EQUIPMENT: AUTOMATION

CARTON SEALERS AND AUTOMATIC TAPE MACHINES

HOW AUTOMATING THE CASE SEALING PROCESS CAN SAVE YOU THOUSANDS

iPS PACKAGING & AUTOMATION

800-277-7007 | ipack.com

Introduction: The choice to automate

The general public has little understanding of the critical importance that packaging plays in business today. It's not just about the box looking nice on the shelf and catching our attention; it's about safely getting those boxes and the products they're protecing from manufacturers to customers.

Just think of what your package will face in transit. While no protection is guarantee-able, especially once the package leaves your facility, if you've prepared your package for the worst, hopefully, you'll see better results.

End of line package automation is the new packaging buzzword: it saves time and money on the line and in your facility, but it also helps decrease product damage sustained in transit. When using automation, you're taking the human error element out of the equation; you're using less materials, you're ensuring a cleaner application, and, at the same time, you're removing the labor intensive aspect of packaging..

However, you can't look at it as a simple way to reduce labor or material usage; think of it as a way to scale production. Increased production and decreased expense: two of the best reasons to automate in today's business environment of doing more with less. New technological advancements allow manufacturers to decrease their amount of consumable use while simultaneously achieving greater throughput.

With damage rates during shipping hovering around the 10% mark, it's time to reconsider the best way to package products to protect them from the damage of any major shipping provider.

Many companies are now considering additional costs savings, such as the overall costs of lost opportunity (due to employee absenteeism), safety and ergonomics related costs, reductions in waste, reductions in carbon footprint, and the savings in both administrative time and expense of employing and managing fewer people. All these factors can lead to an accurate ROI calculation when considering end of line automation.

Everything you've read and all the research you've found says that automating end of line processes will help your overall goal of doing more with less.

It all sure sounds good, but how do you know if it's right for your facility? Where do you start? What do you look for? And how are you going to convince your management team that the initial expense is worth it in the long run?

First, the solution needs to be simple and easily upgradeable. This ensures that you are capable of running future products at the future speeds that your market will inevitably demand. It also enables operators to change between products without having to make too many changes to the machine.

Second, remember that these machines, like any other, will need regular maintenance to prolong their life, minimizing downtime and maximizing utilization.

Third, the materials that you use in your machine play a critical role in their functioning. To perform at high efficiency, machines need to use high quality and consistent materials.

WHAT TYPE **IS RIGHT** FOR YOUR FACILITY?

Top 5 questions to ask when you're considering automating your case sealing operation

Choosing the right end of line automation should be a careful consideration for any business. There are several factors to consider when making your choice.

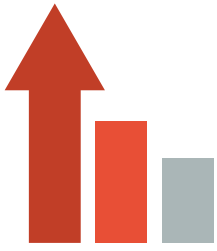
What to consider

Consider the following when you start the process of determining if automation is right for your facility:

1. How many boxes are you sealing and how many do you foresee sealing?
2. How are you currently sealing and how many people does it take?
3. What types of boxes are you sealing? Are they all uniform in shape or do they change frequently? Are they fragile? Are they shaped irregularly? Are they light or heavy?
4. Could you improve throughput and increase production with automating the sealing process?
5. Are you experiencing shipping damages or theft? If so, do you know what is causing the damage or why it is easy for theft to occur?

Remember, there are two ways to seal your boxes, by hand or by machine. Hand sealing is labor intensive and slow; it's messy and can require multiple strips of tape which could possibly still not effectively hold because the pressure by they were applied with was not right. And with more workers on the floor comes additional labor costs and a higher chance for injuries from repetitive motion.

If you're wondering just how popular it is amongst other facilities, consider that 40% of the tape market is actually machine length tape. So, nearly half of the people who are purchasing case sealing materials are using machines. Advantages include lower labor costs, less material waste, greater productivity, and less damage and theft of materials during transportation. Material and labor savings alone can justify the initial cost of a machine in about a year.

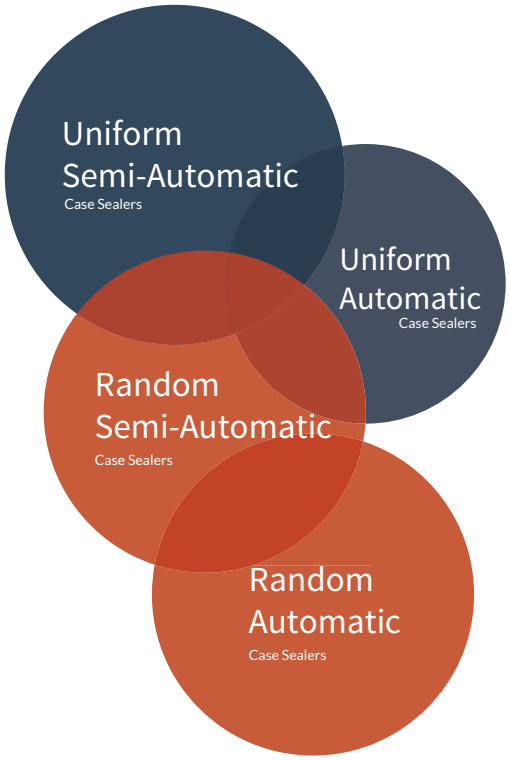


QUESTIONS TO ASK

What kind of case sealer do you need?

A case sealer works by driving a case (or box) through two tape dispensing cartridges. These cartridges apply tape to the box as it travels through the machine, replacing the need to apply a seal by hand.

- **Uniform Semi-Automatic:** adjustable, operator-fed machines that process cases of the same size and style.
- **Random Semi-Automatic:** operator-fed machines that automatically adjust for each size case processed. When your manufacturing produces different sized cases to be processed through a single case sealer, a random case sealer is the answer.
- **Uniform Automatic:** operator-free machines that process same sized cases. These machines are required when consistent production flow rates exceed manual processing ability or when automatic case packing is utilized.
- **Random Automatic:** operator-free machine that processes random sized cases in succession. These machines will sequence the cases entering the machine, adjust for length, width, and height of the case before sealing the case.



Hand taping can be time consuming and wasteful, resulting in poorly presented boxes and a seal that may have been done two or three times over. It can also increase the risk of a repetitive strain injury being suffered by the operator as he or she repeats the same motions over the course of their shift.

8 MAIN REASONS TO INSTALL CASE SEALERS IN YOUR FACILITY

Rising labor cost, high employee turnover, and the need for faster line speeds are pushing management to automate – upgrading existing production lines and considering new lines to increase production capabilities. End of line automation is an investment that can make or break your entire line.

1

Increase your output.

Doing more with less is the mantra of the new American workplace. With a case sealer at the end of your line that is sealing faster than manual sealing rates, you're automatically doing more with less. Faster sealing rates mean less production time and higher production output on a daily basis.

2

Eliminate double taping and reduce tape usage.

Ever received a box at home or at your office that seems to have a dozen pieces of tape across the top to seal it? With a case sealer, one strip of tape is applied in a consistent seal, eliminating multiple reapplications of tape that someone may add with a hand-sealer to ensure complete closure. Think of all the tape you're already saving.

3

Eliminate uneven tape lengths and positions.

By regulating the length and position of all of the tape placed on each carton, you will eliminate the wasted excess tape found on many boxes today.

4

Enhanced packaging.

Without the over-taped look of many cases today, on the shelf presentation of cases sealed with a case sealer is enhanced, making your presentation much more professional looking.

5

Increased product security.

With more consistency comes better security; one piece of tape that has been tampered with will be much easier to spot than a box that has multiple, overlapping pieces of tape. It will allow for increased security during transport and decrease pilferage rates.

6

Eliminate product damage.

When you use staples, glue, or straps to seal cases during packaging, there is a much higher probability of damage to your products or injury to your workers. In addition, the machines that apply glue and staples have higher maintenances costs, on average, than automated case sealers.

7

Reduce employee injuries and downtime.

We've all heard that repetitive motion can cause body strains in employees, including back, neck, and wrist strains. By automating the case sealing process and removing employees from this work detail, you are eliminating the likelihood of fatigue, downtime, and strain injuries

8

Reduce worker's compensation premiums.

By reducing the numbers of worker's compensation claims due to strain injuries from repetitive motion, your company's total premiums for worker's compensation will also fall, saving you additional money and stress.

In today's atmosphere of economic uncertainty, it is increasingly important to take a look at your present procedures, materials, and equipment. By installing a case sealer at the end of your lines, you have the potential of saving thousands of dollars each year in materials and labor, while increasing your output and production quality.

How case sealers consistently save you money from day one.

Return on investment is huge. Management doesn't want to agree to spend money on new systems unless they can guarantee a quick return on their initial investment.

So, when you're trying to show your bosses the justification for automating the case sealing portion of your packaging line, you'll need to understand how savings start almost immediately. A careful analysis of the actual quantified savings can help even the staunchest cost conscious manager start to think twice.

Automation has overtaken all parts of the process in manufacturing and distribution. If your facility has automated up the line and you're putting out over 100 units per minute, you need to find a way to be able to pack and seal at a rate that will match the products coming off the line. Even employing multiple people to pack and seal, at that rate, will, unfortunately, leave a lot of room for error and downtime.

Now, imagine being able to seal nearly 40 uniform boxes a minute? Or being able to seal 20 random boxes a minute? How much more yield is that than hand sealing? By having someone hand seal each box, you may be only seeing 10 to 15 boxes going through in a minute, potentially less if you're having someone who is constantly having to redo the tape seal.

IMPROVED PROCESS & INCREASED THROUGHPUT

If your production line has multiple size boxes coming down the conveyer, as is the case for e-commerce companies, many case sealers can automatically adjust to different size and shape cases.

Whether or not your case sealer can automatically detect differences and adjust accordingly, all case sealers are fairly easy to manipulate and adjust, decreasing downtime and increasing productivity.

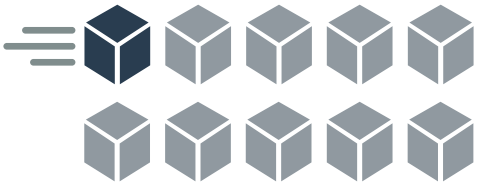
DAMAGE and THEFT REDUCTION

Tape is the most common type of closure used in shipping. Think back to the damage rates noted in the beginning of this document – nearly 1 in 10 boxes shipped is damaged. According to UPS, improper tape application is the leading cause of closure failure on a shipped box. [1] Inconsistently sealed boxes create weak seals, leading to potential theft, damage, or product contamination.

Improper or insufficient sealing may even lead large shipping companies to deny your claims of damage, as the "closure was not sufficient and failed." [2] Ensuring proper tape adhesion can help save your products from that 10% potential of damage in transit.

Machine sealed boxes are more securely sealed, significantly reducing costly product damage resulting from sloppily assembled and sealed cases.

Theft in shipping is also a major problem that can be helped with a quality case sealer. Case sealers can automatically apply tamper evident security tape to packages, securing contents while also preventing repetitive use injury.



1 in 10

boxes shipped will be damaged

with improper tape application being the leading cause of closure failure on a shipped box.

MATERIAL SAVINGS

By moving from hand taping to machine sealing, you can see an increase in productivity and decrease in materials costs. Imagine you are hand taping and you are using an average of 4 inches of tape per box; if you were able to decrease that by just 1.25 inches, sealing 40,000 boxes per year, you're looking at a tape material savings of nearly $5,500 in just one year.

Consider the following: someone hand sealing boxes will use more tape than a machine. Take using a 17 inch piece of tape to seal a 12 inch box; the difference is striking.

Step 01 | **Automated sealer** uses a single 1,500 yard roll of tape to yield an output of 3,176 boxes.

Step 02 | **A person** would utilize a 220 yard roll of tape and yield only 110 boxes.

Step 03 | **6,352 yards of tape** would be needed to acheive the same result as the machine.

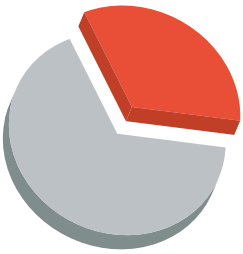
A 1,500 yard roll of tape will cost less per inch and will be need to be replaced far less than a 220 yard roll, potentially saving hundreds of dollars per year. [3]

Sealing by hand results in inconsistently presented boxes, which, in turn, can make your business look unprofessional and can make your product look low quality. You need to have a consistent and presentable look for your products and a carton sealer will help you effectively achieve this, using the same amount of tape, in the same location, on each box.

And, on average, machine tape is 30% less expensive than hand tape. There's a huge savings factor right there, and that's before you consider the rest of the savings.

MACHINE TAPE IS ON AVERAGE

30%



LESS EXPENSIVE THAN HAND TAPE

LABOR SAVINGS

The cost of labor is steadily going up. With an average increase of 2% annually [4], labor costs will continue to be a large factor when it comes to total cost of doing business.

One person using a case sealer can process, in five minutes, what someone hand sealing can do in thirty minutes. This rapidity translates up and down the line, with automation equaling more product being put out with less workforce demand.

Hand sealing boxes doesn't seem like it would be something big, but it is highly labor intensive. If a facility is shipping out thousands of cases a day, they're employing a team of workers just to erect or seal cases. Imagine the ramifications of just one person calling in sick to an entire day's production cycle.

1 person using a case sealer can process, in ***5*** minutes, what someone hand sealing can do in ***30*** minutes.

Even something as small as a 10% reduction in labor can help to offer significant savings in the long run. Now, take into account human inconsistency, their inevitable over usage of materials, and the propensity for damage when you compare hand taping versus machine taping.

With case sealers at the end of production lines, facilities can reduce labor while increasing output. Many case sealers need either minimal or no human interaction to run. Decreasing the amount of human contact with the sealing process can either free employees to redirect their attention to other tasks or to reduce workforce numbers.

Real world examples and statistics

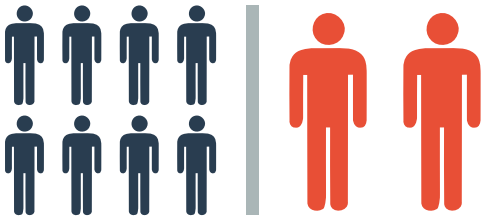
So, you've seen the general information on how case sealers can save you money on both labor and materials. But sometimes the best way to understand the real world application and inherent savings is to see these items in action.

Case Study 1

In 2013, Hostess Brands relaunched after a huge outpouring of support from Americans following their bankruptcy filing. And because they were looking for ways to trim costs, they reevaluated their packaging operations, looking into automating, since the previous processes were costly and inefficient.

With a goal in mind to reduce labor costs, minimize injuries, and ensure output quality, as well as preparing for productivity increases that they knew would be inevitable, the management team collectively decided to automate the end of line packaging program. After their relaunch, demand increased by nearly 600% over what it had been prior to their bankruptcy filing.

By automating their end of line packaging, which included case sealing operations, Hostess was able to meet the huge surge in demand while decreasing their expenses – a critical feat considering their previously precarious financial situation.



They were able to go from eight operators per line down to two, which netted huge direct and indirect labor savings.

Today, Hostess Brands is well equipped to run higher line speeds without adding extra labor due to their forward thinking management team and the automation of their packaging operations.

Case Study 2

While their business had doubled, this company was still manually erecting, packing, sealing, and labeling boxes as they had done for many years. A free on-site consultation generated an on-site demonstration that changed everything.

General skepticism about automating a process that had been performed by hand for years gave way to delight with the installation of three case sealers. That meant boxes no longer had to be pre-made before filling and were sealed automatically.

Before long, the manual process was replaced by an automated one, which allowed for the company to save money, while also improving their efficiencies. They were able to save space as there was no longer an area of their facility dedicated solely to making and storing boxes; they were also able to save 30% in tape costs.

Finally, four members of the team that had previously included seven were reallocated to more productive positions. With a $26,000 investment in automating their case sealing operations, this company was able to realize nearly $100,000 in annual labor savings alone.

SAFETY

Another hidden cost saving initiative that switching to an automated case sealer can provide is an increase in worker health and safety.

Musculoskeletal injuries are the leading cause of employees missing work. Non-fatal workplace injuries related to musculoskeletal disorders cost businesses more than $21 billion every year and account for over 40% of total cost burdens to business. [5]

Non-fatal workplace injuries related to musculoskeletal disorders cost businesses more than

$21 BILLION

PER YEAR

The average back injury can cost

$3,000 - $10,000 in Direct Costs

$30,000 - $100,000 in Indirect Costs

According to the Bureau of Labor Statistics, there were nearly 400,000 musculoskeletal injuries in 2013; approximately one quarter of those injuries were because of worker motion or position.[6] While the BLS doesn't carry cost data about these injuries, various sources suggest that the average back injury (sprain/strain) can cost anywhere from $3,000 to $10,000 in direct costs and from $30,000 to $100,000 in indirect costs.[7] And none of that includes the liability involved in an actual lawsuit and settlement or judgment.

Using a case sealer ensures ergonomically correct working conditions, allowing workers to experience far less physically intensive motions, including lifting, reaching, bending, twisting, and gripping.

All case sealers are required to pass industry standards and are required to have multiple axis controllers and other motion control products for safety processes to run easily and quickly. When used properly, case sealers will help to increase production while achieving flexibility in packaging needs and continously ensuring the safety of your operators.

[1] UPS Air Freight Packaging Pointers: https://www.ups.scs.com/tools/packaging_pointers.pdf
[2] UPS, Preventing Claims. http://www.ups.com
[3] "Evaluating Automated vs. Manual Case Taping." http://leadwise.maediaroit.com/files/2671Loveshaw_casetaping.pdf
[4] Employment Cost Index News Release, June 2015. http://www.bls.gov/news.release/eci.nr0.htm
[5] Liberty Mutual
[6] http://data.bls.gov
[7] National Safety Council

Conclusion: Increase productivity, lower costs

Packaging plays an extremely important role in the reduction of unsaleable rates. Manufacturers who are able to reduce their unsaleable costs in one year, do so primarily by improving packaging.

Improved Processes and Increased Throughput

If your facility is putting out over 100 units per minute, you need to find a way to be able to pack and seal at a rate that will match the products coming off your line. By automating the case sealing portion of packaging, you've got the potential of increasing your output by 600%.

How many people would it take to manually seal 20 to 40 boxes a minute? Is that even humanly possible without an entire shift dedicated to the process? And that's just considering sealing them after they've been packed; what about the cases that need to be hand-sealed prior to packing?

By having someone hand seal each box, you may be only seeing a half or quarter of those rates going through per minute. If you're moving product faster than you've got boxes to pack them in, then you've bottlenecked your production and you're losing money every second that you're not pushing product out.

By automating the case sealing portion of packaging, you've got the potential of increasing your output by

600%

Damage and Theft Reduction

Between 8 and 11% of boxes shipped arrive at their destination damaged in some way. And it's usually improper tape application that is cited as one of the top reasons for that damage because there are weak seals and the potential for contamination.

Machine sealed boxes are more securely sealed, significantly reducing costly product damage resulting from sloppily assembled and sealed cases. And if you've got people sealing boxes, you're more likely than not going to see poor adhesion rates. Remember, repetition causes fatigue and machines don't get tired.

Material Savings

By moving from hand taping to machine sealing, you can see an increase in productivity and decrease in materials costs. Consider the fact that each person will use different tape lengths; that can be differences of 0.25 to 1.25 inches between each piece. While it seems small, it adds up quickly, especially if you're talking tens of thousands of boxes. Additionally, machines hold larger tape rolls, meaning that they will run out less often and will have less waste between roll changes.

Labor Savings

Hand sealing boxes doesn't seem like it would be something big, but it is highly labor intensive. A case sealer can process 600% faster than someone hand sealing. This rapidity translates up and down the line, with automation equaling more product being put out with less workforce demand.

A mere 10% reduction in labor can also help to offer significant savings in the long run. Since many case sealers need either minimal or no human interaction to run, decreasing the amount of human contact with the sealing process can either free employees to redirect their attention to other tasks or to reduce workforce numbers.

Safety

Another cost saving initiative that switching to a case sealer can provide is an increase in safety on your facility's floor. Packaging operations require employees to stand in a single location, performing the same motions continuously throughout their shifts.

Using a case sealer ensures ergonomically correct working conditions; this allows workers to experience far less physically intensive strains, including lifting, reaching, bending, twisting, and gripping.

INCREASE PRODUCTIVITY
LOWER COSTS

Let's Get Started

Choosing the right end of line automation should be a careful consideration for any business. There are several factors to consider when making your choice. But first, you need to find out what is right for you.

You need a solution.

If your facility is putting out over 100 units per minute, you need to find a way to be able to pack and seal at a rate that will match the products coming off your line. By automating the case sealing portion of packaging, you've got the potential of increasing your output by 600%.

In today's atmosphere of economic uncertainty, it is increasingly important to take a look at your present procedures, materials, and equipment. By installing a case sealer at the end of your lines, you have the potential of saving thousands of dollars each year in materials and labor, while increasing your output and production quality.

WE'RE HERE TO HELP

Automating your process has many benefits, and we're here to make sure you benefit from every single one of them.

Step 01 | **Get in touch.** Our product specialists are ready with the answers you need.

Step 02 | **Get answers.** We'll assess your needs and show you how we can help.

Step 03 | **Get a solution.** Damage prevention starts with the right solution. We'll provide that solution.

Call Us

Our knowledgable specialists are ready with solutions.

844-495-5208

Email Us

No time to call? No worries, send us an email.

knowledge@ipack.com

IPS PACKAGING & AUTOMATION

IPS Packaging & Automation
P.O. Box 2009
Fountain Inn, SC 29644

P 800-277-7007
W www.ipack.com

ISO 9001 QUALITY MANAGEMENT

SINCE 1976 EXCELLENCE IN PACKAGING IPS PACKAGING

NATIONAL VETERAN BUSINESS DEVELOPMENT COUNCIL
VETERAN OWNED BUSINESS