A Package Deal

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Whether its repetitive use injuries or regulatory compliance issues you're trying to target, packaging equipment vendors have stepped up their game to help address manufacturing, processing, and distribution needs.

Packaging equipment can come in a huge variety of forms – from your traditional hand-operated stretch wrappers, all the way to the highly automated, barcode embedded vision systems often seen in F&B and pharmaceutical applications. Ultimately, the right solution is probably there for you – it's just a matter of finding it.

Safely Stretch

For many manufacturers, that perfect solution will need to address the key areas of concern related to their application, most likely safety, traceability, and efficiency – in whichever order derives the most downtime or related costs if not properly addressed. For many, their application will dictate this, as some packaging tasks are less ergonomic and more hazardous than others. From a safety standpoint, automating end of line packaging can help target the several common employee injuries associated with hand wrapping pallets. According to Michael Klear, Market Development Manager for Muller, a division of ITW (Illinois Tool Works), something as basic as how heavy a film roll is can result in an employee back injury. "In addition, because employees must physically rotate around the pallet to wrap it, injuries due to slipping and dizziness also occur," he explains. "If the pallet is being wrapped while on a forklift, employees also risk hitting their head on the forklift."

Klear recommends automating the stretch wrapping process in order to improve these safety risks, but also notes that an automated stretch wrapping process can also minimize waste. Part of this is due to the fact that hand wrapping is a tedious, difficult task and employees often find themselves fatigued from continuous wrapping. When this occurs, it is not uncommon for pallets to be wrapped inconsistently. "Hand film must also be manually pre-stretched to ensure proper load containment. To solve this, either too much film is applied, resulting in excess film waste, or not enough tension is applied to the film while wrapping, resulting in weak load containment and damage," Klear says. Automated stretch wrapping can target this consistency problem, as well as address efficiency issues by ultimately speeding up the wrapping process, which enables companies to allocate employee time to other tasks. "For example," says Klear, "in the foodservice industry, a selector can wrap 80 pallets a night by hand and each pallet takes on average one minute to wrap by hand. Because they are paid on how many cases they actually pick, stretch wrapping is actually taking about 80 minutes a night away from their case picking productivity."

The Technology Curve

The food industry – along with pharma – are two of the big industries most concerned with product traceability from a packaging standpoint due to the highly regulated space they operate in. This, coupled with the critical need to be able to pinpoint specific IDs in order to ensure compliance or address a recall situation, means processors are looking for more advanced ways to keep tracking technology at the forefront of their packaging strategy.

According to Cognex, vision systems can serve as a great way to help food and pharmaceutical processors, packagers, and their equipment and material suppliers achieve compliance in an increasingly regulatory environment. “Many of these firms implement vision systems, two dimensional (2D) barcodes and image-based ID readers and verifiers to comply with food and drug safety initiatives. They train vision systems to quickly identify label graphics and recognize letters and numbers,” explains John Lewis, Market Development Manager for Cognex. “They use ID readers to decode and verifiers to assess the quality of barcodes on labels or marked on containers, and even achieve item-level traceability by reading 2D barcodes carrying unique numbering schemes.”

What this technology can essentially do is to help packagers confirm that the label actually matches the product in question, lowering a company’s risk of an FDA-mandated recall due to mislabeling. “Yet they also help and track lots, batches, and individual items through the supply chain to reduce the cost of recalls due to product contamination.”

The result of compliance with the latest mandates, explains Lewis, is improved food and medication safety, product integrity, and supply chain security. However, beyond compliance, food and drug manufacturers have discovered value in being able to stop counterfeiting, prevent parallel trade through unauthorized channels, and achieve greater visibility into how products are made, distributed, and used.

Cognex technology offers vision systems capable of deploying packaging equipment for key applications like guidance (locating the part); inspection (checking quality or assembly); gauging/measuring (checking that the package is flawless, including measuring the label position); and identification (answering the question: “What product or package is it?”).

So whether your application requires a hard look at the basics of employee ergonomics and repetitive stress injuries, and/or basic efficiency issues – or you need to up the ante for regulatory or compliance issues – packaging vendors are likely one step ahead of you when it comes to the available technology, and moving forward as we speak. According to Muller’s Klear, trends continue to drive development, and the industry has shown a greater interest in robotics. Down the line, sustainability demands may also factor into the available technology. In the end, manufacturers and distributors are looking for packaging equipment that not only gets the job done but also includes hardware and software that monitors, measures, and reports equipment performance. “There are a number of ways to

automate the packaging supply chain," he says. "Many manufacturers are looking at packaging equipment that can help them reduce labor, increase sustainability, and improve overall efficiencies."

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