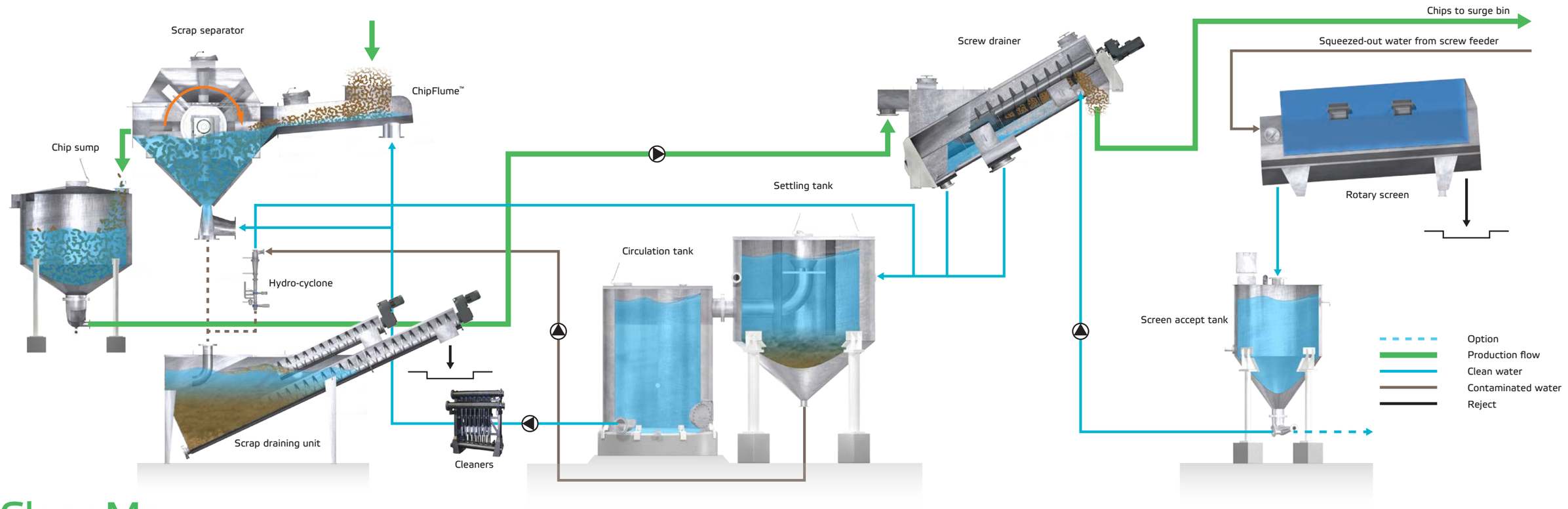
Valmet
FORWARD

CleanMax™

Improved chip washing concept



CleanMax

Best then, even better now and it adapts to customer demands. A chip washing system upgraded with CleanMax provides the optimal washing efficiency for our customers various processes.

At Valmet, state-of-the-art is always the target and that's CleanMax, the latest development in chip washing. At Valmet, development is a continuous process.

For instance, way back in 1966, Valmet was awarded worldwide patents for the process that became the industry standard for removing magnetic particles as well as sand, scrap and stones from the chips that enter the pulp and board mill manufacturing process.

During 1996 and 1997, process developers at Valmet sought and were awarded a patent for the Settling tank that is still an essential component in today's chip washing system. But development of the chip washing process didn't stop then.

Currently, CleanMax is the most recent concept for chip washing from Valmet. Regardless of whether CleanMax is installed as a completely new package or as an custom-made upgrade to meet needs in earlier installations, Valmet is proud to offer customers the ultimate in chip washing. CleanMax is the Valmet guarantee for meeting the most demanding of chip washing requirements.

Improved quality, less energy consumption, reduced machinery wear

Sand and foreign materials enter the pulp and board mill machinery together with chips, fines and bark every day. Efficient removal of these materials drastically affects the quality of the end product.

Removing oversized fines and bark from chips enables using only as much energy as necessary to achieve a desired fiber quality. But energy saving is not the only benefit.

Efficient chip washing increases the lifetime of refiner segments while reducing maintenance and replacement costs for other machinery in the process such as plug screws, screen baskets and other machinery.

Efficient chip washing also enables optimal consumption of chemicals, electricity and raw materials.

Main functionality

Contaminated roundwood or chips containing foreign materials such as metal, stones and sand arrive at the pulp or board processes.

Scrap separator

Chips are transported to the Scrap separator via the ChipFlume, which increases the retention time. Hot water (70-90° C) from the circulation tank is added here via two automatic flow control valves. The paddle drum submerges the chips in the water to ensure efficient separation of the heavy contaminants from the chips. The contaminants collected at the bottom of the scrap separator are periodically dumped into the Scrap draining unit.

Chip sump

The washed chips are transferred to the Chip sump. The Chip sump also acts as a temporary holding tank for the chip slurry and water behind the screw drainer when the Chip pump is stopped.

Screw drainer

The Screw drainer consists of inclined screws. Water drained from the chips, as it moves through the screws, flows through perforated screens in the trough. The contaminants from the Scrap separator and in some installations Hydro-cyclones, are collected in the Scrap draining unit where the water is separated from solids. Pieces of metal and other contaminants from the chips are dumped into a container.

Cleaning the wash water

The wash water drained from the chips is treated to remove contaminants. The wash water cleaning system consists of:

- Rotary screen
- Sand settling tank
- Hydro-cyclones
- Cleaner stage
- Scrap draining unit

The squeezed out water from the screw feeder is run through the Rotary screen to remove wood particles, coarse sand and other large contaminants. The return water from the screw drainer is treated in the Sand settling tank, to remove the fine sand. Water overflowing from this tank flows into the stand pipe further to the circulation tank.

This wash water is then pumped to the Chip wash water cleaners for further separation of fine sand and dirt. The clean accept stream is returned to the chip washing system for use mainly as dilution in the Scrap separator via the ChipFlume. A smaller portion of this flow is used in the dump chambers on the Scrap separator.

The reject stream from Sand settling tank and hydro-cyclones is discharged to the scrap draining unit.

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