



How One Simple Change  
Can Bring Your System  
into the Next Decade

# CASE STUDY

## Non-wrapping 440 StarScreen Retrofit

### Table of Contents

**1** The Old System

**2** The Problem

**3** The Solution

**4** The Results

**5** Why VAN DYK?

# THE OLD SYSTEM

A system ill-equipped to handle contaminated inbound stream.

## EXISTING EQUIPMENT

**Bollegraaf residential single stream sorting system**

**Double line with 40+ ton/hour capacity**

**4 traditional incline ONP screens**

**2 angled sorter polishing screens**

Our customer was experiencing the challenges of a changing, contaminated inbound residential single stream with an increasingly high percentage of film bags in the input. Their incline and angled sorters in particular were having a hard time processing high volumes of film and other stringy materials.

Now, this system was one of our own. A Van Dyk and Bollegraaf design built in the early 2000s. While suitable for processing the material of its time... times, and materials, have since changed. Our customers see less and less newspaper going over their newspaper screens, and more and more problematic items such as plastic film bags, cable wires, and garden hoses.

While able to recognize that some systems were just built for the past, we are committed to rebuilding and retrofitting our customers' plants to adapt with the future. Read on to see how our customer overcame their challenges and improved their overall operations.

# THE PROBLEM

Outdated screens clog and jam with contaminated material.



Traditional ONP screens were not designed to resist difficult material like film bags and rope. Take a look at the picture to the left. Film wraps and wraps around the shafts until there's no space left between them. The screen is completely clogged and cannot perform its basic function: separating paper from containers.

Paper is supposed to climb over the screen while containers bounce back. Instead, containers travel up the jammed stars and mix into the paper stream, devaluing both the paper stream and the container stream. The screen accomplishes very little and is essentially defunct.

And the trouble doesn't stop there, because someone has to declog these screens. In our customer's case, 4 someones (see right). 4 employees spending 2.5 hours per shift trying to peel and cut tightly wound materials from the screen shafts. And the whole sort line had to be paused while cleaning occurred. That's 2.5 hours of lost production time each shift!

And not to mention the physical risk to their employees. Walking and laying on the screen for hours at a time, while slicing through thick layers of wrapping doesn't make for the safest of situations.

Additionally, the constant rubbing and friction from these materials cause excessive wear and tear on the stars (and in some cases cause fires). Our customer averaged star and disk replacement costs of \$150,000/year due to excessive wear.

Oh, and how long does it take for the screen to become clogged again when the system starts back up? Just 20 minutes.



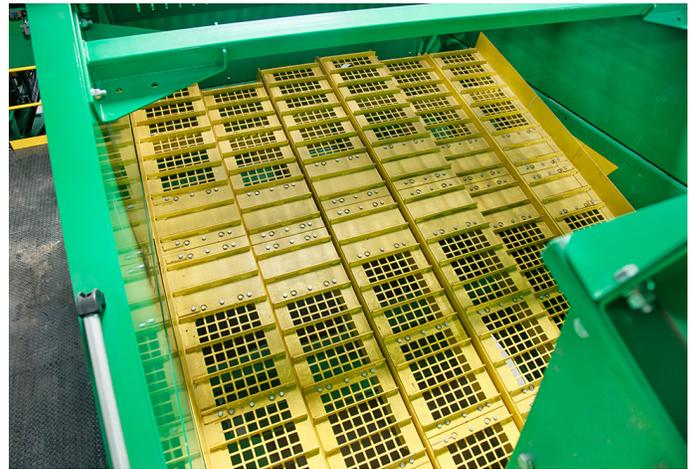
# THE SOLUTION

A specially designed screen to resist wrapping.

## NEW EQUIPMENT UPGRADE

**4 Non-wrapping 440 screens (12' wide) to replace 4 inclining ONP screens (8'6" wide)**

**2 Elliptical separators to replace 2 angled sorter screens**



Our customer opted for a full upgrade of their system's primary screening package. The Non-wrapping 440 Screen has specially designed shafts and stars to resist wrapping and clogging. It will not become clogged with film, even after running an entire shift with no cleaning. Because of this, it will not suffer constant wear and tear of material twisting and grinding around the stars. It also comes in widths wider than its traditional counterparts, giving it more capacity.

The elliptical separator performs highly accurate separation of 2D, 3D and minus materials. Its unique design scalps off film to create a clean stream of commingled containers prepared for further sorting.

# THE RESULTS

Money saved. Time gained.

This is a Non-wrapping 440 Screen after running a full shift. No pausing the line. No stopping to clean. In respect of full transparency, there are a few items in the shafts. But nothing that will slow the screen down. This screen is running at full capacity and full capability for entire shifts at a time. Our customer reports cleaning times are reduced from 2.5 hours to just 20 minutes. That's over two hours of production time gained for each shift!



Without having to pause either line to clean, operations run more smoothly and efficiently. The entire system throughput has increased from an average of 28 ton/hour to 38.75 ton/hour while quality is maintained.

And without that wear and tear, star and disk changes are fewer and less frequent. Star changes are down from 2,000/year to 200/year. Star/disk replacement costs are down from \$150,000/year to \$25,000/year.

And because of the improved screening performance, our customer experienced a 7% increase in recovered PET that is properly separated by the non-wrapping screens and the elliptical screens.

# WHY VAN DYK?

We know how challenging it is to run your operation. You're under constant pressure to meet goals in the face of changing end markets. Tough inbound material makes meeting those goals harder, and sometimes, aging equipment just slows you down.

But you can make decisions now that prepare you for the future. A simple retrofit can alleviate current problems and prevent more from arising.

A non-wrapping screen can be retrofit into your existing system in as little as two days. And it can be retrofit into any system, regardless of manufacturer. You won't lose production time on the installation, and you will be quickly up and running, increasing your throughput and recovery numbers.

**If the problems described in this document sound a lot like yours, give us a call today. We are working on solutions for our customers, and operations like yours, every day. With our help, you can streamline your system, overcome your challenges, and turn them into profit-making opportunities.**

**Call us today! 203-967-1100**

**Or email us! [info@vdrs.com](mailto:info@vdrs.com)**