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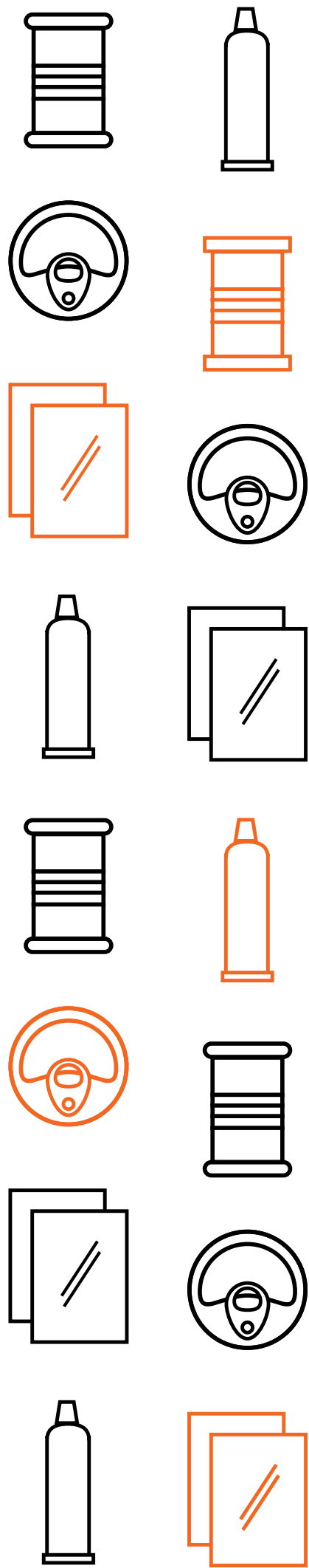
QUALITY ASSURANCE

FOR METAL PACKAGING

 www.innosens.com

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INNOSSEN IN A NUTSHELL

Our company's mission is to help the metal packaging industry produce the best quality products with the least amount of effort, money and resources.

We make this happen by providing them innovative sensors that would minimize their production downtime and maximize efficiency.

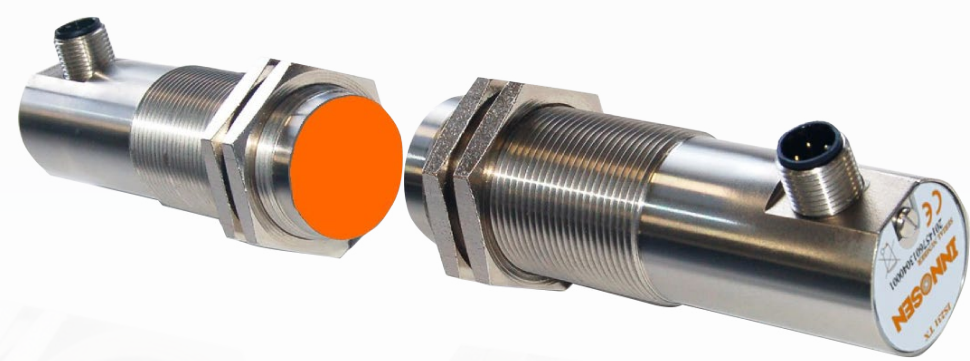
Our history involves working closely with our partners to make sure we understand their needs before developing solutions for each specific problem. In fact, our sensors are products of our close and meaningful partnership with our clients. We always introduce our products with THEM and for THEM.

Innosen has been there to deliver solutions to production issues like the formation of double sheets, skewed sheets and missing tabs to name a few. With Innosen, no matter how big or small the problem is, it's always a CAN do.

What better way to help the metal packaging industry become more efficient than providing Innovative Sensors for their production needs?

**Avoid downtime. Choose Innosen ---
YOUR PARTNER IN QUALITY.**

Ours is different.



Double Sheet Detector IS231

Fully automatic sensor with:

RETROSPECTIVE REJECT



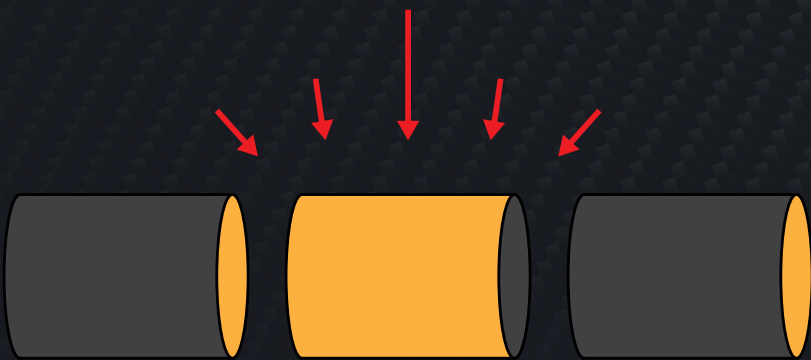
Innosens's IS231 Double Sheet Detector automatically learns the correct sheet thickness and rejects a double sheet even if the first sheet it saw was a double. This is done using the 'retrospective reject' feature.

"We use Innosen double sheet sensors on multiple machines. They have made a big difference to our productivity and product quality. Delays and costs from coatings issues and machine damage from double sheets have been significantly reduced. We would not run the line without them."

Quality Manager from Rebice in Spain  **REBICE, S.A.**
ENVASES METALICOS

TWO MOST DANGEROUS COATING PROBLEMS

1. Coating placed on the outside of the can instead of the inside.
2. Twice coated on the same side of the sheet instead of one on each side.

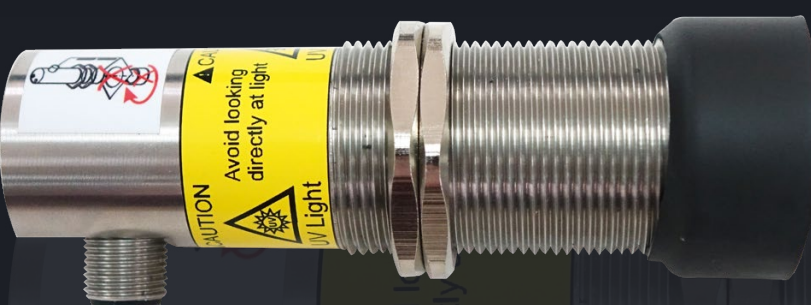


These are also called
**INSIDE - OUT
CANS**

If left undetected, these cans could result in rusty pallets of cans, contaminated products and badly corroded or blown cans after filling!

Don't let this problem damage your reputation as a CAN MAKER!

GUARD YOUR PRODUCTION AGAINST THIS NOTORIOUS PROBLEM!



INVERTED BLANK DETECTORS IS621/IS631

- ✓ Detects blanks or cans with lacquer applied on the wrong side
- ✓ Works on gold, white and clear lacquer
- ✓ Self-calibrating and self-adjusting
- ✓ No controller needed



CAN DEFECTS: CAUSES, EFFECTS, AND PREVENTION

Can makers invest in research and development to further improve manufacturing efficiency to increase productivity without necessarily increasing cost. With the use of innovative technology that assures the quality of end products, some defects still make their way into this high-speed production. These defects are caused by factors like inefficient tools, lack of quality assurance measurements and simply, machine faults.

It is imperative for can makers to recognize a defect because one undetected defective product may pose potential damage to their reputation and eventually, if uncaught, damage to the health of consumers. It can also cause expensive repair budget if a tooling breakage happens. Most importantly, low-quality cans are not ideal for can fillers to buy. Can fillers always want good looking, safe and quality products, leaving defective cans out of their options. Removing a defective item can save a life and it can always help can makers assess and improve their process. The way to do this is to always be aware of the different types of can defects and their causes:

CRITICAL DEFECTS: THESE DEFECTS ARE SERIOUS YOU CAN'T JUST IGNORE THEM!

FRACTURES, HOLES AND MISSING SEALS

How to spot these defects easily: Take a look at the opening or where the can is sealed. If there's a hole, a fracture, missing seal or anything that may cause leakage

of the product, then the defect is critical. Can opening breakage is the most famous and most dangerous type of can defect.

Here are some examples:

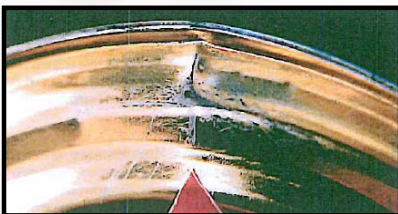


Figure 1: Minor "buckle" just extending into double seam on end of can body. (Double seam does not appear significantly affected.)

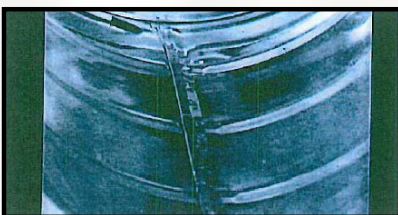


Figure 2: Can with likely loss of hermetic seal and normally a leaker due to the mislocked side seam.

Causes and prevention: Most of these defects were caused by mistakes in the seaming process such as double and sharp seams, mislocked side seams, torn flange and others. Double sheets are often the cause of seaming problems in the opening of cans. Poorly placed sheets being fed to various machines also contribute to seaming problems. The way to prevent these problems is proper detection of sheets being placed in the body making phase and welding phases of can making. Detection of misaligned, displaced or sheets with holes lead to smooth seaming and packaging process. The good news is that

CAN DEFECTS: CAUSES, EFFECTS AND PREVENTION (CONT'D)

there are now sensors that can protect, detect and prevent double or misaligned sheets being fed in the body maker machine, coater, and the thermal oven for curing.

MAJOR DEFECTS: PAY ATTENTION TO THESE DEFECTS TOO!

DISTORTED, CORRODED AND DENTED

How to spot these defects easily: The difference of these defects from the previous ones is that there are fractures in parts that are far from the can opening. Defects under this category often appear on the body of the can itself. Examples of these defects include corrosion, can stains and can body dents.

Here are some examples:

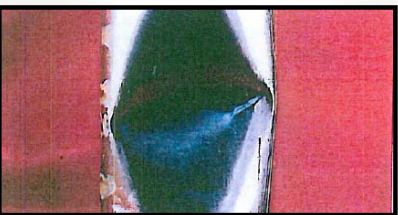


Figure 3: Major dent in center of can body. (Plate may be fractured with loss of hermetic seal).

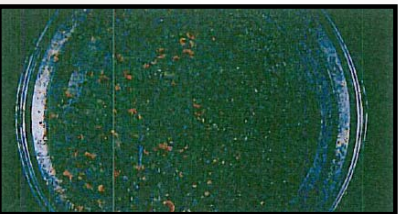


Figure 4: Severely rusted with deep pits near point of perforation.

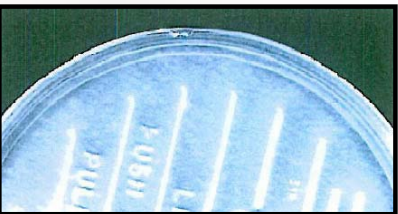


Figure 5: "Cut-over" depicting sharp seam. (Observe for potential plate fracture or loss of hermetic seal).

Causes and prevention: Can body distortion and dents are usually caused by improper stacking of cans for transportation. Cans need to be carefully arranged or stacked when being transported to prevent these defects to happen. Corrosion, on the other hand, is caused by incorrect lacquering or missing lacquer on metal sheets. Aside from sheet alignment, transfer and sheet timing detection, spotting areas on sheets with no lacquer will prevent corrosion to happen.

MINOR DEFECTS: MOST OF THESE DEFECTS ARE THE AESTHETIC PROBLEMS IN CANS

BENDED, RUSTY AND MINOR BUCKLES

How to spot these defects easily: These defects may sometimes be dangerous but are generally considered safe with proper labelling. The defects under this category include rusty surfaces, paneled container and body dent but with no damage in the opening and minor buckles on any part of the can.

Here are some examples:



Figure 6: Minor dent to double seam on end of can body, i.e., it does not appear creased or sharp.

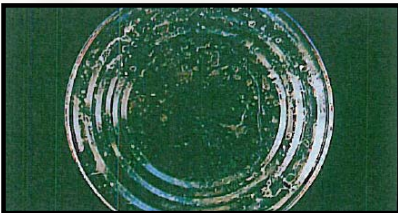


Figure 7: Surface rust and residue food cooked on end of can. (Minor external rust and light superficial pitting easily removable by light buffing is considered an insignificant defect).

Causes and prevention: Most of the causes of these defects are external and internal pressures, slight rustiness on the surface because of food spoilage residues and other external dents. These defects are slightly difficult to prevent because they are mostly acquired during transportation. Do note, however, that once the can opening is tampered, it is already considered as a critical defect. The way to somehow reduce the existence of these defects is proper storage and transportation.

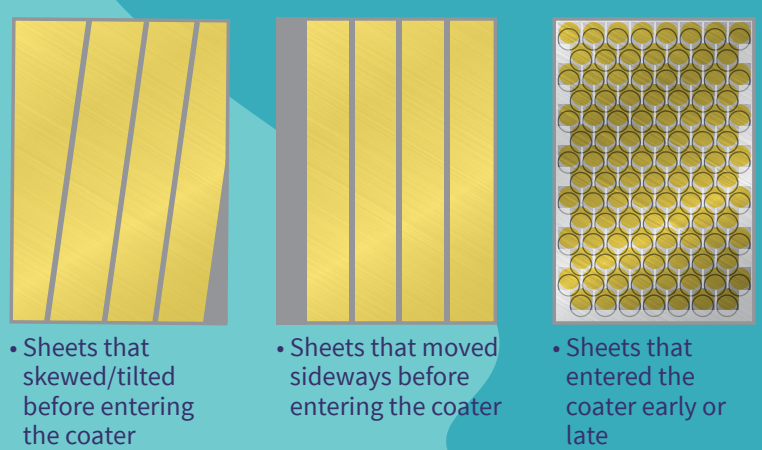
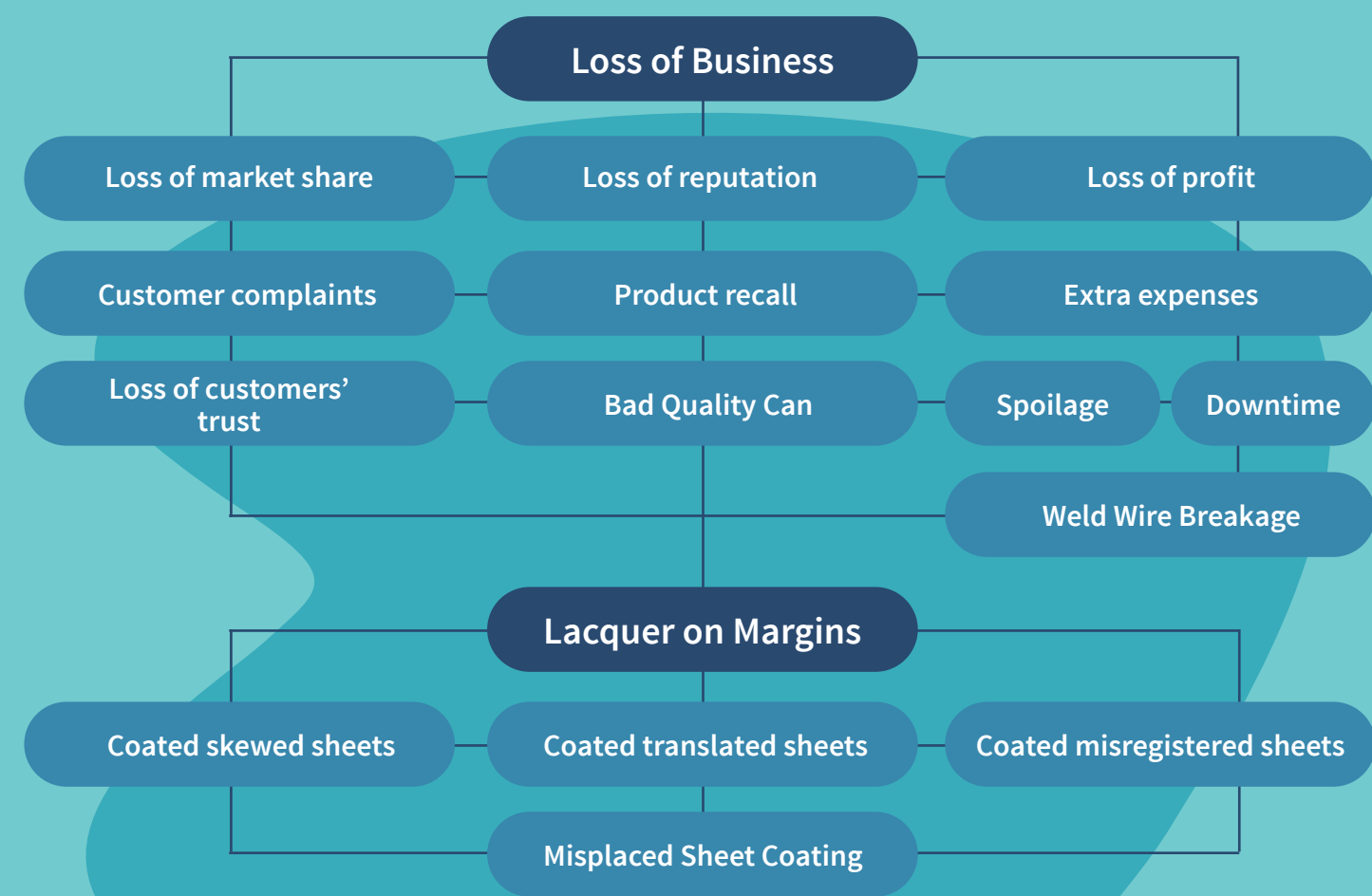
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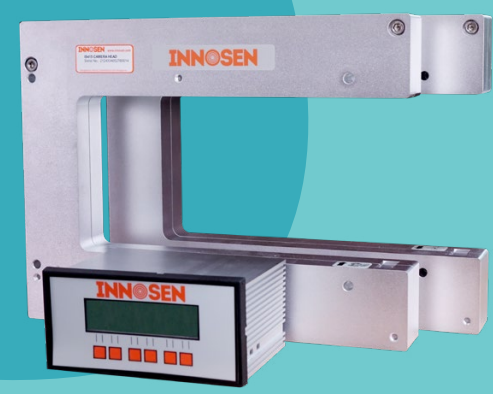
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ORIGIN OF DOWNTIME



- Sheets that skewed/tilted before entering the coater
- Sheets that moved sideways before entering the coater
- Sheets that entered the coater early or late

Detect skewed or tilted sheet before it enters the coater with the **IS415 Sheet Skew Measurement Sytem.**



**Prevent expensive downtime;
Treat the problem from its source!**

"I have had experience with this system now for many many years and still believe it to be the best solution available for Skew and Position measurement..."

Chris Debrincat, Electrical Technician of Visy **VISY**

How to choose the right tool for UV Curing Optimization

Understanding your equipment and your process is needed in producing quality products. In a UV curing process, understanding how the equipment works, the changes it undergoes and the right time to conduct equipment maintenance is very important, especially if your goal is to improve the efficiency of your current process.

Is your UV curing process optimized? Do you want to improve production/product quality without the risk of spoilage? If you answered yes to both of these questions, all the more you need to read on.

Understanding your UV process helps you avoid maintenance during your busy time!

Other benefits:

- Maintenance is always scheduled, therefore, there will be no unexpected downtime
- Reduced time figuring out what's wrong or what's not working in your process
- You can plan a course of action on what to do when something fails because you are actively monitoring your process

HOW DOES UNDERSTANDING MY UV PROCESS HELP ME SAVE MONEY?

When you have a good understanding of your UV process, you are assured that the cure quality of your product will always be in the acceptable range. This will reduce the risk of unwanted spoilage and customer complaints. You will also be able to properly plan your maintenance schedule so that unplanned downtime may be prevented.

Other savings:

- Electricity costs that's brought about by timely maintenance
- Reduces lamp replacement costs
- You can increase the line speed, thus, producing more products
- Prevents down time

HOW DO I IMPROVE PRODUCTION QUALITY BY UNDERSTANDING MY UV PROCESS?

In order to maintain and improve the quality of the curing process and the cured products, UV oven performance must be constantly monitored. Several factors affect cure performance:

- Lamp (ageing, dirty)
- Reflectors (discolouration, dirty, wrong position)
- Line speed (higher line speed)
- Thickness of curing material on the substrate
- Type and colour of curing material (some colours require more UV light to cure)
- Age of curing material
- Type of substrate
- UV lamp type

HOW DOES UNDERSTANDING MY UV PROCESS HELP ME SAVE TIME?

By understanding your UV process, you can schedule your maintenance on time. When you understand your process, you'll be able to focus on the equipment that needs maintenance, giving you control when to conduct the maintenance it needs.

So how do you gain insights about these?



How to choose the right tool for UV Curing Optimization (cont'd)

YOU NEED A TOOL TO SHOW YOU WHAT HAPPENS INSIDE YOUR UV OVEN!

- Information about your oven's power and energy
- Individual lamps and/or individual UV bands
- Graphical data of the measurements
 - ◊ You need graphs to be able to know how to correct a faulty oven. A logger without graphing will only tell you that oven is wrong but it gives you no clue as to what to do to correct it.

WHAT DOES INNOSEN OFFER?

IS310 UV LOGGER

- Reading of Power in Watts and Energy in Joules
- Readings for each individual lamp in various ovens (up to 9 lamps)
- FREE data analysis software
- Small as a credit card, it will be able to enter even the smallest openings
- Very low cost yet efficient
- Indication of percentage degradation per lamp
- Graphical Data: Has information on
- Vertical and horizontal focus
- Reflector quality
- Lamp current/ageing



IS310 UV Logger with leather pouch

EVENTS REVIEW 2019

Latamcan 2019
20-22 February, Mexico City, Mexico



IMDPA 2019
22-23 May, Chicago, Illinois



ASIA CANTECH 2019
28-30 October, Bangkok, Thailand



Meet our 2019 Asia Cantech VIP

TinPak (Pvt) Ltd

Buddhika Ambegodda
Production and Development Manager of Tinpak Ltd

"As your VIP, [the event] gave me the opportunity to be updated on the latest innovations and trends in our industry."

A Can Maker's Guide to Cutting Cost and Increasing Profits

Producing quality end products is a can manufacturer's number one goal. When good quality products are made, business relationships with clients flourish and the business keeps going. Then there's process optimization, this is where you maximize capability without sacrificing quality.

Most can makers have their own game plan in achieving these two goals: produce more and earn more. In a bid to help can makers save more from unnecessary costs due to process inefficiency, we have listed five simple guidelines to cut down costs and save more:

1. IDENTIFY THE WEAKEST LINK IN YOUR PRODUCTION

Evaluate your process before you optimize. A solution is always identified when specific problems are defined. Identify the bottlenecks in between your production phases because your process is only as strong as your weakest point.

2. REDUCING COST FAILURES

Reducing failures means not having a room for defective products in the production. Defective products don't only contribute to spoilage, delayed delivery and unplanned down time, it is also the major cause of damaged brand reputation. In order to avert these, it is recommended to know how these defects are formed and where they are formed. There are two types of cost failures due to defective products:

a. External failures - these are failures that reach the customers, e.g. product defects like badly welded cans, double body cans, cans with missing lacquer, etc. Products like these are produced when a process equipment fails or the process isn't controlled. Some examples are cans with missing lacquer, badly welded cans and double body cans. These failures are highly expensive because it can cause you a lot of customer complaints, lost reputation, poor business or even lawsuits! Preventing the occurrence of these defects is the only answer to this problem. Badly welded cans are often caused by margins contaminated by lacquer, water splashes or dirt. To solve this problem, proper detection of contaminated margins is needed. Cans with missing lacquer also result in a number of problems like corrosion and food contamination. The good news is that there are now sensors available in the market to easily detect these problems immediately!

b. Internal failures - these failures are those defective products that are detected and/or corrected before customer delivery. These failures usually cost less than external failures. Nonetheless, they still contribute to expenses that are unnecessary. Costs from these failures consist of collecting and correcting a batch of products, changing the production plan in the last minute which could lead to down time, delivery delays and more labour hours. Again, preventing these defects to form will save your company a lot of money!

3. INVEST IN QUALITY AND EFFECTIVE TOOLS

Sometimes, the way to save money is to spend it. By investing in quality tools, you are spending your money wisely. Buying

A Can Maker's Guide to Cutting Cost and Increasing Profits (cont'd)

cheap tools, which sometimes are with poor quality, has never been a good idea. Poor quality products break sooner and don't deliver 100%. You also don't get a guarantee of the measurement accuracy and reliability. As a result, you'll end up spending more to (again) buy a replacement in the future.

People choose to buy cheaper things when they care less about the goal. When a person wants to buy a car or a house, which is of importance to him, he will often think of the quality regardless of the price. So when buying quality assurance tools for double sheet detection, UV Logging or enamel rating, always ask yourself: will this tool elevate my production efficiency?

4. WORK FORCE OPTIMIZATION

In the manufacturing industry, one way to increase employee productivity is by installing user-friendly tools and equipment. These tools will help increase the productivity of people working in a factory by not requiring too much attention. For quality checking, quality assurance tools also need to be easy to maintain so that employees can save time and focus more on other important matters. In addition, using tools that don't require human intervention leads to less mistakes done by operators.

5. MAINTAIN A SIMPLER PROCESS

The simpler the process the better: simple and easy assembly of tools, simple instructions to follow and simple process error detection. Setting up control systems like sheet skew detectors and margin inspectors will help simplify and monitor the production. These control systems should also be simple to set up so that no time is wasted and efficiency is maximized. Control systems with lesser number of parts like cables and controllers also help can makers save space in the production. By using tools that are not complicated to install, maintain and calibrate, you are making it easier for your manufacturing process to produce more and earn more profits.

Earning more profit doesn't always equate to more products manufactured. It is about making more satisfied customers and wiser use of time in the production. By following the simple guidelines mentioned above, your productivity improvement and line efficiency are almost guaranteed with better products ready to reach your customers.

WHAT DOES INNOSSEN OFFER?

IS415 SHEET SKEW MEASUREMENT SYSTEM

Detects skewed or rotated sheets to avoid leading cause of downtime.



IS9015 CAN STAND FOR ENAMEL RATER

Tests lacquer quality in a wide variety of can shapes and sizes.



IS9650 HOVERPROBE

Measures flat sheets' coating thickness with world class R&R.



Know more about uncomplicated quality assurance tools! Visit www.innossen.com for your quality assurance needs. Bring back the QUALITY in quality assurance! Choose **Innossen - Your Partner in Quality**.

Sources:

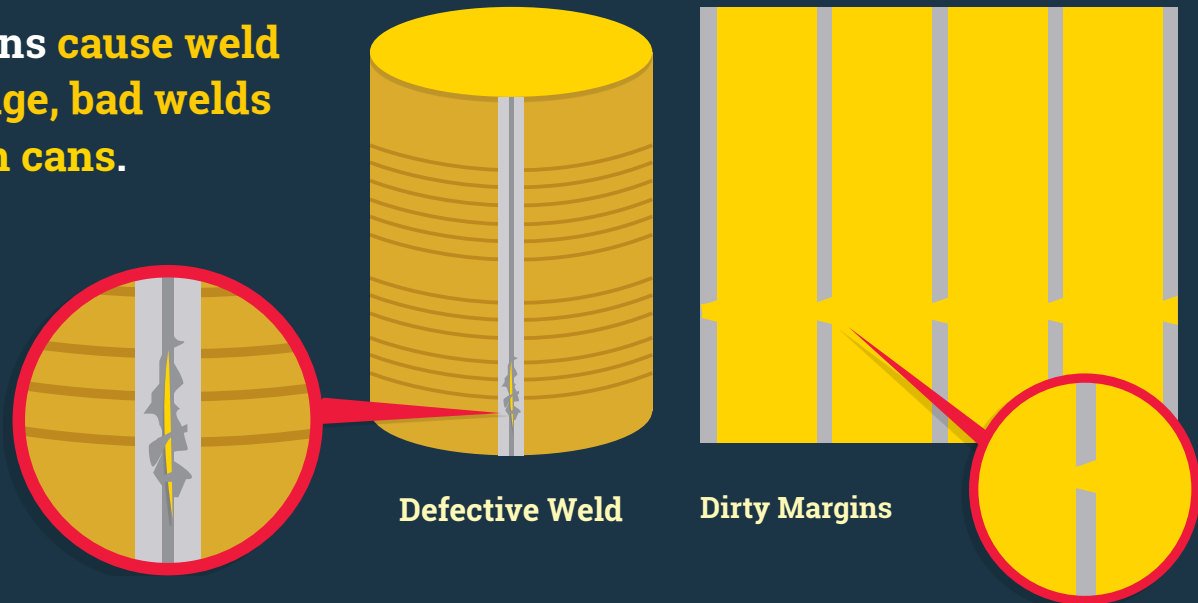
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Don't let your cans make a MESS.

Dirty margins cause weld wire breakage, bad welds and leaks in cans.



Protect your welders from contaminated margins with the IS610 Plain Margin Inspector

"Innossen's Plain Margin Inspector effectively detects lacquer and other contaminations that can potentially damage our welders."

The major concern we have (aside from the wire breakage) is that the contamination on the margin could contribute to welding defects which may reach the customer.

Weld sparks can cause burns/holes on the can when formed which may lead to leakers on filling lines of the customer. The IS610 improved weld quality, which degrades when contamination is present.

It has increased overall productivity and efficiency in our production lines by preventing delays and downtime caused by the damage."

Felimon Dexter Chua, Senior Vice President of Oriental Tin Can and Sheets Manufacturing



IS610 Plain Margin inspector



STRONG PRODUCTS BUILT BY STRONG PARTNERSHIP

About our Partner

Massilly is a food and industrial metal packaging manufacturer, which was founded by Robert Bindschedler, in France in 1911. The company was originally created as a modern service center dedicated to cutting and printing on tinfoil and aluminium but slowly expanded to become a major player in manufacturing sustainable metal packaging such as food cans, closures and steel aerosols. They are located in more than 15 countries, allowing them to easily attend to customers' needs and develop strong synergies for cost reduction with their clients. The two pioneer can manufacturing companies, Iberemba and Franpac, are also part of Massilly's world-renowned group.

Other notable details about Massilly:

- Massilly is ISO 9001 – ISO 2200 and FSSC 22000 certified.
- They also pride of their membership in numerous industry organizations including Metal Packaging Europe, SNFBM, Metal Packaging Manufacturers Association, Asociación Metalgráfica Española, European Aerosol Federation, Industrie Gemeinschaft Aerosole E.V and other significant metal packaging organizations.

What Makes Massilly Remarkable?

They provide not only reliable packaging, but also a reliable workplace for their employees

- Massilly provides its employees a safe, enjoyable and rewarding work environment. This ensures that each employees' mission to create reliable and safe products always come to fruition.

They value responsiveness and involvement with their clients

- Massilly always tries to be an involved partner by being updated on the local issues and requirements of each market. They respond to the needs of their clients as soon as possible because they recognize the demand for a fast and optimal procurement lead time.

They put innovation at the forefront of their product development

- They invest in advanced technology and a team of experts dedicated for their customers' competitive edge.
- They have consistently won awards for their products, grabbing different The Can Maker Gold and Silver Awards for 3-piece, beverage and closures categories. They have also been awarded the OSCAR De L'Emballage in 2016.

They are a company focused on sustainable development

- To quote Massilly, "We believe in our mission: to protect, preserve and enhance the product of nature and our clients, through effective and safe metal packaging."

Partners in Quality

Massilly is devoted in preserving our planet and the environment by producing sustainable packaging to the people. Both Massilly and Innosen strive to spread awareness on why metal can is the better packaging solution.

Like Massilly, Innosen's goal is to provide the most innovative and the most efficient products to help its customers. With more than 20 years of expertise in the can making industry, Innosen has proven the reliability of its quality assurance tools by helping Massilly detect various can making problems and resolving them.

Sensors that sense your needs

Part of creating sustainable solutions for the environment is reducing spoilage and scrap in a can making production. Massilly has entrusted the job of assuring uninterrupted production without sacrificing quality to Innosen. They have been using Innosen sensors for many years now which have made a huge impact in helping Massilly reach its goals.

One of the many Innosen products installed on their lines is the **IS415 Sheet Skew Measurement System**, which helped them save money from the unnecessary cost of spoilage. This tool detects skewed or tilted sheets entering the coater that could result in misapplication of coating.

Another sensor that assisted Massilly in their production needs is the **IS231 Double Sheet Detector**. By detecting double sheets, various production problems like missing lacquer on sheets were prevented. Despite many sensors available in the market, Massilly chose the IS231 Double Sheet Detector because of its numerous benefits. This sensor is fully automatic and never requires any adjustments during plate changes. It doesn't have any buttons, making it free from the risks of wrong settings from the operators. Once installed on the line, it works on its own, even calibrates on its own. In addition, this sensor doesn't have any controller and doesn't need maintenance.

Innosens's **IS610 Plain Margin Inspector** is a product that eliminates one of the most serious production problems --- dirty or contaminated margins. By detecting sheets with dirty margins before they are formed into a can, can makers are spared from the trouble of machine damage, weld wire breakage and badly welded products.

Various Innosen tools are also being used by Massilly for their production needs.

Finishing Touches

Innosens always works and communicates with their customers to make sure that the products they provide address their customers' specific production problems, no matter how simple or complicated they are. Innosen believes that whatever problem the customers have, it can always be resolved with the help of innovative solutions.

Innosens is proud to have Massilly in their roster of delighted customers. Their customers' success is the inspiration in developing more innovative sensors that would help prevent production problems.

Know how Innosen can help your production be more efficient like Massilly. Send us an email at sales_eu@innosen.com or contact us here, <https://www.innosens.com/contact/>



That **uneven lacquer application** on sheets will cost you not just more money, but more time and lost trust?

HIGHER COST

- Lacquer overconsumption
- Unnecessary costs due to spoilage

WASTED TIME

- Without proper tools to measure lacquer thickness on sheets, you will waste more time figuring out what to adjust/correct in your process.

LOST TRUST

- Sheets with thinner lacquer are prone to corrosion, resulting in customer complaints

Gain ideas on how to ensure quality and cost control through the **IS9650 Hoverprobe's Outstanding Repeatability and Reproducibility!**

- ◇ Shows which part of coating process is contributing the most variation of the measurements

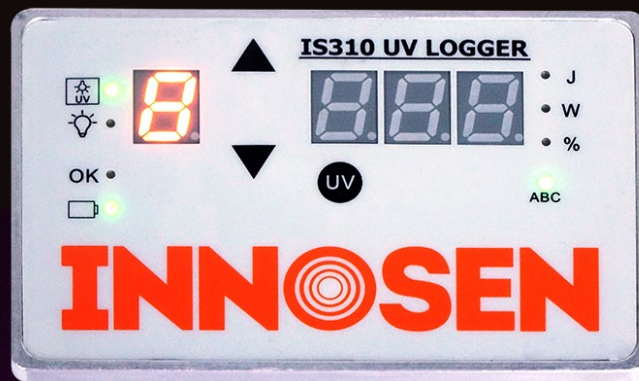


IS9650 Hoverprobe

The pioneer in coating thickness measurement that uses air bearing principle for maximum ease of use!

Replace the Lamp or Adjust the Reflector?

Guessing games are over with the **IS310 UV Logger**.



Inefficient

Wasted Energy

Undercuring

Wasted time

Wasted resource

Wasted Money

Avoid issues down the line.
Do it with **Innos**en - Your partner in quality.