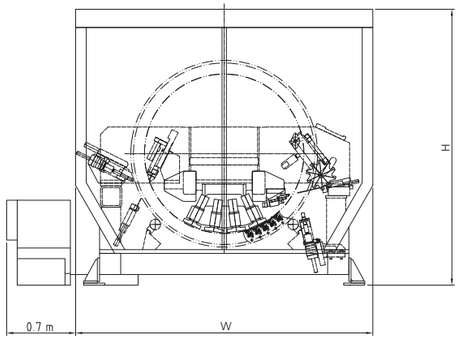
Technical features

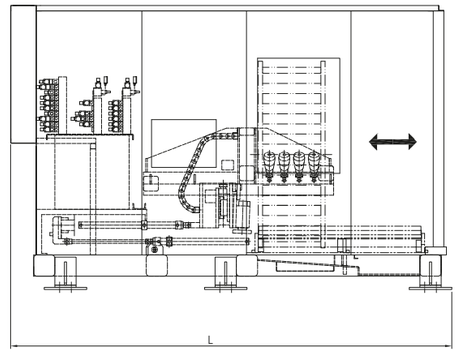
- Automatic identification of every knife ring due to coding
- Each process step, grinding speed and regrinding measure per stroke are individually adjustable
- Long-life grinding discs
- Cleaning system for grinding emulsion (see red marking above)
- Siemens PLC-control with comfort touch panel, remote maintenance unit and intuitive menu navigation for easy operation
- Recording of life cycle data of each knife ring

MSA Automatic Knife Ring Grinding System

Type	Knife ring mm Ø	Number of knives per knife ring pcs.	Regrindable knife angle °	Knife ring grinding time[1] min.	Dimensions m (L × W × H)	Weight approx. t
MSA 1400	1,400	60	35–42	45–50	3.8 × 2.7 × 2.5	7.5
MSA 1500	1,500	64	35–42	60–65	4.2 × 3.0 × 2.7	8.5
MSA 1600	1,600	72	35–42	70–75	4.6 × 3.3 × 2.9	9

1) Values, achieved by regrinding measure of 0.5 mm





MAIER® MPF Prallfiner

Application

- Surface layer production in particleboards
- Preparation of filling and insulation material
- Preparation of fuel for thermal utilization
- WPC/WFC
- Animal food and bedding

Description

The MPF Prallfiner enables the continuous processing of soft to medium-hard materials into slim fine flakes or wooden powder.
After passing the VC Vibration Conveyor, the permanent magnet drum and the HPS Heavy Particle Separator, the material is fed from the rear side into the grinding chamber where it is milled between the rotor beater ledges and the grinding track.
The final product is pneumatically discharged through the door (differentiation from MPM see page 66).

Customer benefits

- Wide range of input materials, including pre-sized wood, annual plants, pellets, grain and inorganic materials
- Production of mainly slim finest flakes, wood powder or dust
- Dry or humid input material
- Degree of fineness adjustable by baffle plate, rotor speed and air extraction volume (bypass-valve)
- Low maintenance and service-friendly
- On-floor installation; pneumatic product discharge through the door

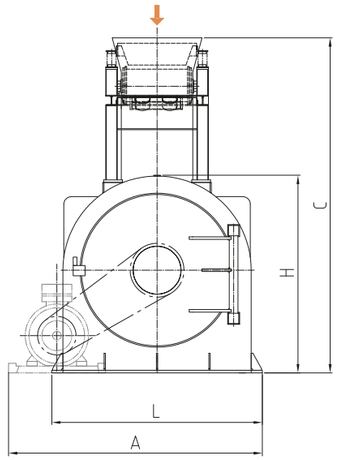
Technical features

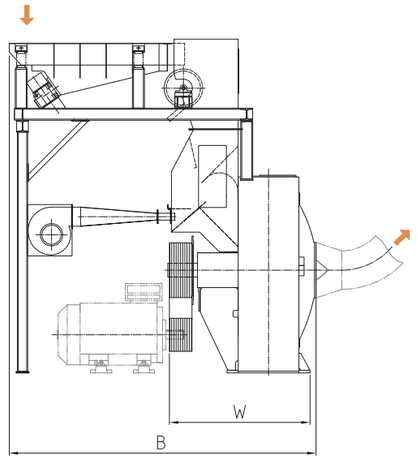
- Grinding track segments and their configuration adaptable to the input material
- Wear-resistant, clamped and easily exchangeable grinding track segments
- Complete grinding ring easily removable
- Divided beater ledges for selective exchange of worn parts
- Maintenance opening in casing for easy exchange of the rotor beater ledges
- Insensitive to impurities, no screens
- VC Vibration Conveyor (see page 68) included

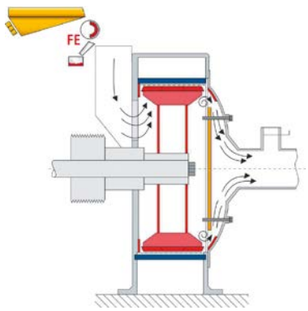
MPF Prallfiner

Type	Rotor mm Ø	Number of beater ledges pcs.	Number of grinding tracks pcs.	Width of grinding track mm	Main drive kW	Capacity[1] t/h b.d.	Dimensions basic machine[2] m (L × W × H)	Dimensions complete system m (A × B × C)	Weight[2] approx. t
MPF 9/430	900	18	9	430	90–132	1.0–2.0	1.5 × 1.2 × 1.3	2.7 × 2.2 × 2.6	2.0
MPF 12/430	1,200	24	15	430	110–160	2.0–3.0	1.8 × 1.5 × 1.7	2.7 × 2.6 × 3.6	2.5
MPF 14/550	1,400	30	20	550	250–315	3.0–5.0	2.3 × 1.9 × 2.2	3.0 × 3.0 × 3.8	5.5
MPF 16/550	1,600	36	22	550	250–400	5.0–6.5	2.4 × 2.0 × 2.3	3.3 × 3.2 × 4.0	7.0
MPF 18/700	1,800	40	30	700	315–500	6.5–8.0	2.7 × 2.1 × 2.5	3.3 × 3.5 × 4.0	8.0

1) Maximum values achieved when processing flat flakes of coniferous wood
2) Dimensions and weight of basic machine with V-belt pulley on machine side without add-on units
Note: The MPF is exhausted with approx. 4 m^3 air per kg material.







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MAIER® MPM Impact Mill

Application

- Surface layer production in particleboards
- Preparation of filling and insulation material
- Preparation of fuel for thermal utilization
- WPC/WFC
- Animal food and bedding

Description

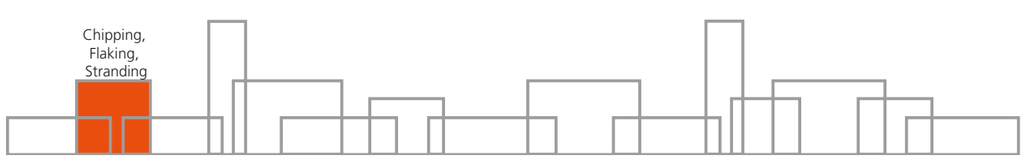
The MPM Impact Mill enables the continuous processing of soft to medium-hard materials into cubic fine flakes or wooden powder.
After passing the VC Vibration Conveyor, the permanent magnet drum and the HPS Heavy Particle Separator, the material is fed from the rear side into the grinding chamber where it is milled between the rotor beater ledges and the grinding track.
The material is finally reduced and calibrated by the integrated special fine hole screen (differentiation from MPF see page 64).

Customer benefits

- Wide range of input materials, including pre-sized wood, annual plants, grain, seeds and spices
- Adjustable degree of material fineness
- Fast screen exchange without removing the complete grinding ring
- Low maintenance and service-friendly
- On-floor or pit installation; pneumatic product discharge laterally or downwards possible

Technical features

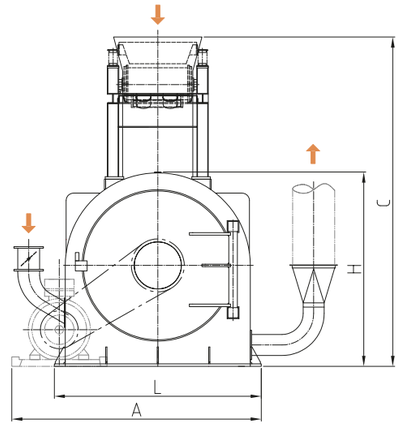
- Grinding track segments and their configuration adaptable to the input material
- Wear-resistant, clamped and easily exchangeable grinding track segments
- Special fine hole screens with different mesh sizes applicable
- Divided beater ledges for selective exchange of the worn parts
- Maintenance opening in casing for easy exchange of the rotor beater ledges
- Easy screen-granding ring removal with suspension or hydraulic device according to machine size
- VC Vibration Conveyor (see page 68) included

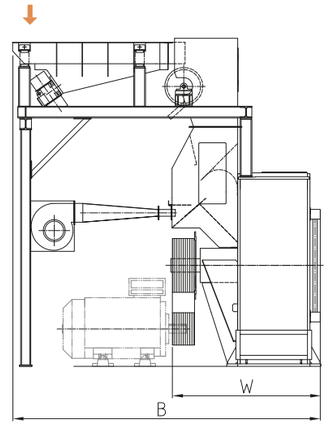


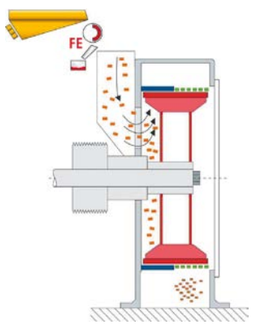
MPM Impact Mill

Type	Rotor mm Ø	Number of beater ledges pcs.	Width of sieve ring mm	Width of grinding track mm	Main drive kW	Capacity[1] t/h b.d.	Dimensions basic machine[2] m (L × W × H)	Dimensions complete system m (A × B × C)	Weight[2] approx. t
MPM 9 /175	900	18	230	175	90–132	2.0–2.5	1.5 × 1.1 × 1.3	2.7 × 2.1 × 2.6	1.8
MPM 12 /175	1,200	24	230	175	110–160	2.5–3.0	1.8 × 1.4 × 1.7	2.7 × 2.5 × 3.6	2.3
MPM 14 /175	1,400	30	390	175	160–200	3.0–4.0	2.3 × 1.7 × 2.2	2.7 × 2.9 × 3.8	3.8
MPM 14 /350	1,400	30	340	350	315–400	4.0–5.5	2.3 × 1.8 × 2.2	2.7 × 3.3 × 3.8	5.3
MPM 16 /350	1,600	36	360	350	355–450	5.5–6.5	2.5 × 1.9 × 2.3	3.0 × 3.3 × 3.9	6.5
MPM 18 /350	1,800	40	350	350	400–500	6.5–7.5	2.7 × 2.0 × 2.5	3.2 × 3.3 × 4.0	8.0

1) Maximum values achieved when processing flat flakes of coniferous wood using a 3 mm special fine hole screen insert
2) Dimensions and weight of basic machine with V-belt pulley on machine side without add-on units
Note: The MPM is exhausted with approx. 4 m³ air per kg material







MAIER® VC Vibration Conveyor

Application

Single machine feeding and/or screening in:
- Panel boards (PB, MDF, OSB)
- WPC/WFC
- Recycling
- Biofuel
- Pellets and briquettes

Description

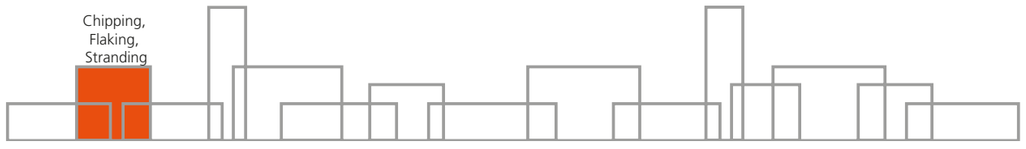
The VC Vibration Conveyor enables the continuous feeding of various bulky materials. According to the required applications, such as single machine feeding (e.g., MRZ, MSF, MSZ, MPM, MPF, et al.), combined feeding with screening, or stand-alone screening device, different executions and sizes are available.

Customer benefits

- Vibrating speed freely adjustable
- Increased machine performance by homogenized feeding
- Integrated screening of fines, oversizes or other fractions possible (optional)
- Low energy consumption
- Low maintenance and service-friendly

Technical features

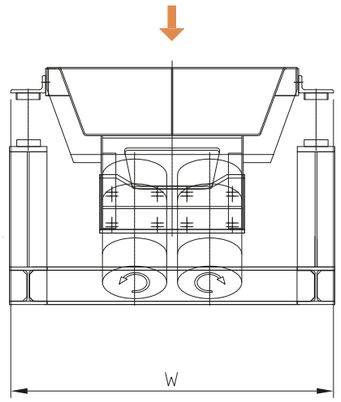
- Trough supported by steel springs, variable inclination angle
- Combination with magnet drum and HPS Heavy Particle Separator possible
- Driven by unbalanced motors
- Execution with easily exchangeable screens available
- Dust cover for clean operation available

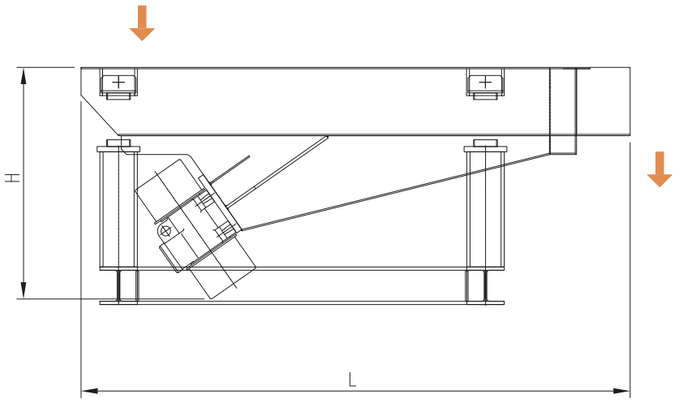


VC Vibration Conveyor

Type[1] Working width/length mm	Drive kW	Dimensions[2] m (L × W × H)	Weight t
VC 500 / 1500	2 × 0.6	1.6 × 1.1 × 0.9	0.2
VC 650 / 2000	2 × 0.6	2.1 × 1.3 × 0.9	0.3
VC 900 / 2000	2 × 0.6	2.1 × 1.5 × 0.9	0.4
VC 1200 / 3600	2 × 2.2	3.7 × 1.9 × 1.5	1.3
VC 1800 / 3600	2 × 2.2	3.7 × 2.5 × 1.6	1.5

1) Standard execution; optional with special fine hole screen or with special fine hole and oversize screen available
2) Individual dimensions on customer request





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BIVITEC Screen

- Dieffenbacher and Binder+Co signed a cooperation agreement in 2016 for the supply of Bivitec flip-flow screens. Binder+Co is a unique enterprise in the world of processing, e.g., screening. The expertise of both companies and the interplay of Bivitec screens and Dieffenbacher processing steps equip customers with excellent, fully customized solutions.

Application

- Dry strand screening in OSB production, particle cleaning in recycling wood process

Description

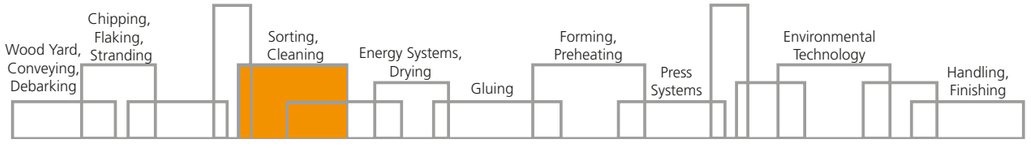
Using resonance, a driving mechanism provides two vibratory movements in which flexible polyurethane mats are expanded and compressed in turns. The material is separated at high acceleration. The dynamically excited screen mats thus remain free and allow efficient and economical screening.

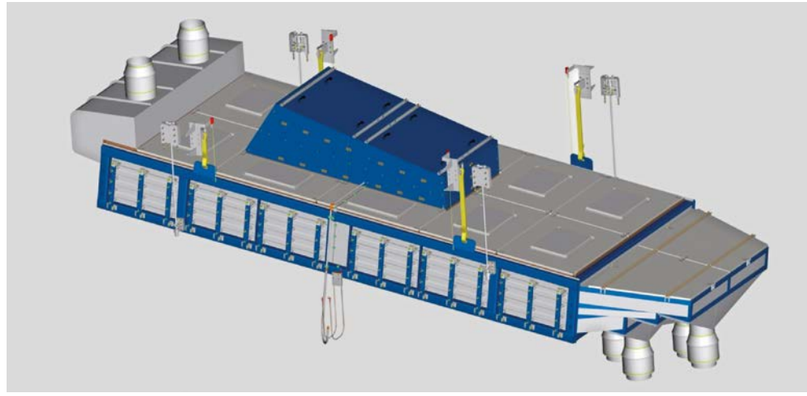
Customer benefits

- Highly effective fractioning
- Minimal cleaning effort
- Long lifetime of screen mats
- Low maintenance cost
- Efficient solution

Technical features

- E-motor, cardan shaft and a shaft with adjustable unbalanced mass
- Movement of left and right oscillating masses can be adjusted
- Speed and adjustment of the unbalanced masses can be individually adapted
- Vibratory characteristics can be adjusted by the number of rubber parts used
- Screens are made from punched polyurethane mats (no steel wire mesh material)
- Screwless fastening system of the screen mats
- Large variety of different screening outlet forms and widths





RS Oscillating Screen

Application

Dry flake screening in PB factories

Description

The RS Oscillating Screen is a cable-suspended screen, developed for the screening of dried flakes. It makes a horizontal oscillating movement and has an 8° inclination. The screen is available in two sizes and configured for the process requirements.

Customer benefits

- High screening efficiency
- Long frame lifetime
- Easy and quick change of screen nets
- Self-cleaning screen nets
- Light support structures

Technical features

- Drive system
- Screen nets for different fractions, with or without cleaning balls
- Cable-suspended frame with safety switches
- Discharge chutes
- Rupture disks
- Fire-extinguishing piping and nozzles
- ATEX classification: Category 1/3, according to Annex 1 of 94/9/EC used in Zone 20
- Central lubrication for main bearings
- Ball cleaning for fine screen mesh

RS Oscillating Screen

Type	Dimensions Screen body mm			Weight	Design		Capacity	
	length	width	height	kg	decks	fractions	kg/h	
RS 10 D-D	6,240	2,930	2,160	4,700	Double Deck	2	3,400	Dust
RS 17	8,720	4,000	2,160	9,400	Single Deck	3–4	15,000	Flakes

EVOscreen

Application

Dry flake screening in PB factories

Description

EVOscreen is developed specifically for producing high capacities. It is a cable-suspended design like many screens throughout the RS family. The screen is available in three sizes and configured for four or five fractions.

Customer benefits

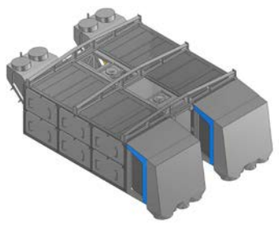
- Superb screening accuracy
- Long frame lifetime
- Easy and quick change of screen nets
- Self-cleaning screen nets
- Light support structures
- Indoor installation possible
- Outstanding safety standard
- Low investment cost
- Component dimensions fit into standard container

Technical features

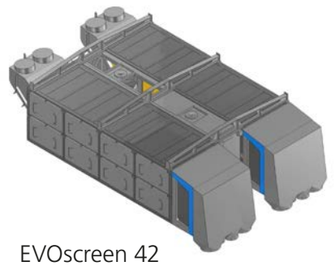
- Horizontal oscillating movement inclined at 8°
- Mechanical Inclination Change (MIC) option available
- Integrated Flameless Explosion Relief (IFER)
- Screen decks equipped with rupture disks for direct pressure relief installed at each screen deck
- Enclosure panels and doors made of sandwich panels
- Double drive system electronically synchronized
- Screen nets for different fractions, with or without cleaning balls
- Discharge chutes
- Rain covers for all weather conditions

EVOscreen

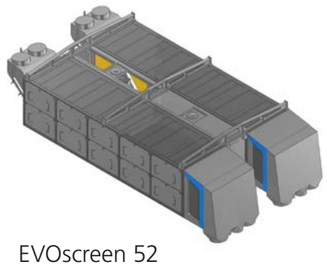
Type	Dimensions Screen body mm			Weight	Capacity at 5 m^3/m^2 and 120 kg/m^3	
	length	width	height	kg	kg/h	m^3/h
EVOscreen 32	4,860	5,180	2,094	10,800	19,200	160
EVOscreen 42	6,430	5,180	2,094	14,200	25,200	210
EVOscreen 52	8,000	5,180	2,094	17,500	31,200	260



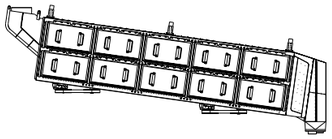
EVOscreen 32

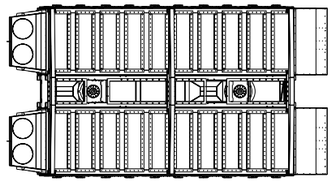


EVOscreen 42



EVOscreen 52





Optional Feature

Mechanical Inclination Change (MIC)

Customer benefits

- Electronically adjusted inclination according to the ongoing process demand provides highest screening efficiency

Technical features

- The range of inclination will be 6° – 8° – 10°
- Flow speed depends on angle and particle size
- Flow can be increased and decreased by 35 % to 44 % of nominal capacity (8° ± 2°)

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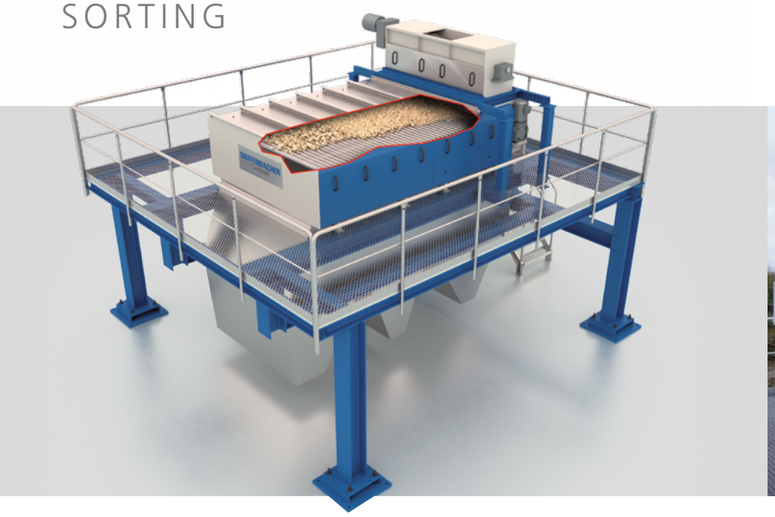


ClassiScreen

Application

- Panel board industry (PB, MDF)
- Pellet plants
- Wood recycling
- Energy generation

Description

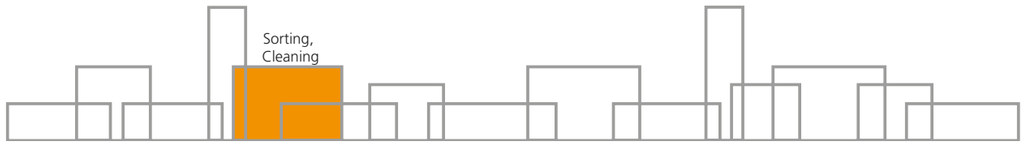
ClassiScreen classifies the material according to thickness by means of gaps between the ClassiRolls. Material is screened into predetermined fractions, including fines, flakes, mini chips, chips and oversized. The determination of fractions is done by adjustable gaps, roller pattern depth and rotation speed of the rolls. The screen is configured for the needs of the process.

Customer benefits

- Best screening accuracy with high-precision ClassiRolls
- Non-plugging, strong double-drive system
- Efficient thickness screening
- High capacity per screening area
- Low energy consumption, maintenance costs, dust emissions and noise level

Technical features

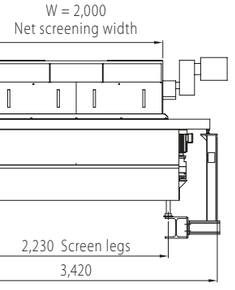
- ClassiRolls can be selected according to screening application:
  - *Standard Plus* for screening fresh wood and saw dust
  - *Dura* for screening contaminated wood
  - *DuraPlus* for screening highly contaminated material such as urban waste wood
- Various roll pattern depths available for different applications
- Disc rolls available for the separation of the bigger fractions
- Gaps between the rolls can be adjusted individually according to application requirements
- Roller rotation speed is adjusted by means of a frequency converter drive system

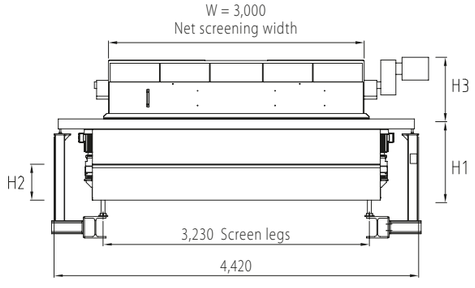


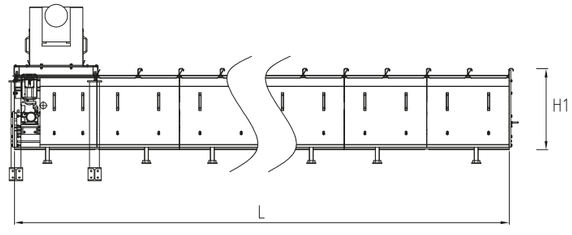
ClassiScreen

Item		Type (Examples)[2] CS 4000 × 2000 / 26+8	CS 4000 × 3000 / 26+8	CS 5000 × 3000 / 32+12	CS 6500 × 3000 / 42+16
Throughput capacity[1]	t/h b.d.	10–20	20–30	30–45	45–60
ClassiRoll diameter	mm	80	80	80	80
ClassiRoll rotation speed	rpm	50–200	50–200	50–200	50–200
Number of fractions		2–4	2–4	2–4	2–5
Installed power	kW	6	6	6	6
Machine weight	t	6	8.5	10	12
Dimensions (L × W)[2]	mm	4,000 × 2,000	4,000 × 3,000	5,000 × 3,000	6,500 × 3,000
Height (H1)	mm	980	980	980	980
Height (H2)	mm	435	435	435	435
Infeed screw diameter[3] (H3)	mm	400	500	630	750

1) Capacity depends on raw material and screening application
2) Any screen length from 2,000–7,000 mm available in steps of 500 mm with width of 2,000 or 3,000 mm
3) Infeed screw is optional. Other feeding methods are available







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USE MORE RECYCLING WOOD

Reduce raw material costs for high-quality boards

Recycling wood contains impurities, which severely diminish the physical and optical quality of the end product. Dieffenbacher wood recycling plants reliably eliminate these impurities. Now you have the flexibility to replace fresh wood with recycling wood without compromising board quality.

Benefit from reduced material costs, maximum cleaning efficiency with low wood losses and increased sustainability.

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Wood Recycling

Application

- Panel board industry (PB, MDF)
- Recycling plants
- Pellet plants
- Pallet block plants

Description

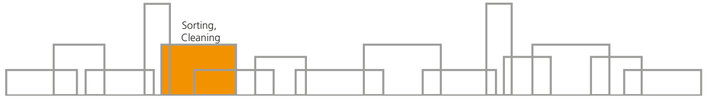
Wood-based recycling material is reduced to chips. The chips are sorted and cleaned in several steps of screening, sifting and sensor-based sorting. Oversized particles are rechipped and fed again into the cleaning process.

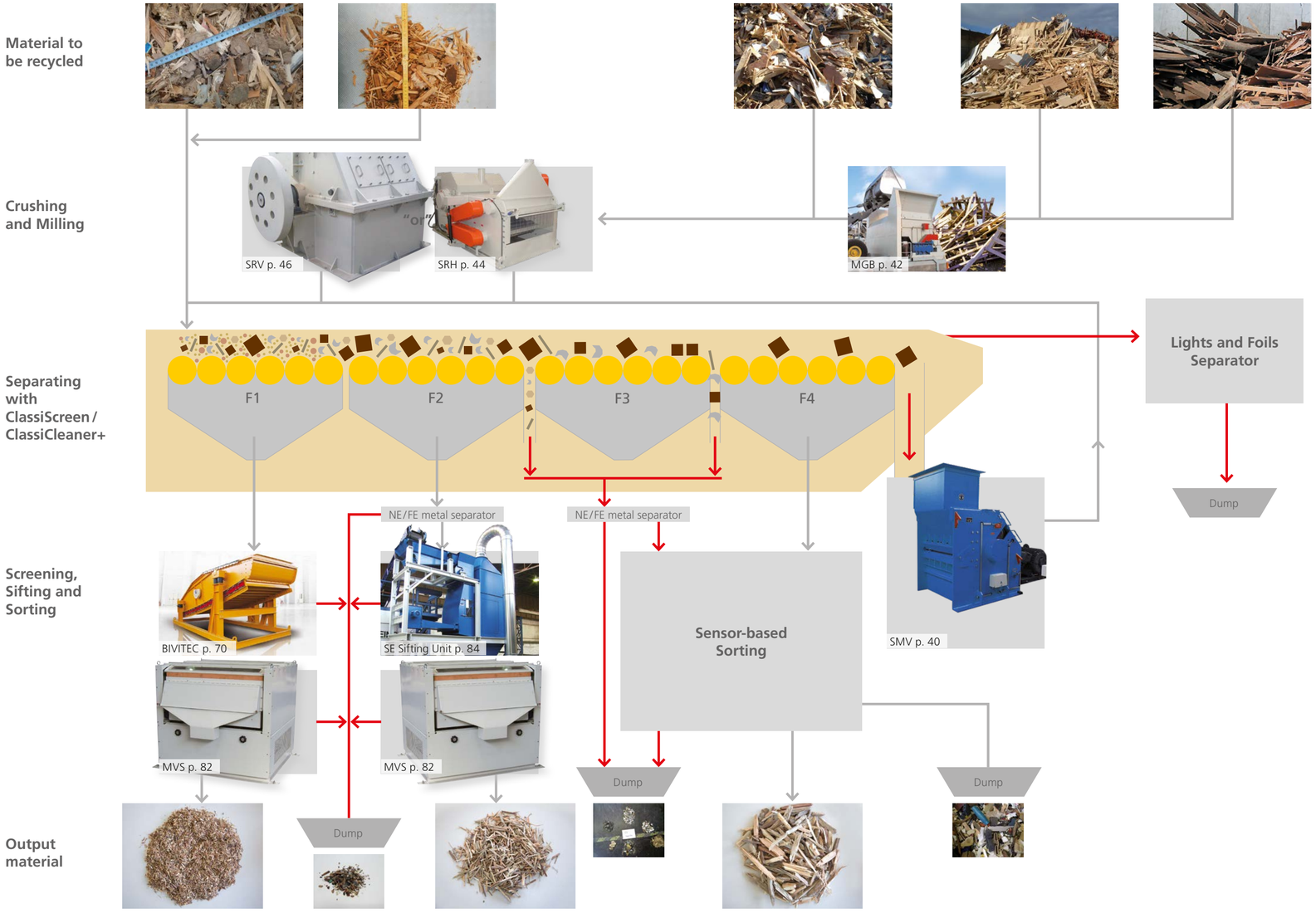
Customer benefits

- Reliable separation of impurity (metal, minerals, foil, rubber, plastic)
- Outstanding cleaning efficiency of up to 98 %
- Wood yield up to 99 %
- Up to 6 fractions

Technical features

- Crushing and milling machines with different feeding available
- Roller and flip-flow screens for various applications
- Sifters for different materials
- Sensor-based sorting technology identifies non-wood material with wood-like density
- Separators for ferro-magnetic and non-magnetic metals
- Suction unit to remove foils and other light impurities





ClassiCleaner+

Application

- Panel board industry (PB, MDF)
- Recycling plants
- Pellet plants
- Biomass and renewable energy plants

Description

The ClassiCleaner+ system consists of integrated roller screening with high cleaning effectiveness and high energy efficiency. The infeed material mix is screened into different fractions, which is helpful for further processing.

Customer benefits

- Efficient impurities separation (incl. plastics)—maximum wood and biomass yield
- Less wear of flaking tools, cyclones, ducting, cutting blades, etc.
- Low energy consumption, low emissions
- Compact design with integrated screening and cleaning
- Minimum dynamic loads, light foundations
- Total cleaning efficiency up to > 90 % and wood yield up to > 99 %

Technical features

- ClassiRolls with different patterns, gaps and rotation speed enable effective screening according to screening process requirements
- Sensor-based sorting
- Collection of different fractions under the screen rolls
- Cleaning of impurities enriched material mix
- Removal of foils with suction from the roller bed
- FE and non-ferrous separators and optical sorting
- Capacity range 10–60 t/h b.d.

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MVS Sifting Table

Application

- Panel boards (e.g., cleaning of fines for surface layer)
- WPC / WFC industry
- Pellets
- Combustion (energy from waste)
- Cleaning of grain

Description

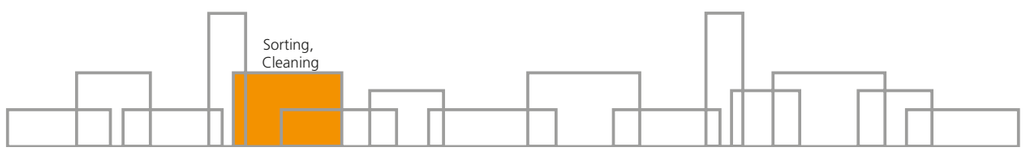
The MVS Sifting Table enables effective cleaning of dry or semi-moist finely ground material from minerals, heavy impurities, dust and foils.
The material is fed from above. The light fraction is separated by air flow, blown from underneath of the inclined screen into the lower discharge. The heavy particles are moved to the upper discharge by vibration of the screen. The dust and foils are sucked into a cyclone.

Customer benefits

- High cleaning efficiency of flakes and fines, e.g., for combustion (energy from waste)
- Separation of heavy particles from rejects after CL or SL wind sifters
- Pre-cleaning of fines for more effective combustion and lower combustion chamber maintenance
- Fast return on investment by gaining additional raw material for production or burning
- Low operating and maintenance costs, low energy consumption

Technical features

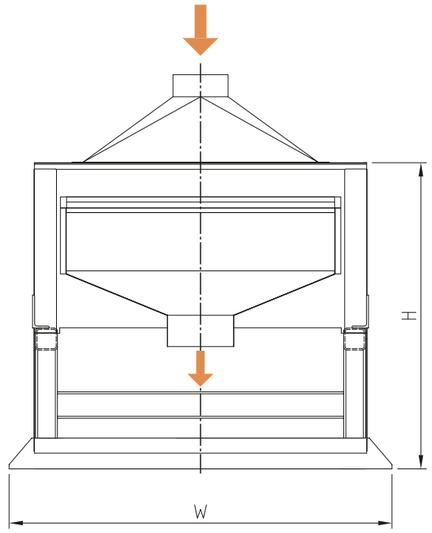
- Fraction separation on the basis of different specific weights
- Numerous adjustment possibilities, including screen inclination and perforation, vibration frequency and amplitude, air volume and speed
- Easy exchange and cleaning of the screen
- Recirculating air operation or aspiration
- Dust-free operation due to closed casing

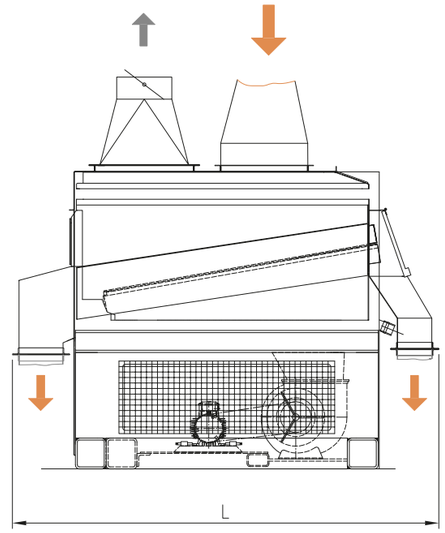


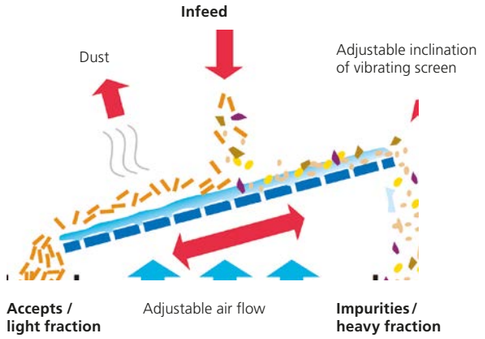
MVS Sifting Table

Type Working width / length mm	Capacity[1] t/h b.d.	Table Drive kW	Fan Drive kW	Dimensions m (L × W × H)	Weight approx. t
MVS 590 / 1000	0.8	0.37	3	1.9 x 1.2 x 1.4	0.6
MVS 1000 / 1000	1.3	0.55	4	1.9 x 1.6 x 1.4	0.7
MVS 1200 / 1250	1.7	0.55	4	2.0 x 1.8 x 1.4	0.8

1) Depending on specific weight and size of the material to be cleaned







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MAIER® SE Sifting Unit

Application

- Panel boards (PB and MDF)
- Pellets and briquettes
- Recycling

Description

The SE Sifting Unit is a cost-efficient solution for effectively cleaning chips and flakes of ferrous and heavy impurities and lightweight contaminations.
The sifting unit consists of a VC Vibration Conveyor, a permanent magnet drum, a HPS Heavy Particle Separator and an air expansion box with integrated rotary valve, mounted at the supporting frame.

Customer benefits

- Cost-efficient solution
- Designed for moist and dry material applications
- Effective cleaning from impurities
- Modularly expandable
- Easily adjustable

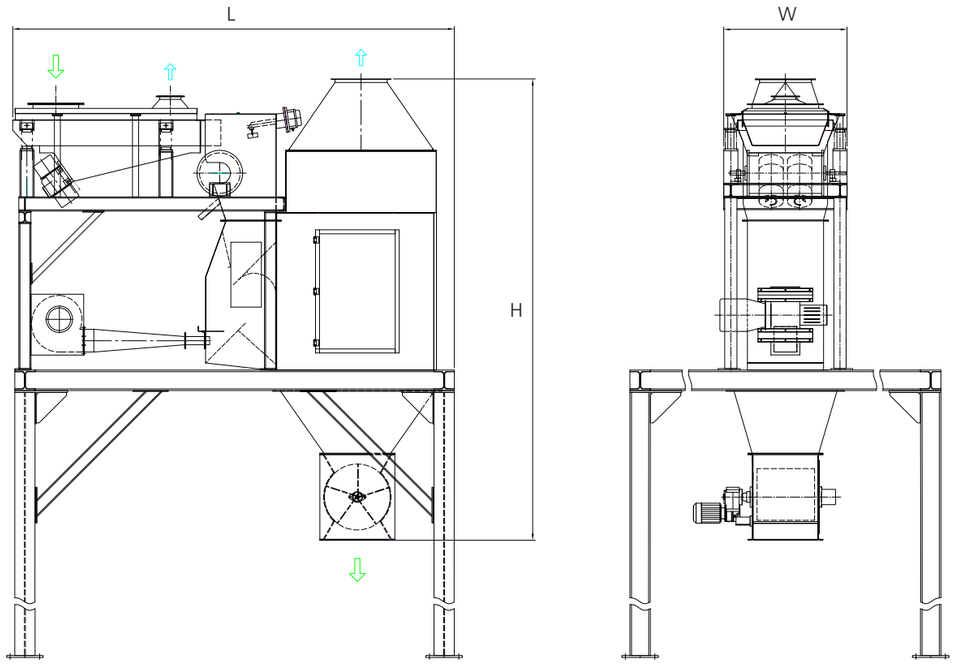
Technical features

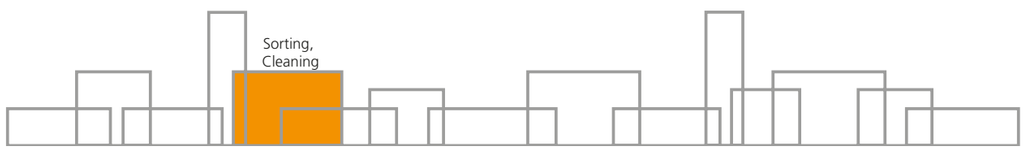
- High capacity per unit
- Includes VC Vibration Conveyor (see page 68) with dust cover for clean machine operation
- Variously perforated, exchangeable screens for VC Vibration Conveyor available
- Magnet drum with adjustable discharge point
- Expansion box with special wear protection

SE Sifting Unit

Type	VC Vibration Conveyor[1] mm (W × L)	HPS Heavy Particle Separator mm (W)	Air quantity suction m³/h	Installed power[2] kW	Capacity[3] t/h b.d.	Dimensions[4] m (L × W × H)	Weight[4] approx. t
SE 750 / VC 650	650/2,050	750	8,000–10,000	7	12	4.0 × 1.4 × 4.7	2.8
SE 1000 / VC 900	900/2,050	1,000	11,000–13,000	9	14	4.0 × 1.6 × 4.9	3.5

1) Standard execution; optional with special fine hole screen or with special fine hole and oversized screen available
2) Consisting of drive power of VC Vibration Conveyor, magnet drum, HPS Heavy Particle Separator and rotary valve
3) Depending on input material, based on bulk density of 150 kg/m³ b.d.
4) Dimensions and weight of machine without supporting frame





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Air Grader for Particles

Application

- Particleboard industry
- Separation of foreign materials such as sand, stones, metal or bark
- Separation for core and surface particles
- Separation of the flakes depending on the flake thickness

Description

The air grader splits the incoming material into three fractions: acceptable material, coarse material (e.g., high density contaminants or wood particles of undesirable geometry such as needles, etc.) and material falling through the screen decks (mostly sand, minerals, glass, etc.).
The product enters the suspension chamber (of the air grader) via a rotary valve and a central tube. Agitator arms distribute the material uniformly over the perforated plate through which air is drawn. Different grades of separation are achieved by varying the air velocity. The heavy coarse material is moved to the outside of the grader and leaves the suspension chamber via rotary valves. The accepted material is suspended in the air stream and separated from the air in high-efficiency cyclones.

Customer benefits

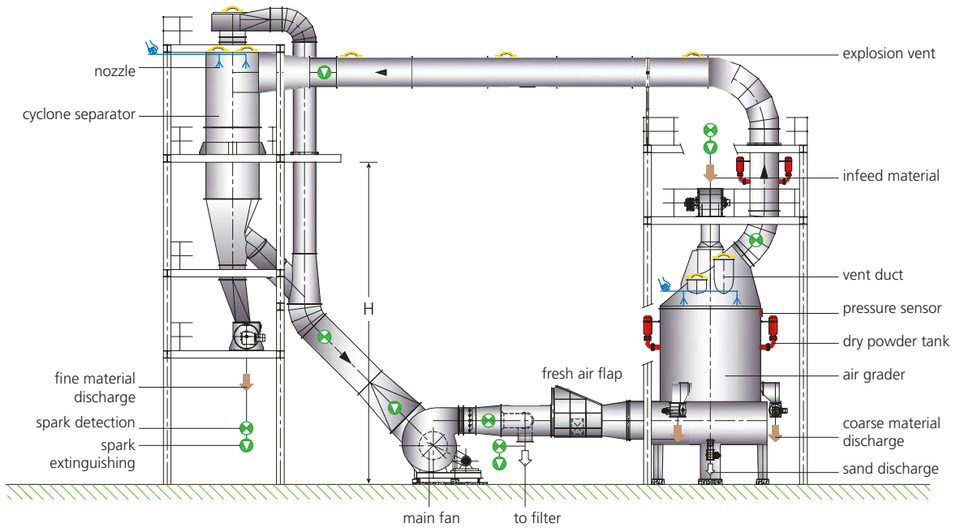
- Precise separation according to particle thickness
- Continuous and consistent separation at all operating modes
- Excellent removal of heavy contaminants
- High capacities with one unit
- Low maintenance costs
- Low exhaust volume
- Safe and reliable design

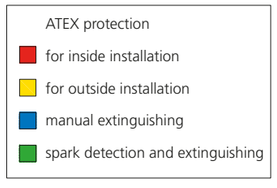
Technical features

- Up to 85 % of the air is recirculated while the remaining volume is cleaned before venting into atmosphere
- High-efficiency cyclones
- Explosion protection system conforming to ATEX
- Air grader suspension chamber with:
  - Agitating device with continuous cleaning system
  - Quick change device for the upper screen
  - Conical drilled holes in upper screen deck

Air Grader for Particles

Type	Capacity surface layer				Capacity core layer			
	Installed power	Exhaust air	Thickness of acceptables 0.25 mm	0.4 mm	Installed power	Exhaust air	Thickness of acceptables 1.2 mm	1.5 mm
	kW	am^3/h	t/h b.d.	t/h b.d.	kW	am^3/h	t/h b.d.	t/h b.d.
8,0 R	100.0	12,600	11.0	14.0	160.0	13,000	23.0	26.0
10,0 R	130.0	15,800	14.0	18.0	195.0	16,200	28.0	33.0
12,5 R	160.0	19,700	20.0	22.5	235.0	20,300	36.0	40.0
16,0 R	195.0	25,200	25.6	28.8	355.0	26,000	44.8	52.0





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SGF Air Grader for Wood Fibers

Application

The SGF-Air Grader is used in the MDF, HDF, THDF and door skin production for separating:

- Wood particles
- Glue lumps
- Coarse fibers
- Metal, rubber and other foreign material

Description

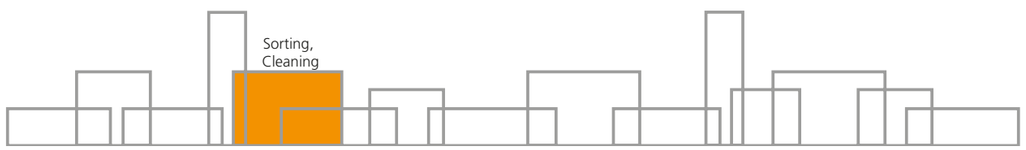
The Air Grader separates the material in the vertical air flow over two sifting stages. Heavy and coarse material is discharged via screw conveyors and downstream arranged rotary valves. The accepted material is conveyed pneumatically to a high efficiency cyclone. There, the material is separated from the air flow and discharged by an air lock.

Customer benefits

- Increased product quality
- Reduced risk of press damage
- Simple and reliable
- Safe design according to high European Standards
- Low operating costs and maintenance effort
- High press performance by avoiding fiber temperature drop from dryer to forming
- Low exhaust volume

Technical features

- No internals which could cause blockages
- Pressure control to enable adjustments of capacities
- Design according to ATEX directives with pressure relief and/or explosion suppression
- Fan arrangement on clean air side downstream cyclone prevents wear on fan impeller and impeller housing
- Fan impeller with high efficiency
- Process Heating system
- Air grader process with usage of up to 70 % recirculated air

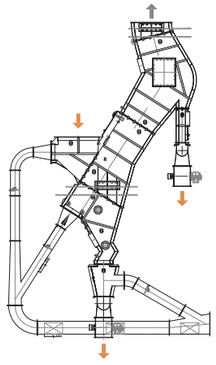


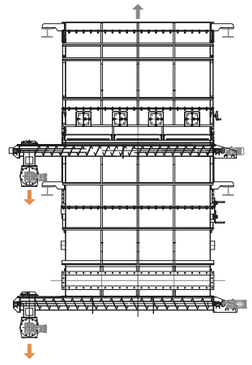
Air Grader for Wood Fibers

Type	Capacity incl. moisture and resin for board thickness > 4 mm t/h eff Number of air graders 1	2	3	4	Main fan kW P_{shaft}	Cyclone Type	Exhaust volume m^3/h	Heating system kW Axial fan	mW[3] Heat exch.
SGF 2000/850	17.8	29.6	41.3	50.8	91.1	HEC 315	17,400	6.3	0.51
SGF 3000/850	26.7	44.5	62.0	76.2	136.7	HEC 400	26,100	9.4	0.76
SGF 3500/850	31.2	52.0	72.5	89.1	159.5	HEC 400	30,400	11.0	0.89
SGF 4000/950	39.9	66.5	92.7	114.0	203.7	HEC 450	38,800	14.1	1.13

1) For board thickness starting from 3 mm use 90 % and from 2 mm use 80 % of the capacity
2) Fan with directly coupled VFD drive and installed heating system
3) Based on 0°C ambient temperature; standard heat source thermal oil 240/220°C

Motor list Type	Discharge conveyor 1st stage kW	2nd stage kW	Discharge air lock 1st stage kW	2nd stage kW	Cyclone kW	Main fan kW	Axial fan kW	Total installed kW
SGF 2000/850	3.0	2.2	2.2	2.2	11.0	110.0	7.5	138.1
SGF 3000/850	3.0	2.2	2.2	2.2	15.0	160.0	15.0	199.6
SGF 3500/850	3.0	2.2	2.2	2.2	18.5	160.0	18.5	206.6
SGF 4000/950	3.0	2.2	2.2	2.2	18.5	250.0	18.5	296.6





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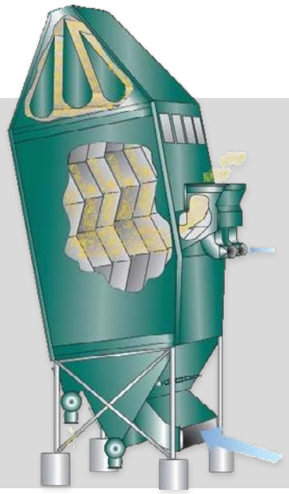


Z-Sifter for Rubber Wood Fibers

Application

Used in MDF, HDF, THDF and door skin production for separating:
- Glue lumps
- Latex particles
- Wood particles
- Coarse fibers
- Metal, rubber and other foreign material

Description

Fibers from the dryer are getting accelerated by a horizontal air stream in inlet section and spread in Zigzag section. Vortexes, caused by zigzag shaped internals, separate coarse from fine material. Coarse particles fall down to sifter bottom section and get transported out by two screw conveyors. Acceptable material gets carried upwards and out of sifter to a high efficiency cyclone above the forming station. There, the material is separated from the air flow and discharged by an air lock.

Customer benefits

- Outstanding sifting performance and excellent separation accuracy
- Proven technology for rubber wood
- Reduced risk of press damage
- Fully automatic operation
- Safe design according to European standards
- High press performance by avoiding fiber temperature drop from dryer to forming
- Low exhaust volume

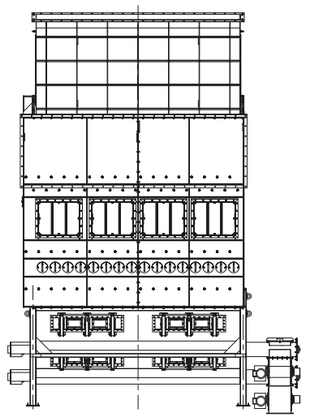
Technical features

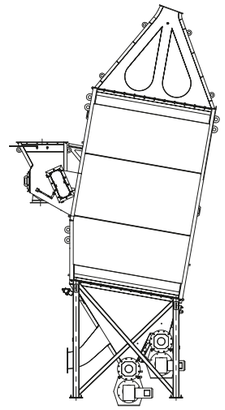
- Inlet section with blow box and coanda separation technology
- Sifter section with proven zigzag plates
- Two steps of reject collection with distribution plate and vibrator
- Sifter performance controlled via pressure and air flow according to capacity
- Design according to ATEX directives with pressure relief and/or explosion suppression
- Process heating system
- Z-Sifter process with usage of up to 70 % recirculated air

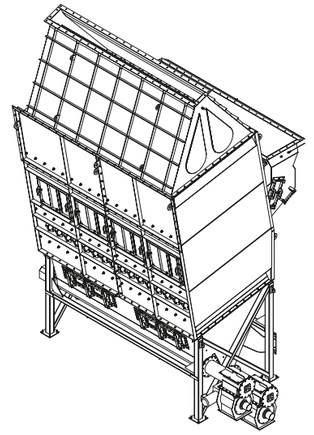
Z-Sifter for Rubber Wood Fibers

Type	Capacity incl. Moisture and resin		Cyclone	Air lock	Installed electrical energy	Heating system demand
	1 unit	2 unit[1]				
	kg/h eff	kg/h eff	Type	Type	kW/unit	mv^2
Z 2750/2270 RW	19,500	32,500	HEC 355	NDL 1500x1500 SAB8	184.3	0.66
Z 3500/2270 RW	24,900	41,500	HEC 400	NDL 1800x1800 SAB9	315.9	0.84
Z 4000/2270 RW	28,500	47,500	HEC 400	NDL 1800x1800 SAB8	319.4	0.96
Z 4000/3000 RW	37,600	62,600	HEC 480	NDL 2100x2100 SAB8	446.4	1.27

1) With 60/40 split from dryer cyclones
2) Based on 0°C ambient temperature, standard heat source thermal oil 240/220°C







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Energy Systems

Application

- For combustion of fresh biomass and solid waste from the wood panel production process
- To provide hot gas for direct heating of rotary drum and flash tube dryers and of thermal oil
- Use of fuel quality range of up to 150 % b.d. moisture (60 wt. %)

Description

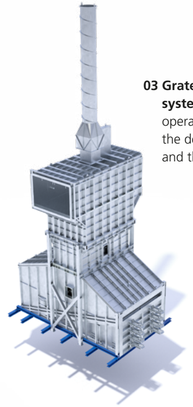
The firing system consists of an air-cooled reciprocating grate using the coarse biomass fractions of the wood panel production process as main fuel. Examples include bark, wood chips, coarse trimmings. System can be equipped with various injection nozzles for combustion of dust and granulate fractions from screening, sawing and sanding. Generating hot thermal oil and providing hot gas to the dryer system can be controlled independently of each other in order to meet individual peak load demands. Recirculation of hot gas from downstream of the thermal oil heater is applied to optimize the combustion process and to allow best operational flexibility of the energy system.

Customer benefits

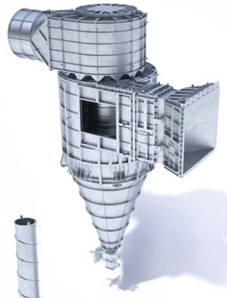
- Process and design engineering of energy and dryer package from one source: less interfaces
- High availability and reliable operation: Robust design and low maintenance requirements allow a long operation period without forced shutdown
- Reduced operating costs: minimum staff required due to fully automated operation controls
- High efficiency and flexibility: Design allows fast load change response
- Low electrical power consumption
- Simple and easy operation

Technical features

- VFD controls for operation of fans, pumps and dampers according to process needs
- integration of controls into one comprehensive automation system
- Grate combustion capacity of up to 85 MW
- Thermal oil heater size of up to 45 MW
- Optional 24/7 online support and remote control



03 Grate and dust combustion system: Broad fuel quality and operating flexibility help to meet the demands of various hot gas and thermal oil heat consumers.

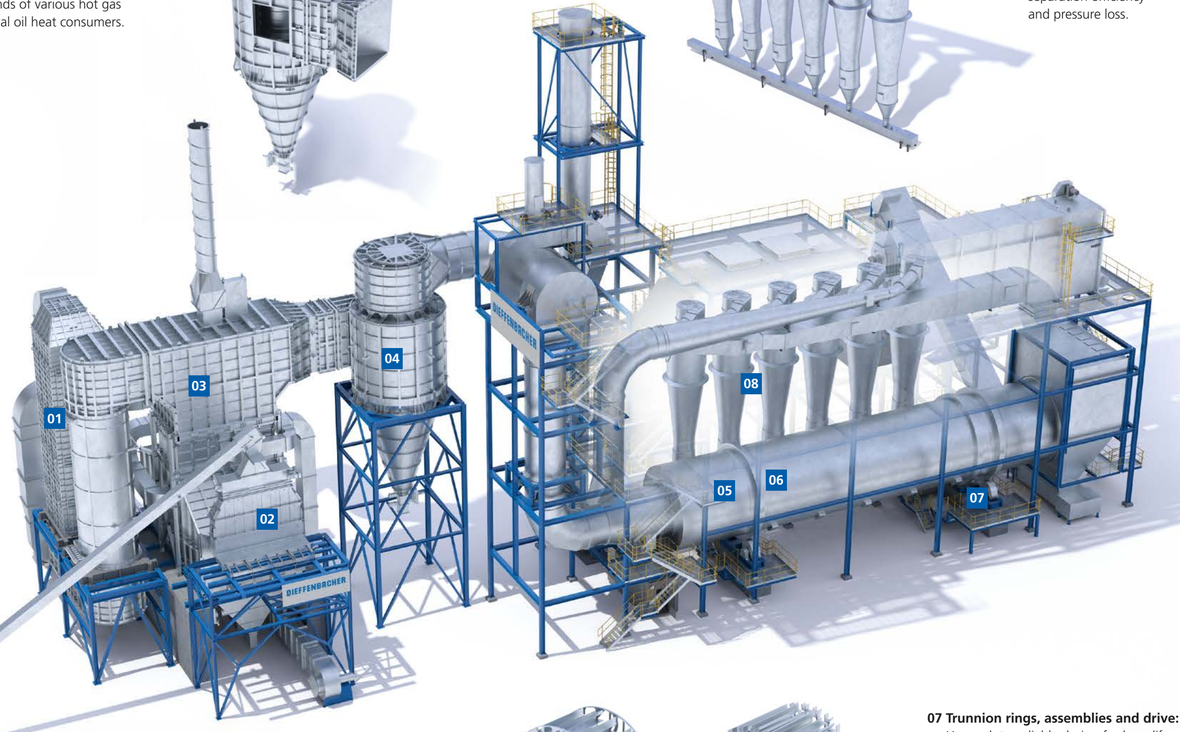


04 Hot gas cyclone: For OSB and PB plants. Ensures particle seperation with > 90 % efficiency.

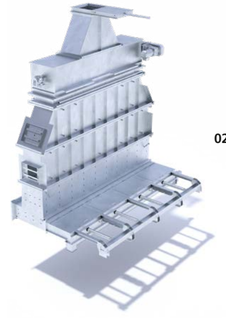
08 Cyclone battery: Optimized by using the fluid dynamics (CFD) analysis to improve separation efficiency and pressure loss.

Benefits of integrated Energy and Dryer systems

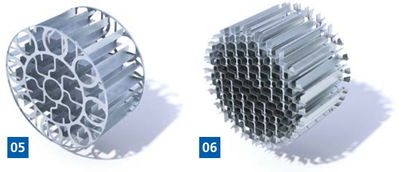
- Interconnected mechanical and process design with integrated control and visualization system (reduction of interfaces)
- Synchronized process with stable operation parameters (like constant final moisture at dryer outlet)
- Fast and effective response to dynamic consumer demand
- An overall reduction of operational costs



01 Thermal oil heater: Applicable in open or closed thermal oil systems. Usable with mineral and synthetic heat transfer fluids, meeting a broad range of process requirements.



02 Fuel feeder: Homogenization and even distribution of grate fuel for optimum combustion performance and operation control.



05/06 Drum internals: Optimized internals for energy-efficient drying and homogeneous moisture for particles (06) or OSB strands (05).

07 Trunnion rings, assemblies and drive: Heavy-duty, reliable design for long-life operation with VFD-controlled main drive and auxiliary drive for backup operation.



Drum Dryer

Application

Drying of:
- Wood particles, e.g., sawdust, mini chips, recycling material for PB and pellet production
- Strands and wafers for OSB production
- Disintegrated seasonal annual crops and other biomass for a wide range of applications

Description

Wet material is fed via a rotary valve and a specially designed infeed chute into the rotating drum. There, the heat is transferred mainly through convection from the drying gases to the material for water evaporation. At the end of the drum, the material is pneumatically transported to cyclones where the material is separated from the drying gases. One portion of the drying gases is recirculated to the mixing chamber for energy recovery and reduction of dryer exhaust volume.

Customer benefits

- High capacity
- Internals designed according to material characteristics for high thermal efficiency and low moisture fluctuation
- Optimized drum using FEM
- High standard of safety and reliability
- Low risk of fire and explosion
- Design acc. to ATEX directive 2014/34/EU
- Optimized cyclone design
- 3D modeling

Technical features

- Fully integrated control of dryer and energy plant
- Fully welded drum shell with alternating sections of cruxiform internals and lifting blades
- Gear box with frequency-controlled main motor and backup motor for emergency case
- Minimal air leakage due to proven seal technology
- Dryer exhaust gas recovery
- Fully integrated dryer deluge system

Heat sources for direct heating

Flue gases from
- Gas, dust, light and/or heavy oil burner
- Energy system (e.g., grate firing systems)
- Turbine exhaust gas
- Combination of heating systems mentioned above

Heat sources for indirect heating
- Heat exchangers with steam or thermal oil

Capacities and Options:

- PB and pellets: up to 100 t/h b.d. with evaporation rates of 80 t/h
- OSB: up to 60 t/h b.d. with evaporation rate of 60 t/h

Options:
- Flue gas cleaning with refractory-lined hot gas cyclone to reduce wear in the drying system
- Pre-dryer with heavy-part separation and second infeed for reject material
- Discharge box for gentle discharge of heavy and sensitive material

FT / FTU / FTZ Flash Tube Dryer

Application

Drying of wood fibers for MDF, HDF and insulation boards

Description

Wet material is injected via a blow-line into the dryer and pneumatically conveyed through the dryer duct and dried to the required moisture content. High efficiency cyclones separate the fibers from the gas stream. Fibers are discharged via air locks.
A portion of the exhaust gases can be reused in dryer installations with recirculation air operation.

Customer benefits

- High throughput of more than 60 t/h b.d. possible
- Automatic process control
- Dryer and air grader from a single source, i.e. optimized investment and operational cost
- Safe design according to high European standards
- Customized energy concepts
- Up to 15 % energy cost savings with an adjustable recirculation air operation

Technical features

- Alternatively single or two stage dryers
- Adjustable final moisture related to downstream processes (e.g., EVOjet M gluing)
- Combined steel structure for both dryer and air grader
- Pressure shock proof design according to ATEX directives
- Explosion pressure relief by certified rupture discs
- Interlocking sequence for all safety relevant alarms
- Automatic spark detection and deluge systems
- Stainless steel dryer duct (optional)

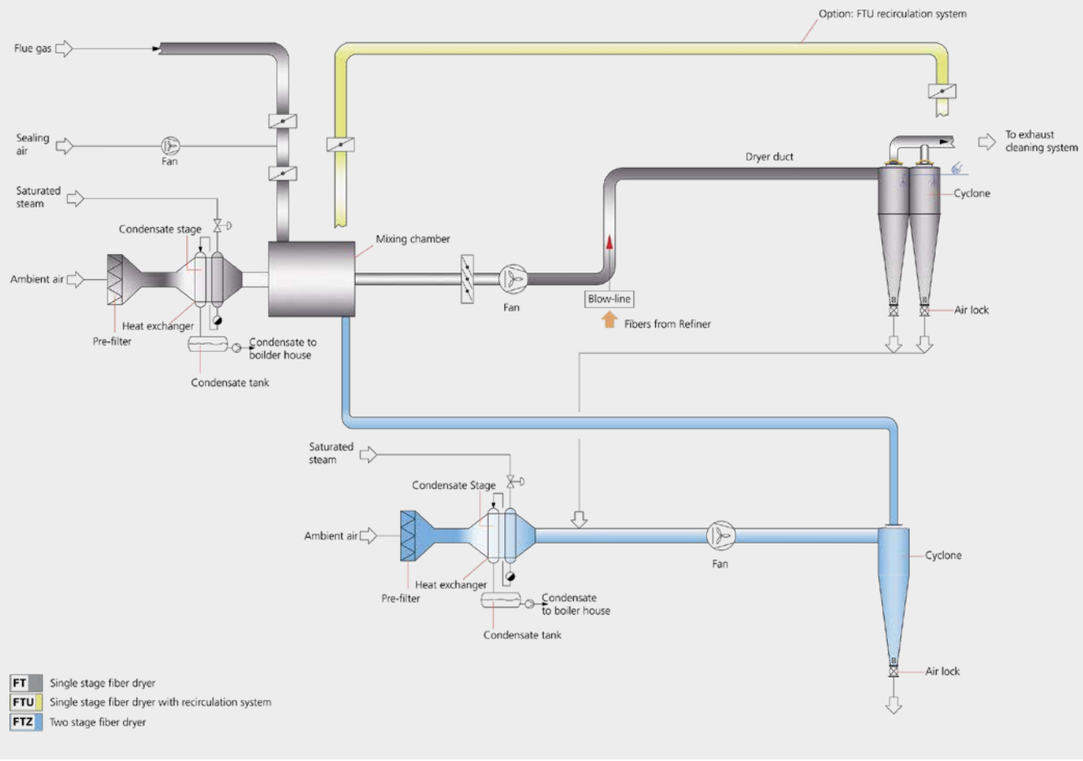
Efficient usage of various energy sources:

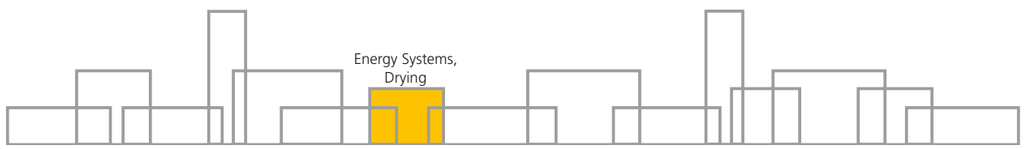
- Mixing chambers for flue gases from grate firing system, gas turbine, boiler house and diesel generator
- Burner systems for wood dust, natural gas, light or heavy oil
- Heat exchangers for thermal oil, saturated steam and hot water

Exhaust gas for heat recovery:

- From pneumatic transport systems (see page 129)
- From EVOjet M system (see page 104)

FT Single stage fiber dryer
FTU Single stage fiber dryer with recirculation system
FTZ Two stage fiber dryer





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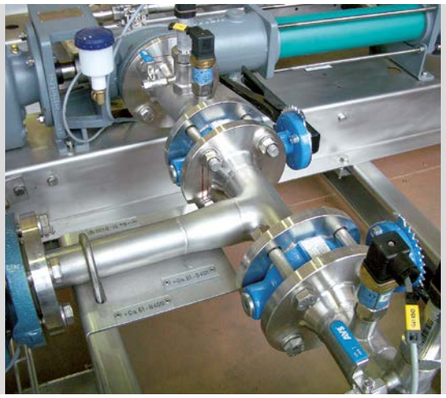



Glue Preparation and Dosing System

Application

Resin and chemical preparation, handling and dosing for PB, MDF and OSB plants

Description

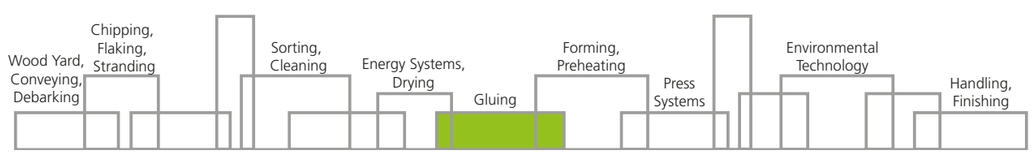
Trucks or train cars can unload directly into storage tanks. Powder handling and dissolving systems are adapted according to customer needs. Dosing of components is carried out with accurate dosing pumps controlled by flow meters to assure optimal material flow.

Customer benefits

- Complete system with fully automatic control
- Accurate dosing directly results in savings of resin and additives

Technical features

- Storage systems
- Powder dosing systems
- Dissolving systems
- Glue dosing systems:
  - In-line dosing
  - Batch dosing




Universal Bin for Gluing PB

Application

Surface layer (SL) and core layer (CL) flake dosing for gluing particles

Description

Dosing bins are typically installed for both SL and CL flakes. The first task of the bins is to equalize the flake flow from the storage silos to gluing. The bins' second and main task is to accurately dose the flakes into the blenders.

Customer benefits

- Accurate dosing of flakes into the glue blenders
- Continuously monitoring the filling level ensures accurate level control
- Accurate mass flow measuring with belt scale (deviation < 1%)

Technical features

- Dosing bin capacity for buffering between the process steps
- Rake and discharge rolls inside the bin for equalizing the material flow to the scale
- Belt scale with discharge roller and mat height monitoring
- Belt speed control to ensure a smooth material flow into blending
- Aligned to EVOjet P for convenient integration (see page 102)
- Sampling tube for secure extraction of material
- Volumetric level monitoring with guard against overfilling
- Extinguishing device for the entire bin
- ATEX classification: The dosing bin is designed and constructed to comply with explosion protection directive 2014/34 / EU category II 1D inside.

Type		UBG-1200-S	UBG-1200-L	UBG-1700-S	UBG-1700-L
Discharge capacity	m^3/h	322.5	322.5	485	485
Discharge width	mm	1,120	1,120	1,680	1,680
Bin width	mm	2,198	2,198	2,758	2,758
Bin length	mm	10,574	12,074	10,574	12,074
Bin height	mm	3,373	3,373	3,373	3,373
Bin volume	m^3	6.7	9.3	10	14

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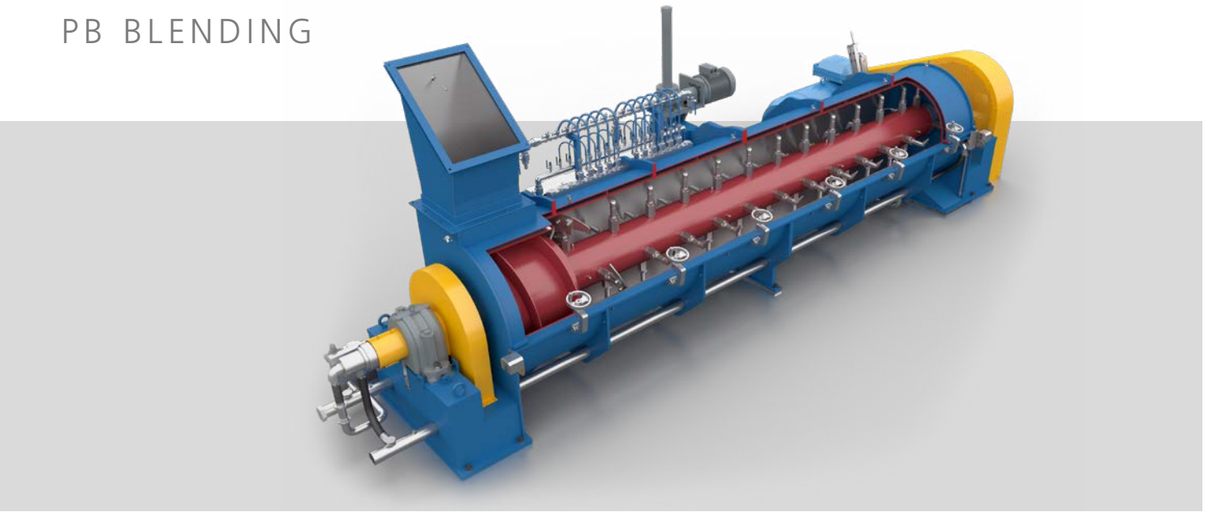


PB Glue Blender

Application

Particleboard plants

Description

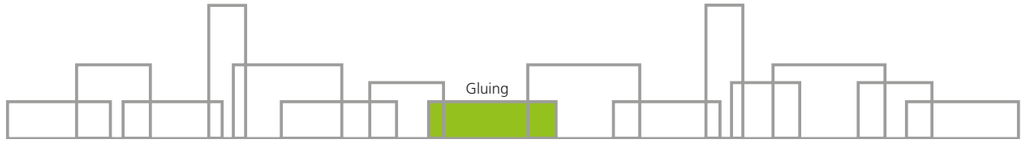
Glue blenders provide uniform glue distribution due to large chamber volume and long retention time. A constant filling level of the blender is maintained by a discharge flap to ensure an optimum gluing result. The power consumption of the main motor is controlled by the filling level.

Customer benefits

- Uniform glue distribution
- Long retention time
- Separate cooling water infeed for shell and shaft
- Open PLC-based flap control

Technical features

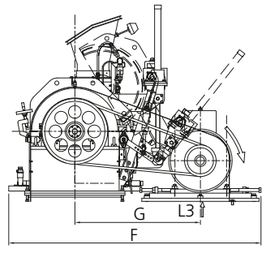
- Available with either screw intake (CL) or paddle intake (SL)
- Mixing chamber is manufactured with wear-resistant material, highly wear-resistant coating option available
- Mixing chamber, mixing tools and discharge flap are water cooled
- Blender retention time controlled by discharge flap adjustment
- Electrically actuated cover opening
- Ready for EVOjet P (see page 102)

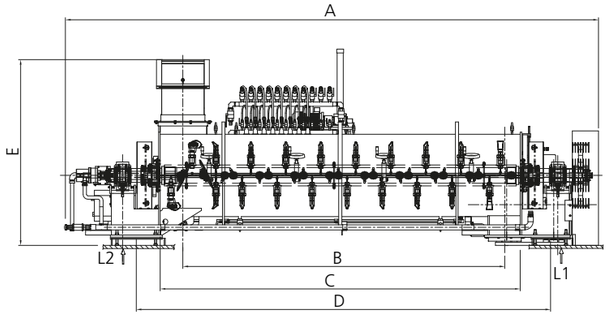


PB Glue Blender

	Type	Chamber mm (D × L)	Capacity[1] t/h b.d.	Power kW	Retention time at max. capacity S	Cooling water l/h	Cooling power (kW) Tflakes/Tcooling water/ΔTin- outfeed 45°C/12°C/5 K	Cooling power (kW) 65°C/12°C/7 K	Dimensions mm (see drawings below) A	B	C	D	E	F	G
Surface Layer	CB 70/30 SL	700 x 3,000	2.5–10.0	75	21.2	8,000	46	65	4,600	2,630	3,000	3,528	1,900	2,350	1,193
	CB 70/35 SL	700 x 3,500	3.1–12.0	90	21.1	9,600	56	78	5,100	3,130	3,500	4,028	1,900	2,350	1,193
	CB 80/40 SL	800 x 4,000	3.7–17.0	90	22.7	12,100	71	99	5,600	3,630	4,000	4,528	2,100	2,440	1,240
	CB 85/45 SL	850 x 4,500	4.4–22.0	110	22.6	16,100	93	130	6,240	4,105	4,500	5,028	2,250	2,480	1,249
	CB 90/50 SL	900 x 5,000	5.0–30.0	132	20.8	20,400	118	166	6,740	4,605	5,000	5,528	2,310	2,530	1,277
	CB 90/60 SL	900 x 6,000	7.5–40.0	160	18.9	24,500	142	199	7,740	5,605	6,000	6,528	2,310	2,720	1,347
	Based on density 150 kg/m³		Filling rate = 40 %												
Core Layer	CB 70/30 CL	700 x 3,000	2.0–8.0	75	21.2	8,000	46	65	4,600	2,630	3,000	3,528	1,900	2,370	1,222
	CB 70/35 CL	700 x 3,500	2.5–9.6	90	21.1	9,600	56	78	5,100	3,130	3,500	4,028	1,900	2,370	1,222
	CB 80/40 CL	800 x 4,000	3.0–14.0	90	22.0	12,100	71	99	5,600	3,630	4,000	4,528	2,100	2,470	1,268
	CB 85/45 CL	850 x 4,500	3.5–17.6	110	22.6	16,100	93	130	6,240	4,105	4,500	5,028	2,250	2,500	1,274
	CB 90/50 CL	900 x 5,000	4.0–24.0	132	20.8	20,400	118	166	6,740	4,605	5,000	5,528	2,310	2,560	1,305
	CB 90/60 CL	900 x 6,000	6.0–32.0	160	18.9	24,500	142	199	7,740	5,605	6,000	6,528	2,310	2,740	1,364
	CB 100/65 CL	900 x 6,500	8.3–42.5	160	19.0	29,300	170	238	8,240	6,055	6,500	7,028	2,500	2,820	1,394
	CB 110/65 CL	1,100 x 6,500	10.0–50.0	200	19.5	32,600	189	265	8,240	6,055	6,500	7,028	2,650	2,930	1,447
	CB 120/65 CL	1,200 x 6,500	12.0–60.0	200	19.4	39,000	225	317	8,240	6,055	6,500	7,028	2,870	3,060	1,530
	Based on density 120 kg/m³		Filling rate = 40 %												

[1] other capacities on request





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EVOjet P

Application

Gluing for particleboards

Description

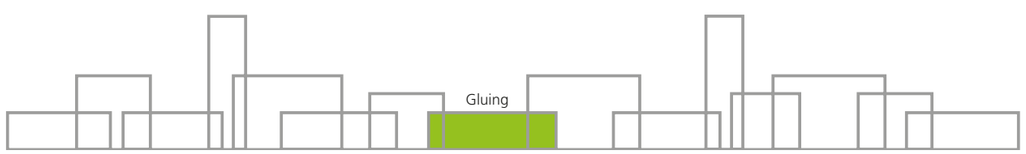
EVOjet is the resin application system made by Dieffenbacher. EVOjet P allows high resin savings achieved by atomized resin distributed by two-component nozzles. These special nozzles create a homogeneous resin droplet distribution on the particles.

Customer benefits

- Up to 15 % resin savings in the core layer compared to common blender technology
- Less humidity might result in a reduction of press factor
- Standard glue pumps can be used—no additional equipment needed

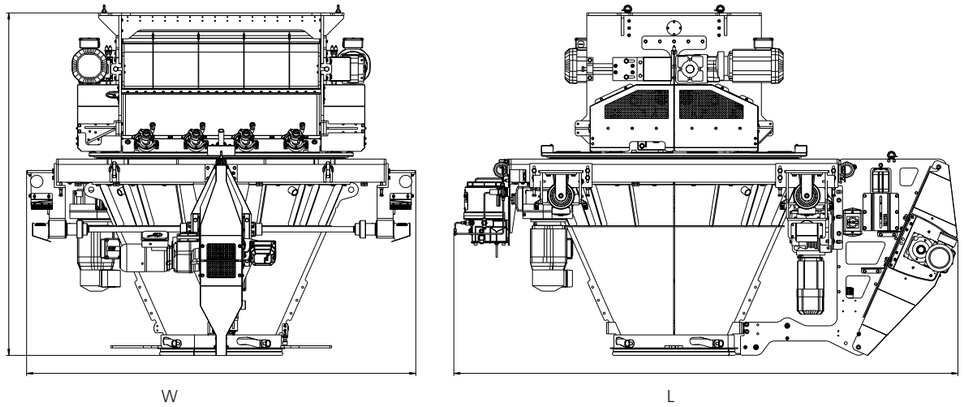
Technical features

- Two fast-rotating spike rollers ensure homogeneous particle distribution
- Two-component nozzles for low-pressure gluing
- Compressed air as atomization medium
- Internal cleaning units: swiveling plates and rotating scraper with wire rope
- All parts in contact with resinated particles are stainless steel
- Integrated transport device to move the blending chute into maintenance position



EVOjet P

Type		EVOjet P 1200	EVOjet P 1700
Particle throughput max.	t/h b.d.	40	60
Width particle inlet (B)	mm	1,120	1,680
Electric power, approx.	kW	7	11
Weight, approx.	t	4	6
Dimensions (L × W × H)	mm	2,830 × 2,190 × 1,930	4,000 × 3,150 × 2,500
Air consumption	Nm^3/h	400	600



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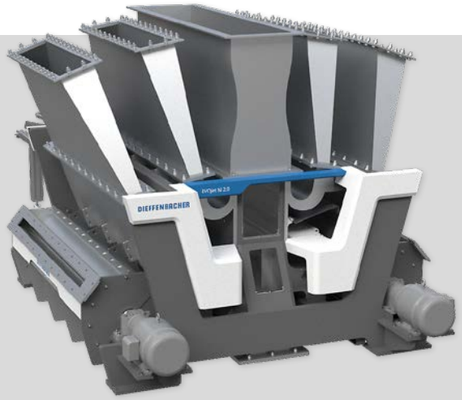


EVOjet M 2.0

Application

- MDF/HDF panel industry
- Wood fiber insulation industry
- All kinds of resin

Description

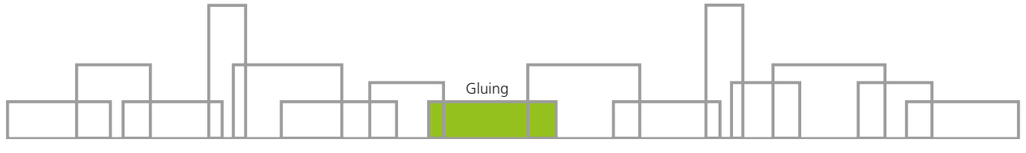
EVOjet M 2.0 is the next generation of dry resin application systems. After drying, a trap separates coarse foreign particles from the fibers to protect the spike rolls. These fast-rotating rolls dissolve the fiber stream before entering the resinator. Special nozzles atomize the glue into the finest droplets to guarantee optimum gluing of the fibers. Controlled protection air is added to prevent sticking of the freshly glued fibers. Downstream, a unique air slide elbow works in combination with recirculated fibers to prevent contact between resinated fibers and the surrounding ductwork. The EVOjet M 2.0 is available for new production lines and as retrofit in existing plants.

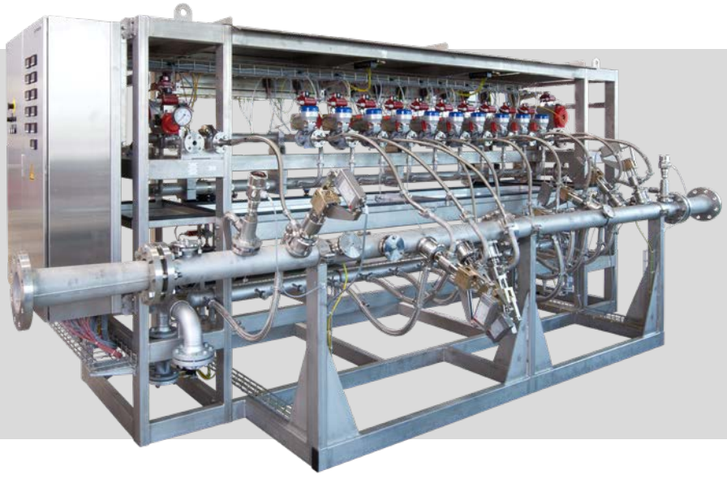
Customer benefits

- Superior fiber/resin contact
- Resin savings up to 25 % compared to conventional blow line
- Reduced emissions out of the dryer
- Proven flow technology for minimum cleaning
- Less pre-curing of the resin

Technical features

- Two fast-rotating spike rollers ensure a high-quality board surface
- Dissolved fiber flow is sprayed with glue
- Externally arranged nozzles atomize the resin into defined droplets size
- Fully automatic self-cleaning of the nozzles without interrupting the production
- Visual online monitoring of the process through inspection window
- Protection air prevents sticking in the system for minimum cleaning effort
- ATEX-approved
- System capacity up to 48 t/h b.d. of fiber with a single EVOjet M 2.0
- Easy access through inspection doors and hatches





PROjet

Application

- MDF/HDF panel industry
- Applicable for UF and/or MUF resin

Description

Resinating wood fibers in the blow line. The PROjet system consists of a resin injection tube with steam atomizing nozzles, a distribution unit with valves, sensors and a water booster station for cleaning.

Customer benefits

- Resin savings up to 15 % compared to conventional blow line
- High board quality due to less resin spots on board surface
- Lower energy consumption in the dryer due to low water load
- Optimized engineering for blow line routing
- Retrofit flexibility at any time

Technical features

- Each nozzle gap is individually controlled and adjusted by a linear motor for uniform spray pattern
- Resin and steam pressure can be set in the HMI screen and are adjusted automatically
- Each separate resin nozzle can be flushed with fresh water by high pressure unit during production
- Steam atomizing nozzles create small resin droplets
- Modular extensibility

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Forming Station MDF

Application

Mat spreading for MDF/THDF board pressing

Description

MDF forming station consists of several single machines (forming bin, discharge head, forming head and scalper unit) and produces a uniform fiber mat.

Customer benefits

- Low sanding required due to highest forming accuracy, both lengthwise and crosswise
- Excellent board surface quality. Highly suitable for laminating or direct painting
- Possible material savings due to short control loop of the scalper system and direct return of material to the bin
- Board's top and bottom appearance identical. Separation effect avoided thanks to different forming roller's designs, separately adjustable speed and low dropping height

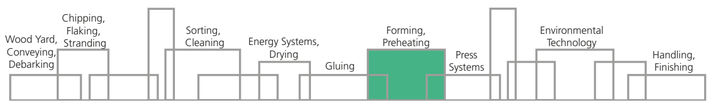
Technical features

For line speeds up to 2,500 mm/s, and either of these forming heads:

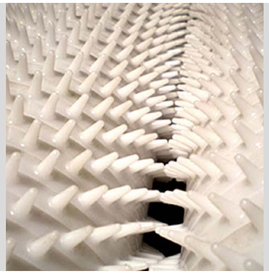
Forming Rollers Head
- Board thickness: 2.0–60 mm
- Rollers equalizing the fibers
- Different roller designs to avoid separation effect

Spike-Roll Vacuum Former
- Board thickness: 1.0–16 mm
- Spike-Roll disintegrates fibers
- Vacuum pre-compresses the mat and adjusts fiber distribution

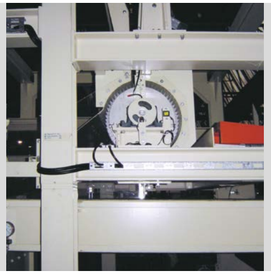
Best forming accuracy crosswise with optional Formator (see page 115):
– Scalper with separately scalping 100 mm wide segments over board's width, regulated in closed loop by Dieffensor
– Ability to reduce raw material consumption considerably. Material is returned to the forming bin



Outfeed rollers gently discharge the fibers to protect their geometry. Design ensures an uniform material discharge



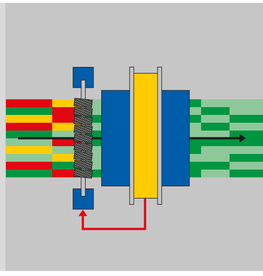
Forming Rollers Head: No sticking nor blocking of the rollers due to material and geometry of the spikes



Spike-Roll: Finely dissolving the fibers from above and accelerating them into the vacuum forming area to the right

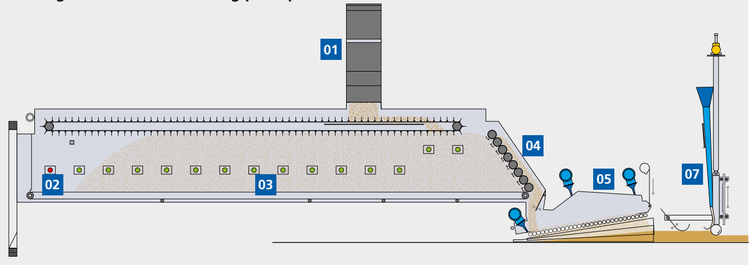
Segmented high-speed scalper reduces area weight deviations

Dieffensor senses area densities crosswise and lengthwise with high resolution



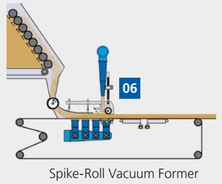
Combination is the Formator: Closed loop, acting automatically without operator

Forming Station MDF: Working principle



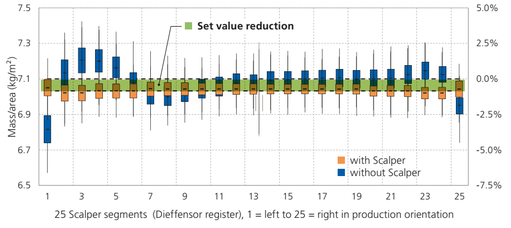
01 Material infeed to forming bin
02 Alert wheel
03 Filling level sensors
04 Discharge head
05 Forming head with adjustable inclination
06 Spike-Roll Vacuum Former
07 Scalper unit (additional option: Formator, see page 115)

Forming Roller Head



Spike-Roll Vacuum Former

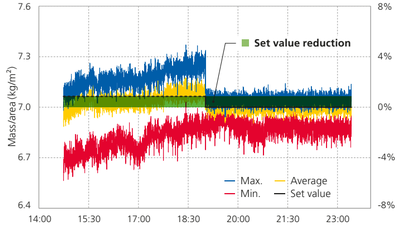
Cross distribution with, w/o Scalper 6.4 mm HDF



Optional Formator provides increased material efficiency

Formator achieves excellently narrow corridor on density crosswise; subsequently the system allows extreme savings in raw material consumption.

Lengthwise comparison during 5 h production with, w/o Scalper 6.4 mm HDF



With Formator, lengthwise density deviation is reduced extraordinarily, which provides possibility to increase quality and/or save raw material consumption.



CBV Prepress MDF

Application

Wood fiber mat de-aeration prior to MDF/THDF and insulation board pressing

Description

Continuous precompression of fiber mat

Customer benefits

- Long de-aeration zone and high-pressure compacting area in order to achieve thin mat at press infeed
- Excellent line speed
- No plugging of degassing (precompressor) belt
- Homogeneously compressed mat without blowout
- Low maintenance due to exhaust and belt cleaning device
- Long lifetime of belts

Technical features

- Precompressor inside spreading wall
- Precompressor and prepress belt cleaning
- Two hinges with different pressure zones
- Top press belt optionally perforated and degassing belt optionally endless (installing device included)
- Max. speed 2,500 mm/s

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Forming Station PB

Application

Mat spreading for particleboard (PB) pressing

Description

PB forming station spreads constant three-layer particle mat. The production capacity ranges from 300 to 3,000 m³ particleboards per day, dependent on device chosen:

- ClassiFormer, the compact mechanical forming device for small and medium capacities
- WindFormer, best-practice wind forming device for medium and high capacities

Customer benefits

- Low sanding allowance due to superb forming accuracy, both lengthwise and crosswise
- Excellent board surface quality, highly suitable for laminating or direct painting due to a highly accurate process (WindFormer)
- Modular system with compact design, especially for modernizations (ClassiFormer)
- Optimized weight control loops for fast production starts and changes
- Possibility to process 100 % recycling material, straw, hard and soft wood

Technical features

WindFormer:

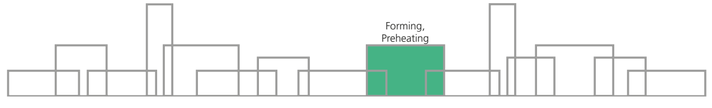
- Separation for surface layer mainly due to wind (particles' weight) in combination with screens
- Separation and reject of glue lumps from the production material (optional roller screen "retrofittable")

In combination with Rake spreader head for core layer (with disc separator for glue lump removal)

ClassiFormer:

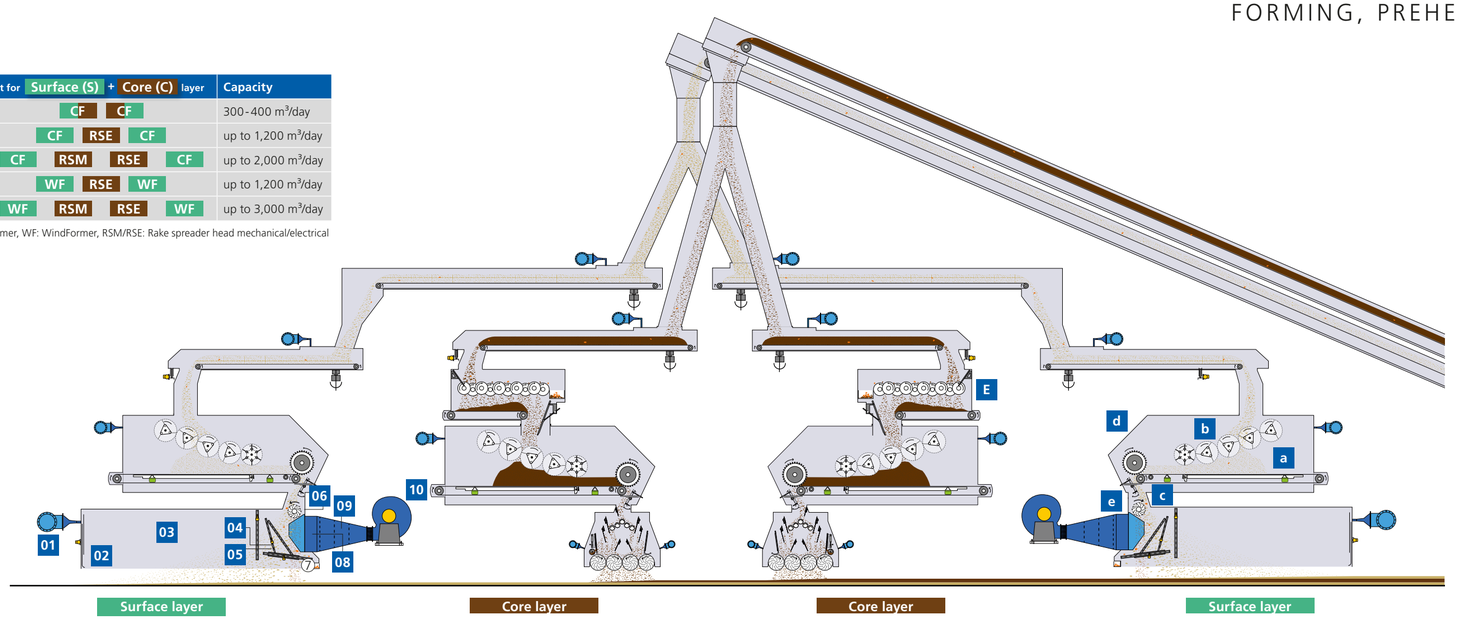
- Separation by particles' size mainly due to different gaps between the rollers
- Combined dosing bins for both surface layers and core layer (for capacities < 400 m³/h)
- For medium capacities in combination with Rake spreader head for core layer

Best forming accuracy crosswise with optional Formator (see page 115).



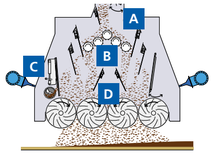
Equipment for Surface (S) + Core (C) layer					Capacity
Mechanical forming	CF	CF			300 - 400 m³/day
	CF	RSE	CF		up to 1,200 m³/day
	CF	RSM	RSE	CF	up to 2,000 m³/day
Wind forming	WF	RSE	WF		up to 1,200 m³/day
	WF	RSM	RSE	WF	up to 3,000 m³/day

CF: ClassiFormer, WF: WindFormer, RSM/RSE: Rake spreader head mechanical/electrical



WindFormers for surface layers:

01 Air exhaust
02 Height adjustable air flow guide
03 Wooden corpus
04 Vibratory screens flush glued to walls
05 Flush mount screen
06 Spoke roller
07 Glue lump or roller screen
08 Horizontally and vertically adjustable register
09 Diffusor screens
10 Radial air fan

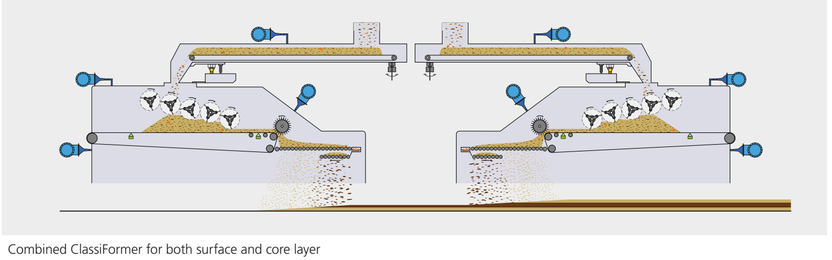


Rake spreader head and disc separators for core layer:

A Material flow split by rakes
B Distribution rollers
C Mechanically (RSM) or electrically (RSE) controlled correction module
D Spoke rollers
E Disc separator for glue lump removal

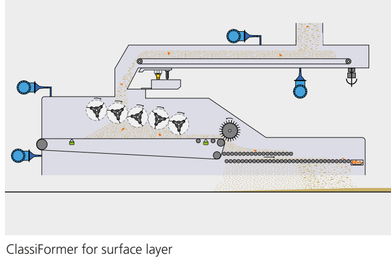
Universal bins for forming:

a Wooden interior
b Paddle rollers
c Weight scale
d Discharge roller dissolves the particles before feeding them into the spreading head
e Continuous discharge to forming head

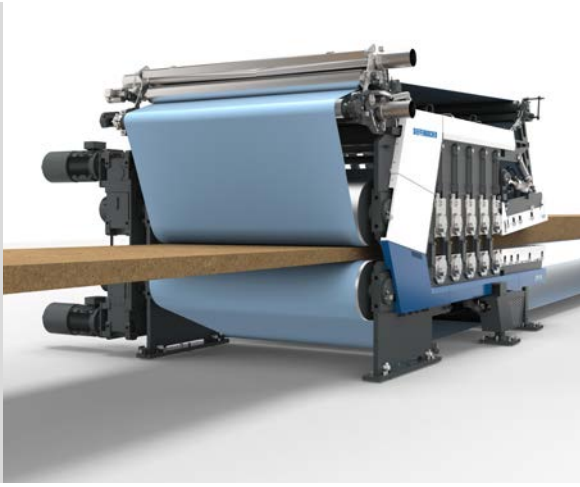


Combined ClassiFormer for both surface and core layer

ClassiFormers



ClassiFormer for surface layer



CPP Prepress PB

Application

Wood particle mat de-aeration and compression prior to PB board pressing

Description

Homogeneous precompression to enable a safe and smooth mat transfer into the continuous press. Individually regulated compression rollers and high line pressure to meet the customer requirements

Customer benefits

- Smooth precompression and pressure relief for optimal surface quality
- Compression curve adjustable according to mat thickness
- Homogeneously compressed mat without blowouts
- No plugging of de-aeration (precompressor) belt
- Low maintenance due to exhaust and belt cleaning device
- Long lifetime of belts
- Easily exchangeable de-aeration belt

Technical features

- 6 precompression rollers
- 4 main compression rollers, individually adjustable and separately controlled
- Hinge between precompressor and main compressor
- De-aeration belt cleaning devices
- De-aeration belt changing support
- Line pressure up to 150 N/mm
- Max. speed 2,500 mm/s

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Forming Station OSB / OSL

Application

Mat laying for OSB/OSL board pressing

Description

OSB Forming Station forms glued strands to an equal and calibrated multilayer mat. The mat is formed of two symmetrical surface layers with length-oriented strands, optional intermediate layers and a core layer of various finer strands with cross orientation. However, OSL Forming Station orients both surface layer and core layer strands lengthwise.

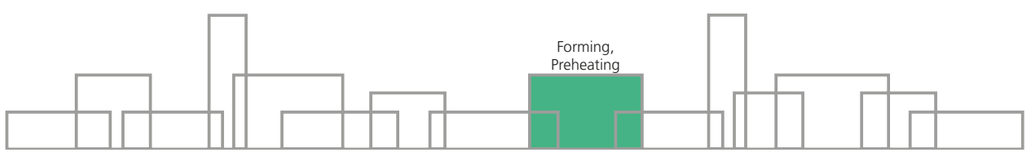
Customer benefits

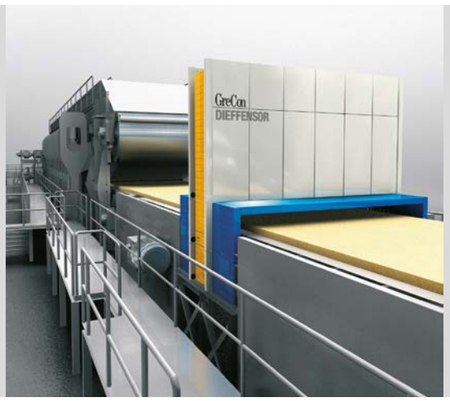
- High board quality due to superb strand orientation
- Excellent strand orientation, both lengthwise and crosswise, due to automatic height control of the spreading heads
- Very low area weight deviation, both lengthwise and crosswise, due to individual weight control of each layer
- Modular types of spreading heads for all kinds of material (length 40 to 250 mm)
- Optimized weight control loops for fast production starts and changes

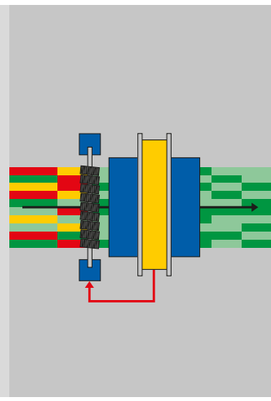
Technical features

- Variable ratio between surface and core layer material
- Individual weight control of each layer with mat scales integrated into either the bin or the forming line
- Unseparated or separated core layer former
- Separate automatic height adjustment of each forming head
- Cross belt to reject glue lumps in surface layer

Best forming accuracy crosswise with optional Formator (see page 115).







Formator

Application

Mat forming for MDF, PB and OSB production

Description

Formator consists of the Dieffensor and a segmented scalper:

- Dieffensor constantly senses area densities crosswise and lengthwise with high resolution over the mat's depth and width
- Segmented high-speed scalper, regulated in closed loop by Dieffensor, reduces area weight deviations

Customer benefits

- Excellently narrow corridor on density crosswise
- Extreme savings in raw material consumption
- Lengthwise density deviation is significantly reduced
- Improved quality and/or reduced raw material consumption
- Low thickness tolerance allows reducing the sanding allowance
- Adjustable edge-density

Technical features

- Scalper lowers its height automatically relative to the mat's height according to the recipe
- Scalps in separate 100 mm wide segments over board's whole width
- Fully automatic adjustments of the segments or the complete scalper depending on the density deviations measured by the Dieffensor
- Scalped material is returned to the forming bin (MDF: pneumatically; PB/OSB: mechanically)
- Board thickness up to ca. 2.5–40 mm MDF, ca. 6–40 mm PB, ca. 6–38 mm OSB

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Mat Spray System

Application

PB, MDF and OSB production

Description

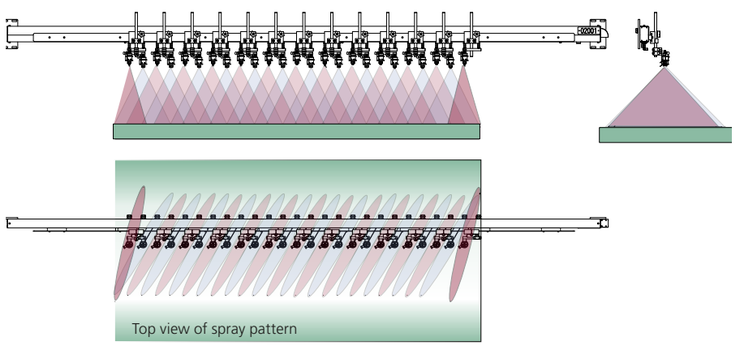
Add moisture for quick temperature transfer to the mat's core during press process. High-precision spray system consisting of two units for spraying water onto the forming belt and onto the material to be pressed. If desired, additives (e.g., release agent) can be added to the water.

Customer benefits

- Improved board properties and surface quality
- Reduced press factor
- Integrated into the control system of the line, fully automated
- Easy maintenance (possible even while producing) and high uptime

Technical features

- Automatic, exact mixing and dosing of water and additives
- Spray system automatically adjustable in height. Width adjustment optional
- Individual variation of spray pattern possible
- Droplet-free technique
- Nozzle quick-change adapter
- Integrated rails to slide spray bar into maintenance position
- Typically 10 to 80 g/m^2 resp. ml/m^2 dosing range depending on line speed
- Dimensions of the basic system:
  1.8 × 1.2 × 1.6 m (L × W × H)



Microwave Preheater

Application

PB, MDF, OSB and LVL board production

Description

Increase of capacity achieved by a higher mat temperature. Microwave radiation allows an efficient and homogeneous temperature buildup in front of the press.

Customer benefits

- Increase of production capacity, typically by up to 30 %
- Homogeneous preheating of the complete mat
- No moisture added to the mat, thus preferred solution for HDF
- Easy operation and process control
- Short installation time of about 10 days and short start-up time

Technical features

- Equally arranged of magnetrons, each magnetron individually adjustable
- Easy maintenance of the magnetron heads due to direct electric cabinets
- Safe operation due to absorbing chambers
- Adjustable infeed and outfeed channels
- Microwave power can be adjusted easily to throughput
- Required length in forming line 7.5 to 10 m
- Installed power 450/900 kW
- Preheating power 360/720 kW

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CPS+

Application

PB, MDF, OSB and LVL board production

Description

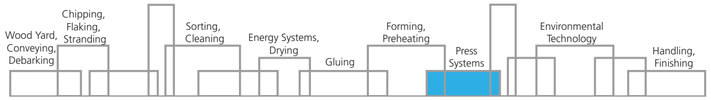
Continuous production of PB, OSB, MDF and LVL under simultaneous influence of accurate pressure and temperature.

Customer benefits

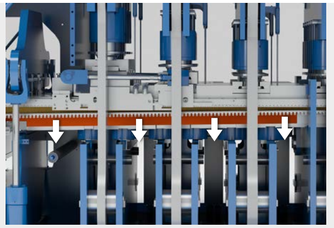
- Low sanding allowance due to the double-hinge infeed system
- Optimal thickness tolerances due to proven CPS+ Thickness Control System
- Low glue consumption due to Parallel Press Gap System
- Thermal expansion compensation allows fast heating up and temperature changes during production due to movable frame system
- Offset-placed cylinders homogenize board's surface
- Lifetime heating platen concept with separate protection plates

Technical features

- Double-hinge infeed system for best de-aeration and fast simultaneous pressure and temperature buildup
- Parallel Press Gap System
- Multipot cylinders for optimal edgewise de-aeration (standard for MDF) and quick pressure relief in case of emergency (option)
- CPS+ thickness control with flexible setup for all board requirements
- Motor-driven adjustment of rolling rods for optimal steel belt tracking
- Release Agent Applicator to prevent the mat from sticking to the belts (option, see page 122)
- Thermo-active protection platen in infeed and high pressure zone accelerates heat transfer to the mat (option)
- Docking of upgrades (e.g. preheating systems) prepared
- Speed up to 2,500 mm/s
- Board thickness 1.5–60 mm
- Finished board width 1.2 m, 1.8 m, 2.1 m, 2.4 m, 2.7 m, 3.2m (4 ft, 6 ft, 7 ft, 8 ft, 9 ft, 10ft)
- Typical width variation 0.6 m (2 ft)

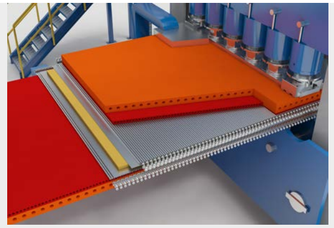


01 Double-hinge infeed system for fast pressure and temperature buildup

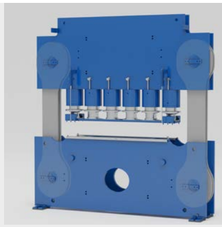


02 Press infeed protection detects undesirables, stops press instantly and actively releases multipots (option)

03 Multipot cylinders for de-aeration via mat's edges and for pressure relief of lower heating platen (option)

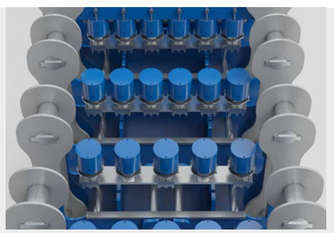


04 Heating and protection platens—thermo-active protection platen allows faster temperature buildup (option)



05 Modular frame construction for quick installation and easy access

CPS+

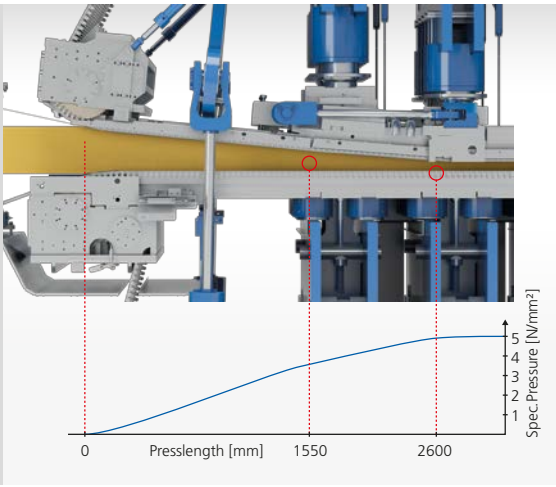


06 Offset-placed cylinders homogenize board's surface

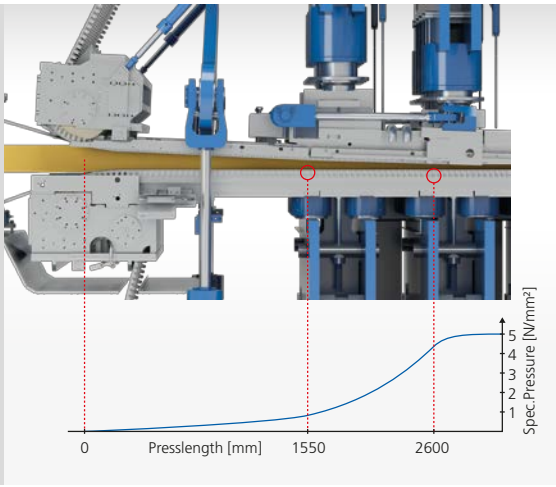
07 Thermal expansion compensation—unrestricted temperature changes during production

08 Strictly aligned supply side for easy access to inner parts from opposite maintenance side

09 Valve blocks easily accessible in cool surroundings



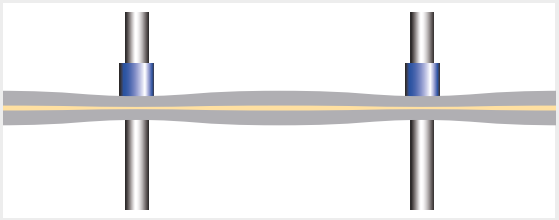
Fast pressure buildup for high bending strength and good surface quality due to double-hinge infeed system.



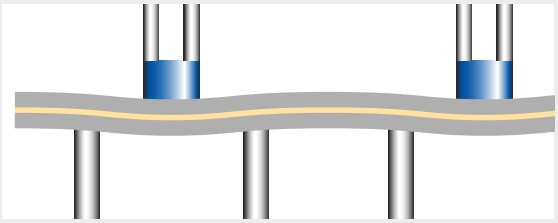
Smooth de-aeration at high speed thin board production and fast pressure and temperature buildup due to double-hinge infeed system.

Parallel Press Gap System (PPS)

Sustained pressure continuity—Dieffenbacher standard since 1999



without Parallel Press Gap System (ContiPlus)



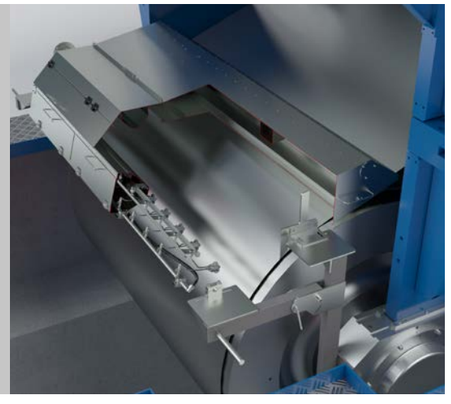
with Parallel Press Gap System (CPS+)

Characteristics

- Heating platens' thickness, number of cylinders lengthwise and frames' distances are well balanced
- Cylinders' forces and counteracting forces are being absorbed length-wise-offset

Benefits

- Minimum press gap variation between the frames
- Even pressure distribution:
  - for low glue consumption
  - for best thickness tolerances
  - for outstanding board quality



Release Agent Applicator

Application

PB, MDF and OSB production when using MDI glue

Description

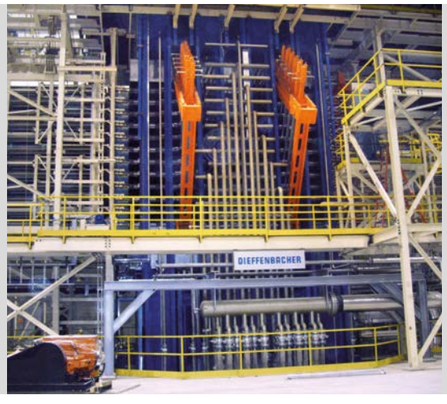
Two spray bars with high-precision nozzles achieve constant application of diluted release agent onto the steel belts. Potential evaporation will be captured by the press suction system.

Customer benefits

- Reliable protection of steel belts
- Improved board surface quality
- Low consumption costs
- High uptime and low maintenance

Technical features

- Automatic, exact mixing and dosing of release agent and water
- Overlapping fluid application
- Droplet-free technique
- Suction hoods for spray bars
- Application range 5–30 g/m², adjustable and depending on line speed
- Dimension of dosing station: 1.8 × 1.2 × 1.7 m (L × W × H)



OSB Multi-Opening Press System

Application

OSB production

Description

Multi-opening press system to produce OSB with precision pressure and temperature control for large formats.

Customer benefits

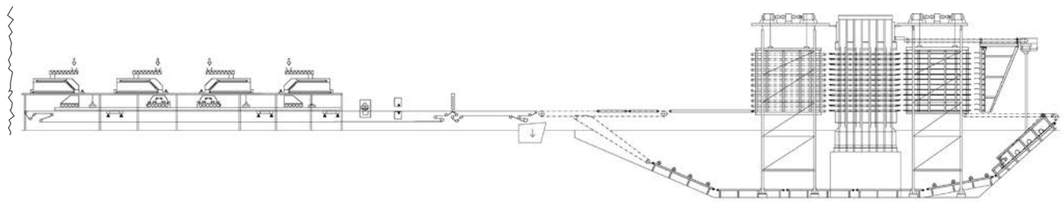
- High compression speeds result in sound board properties
- Steam venting enables degassing of wider presses and results in desirable board properties
- High position accuracy due to advanced hydraulics and state-of-the-art controls
- Easy and multifunctional control of the press
- Easy access to every press part and hydraulic system

Technical features

- Simultaneous closing device with maintenance-free bushing design
- Rigid design of the press, especially the press frames and the forged cylinders
- Press design can be conventional or modular
- Total nominal pressure up to 200,000 kN
- Design capacity up to 1,152 MMsft/a (on basis 3/8-inch board thickness)
- Board thickness 10–50 mm (0.4–2 inches)
- Finished board width max. 4 m (13 ft), length max. 8 m (26 ft)

Option

Flexoline consisting of belt and chain conveyors transporting Flexoplan sieves from discharge cage at press outlet back to charge cage in front of the press. Ideal in use with Combiline, which transforms continuous forming into discontinuous mat preparation without raw material loss.



Intelligent Air Management System

Application

Buildings for MDF, PB, OSB and LVL production

Description

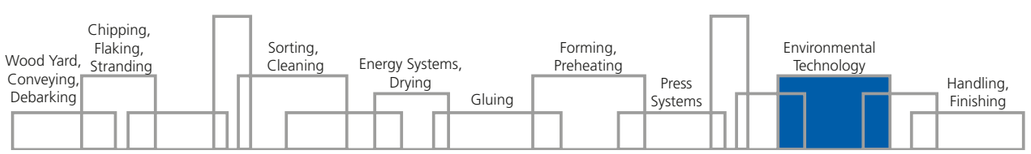
The intelligent air management system captures concentrated and diffuse emission sources and controls the infeed and outfeed air in the hall in order to improve the hall climate through systematic air flow. Each concept will be individually and integrated designed to meet our customer requirement.

Customer benefits

- Improved air quality for your staff's health
- Heat recovery from exhaust streams
- Use of low calorific energy streams for preheating the ambient air supplies
- Minimized exhaust air volumes

Concept modules

- Separated production buildings into emission zones
- Decentralized air supply and heat transfer units
- Efficient capture concentrated and diffuse emission sources
- Multiple-use exhaust air volumes
- Inline scrubber for cleaning the exhaust air streams



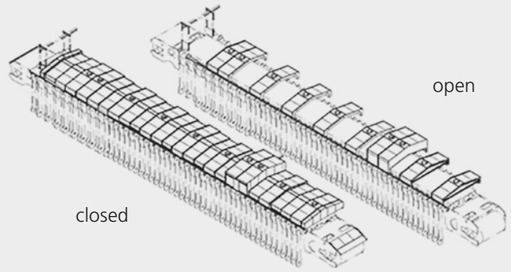
Intelligent Air Management System

As a general contractor for the worldwide wood-based panel industry, Dieffenbacher provides customers with an engineered solution for improving the air climate in their production hall. This is possible with a new intelligent air management system combined with the innovative Inline Scrubber (see Press Emission Control System, page 126, and Dryer Emission Control System, page 128). This system also can be easily retrofitted in existing plants to comply with new and stricter regulations.

Our solution is based on a concept specially configured to customers' requirements. To configure an optimal solution, in-depth analyses such as CFD simulations (computational fluid dynamics) are carried out.

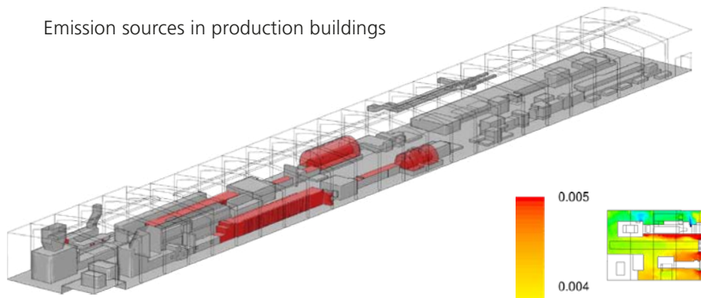
Add-ons:

Inline scrubber

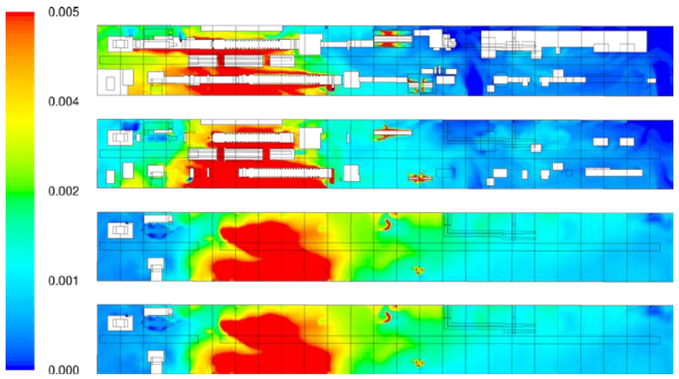


Modular press suction hood ideal for retrofitting

Emission sources in production buildings



CFD simulation of VOC concentrations



Press Emission Control System

Application

- MDF/HDF panel industry
- Particleboard industry
- OSB industry

Description

The Press Emission Control System cleans exhaust gases from the press through a washing process. Dust and condensable fractions of exhaust gases are bound to fine water droplets. These solid and liquid parts are separated in the unique Inline Scrubber. Additional equipment can be supplied to reduce VOC emissions (volatile organic compounds), in particular, formaldehyde.

Customer benefits

- Fluid-optimized system means excellent energy efficiency
- Additional energy savings feasible with use of our unique Inline Scrubber
- Reduction of VOCs and formaldehyde with built-in equipment (optional)
- Low fresh water demand
- Low space requirement

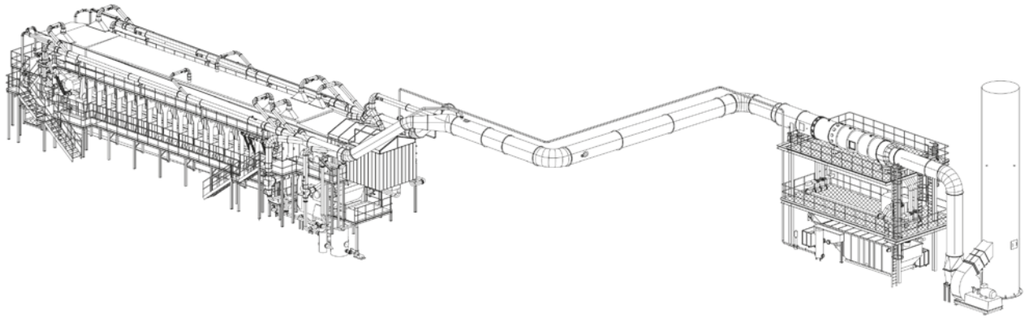
Technical features

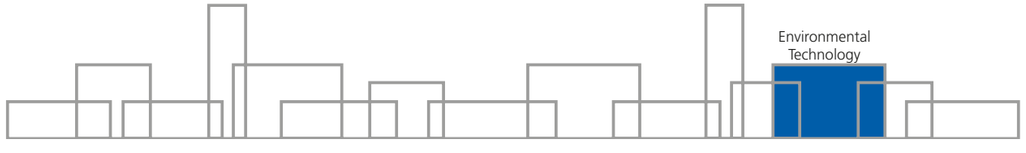
- High-efficiency separator
- High solid content in sludge discharge
- Low pressure drop components in entire system
- Special non-sensitive nozzles to prevent contamination with particles
- Function electronically visualized and monitored at the control room
- Easy access for inspection and maintenance

Press Emission Control System

Type		NE 35	NE 55	NE 75	NE 90	NE 120	NE 150	NE 180
Product		for OSB/PB/MDF						
Exhaust volume, nominal	am³/h	35,000	55,000	75,000	90,000	120,000	150,000	180,000
Exhaust volume, minimal	am³/h	26,700	39,400	59,300	81,700	94,800	135,500	159,500
Exhaust volume, maximal	am³/h	39,400	59,300	81,700	94,800	135,500	159,500	190,300
Exhaust temperature, approx.	°C	30						
Fresh water consumption[1], approx.	m³/h	1–2						
Recirculated water amount, approx.	m³/h	120						
Installed electric power at pumps	kW	22 + 11						
Effective electric power requirement at pumps	kW	18 + 8						
Installed electric power at radial fan	kW	45–75	75–110	110–160	160–200	200–250	250–315	315–355
Effective electric power requirement at radial fan	kW	37–55	55–82	82–114	114–132	132–188	188–222	222–264

1) heavily dependent on ambient conditions





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Dryer Emission Control System

Application

- MDF/HDF panel industry
- Particleboard industry
- OSB industry
- Pellet industry

Description

The Dryer Emission Control System cleans exhaust gases by using a scrubber. Water droplets accrued in a venturi throat trap fine particulates. These solid and liquid parts are separated in the subsequent cyclone. Additional equipment can be supplied to catch water soluble VOCs (volatile organic compounds), in particular formaldehyde.

Customer benefits

- Immune to fluctuating quantity of gases at constant separation efficiency
- Adjustable emission control into submicron range
- High solid content in sludge discharge
- Reduction of VOCs and formaldehyde with built-in equipment
- Low space requirement

Technical features

- High-efficiency separator means low water consumption
- Variable amounts of gas can be processed
- Liquid distribution in venturi head via open pipes rather than nozzles, thus no clogging
- Adjustable emission control via steplessly variable venturi throat
- Recirculation of scrubbing liquid with high solid content

Pneumatic Systems

Application

- MDF/HDF panel industry
- Particleboard industry
- OSB industry
- Recycling and Pellet industry

Description

Pneumatic systems are optimal solutions for dust extraction and material transport. Main components consist of fans, blowers, cyclones, air locks, bag filter units and ductwork.

Customer benefits

- Customer-related solutions
- High safety standards
- Excellent energy efficiency
- Feasible for all climate conditions
- One source, no additional interfaces

Technical features

- Reduced pressure drop due to optimized design
- Additional energy savings feasible by use of Low Pressure Drop Cyclones
- Bag filter units with maximum operation reliability as emission control
- ATEX: conforms to highest ATEX standards
- High-efficiency components in robust and compact design

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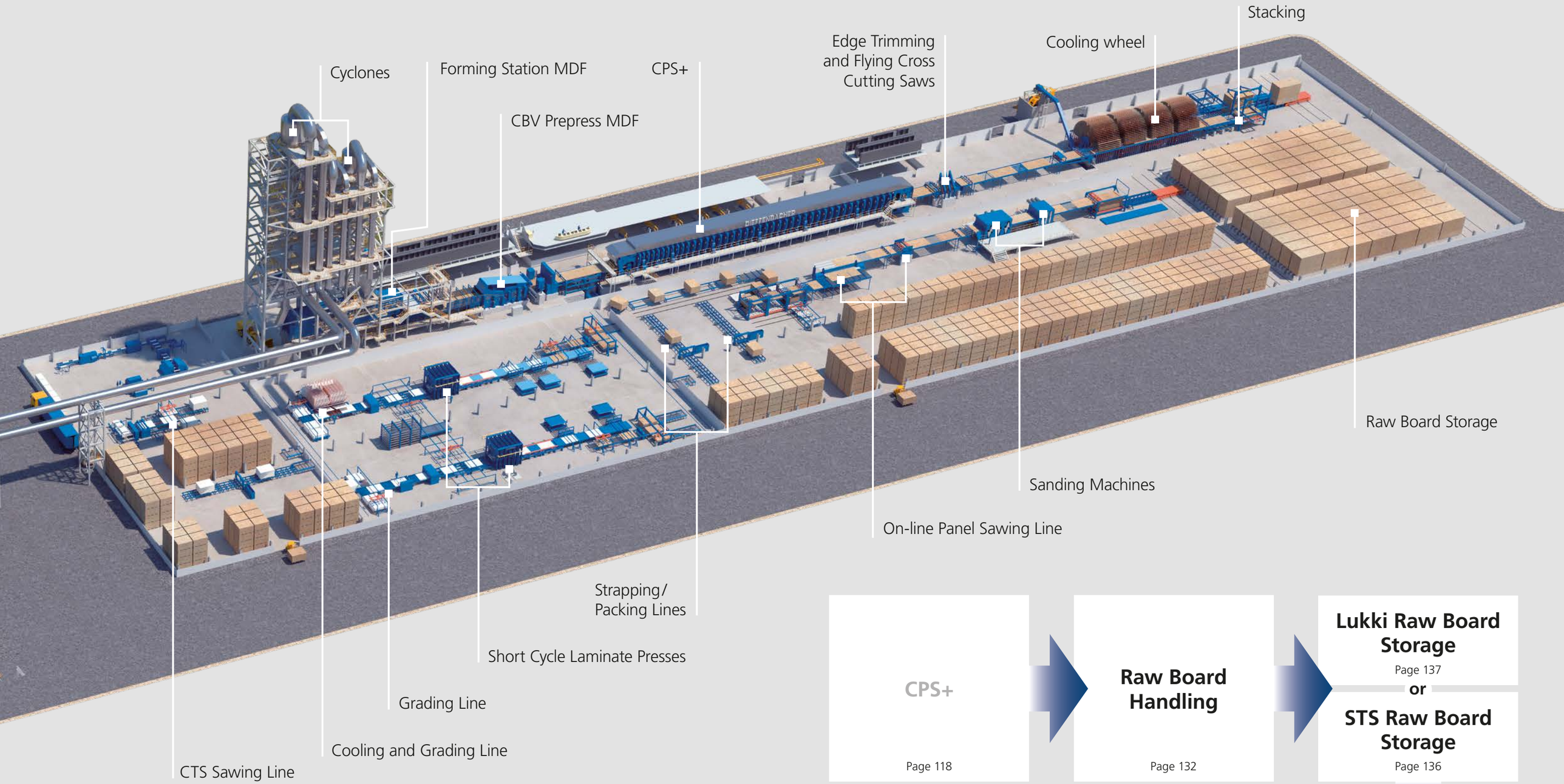

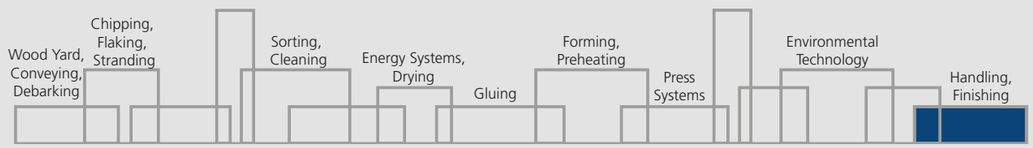

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or
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Strapping / Packing Line
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Raw Board Handling

Application

For PB, OSB, MDF and THDF production

Description

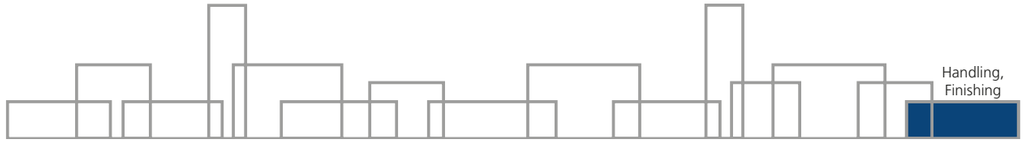
Raw Board Handling provides the tools for reliable panel production with a straightforward process designed for continuous high-speed operation. Line starts with trimming and cross-cutting saws, followed by board property control equipment. Reject panel removal prior to cooling wheels to lower board temperature. Continuous stacking with automatic product change.

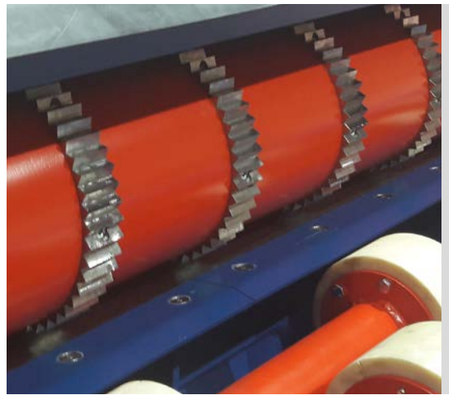
Customer benefits

- Reliable operation to ensure high uptime
- Secure process to minimize downgrade
- Fully automatic to minimize manual operations
- Heavy-duty construction to ensure long lifetime

Technical features

- Reject-handling with board breaker or by stacking
- Number of cooling wheels according to line capacity up to 3,000 m^3/d
- Stacking for raw board storage
- Production speed up to 2,500 mm/s
- Master panel width range 1,200–3,200 mm
- Master panel length range 1,800–8,800 mm






MAIER® MBB Board Breaker

Application

Panel boards (PB, MDF, OSB)

Description

The MBB Board Breaker is an effective inline solution for the reduction of reject boards.

The boards are horizontally fed between the lower guide rollers and swinging upper infeed roller to the rotor. The rotor uses aggressive crushing tools to reduce each board at the counter knife. The crushed material is further homogenized by refractioning grid.

Customer benefits

- Reliable crushing of reject boards of variable size and thickness
- Robust, long-term reliability
- Low operation costs due to simplified maintenance
- Essential parts of machine are wear-protected and exchangeable
- Energy-efficient size reduction
- Easy on-floor installation

Technical features

- Reliable forced material-feeding via hydraulically movable swinging infeed roller with integrated toothed segments
- Toothed segments of upper infeed roller and lower guide rollers are divided for easy exchange
- Robust welded casing with heavy-duty spherical roller bearings
- Crushing cams positioned on the rotor in alternating offset rows
- Wear-resistant turnable crushing tools are screwed on the rotor cams for easy exchange
- Refractioning grid, multiple-segmented for easy exchange

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Edge Trimming and Flying Cross Cutting Saws

Application

Continuous production lines for all wood-based panels

Description

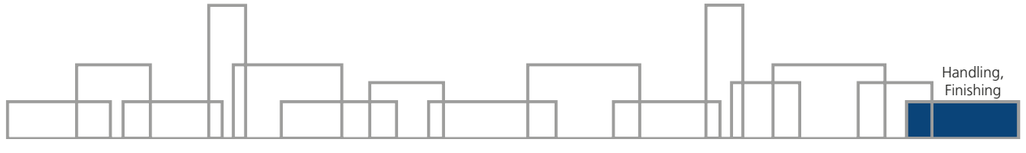
Endless board accurately trimmed to desired master panel width for further handling. The saw pairs follow the position of the edge to trim equal amount from both edges. The flying cross cut saw consists of two to six saw units depending on the required minimum panel cycle time.

Customer benefits

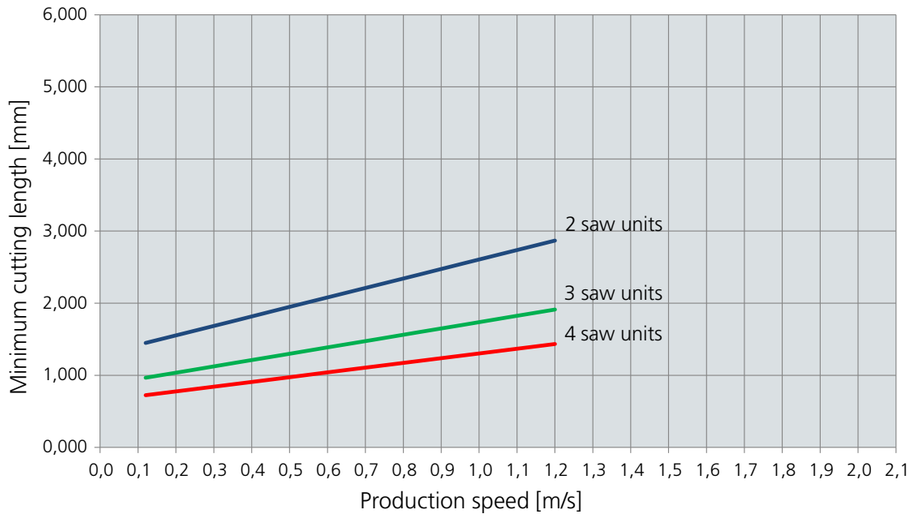
- Fast and accurate operation
- Sturdy and reliable construction
- Accurate cutting to maximize yield
- Controls with standard PLC
- Automatic cutting recipe change on fly
- Laboratory cutting possible during production

Technical features

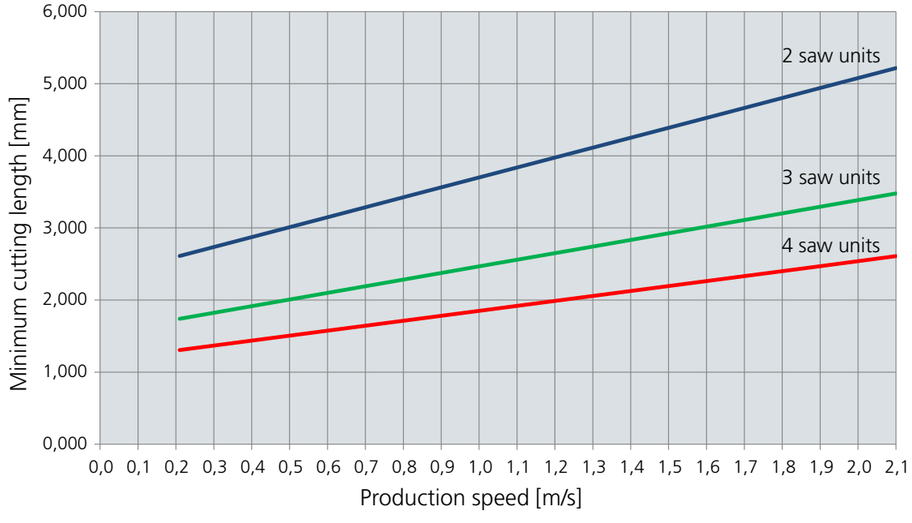
- Floating-edge trimming with two pairs of saw units
- Cross cutting with two to six saw units
- Saw blade changes possible during production
- Production speed up to 2,500 mm/s
- Master panel width range 1,200–3,200 mm
- Master panel length range 1,800–8,800 mm



Minimum cutting length for max. 2,600 mm wide panel
typical PB or OSB application



Minimum cutting length for max. 2,600 mm wide panel
typical THDF application



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STS Raw Board Storage

Application

For storing PB, OSB and MDF stacks

Description

Fully automatic storage system for panel board production. Master panel storage for main production prior to finishing and protection panels for finishing lines. Inventory management system with real-time stack information and inventory reports.

Customer benefits

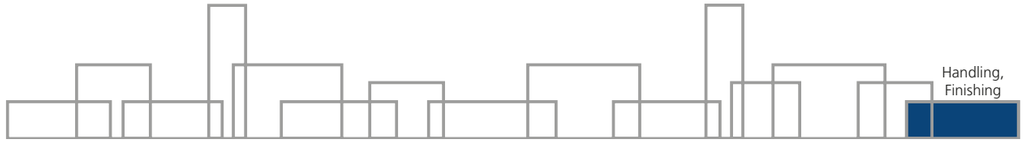
- Efficient use of storage area
- High transfer capacity due to big stack size
- Fully automatic to avoid manual operations

Technical features

- Consists of a main wagon and two satellite wagons
- Main wagon makes the crosswise movements
- Satellite wagons lift the stacks up and down
- Satellite wagons travel lengthwise in the storage area

Technical data

- Stack weight approx. 60 t max.



Lukki Raw Board Storage

Application

For storing PB, OSB, MDF and THDF stacks

Description

Fully automatic storage system for panel board production. Master panel storage for main production prior to finishing, downgraded panels after sanding and protection panels for finishing lines. Inventory management system with real-time stack information and inventory reports.

Customer benefits

- Efficient use of storage area
- Flexible operation because any stack at the top of storage place can be transferred
- Simple foundations
- Conventional stacking and feeding systems due to small stack size
- Fully automatic to avoid manual operations

Technical features

- Auxiliary wagon with conveyor for stack receiving and removal
- Auxiliary wagon makes the crosswise movements in storage
- Lukki wagon lifts the stacks up and down from/to auxiliary wagon
- Lukki wagon makes the lengthwise movements in storage
- Steel pallets are used to carry the stacks in storage

Technical data

- Stack weight approx. 20 t max.
- Stack height 2.5 m max., up to five full stacks per storage position

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Sanding Line

Application

For sanding PB, OSB, MDF and THDF boards

Description

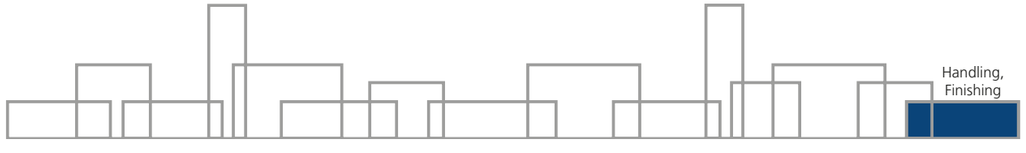
The Sanding Line provides the tools for reliable panel production with a straightforward process. From the feeding station the panels are fed into the aligning conveyor prior to the sanding machine. After sanding, the panels are inspected visually or with automatic grading systems and conveyed to the stacking stations. When needed, protection panels are used while stacking. Panel Sawing Line (see page 139) or CTS Sawing Line (see page 140) can be directly connected in-line with Sanding Line.

Customer benefits

- Reliable process to ensure high uptime
- Heavy-duty construction to ensure long lifetime
- Fully automatic to minimize manual operations
- Gentle process to minimize downgrade

Technical features

- Possibility for non-stop feeding
- High-speed feeding for thin panel operation
- Panel aligning to sanding machine centerline
- Automatic adjustments according to master panel dimensions
- Precise aligning devices at stacking stations
- Max. speed 120 m/min.





Panel Sawing Line

Application

For sizing PB, OSB, MDF and THDF boards

Description

High-capacity sawing system for standard panel sizes. Typically, the line is integrated into the Sanding Line. After aligning, the long edges of the panels are trimmed. For cross-cutting, the panels are pre-stacked to reach high capacity. Panel bundles are pulled through the cross cut saw to ensure squareness. When needed, panels are split after cross-cutting. Several stacking stations for continuous stacking. When needed, protection panels can be used while stacking.

Customer benefits

- Accurate cutting to maximize yield
- High capacity to minimize operating hours
- Reliable process to ensure high uptime
- Heavy-duty construction to ensure long lifetime
- Fully automatic to minimize manual operations

Technical features

- Saw units provided with scoring blades prior to main blades
- High-speed pre-stacking before cross cutting
- Panel aligning systems for cross cutting
- Automatic adjustments according to cutting pattern
- Precise aligning devices at stacking stations

Technical data

- Panel bundle height for cross cutting 60 mm max.

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CTS Sawing Line

Application

For sizing PB, OSB, MDF and THDF boards

Description

Flexible book sawing system for standard and special panel sizes. Typically integrated into the Sanding Line. Non-stop book forming system for cutting. In the first phase the books are cut longitudinally, followed by cross-cutting phase. Books are accurately positioned by pusher units for cutting according to the cutting pattern. After cutting occurs stacking for final stack height. When needed, protection panels can be used while stacking.

Customer benefits

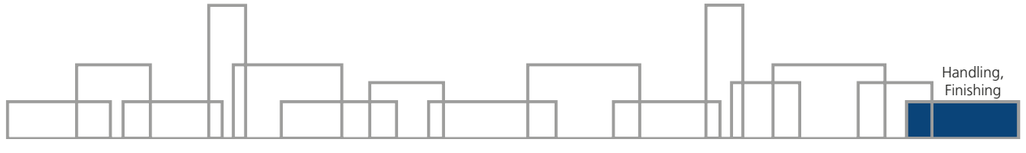
- Accurate cutting and gentle handling to maximize yield
- Flexible cutting patterns for market requirements
- Reliable process to ensure high uptime
- Heavy-duty construction to ensure long lifetime
- Fully automatic to minimize manual operations

Technical features

- Non-stop book forming
- Pusher units with AC-servo drives
- Saw units provided with scoring blades prior to main blades
- Plane saw tables covered with felt
- Automatic adjustments according to cutting pattern

Technical data

- Book height 200 mm max.
- Final product size 600 × 900 mm min.



Strapping/Packing Line

Application

For packing PB, OSB, MDF and THDF stacks

Description

The final stacks are strapped and packed for dispatch. Depending on the market requirements, the line can also be provided with a plastic wrapping system, a longitudinal strapping system or with a crosswise strapping system. Additionally, there is the possibility for panel edge printing of product data or sticker application.

Customer benefits

- Flexible packing according to market requirements
- Reliable process to ensure high uptime
- Heavy-duty construction to ensure long lifetime

Technical features

- Vertical or horizontal axis plastic wrapping with stretch foil
- Manual or automatic longitudinal strapping with PE band
- Semi-automatic or automatic crosswise strapping with PE band
- Bottom runner feeding together with crosswise strapping
- Optional: panel edge printing or sticker application
- Automatic adjustments according to packing pattern
- Ready stacks are removed by forklift truck

Technical data

- Capacity up to 30 stacks/h with a conveying speed of up to 20 m/min.
- Stack width range 1.2–2.6 m, stack length range 1.8–5 m
- Stack height at stacking up to 1.5 m, stack weight at stacking up to 10 t

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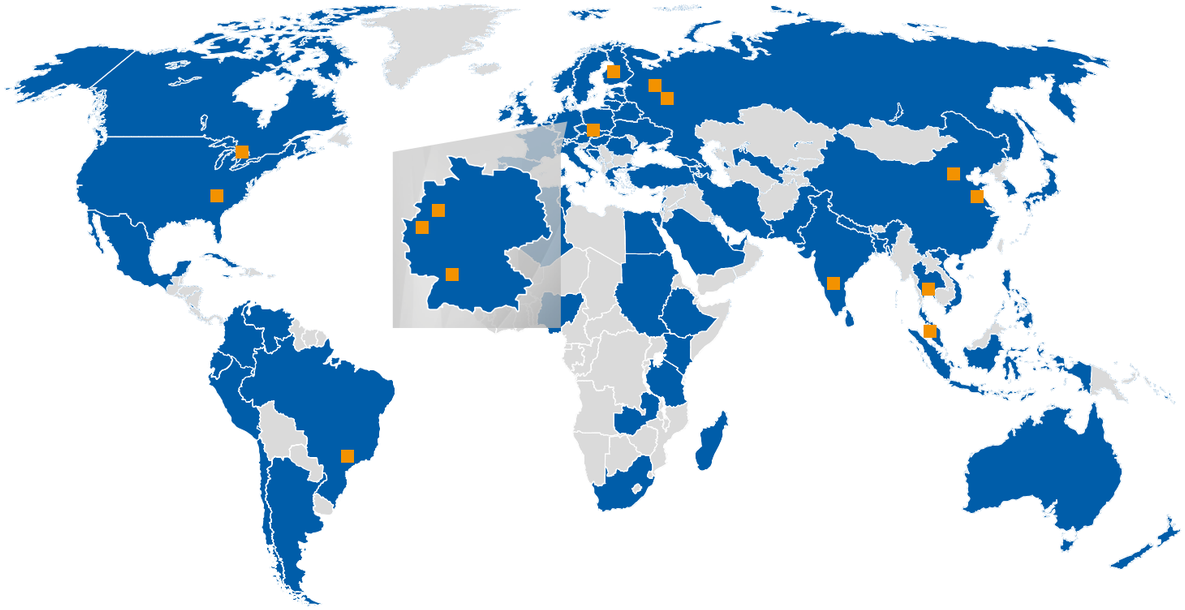
Competence worldwide



- Dieffenbacher sites (Production, Sales, Service and/or Engineering)
- Successful installations in more than 80 countries

Global Production Network

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