Chip Thickness Screening

Systems and equipment specifically designed for total chip preparation.

Features/Advantages

Versatile, Efficient Thickness Screening for Pulp Production

Wood costs represent the highest cost component in pulp production and for this reason it is essential to get the highest yield from the wood chips used. And, because the quality of the end product never exceeds the quality of the input product, the manner in which wood chips are prepared for pulping is significant.

Jeffrey Rader offers equipment for the four stages of total chip preparation — gross oversize removal, over-thick chip removal, size reduction of over-thick chips, and fines removal.

Gross Oversize Removal

Our **Rader Disc Screen (RDS)** is a great choice for the removal of grossly oversized wood chips, lily pads, ice lumps, and other foreign objects.
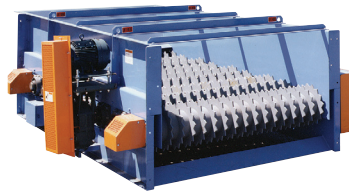
These "overs" can be set aside for further processing by rechipping or hogging, after which they can be reintroduced into the incoming chip flow.

The RDS consists of a series of wear-resistant steel discs mounted on heavy-duty shafts, all rotating in the same direction.

The size of acceptable particles passing between the discs is controlled by the interface opening between discs and the slot length between shafts. The interface opening (IFO) of the RDS is selected for each application and requirement, and can be changed to adapt to changing material characteristics. The infeed to the RDS is also important for maximum efficiency.

Over-Thick Chip Removal

Once the gross overs are removed from the chip flow, the chips can be screened for "thickness." The normal range for accepted chips for pulping is 4-8 mm. Chips thicker than 8 mm are removed for further processing.

Jeffrey Rader offers two types of primary thickness screens — bar type screens and disc type screens.

Our **DynaGage™ Bar Screen** consists of multiple rigid frame sections containing a series of parallel steel bars alternately attached to eccentric shafts.

The spaces or slots between the bars are accurately pre-set and locked in place to establish the open area through which material will pass. When activated, the eccentricity of the shafts causes the bar to alternately rise and fall in a circular pattern.

During the screening process, chips are repeatedly tipped and tumbled by the oscillating motion. Chips of acceptable size pass through while over-thick material is retained on the decks and carried over the end.

We can also provide a **Flat Disc Screen** which uses our patented Raderflex design. As with scalping type screens, the size or thickness of the throughput is controlled by the interface opening of the discs.

Tramp Metal Protection

Our **Air Density System** is then used to remove knots, dense fiber, metal and rocks from the reject flow prior to the chips going to the over-thick processor.

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Features/Advantages (continued from other side)

Jeffrey Rader equipment is used in multiple stages of chip thickness screening and chip preparation, from gross scalping screens to fines screens and over-thick processors.

Over-Thick Chip Size Reduction

Our **Chip Conditioner** consists of two heavy-duty rolls, with removable, profiled structures, which rotate towards each other and pull oversize chips between them. The profiled surfaces are aligned so that the pyramid apexes on one roll travel in the valleys of the apexes on the adjacent roll.
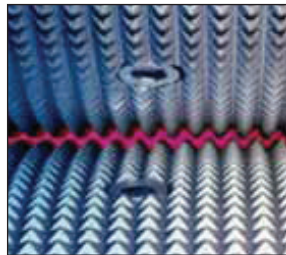
With normal oversize wood, our Chip Conditioner typically generates less than 1% fines and 2% pins. Chip slicers, by comparison, generate fines up to 8% and pins up to 15%. (Comparison is based on -3 mm RH fines and -2 mm slot pins.)

Due to the reduction in wear parts in contact with material as well as the low-speed action of the conditioning process, the wear on wear parts is significantly less than in other forms of overs processing.

Additionally, our Chip Conditioner offers these maintenance advantages:

- All components are simple, off-the-shelf items which all millwrights understand and are familiar with.
- High-strength bolted fasteners make replacing parts quick and easy.
- Hardened stainless steel segments are standard.

Our **Chip-Sizer™** was created as a result of industry concern over the high maintenance cost of typical rechippers. The Jeffrey Rader Chip-Sizer, the first true no-knife rechipper, operates on
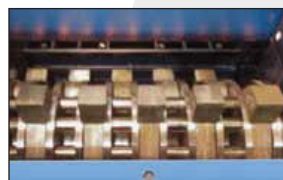
a principal similar to a wood hog, but with special features which offer a "soft touch" to the chips to minimize the creation of pins and fines. This, along with other patented components, permits it to reduce oversize chips at unheard of efficiencies, plus offer the following advantages:

- Low capital cost for a rapid ROI.
- High recovery rates for increased profits.
- Ships complete with motor, drive assembly, and base for quick installation.
- Metal trap minimizes damage from tramp metal.
- Large infeed opening ensures that plugging in the Chip-Sizer is eliminated.
- No knives to sharpen or damage keeps maintenance costs low.

Fines Removal

Our **RaderWave™** screens provide high-efficiency fines removal with excellent pin chip retention. And, they are self-cleaning — with no plugging or binding by pins, snow, or ice.

Screen decks are easily replaced and there is a wide variety of deck opening sizes and geometry available. Optional features include adjustable inclination and variable wave frequency.

Chip Classification

Chip thickness classification is an important process in reducing cost in the mill.

Our **CC2000** allows mills to classify chips according to user-defined thickness. Features include:

- All controls and functions monitored by a computer that is compatible with Microsoft Windows® software.
- Automated chip classification allowing total variability of chip thickness size selection.
- More accurate processing of larger samples in less time than other classifying equipment.

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