WHITE PAPER

ENSURING A SMOOTH PRODUCTION LINE **FROM CASE SEALER TO CASE CODER**

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AN ITW COMPANY

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INTRODUCTION

Across industries, companies have experienced an increase in SKUs, shorter shelf lives for their products, and increased demand for production changeovers over the years. As a result, case coding has become significantly more important in helping the supply chain and logistics function of businesses, allowing manufacturers to track their product as it transitions from supplier to store. Case coding also plays a role in helping businesses brand themselves, letting companies print a graphic or product information on the side of boxes that immediately identifies where that box has come from and its contents.

The printed texts, graphics, and barcodes have to be accurate to ensure that the logistics process runs smoothly. But if there's an issue with printing, the code can become illegible. This is especially difficult as boxes move from a tape case sealer or hot melt glue case sealer to coder — during this process, codes are vulnerable to misprints due to material handling, debris from the case sealer getting onto the printhead, and more. From there, businesses lose track of data, translating into problems with product integrity, transparency, reputation, and even costly potential legal matters.

Luckily, there are some simple steps manufacturers and plant managers can take to prevent their codes from being smeared, smudged, or otherwise unreadable. And the more responsibility companies take to ensure their case sealers and coders are harmoniously working together, the better their supply chain and logistics function will be.

WHAT TO LOOK FOR IN AN INDUSTRIAL INKJET CASE CODER

As you've already learned, a bad case code can cause major distress within a company. Not only can reprinting be costly, but it can also cause a slowdown on the production floor that leads to deliverability issues with customers. And when a product is unavailable, customers become easily frustrated, switching to competitors and leaving negative reviews online. All in all, a problem in the case coding process can leave a business in the lurch when it comes to its reputation and revenue.

It's important to keep in mind, however, that if you don't have a good case coding printer to begin with, a lot of your work to maintain your machine and set up your production line will be moot. With so many options and features on the market, it can be difficult to find the perfect case coding machine for your specific needs.

To avoid feeling lost in the amount of case coders available today, put together a list of needs as you evaluate each printer. Below, we've created a simple checklist that you can use to get started.

☑ **Will it provide your business with true value?**

Are the barcodes readable throughout the supply chain? Is the case coder capable of printing barcodes up-to-date with industry regulations? Can it embed real-time date, time and production information into the print message? Pre-printed barcodes are seen as top-quality readable marks directly on corrugate cases. However, to maintain a stock of pre-printed boxes means additional storage — whether that is within your facility or paid for in an offsite warehouse. This can be an expensive additional cost that runs the risk of scrappage if and when changes need to be made due to changeover for new production runs and product variations. Another factor would be the interventions required when manufacturers need to change out their pre-printed case stock with each and every production run since the cases are unique to the SKU.

☑ **How durable is the printer?**

Consider what your printer parts are made of to avoid unexpected downtime. For example, what kind of materials are used for the printer's nozzles? Full stainless-steel nozzles can handle rugged conditions, resist damage and maintain optimum printing characteristics. These components can also be taken through a refurbishment cycle instead of needing to be fully replaced like printers with plastic face plates.

☑ **Can it fulfill your entire company's needs?**

Talk to your internal stakeholders, including your maintenance, marketing, engineering, and IT departments. Your maintenance and engineering teams will take close inspection of the technical servicing features and the operability, while your marketing team will be focused on how the company's logos and text will look after printing. Lastly, your IT department will need to integrate product databases with the industrial inkjet case coder's message creation software, so someone on this team will need to be informed on the purchasing decision.

☑ **Does the printhead's controller software integrate with your database?**

In the past, all of the messages for case coding were proprietary or had to be designed directly on the software. But over the last five years, there's been a significant increase in the different logos, barcodes, and text companies need to print as product varieties increase. Instead of dealing with 50 different SKUs, there are now thousands of different SKUs that belong to different brands. The right case coding printer will allow you to connect to a variety of product information management (PIM) databases to grab the right product information and even brand logos for simple message creation.

☑ What can the right partner offer?

Typically, a partner in coding and labeling processes will do a site survey to understand your current and future needs, and some will offer a no-charge print sample to show customers what the end product will look like, and how much it will be to print. Companies that provide a thorough review and recommendation are the partners you want to work with, especially ones that are local to your business because they're more likely to be there to provide support long past the initial sale.

Ask for success stories and find out who you will need to call if a problem does arise. You need to know how long your case coding equipment will be down if your printhead needs to be serviced — and if you find out that process will take a long time, then you need to move on.

You need your industrial inkjet to print high-quality logos, barcodes, and text as consistently as possible. But there are several factors within the entire manufacturing process that could break down a case coder when it follows a case sealing process.

COMPLICATIONS WITH CASE CODING AND SEALING DURING MATERIAL HANDLING

Whether you're purchasing a brand-new case coder or you're still working with the one you have now, it's important to keep in mind how your warehouse is set up to ensure your case coding works at an optimal level. If you don't, you're more likely to run into issues with material handling which could make your code unreadable or even damage the product inside your cases.

Your entire manufacturing production line relies on a smooth transition from machine to machine. Here are just a few things to consider when avoiding code degradation after the case is sealed:

- **Proximity to the Industrial Inkjet Printer**

  If the box isn't close enough to the case coder, it might not print at all. But if it's too close, it could mistakenly impact the case coder, making the barcode wavy and unreadable or worse damage the case coder. Inconsistent control of how the box is presented in front of the inkjet coder, especially if the box is not squarely taped or glued, can quickly become problematic, especially as the case transitions from the case sealer to the case coder.

- **The Speed of the Printhead**

  If your case sealer distributes faster than your case coder can print, then you'll likely see misprints — the printing itself might come out distorted or skewed as well as potentially skipping the print on some boxes entirely.

- **Angel Hair and Other Debris**

  Legacy case sealing processes using hot melt glue might leave angel hair that can interfere with case coding by becoming stuck to the printhead. Plus, there's usually debris in the factory itself, and that debris can adhere itself onto the box or printhead. Inkjet printheads have small nozzles that eject tiny droplets of ink all at once, so dirt and angel hair can easily clog the machine if the printhead isn't maintained. Unfortunately, the longer debris sits on a printhead, the harder it is to clean, so when debris goes ignored, the worse the code becomes and the more expensive it is to maintain the printhead.

- **Carton Control**

  If your case sealer doesn't have good control of the carton, then your box might come out misshapen or oblong. And once that happens, the information you need printed will come out stretched or smushed together once that box resumes its proper shape. And while the bad printing is an issue on its own, that misshapen box could also translate to a damaged product inside the box. This could hurt your business not only in terms of product loss, but also in terms of potential workplace accidents (especially if your product is made of fragile materials) and reputation damages with customers who didn't get replacement products.

- **Minimizing Vibrations Coming Off The Case Sealer**

  Strategic placement of your case coder in relation to the case sealer is key. The vibration that occurs during the case sealing process can impact code quality. Each step in the production chain impacts the rest downstream. Having a case transportation method between each piece of equipment allows each piece of equipment adequate space and timing to complete its process with minimal disruption down the production line.

  Whether you have a tape or glue case sealer, the most important thing to know about transitioning your box for it to be printed is the more you take ownership of your equipment, the better off you'll be.

BEST PRACTICES FOR MAINTAINING YOUR INDUSTRIAL INKJET PRINTER FOR CASE CODING APPLICATIONS

Plant managers are too busy to worry about whether their teams are cleaning a printhead every couple of minutes and are often held liable for problems with the cost of scrap, resupply needs, and operator errors. So how do manufacturers best avoid downtime and maintain their brand image and retail relationships? It's vital that companies create effective material handling processes to ensure automated packaging line processes complement each other.

The good thing is that it's easy to keep your coding reliable throughout the life of your industrial inkjet printer and the case sealer before it. Use these best practices so you don't have to stress:

1. **Take ownership of your equipment.**

   While it's necessary for the operating environment to be as autonomous as possible, operators still need to keep track of the health of the equipment. Do a daily inspection — such as a startup run — to check that printing is running optimally. When you have regular interaction with the printer and the code it's producing, you'll have a better chance at taking proactive actions that enhance and lengthen the life of the printhead.

2. **Train your in-house technicians.**

   While the goal is to have as few interventions as necessary with your inkjet or sealing equipment, a backup plan after having it installed is crucial to guaranteeing no surprises down the line. Your in-house technicians should be trained on maintaining the equipment to keep it working. With every install, there should always be one or more operator training classes to ensure your team is up-to-date on the printer's needs. After training classes, a good partner will provide you with an easy-to-follow operation's manual to ensure best practices are followed.

3. **Listen to your coding and labeling partners.**

   It's not uncommon for operators and engineers to be inclined to continue using the same fluids they've always used. When a certain cleaning fluid or ink comes recommended to keep a machine running, it's because other fluids could create problems such as causing corrosion on your printer parts. Always listen to the trainers to ensure the longevity of a piece of equipment.

4. **Guarantee proper material handling with your case sealer.**

   If your case sealer doesn't properly seal or is reckless with its material handling, then your case coding printer won't create a clear print. Industry-leading high-resolution inkjet coders can guarantee consistent control by adding retracting brackets to help the printer **adjust** even when a box is over-stuffed. A quality-built case coder can go a long way to ensure your case is ready for printing.

5. Create a gap.

You want to avoid positioning a case coder right at the transition point from a case sealer because you don't want printing to happen while the case is still being taped or glued. Instead, if room allows, you'll want to both add a belted conveyer and ensure there's a gap between boxes.

A small, powered, belted conveyer between your case sealer and case coding printer will help control the flow of cases. Also, use a sealer that is side-belt driven — this will help the box keep its shape for printing without creating too much pressure at the top. The rule of thumb is to maintain a two-product gap — i.e., space for one box in front and one in the back — so that the coder won't ruin the printing on the next box by accidentally hitting it.

6. Build more automation into your processes.

When cases are discharged from a sealer, if the process relies too much on an operator to either push the case forward, fold flaps, or fill the carton, bunching can occur. The operator becomes overwhelmed when too many cases are moving from section to section. Instead, ensure that there is automation built in to control the spacing of cases from case sealer to case coder. This also helps confirm the aforementioned gap is created between boxes.

Building in more automation will also help with maintenance. Your operators can't sit by and watch the coding process all day — they're busy. With additional automated and computerized monitoring, you can receive notifications when there's a bad print, and the automated system can even shut down the production line or printer.

7. Ensure your printhead is faster than your case sealer.

A case sealer might run at 80-90 feet per minute. If the case coder conveyor is moving slower, then your boxes will start to bunch together, which will hold up your entire production line. Instead, set your case coding conveyor and print rate at a higher speed. Look for high resolution inkjet case coding printers that can print up to 300 feet per minute, which is much faster than the typical case sealer.

8. Keep the printhead clean.

The printhead for your industrial inkjet coder should be as clean as possible at all times. While you should always double check your printhead before the day starts, some industrial inkjet printers already have an automatic cleaning system. As a result, those printheads have systems that can collect and remove debris and even some angel hairs either into a waste container or filtration system.

If the system is equipped with a filtration system, its important to learn about the required maintenance on the filtration system to ensure that the system continues to operate optimally. Whereas printheads that use waste container collection systems have minimal required maintenance and eliminate the possibility of debris winding up in the ink supply.

CHOOSE A PARTNER YOU CAN TRUST

Your company has more important things to worry about than constantly stressing over the quality of the codes on your cartons. But if your material handling process isn't set up efficiently — if transitioning the product from the case sealer to your case coder is not properly set up, for example — then you'll only see more problems. Instead, follow the best practices within this whitepaper to ensure your product identification efforts aren't impacted down the line.

FoxJet's high-resolution ProSeries printheads offer unmatched reliability and scan-ability from a large character case coder. The FoxJet ProSeries printheads utilize the only repairable print engines on the market — Trident print engines — and can create complex graphics up to 4" tall. This is ideal for replacing 4x6 labels on your cases and cartons. For barcoding, the ProSeries 384e is the go-to printhead — not only guaranteed to be readable but can handle cases moving at the highest of speeds. FoxJet ProSeries enhanced printheads set the standard for print quality and printer performance in the industry.

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