

PALLMANN

Depither Centurion

Separation of fiber and pith from bagasse and similar raw material

Series PMS



Depither Centurion Type PMS for High Quality Fibers

The special development of Pallmann for the cellulose, fiberboard and particle board industry

Method of operation

The Pallmann Depither is a special vertical shaft hammer mill. The rotor is equipped with exchangeable hard-faced swing hammers rotating at high speed in a screen cylinder with open top and bottom. The feed material is metered in from the top, is seized by the rotating hammers and split along the grain by impact and friction resulting in opening up of material lumps, shortening of the fiber and separating of pith from the fiber.

The centrifugal force conveys the total material to the inner wall of the screen cylinder. Pith and fines are being discharged through the screen together with the air flow. The longer fibers however are retained inside of the screen cylinder and are discharged through the cylinder bottom in spiral form. Pith and fiber are discharged and collected separately.

Application

Pallmann Depithers are used for depithing of sugar cane bagasse.

The retained fiber material can be used in cellulose production, in production of fiber- or particleboard.

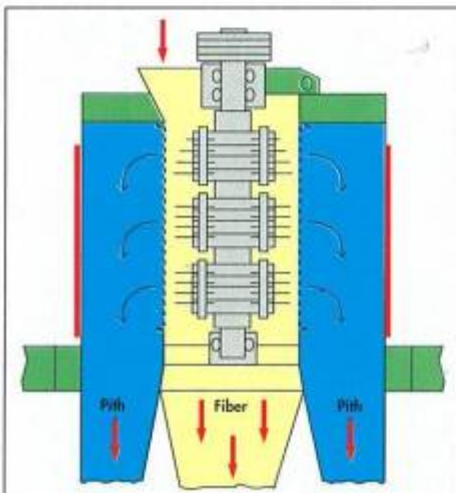
Besides for the preparation of bagasse, Depithers can be used also for separation of other fibrous materials. The machines are designed to work in wet, moist or dry processes.

The bagasse leaving the sugar factory is immediately depithed. Depending on the

geographic location of the sugar factory the duration of the harvesting season will be between four to eleven months per year.

Transport and storage of the predepithed bagasse is much less expensive because during depithing 25 to 50 % pith and fines are removed. This material then can be used as boiler fuel or prepared into cattle feed.

For cellulose production it is imperative to remove almost the total pith content of the bagasse because there are no usable fibers in the pith.



rom annual plants

For utilization in board products a high residual pith content is also unwanted because of the resulting increased consumption of resin, extended press cycles, reduced internal bond and increased thickness swelling of the finished board. In addition board quality will be affected by fungus, insects and rot if a high amount of residual pith remains in the board.

Design

The machine housing is a proven, stiff cage design with a sturdy base frame which also can be used as support for a maintenance platform.

The heavy rotor is precisely and securely supported in generously sized bearings resulting in smooth and vibrationfree operation of the rotor.

The bearings are grease lubricated.

The rotor is driven by a motor arranged on a vertical support via v-belts.

The vertical screen cylinder surrounding the rotor is split into several screen segments.

These segments are supported in hinged frames which can be pivoted after the large access doors in the machine have been opened. This design allows easy and quick access to the rotor, the interior of the screen cylinder and the pith discharge chute.

The feed stock passes through a pin drum feeder arranged above the infeed chutes ensuring metered feeding of the material into the depither. In front of the pin drum feeder a metal separating system should be installed.



Underneath of the Depither two discharge chutes for pith and one chute for fiber are flanged to the machine housing. The pith should be discharged pneumatically, fiber can be discharged mechanically with additional auxiliary aspiration. The degree of depithing achieved is depending on the type of bagasse or the type of preshredding in the sugar factory, the speed of the rotor, the chosen screen opening, the form of the hammers and their clearance to the circular screen cylinder.

While designing the Pallmann Depither utmost care has been taken with regard to wear protection of the machine components in contact with bagasse and easy exchangeability of wear parts.

The rotor has been designed in such a way that alternating operation, clockwise and counterclockwise, is made possible ensuring optimum utilization of the wear parts. The conically shaped rotor design offers the option to further use hammers which have been previously installed in the lower

rotor portion again in the upper rotor portion after having worn down to a certain extent.

The screen segments can also be installed after having been reversed by 180 degree.




Depither Centurion Type PMS

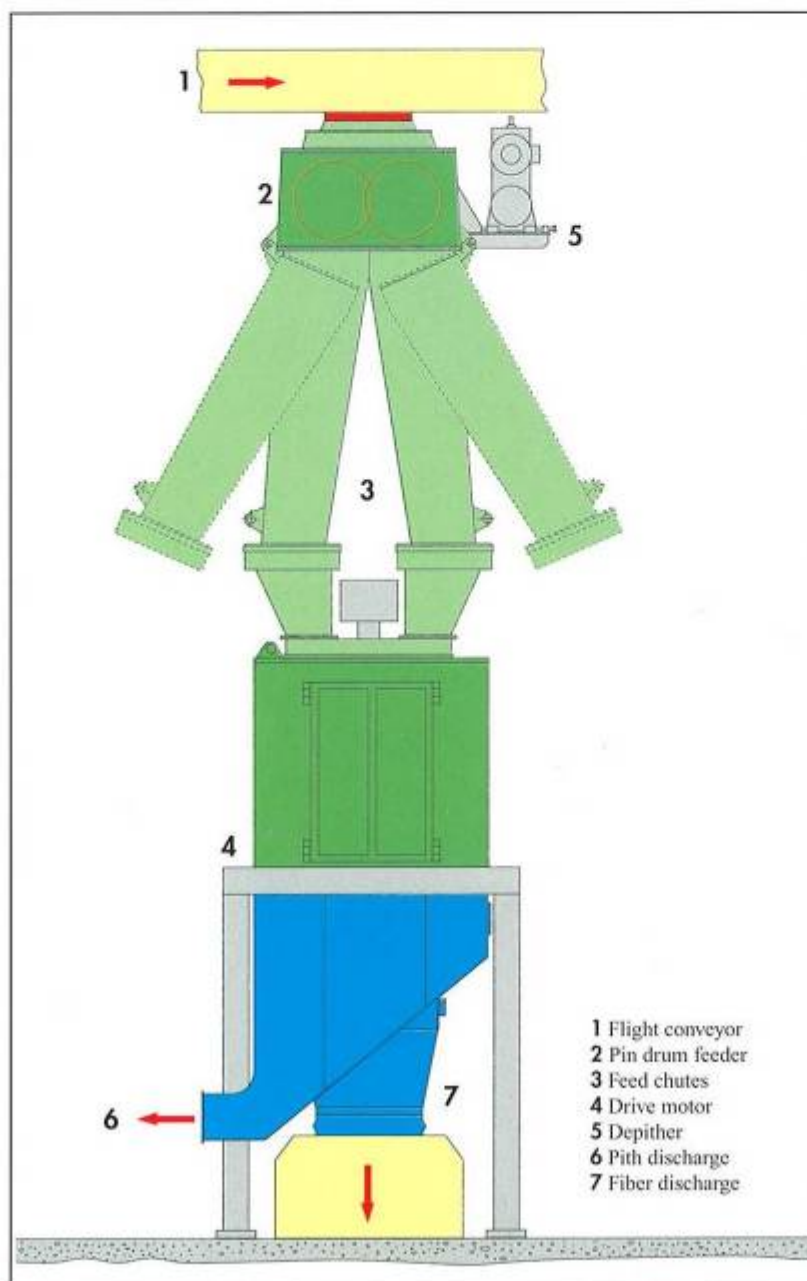
Technical Data

| Type | | PMS 6-600 | PMS 8-800 | PMS 10-1000 | PMS 12-1200 | PMS 14-1400 | PMS 16-1600 |
|-----------------------------|----------|-----------|-----------|-------------|-------------|-------------|-------------|
| Diameter of screen cylinder | mm | 600 | 800 | 1000 | 1200 | 1400 | 1600 |
| Height of screen cylinder | mm | 750 | 1000 | 1250 | 1500 | 1750 | 2000 |
| Drive motor | kW | 75 | 110 | 160-200 | 250 | 315 | 400 |
| Static load | kg | 2500 | 3500 | 7100 | 7500 | 11000 | 17000 |
| Capacity | t atro/h | 2,6 | 5,5 | 8,0 | 12,0 | 14,5 | 17,0 |

Dimensions [mm]

| | | | | | | | |
|---|---|------|------|------|------|------|------|
|  | A | 1540 | 1900 | 2180 | 2460 | 3030 | 3360 |
| | B | 1540 | 1900 | 2180 | 2460 | 3030 | 3360 |
| | C | 1450 | 1760 | 2175 | 2480 | 2875 | 3265 |

The throughput capacity of a depither is depending heavily on the type of bagasse, the degree of preshredding in the sugar factory, the humidity of the bagasse, the condition of the wear parts installed in the machine, the opening of the screen cylinder and the required degree of depithing.



Because of the static load applied to the rotor by the feed material and because of continuing wear of the swing hammers unbalance can occur. Therefore the rotor is securely guided in the upper and the lower heavy bearing and is electro-dynamically balanced.

In case of an extreme unbalance due to heavy foreign matter entering into the machine, a special vibration control system automatically switches off the main drive motor.

Decisive advantages

- High throughput capacity
- Low specific energy consumption
- Dual bearing system, smooth, vibrationfree operation
- Optimum utilization of wear parts because of two operating directions
- Simple maintenance
- Easy exchange of wear parts
- Exchange of hammers without removal of rotor
- Easy and quick adaptation to different finished product requirements
- Separate discharge of fiber and pith

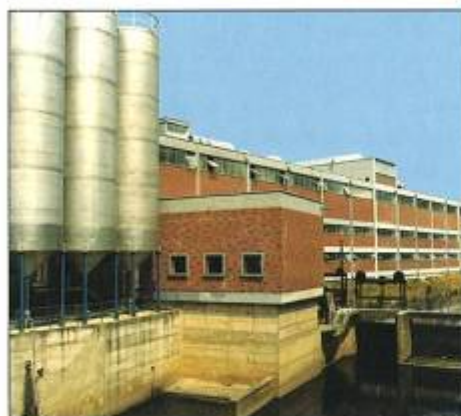
Fig. 1: Schematic of Depither

Fig. 2: Dual bearing system for rotor

Fig. 3: Depither with vertical motor support

Fig. 4: Depither PMS-12-1200

Fig. 5: Schematic Depither system



Pallmann the Size Reduction Specialist offers a wide range of machines and turnkey systems for economical preparation of brittle, tough, elastic or fibrous materials. A staff of qualified, experienced engineers, located in the headquarter and in Pallmann subsidiaries all over the world, guarantee expert advice and support for engineering, erection and operation of Pallmann systems.

The unique Pallmann Research and Development Center offers the opportunity to conduct intensive and realistic tests with the original product on an industrial scale. Experienced engineers work out together with you the optimum solution for your size reduction problem.

Quality and safety are high-ranking goals in the Pallmann philosophy. The reliable Pallmann spare and wear parts service is an important prerequisite to guarantee optimum availability of your machines and systems for a profitable production.



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