



# Advanced solutions saving energy and reducing Fibre Loss in an OCC Stock Preparation System

SIMON ROBERTS, MICHAEL LOPANE, ALAIN LASCAR

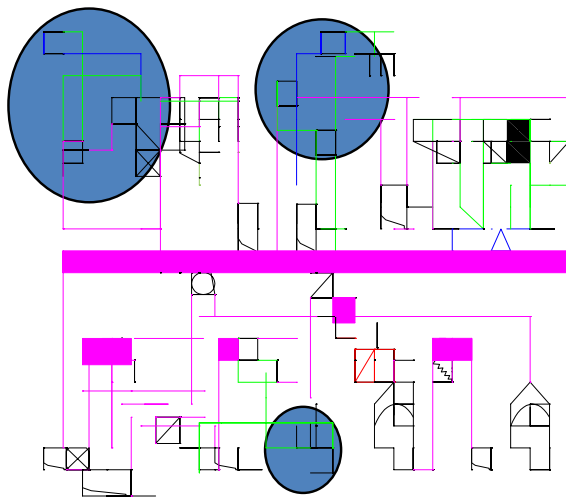


Fig 1. Typical stock preparation line

## Introduction

Less energy, less fibres in rejects and thus more good fibres at the end of the line to improve the physical characteristics of fluting and test liner, here is a summary of some current issues in the design of modern stock preparations.

It is often relatively easy to reduce the line energy by at least 15 to 20 kWh/Ton but it is often generating more fibres and flakes losses. The increase in fibre loss not only generates a high operational cost but rejected fibres are mainly long fibres that could have increased the physical characteristics of the paperboard product.

If we look at a typical system, such as that indicated below, we can define 3 large areas where the fiber losses may be significant. These are the ones circled in the figure below.

## Fibre reduction in the stock preparation line

As indicated on Fig. 1, areas said pulping, coarse screening and fine screening are those that are generating most of the fibre and flake losses. For a better understanding, we will allow ourselves to further define some words used in this article.

**'Fibre'** – We define as fibre, the free fibre so called repulped fibre, and retained on a Bauer-McNett of 100 Mesh.

**'Flakes'** – As flakes, we define the parts of non repulped paperboard. These flakes can come from paperboard called wet strength flakes therefore not repulpable. Kadant has established a laboratory method to determinate flakes said wet strength and those that are not.

In practice those that are not, should be repulped by the process and should not be in the rejects.

It is essential to understand why high fibre losses are encountered and to look at the best treatment or operations for preventing this situation.

## Pulper section

One of the areas where it is possible to limit the contaminant removal from the Pulper is the cleaning system. Let us try to explain it a little.

In order to remove heavy contaminants from the Pulper we have a couple of options such as Junk Box or Trashwell.

The Junk Box was initially employed but has been superseded by the Trashwell in order to avoid the possible blockages or contaminant saturation in the Pulper vat.

The improved operation with the Trashwell is due to the fact that the Trashwell has a larger take-off in the base of the Pulper, and the larger retention time in the Trashwell unit allowing a better separation of the heavyweight.

The actual removal of heavyweight contaminant takes place using a grapple and requires no Reject Valves that was also a maintenance headache with conventional junk box.

One other benefit of the Trashwell versus a standard Junk Box is the fact that it is approximately 3 times the volume of the Junk Box allowing the heavyweight material to better fall out due to a large clearance on the Pulper side, the Trashwell system is less prone to plug compared to the Junk

S. Roberts, Kadant France, M. Lopane, Kadant BC, A. Lascar, Kadant France