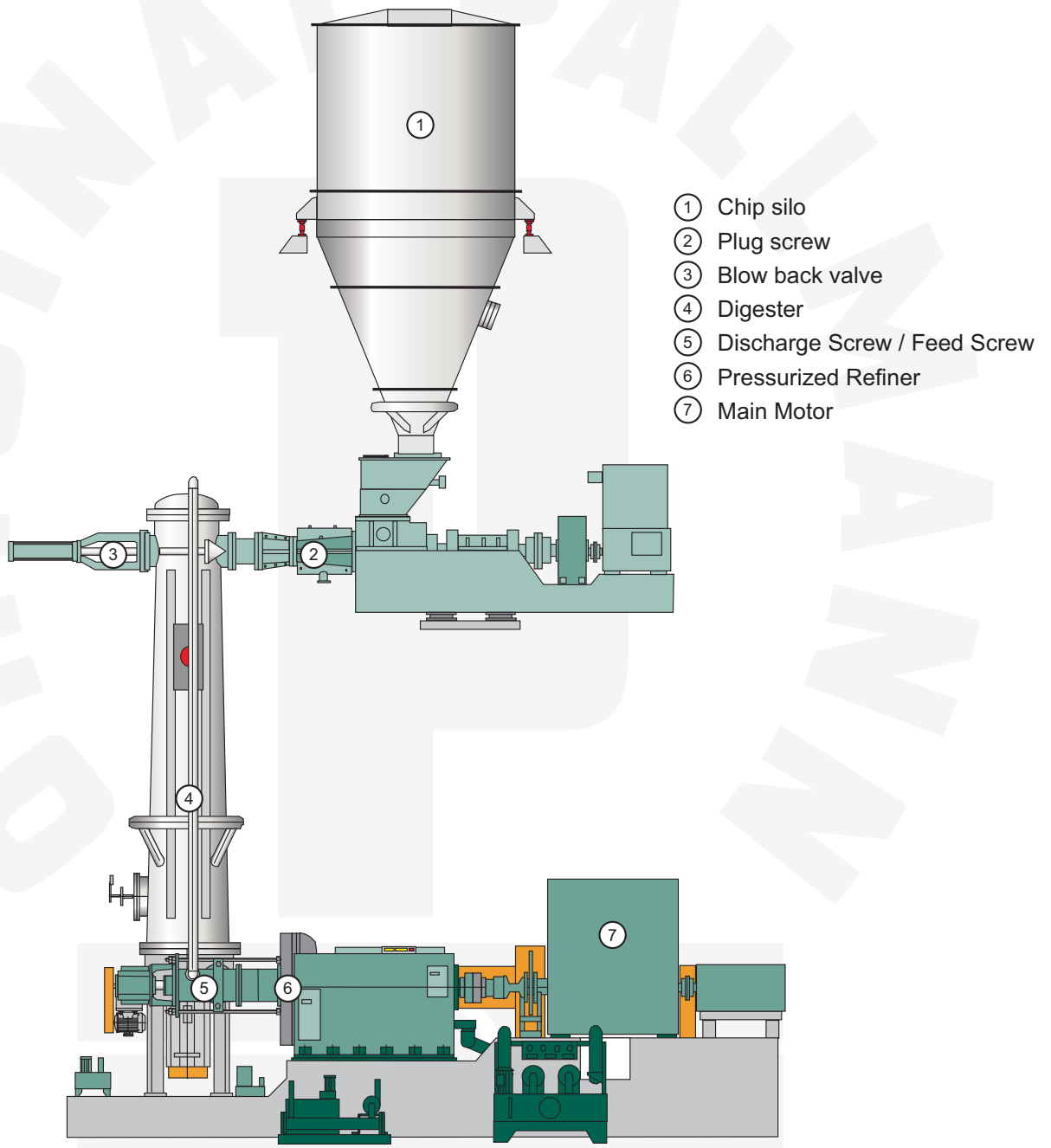


PALLMANN

Refiner System PR



Refiner System PR



Technical Data

Type	Disc diameter mm	Throughput capacity o.d. t/h	Type	Disc diameter mm	Throughput capacity o.d. t/h
PR 32	800	1.0	PR 58	1,475	27.0
PR 46	1,170	10.0	PR 62	1,575	33.0
PR 50	1,270	15.0	PR 66	1,680	40.0
PR 54	1,370	21.0			

Refiner System PR

High performance

Only the best available solution on the market is good enough to serve our customers

For more than a century, Pallmann has been developing and building machines for the size reduction industry. Pallmann's market leading position is a result of our philosophy to provide our customers efficient and at the same time precise, robust and long lasting machines and complete systems.

Application

The Pallmann Refining System PR produces high quality fiber for MDF/HDF and insulation boards made out of wood chips, sawdust and shavings as well as annual plants. Pallmann Refiner Systems reflect the optimum combination of experience gathered in practical operation and highly developed engineering skills. Each component of the system is designed for utmost reliability and economy in the board production process. Constant improvements together with and for our customers also have resulted in a maintenance-friendly system with maximum availability. As a logical consequence of process knowledge and constant development of grinding segment technology, Pallmann offers you the solution for most economic and non-polluting production leading to optimum fiber quality for more than two decades. Chip quality and cleanliness are an important prerequisite for consistent high fiber quality and long service life of downstream machines. Efficient screening, followed preferably by wet cleaning with the Pallmann chip washing system PWH, offer these required advantages.



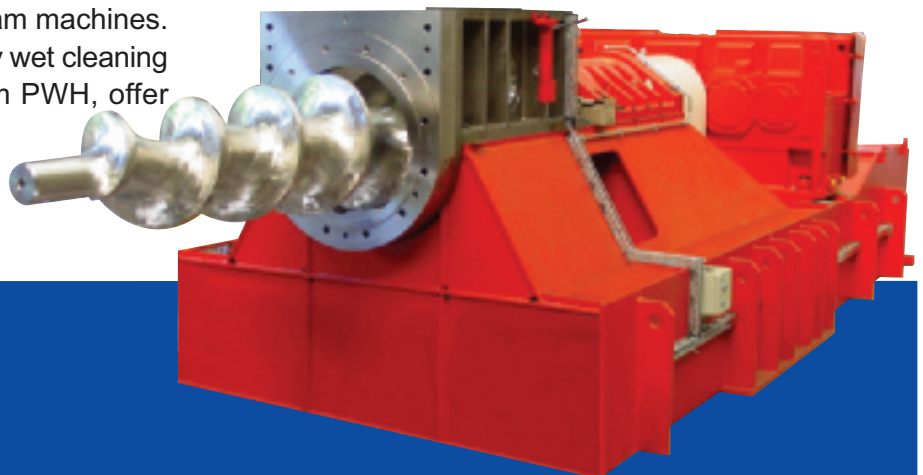
System Description

Chip bin

The standard closed design chip bin has a suspended conical bottom, equipped with a vibrating motor for continuous chip discharge. A circular steam injection system, together with either flow or temperature control, provides desired presteaming of chips. Proper chip filling level is controlled by weight cells combined with a maximum level probe.

Plug screw feeder

The heavy duty Pallmann plug screw feeds chips reliably to the digester and squeezes out excess water. Mounted on a sturdy supporting frame in hinged design, it safely compensates the heat expansion of the digester. Due to its specially extended high compression zone, it perfectly evens out moisture variations, thus giving best precondition for uniform moisture and dryer control. Plug screws with different compression rates fulfil today's and future requirements of our customers.



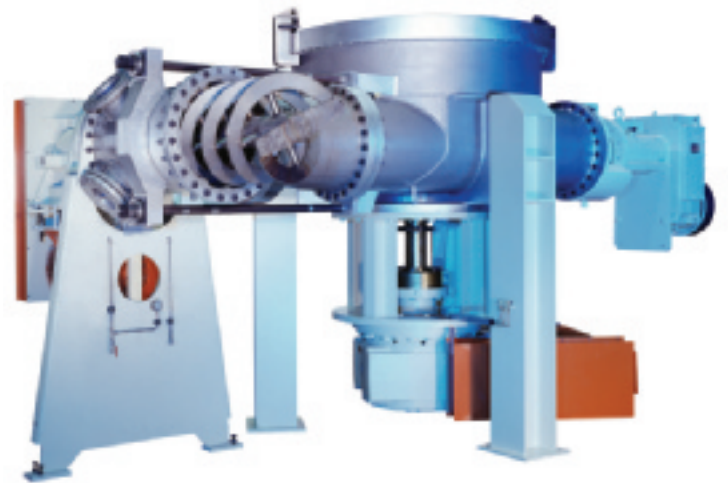
Refiner System PR

Blow back valve

Opposite to the plug screw the blow back safety valve seals the digester when no plug is available. During operation it splits and loosens the plug formed by the plug screw. The blow back safety valve system is operated by a solid steel pneumatic cylinder for control of counter pressure to the plug screw feeder.

Digester vessel

The digester is made of stainless and acid proof steel according to the applicable pressure vessel code, rated at 13 bar pressure. It provides sufficient presteaming time for softening of the chips by its usable volume of up to 20 m³. Thanks to its conical design with the large diameter bottom, the digester is safe against bridging and offers minimized overall height. The adjustable level detector automatically controls filling level and preheating time. The digester vessel bottom part contains the agitator, assuring continuous supply of chips to the speed controlled discharge screw below. Discharge screw and the subsequent feeding screw are arranged on the same level guaranteeing even feeding to the grinding chamber of the refiner. Paraffinwax, chemicals or water can be injected either into the discharge screw or alternatively directly into the grinding zone.

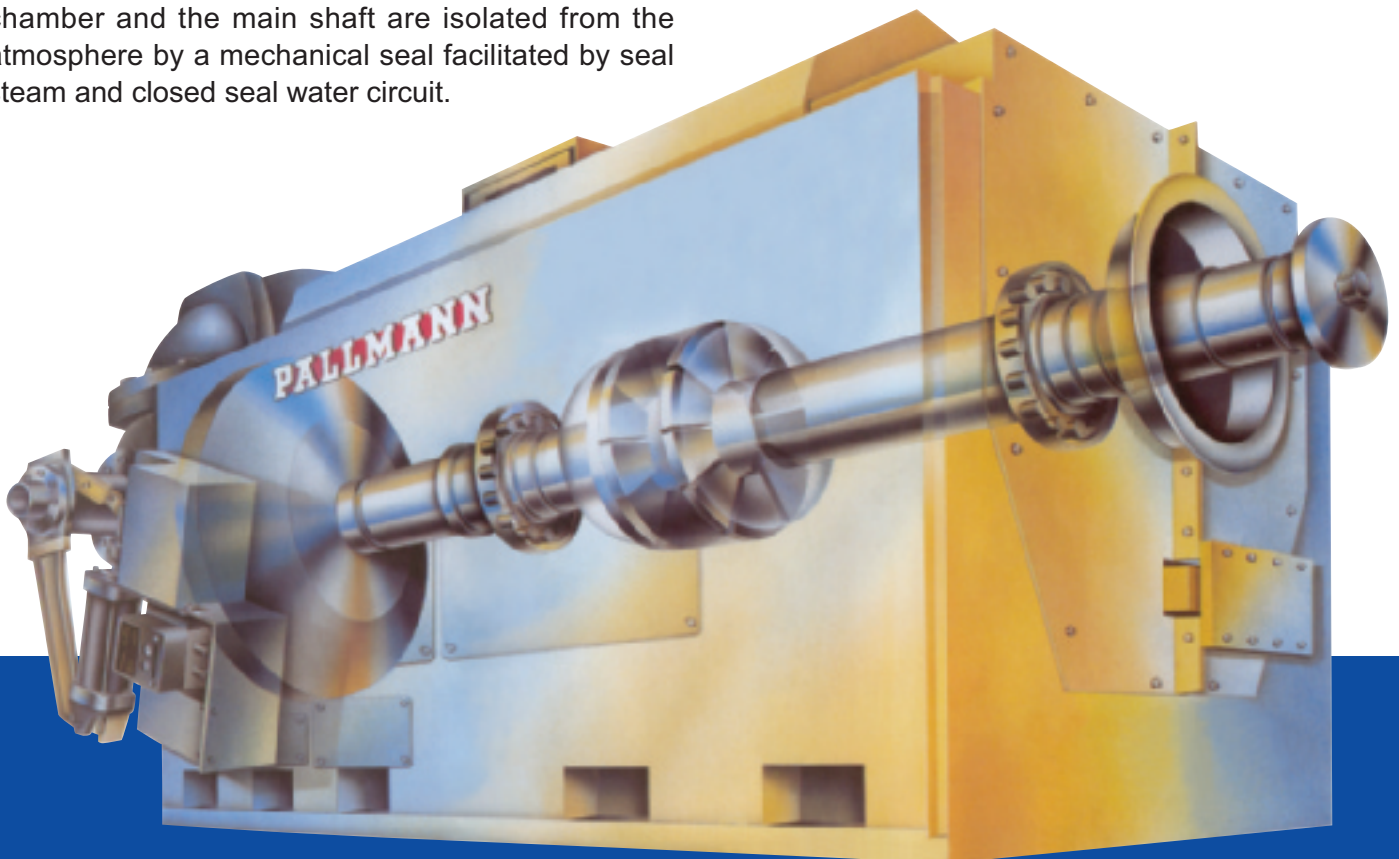


Pressurized Refiner

The Pallmann Pressurized Refiner is a single disc refiner including one stationary and one rotating, axially adjustable refining disc. The refiner is designed to work under steam pressure and temperature for mechanical refining of raw materials into high quality fiber. Its design ensures most precise grinding conditions and an uninterrupted homogeneous grinding zone. The extremely sturdy and heavy machine frame ensures a stiff and vibration-free seat for the bearing assembly and housing of the Pallmann Refiner, eliminating any external influences on the grinding area. The refining disc housing is made of corrosion and acid proof stainless steel. The housing is horizontally split to allow a quick change of the refining discs. The refiner segments are precisely pre-assembled out of the refiner onto segment holders. This feature ensures quick and easy

Refiner System PR

exchange of worn refiner segments. The segment fixing bolts are mounted from the backside without interrupting the grinding area. Together with the accurately pre-assembled segments, this ensures homogeneous and high quality fiber. The grinding gap of all Pallmann refiners is adjusted by a precise hydraulic servo system at extremely close tolerances allowing calibrated fiber quality. The reliable and heavy duty Pallmann bearing design is unique in the industry. Only the radial guidance of the shaft is taken by roller bearings. The dominating axial thrust of the grinding process is taken by the hydrodynamic bearing system designed for up to 12 MW motor power. The bearing assembly is 360° spherically positioned giving the hydrodynamic bearing optimum conditions for long service life. Oil flow and oil pressure are permanently monitored. All hydraulic systems are integrated into an easily accessible service unit. For safeguarding and monitoring the system, a vibration monitor is installed as a standard. The grinding chamber and the main shaft are isolated from the atmosphere by a mechanical seal facilitated by seal steam and closed seal water circuit.



Refiner System PR

Refiner blow valve

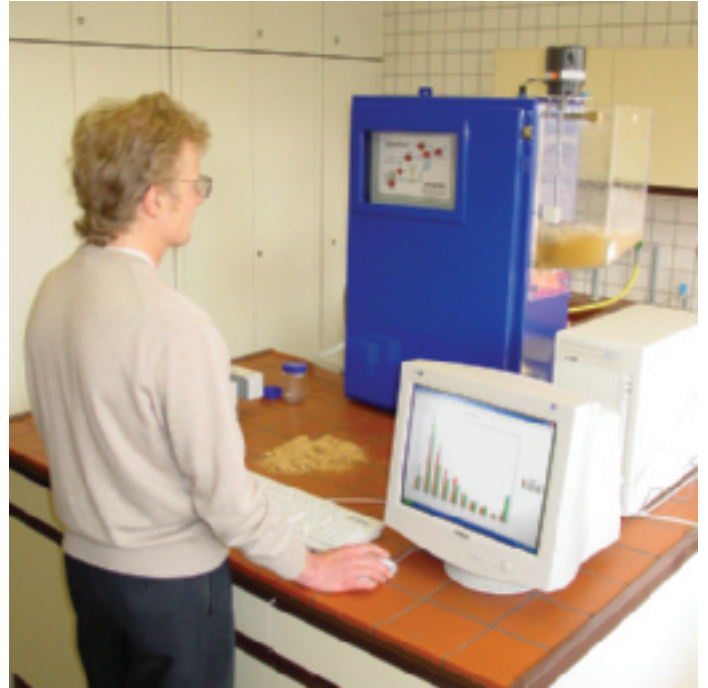
The fiber is discharged to the dryer through the blow valve, designed as an adjustable orifice-type valve. The special features of this valve are its easy and reliable positioning by a hydraulic cylinder as well as its unsurpassed wear resistance.

Fiber diverter valve

Pallmann provides with its compact diverter valve a reliable and most robust component channelling fiber either to the start-up cyclone or to the dryer. By its designed features, the valve is virtually maintenance free.

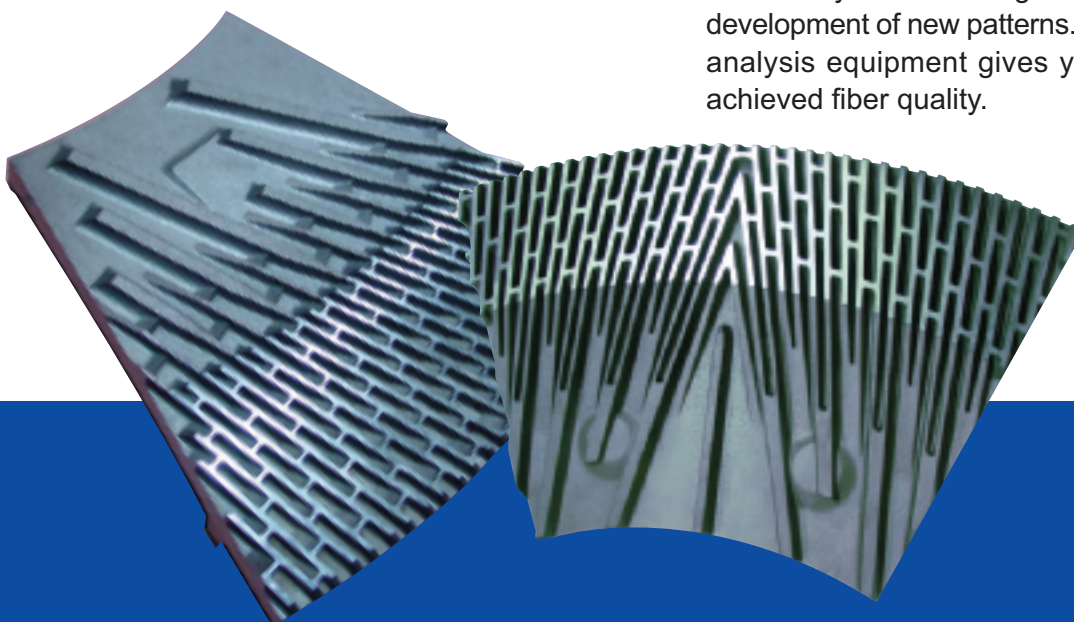
PLC and HMI-control system

The Pallmann refining system is equipped with state-of-the-art PLC and HMI systems. In combination with ample instrumentation it allows easy operation and monitoring of the system. Alarm listing, trending and real time process information are standard features. HMI system and instrumentation are the perfect tools for process optimization, control of fiber quality and profitable running conditions.



Grinding segments and fiber analysis

Pallmann offers a wide range and variety of different grinding patterns, in bi-directional and uni-directional design, when necessary also tailor-made to customer's raw materials and needs. As a Pallmann customer you benefit by the existing experience and ongoing development of new patterns. Our complementing fiber analysis equipment gives you reliable feedback on achieved fiber quality.



Refiner System PR

Customer benefits

- Heavy duty design of all components to assure best refining conditions and long service life.
- Functional units completely assembled and test run in our workshop, allowing swift installation and commissioning.
- Maintenance-friendly design of single components maximizing up-time and minimizing spare part cost.
- Extra long drainage and plug pipe section for even fiber moisture and economic dryer operation.
- Drop-in designed elements allowing swift exchange of wear and spare parts.
- Arrangement of discharge and feeding screws on the same level allows a very even dosing of chips into the grinding chamber.
- Refiner with unique bearing assembly safely absorbing imposed thrust, giving maximum life time.
- Most precise hydraulic gap adjustment for all Pallmann Refiners resulting in calibrated fiber.
- Pre-assembled grinding segments bolted from the rear to the segment holders without interruption of the grinding patterns are perfect preconditions for homogeneous fiber quality.
- Reliable and virtually maintenance-free design of the blow valve and fibre diverter valve.
- PLC / HMI system combined with ample instrumentation allowing perfect process control and fine-tuning of the system.
- Profit from Pallmann's expertise and experience in hard wearing alloys and manufacturing of high performance, precise tools.





The Pallmann Group of Companies

The Pallmann Group is the leading manufacturer for size reduction machinery in the wood products industry. The Pallmann Maschinenfabrik designs, manufactures and supplies tailor-made individual or complete solutions for the processing of raw material for MDF, OSB, particle board, waste wood and annual plants. At the headquarters in Zweibrücken, the Pallmann company runs the world's largest research and development plant as well as a training and service centre. More than 100 test machines are available for the preparation of various raw materials with subsequent laboratory analysis on industrial scale.

In addition to the manufacturing plants in Europe, North and South America, the Pallmann group has a world-wide sales and service network.



The Pallmann Program

Engineering and

Service:

Design and manufacturing
Research & development
Tests at industrial scale
Laboratory analysis
Worldwide service
Spare parts
Control systems
Process monitoring
Set-up & commissioning
Refurbishment

Components:

Debarkers
Universal flakers
Long log flakers
Disc chippers
Drum chippers
Knife ring flakers
Double stream mills
Hammer mills
Drum shredders
Bale breakers
Depithers
Refiners
Chip washing systems
Re-chippers
Pre-crushers
Impact hammer mills
Screen ring mills
Wing beater mills

System solutions for:

Flake production
Fibre production
Strand production
Recycling
Annual plants preparation

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