

INN^{NO}SEN

NEWSLETTER MAGAZINE • JAN - SEPT • 2024 EDITION • VOL 6

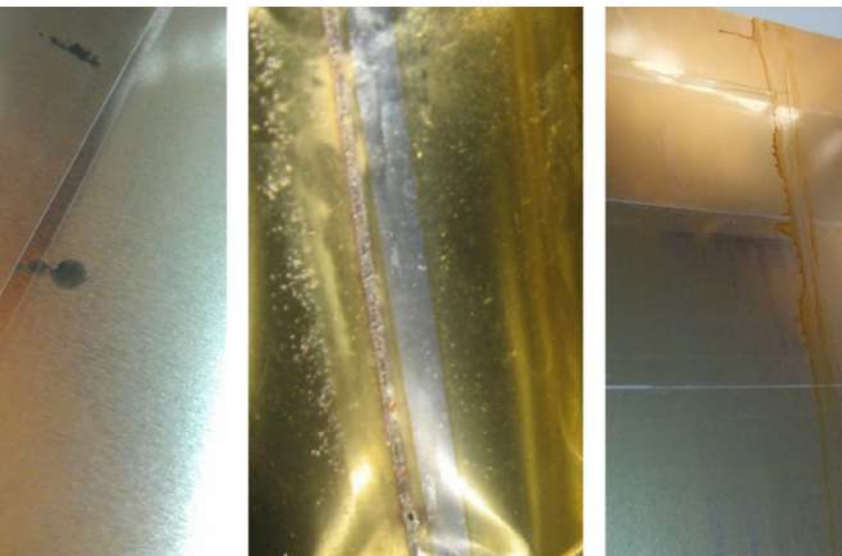


QUALITY ASSURANCE FOR METAL PACKAGING

www.innosen.com | info@innosen.com

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The Staff

Jeniña Muñoz
Editor-in-chief

Lois Abigail Ilo
Head Designer

Jeni Rose Lazarte
Editor

INNOSEN

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.

EXPERIENCE PRECISE COATING THICKNESS
MEASUREMENT LIKE NEVER BEFORE

Versatility Meets Innovation

IS9651 Hoverprobe® II has an alternative metal base which offers you the freedom to use the metal base as a probe when needed, eliminating the traditional crocodile clip. Talk about unparalleled flexibility!



**It's your tool,
your way.**

Other major upgrades in the IS9651
Hoverprobe® II include:

ROBUST CABLE DESIGN:

No more connection issues!

The Hoverprobe® II has a sturdy cable design for seamless connections and protection from electronic damage – your equipment's essential lifeline.



Redesigned Probe Tip:

Time and efficiency matter!

The Hoverprobe® II sports a new probe tip for easy extraction and quicker measurements, saving you time and boosting productivity.

Improved Metal Base:

The Hoverprobe® II's metal base is built to endure tough conditions and resist scratches, ensuring longevity and reliability.

Ready to revolutionize your lacquer thickness control?

Upgrade to the IS9651 Hoverprobe® II today and experience precision like never before.





Getting this skew defect means you need to get your sheet straight.

If you have rotated sheets, expect problems on the line such as:

- ✖ Misaligned margins
- ✖ Cans with bad welds
- ✖ Weld wire breakage
- ✖ Spoilage
- ✖ Customer complaints

How do you get your sheet straight?

Monitor your sheet's behavior as it enters the coater with the **IS416 Sheet Skew Measurement System!**

- 🌐 Ensure quick and reliable changeovers for optimal operations.
- 🔄 Access immediate data on roll position accuracy.
- 📈 Improve processes and boost plant productivity using IS416's statistical insights.
- 🏭 Achieve faster production rates by overcoming alignment challenges at increased line speeds.





Manufacturer's Guide to Cutting Cost & Increasing Profit

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.

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:

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 and delayed delivery but

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, 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 downtime, 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 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 Workforce 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 the best products ready to reach your customers.

Know more about uncomplicated quality assurance tools! Visit www.innosens.com for your quality assurance needs. Choose Innosen - Your Partner in Quality.

Meet your **2 in 1** Can End Inspector



Lost Tabs is Lost Customers

When ends with missing tabs get through your production, you will lose your customers due to quality issues!

Double Shells is Double the Problem

When double shells keep entering your conversion press undetected, they will easily damage your machine & cause quality issues as well.

Make sure these problems don't affect your profit and reputation!

Let this 2-in-1 can end inspector from Innosen alert your production line before it's too late.

The **Tab Verifier IS240** can:

- Easily find incomplete ends in just 2 milliseconds!
- Handle up to 1,000 ends per minute
- Inspect up to 4 lanes at a time with just 1 controller



*Install at the outfeed of the press for Missing Tabs
Install at the infeed of the press to detect Double Shells*

Years of enhancing performance

Evert van de Weg speaks with Innosen's Luc Nelen about his involvement in the birth of automated quality control in can making.

Written by: Evert van de Weg for cantechonline.com

Original Link: [Cantech Online – Years of Enhancing Performance](https://cantechonline.com/years-of-enhancing-performance)

Published: July 2023



In the 1970s, companies in the United States and Europe started to develop solutions for improving quality, maximising efficiency, and cutting costs on [metal packaging](#) manufacturing lines. This included solutions for the manufacture of cans and ends for food and beverages, but also for aerosols and tubes. The boom in can making and easy open end production caused by the quick development of draw and wall-ironing technology in that decade, in particular for the production of beverage cans, undoubtedly played an important role in that trend.

At the same time, brand owners of canned food and beverages became increasingly important in their markets. Poor or variable quality of the cans used added costs and put brands at risk. The last few decades of the 20th century saw a strong increase of the use of fundamental manufacturing aids in metal packaging production, such as statistical process control, process monitoring and the general strive for continuous improvement. Several companies in the USA and Europe took part in these improvement paths, such as Altek, Pressco, ISRA Vision and Prime Controls in the USA, and Heuft, Qualiplus and Sencon in Europe, to name but a few. Someone who actively took part in these developments is my former colleague at the Dutch can maker, Thomassen & Drijver-Verblifa, based in Deventer, the Netherlands, Luc Nelen.

He is now president of the company, [Innosen](#), based in Manila, the Philippines. I met him on the Innosen booth at the recent Metpack exhibition in Essen, and we had much to discuss about his journey to his current position in the much-respected company, specialising in quality assurance for the can making industry.

How did you begin your career in this specialised area?

“After finishing my degree in chemical engineering, my first job was at Philips Research in the Netherlands, where I worked on the development of the VLP, short for Video Long Play, which later became what we now know as the DVD and CD. Although I loved the challenges the work presented, it was also frustrating to sometimes see an idea you had worked incredibly hard on over a long period, rejected, either because it did not work or someone else had a better idea.

“For me, that meant I needed to move away from the more fundamental research and look at more practical engineering challenges. I found those at Thomassen & Drijver-Verblifa (TDV).”

What was the landscape of the can making market when you entered it?

“When I joined TDV in the late 70s, the company was part of the USA-based Continental Can Company. CCC at the time was the world’s biggest can company and TDV was its subsidiary in the Netherlands. At the time I joined TDV, two-piece can making was just getting started in Europe, and for all sorts of reasons, most of the two-piece cans were made out of tinplate. CCC had a lot of experience in two-piece cans, but mainly in aluminium. That meant that there were interesting process challenges I could help resolve. In the 1970s, Continental Can decided to build a factory to make two-piece cans in Wrexham in the UK.

“I joined the project team building that factory, together with colleagues from Germany and Continental’s European headquarters in Brussels. This factory had to be one that made aluminium cans, and I had to make sure the CCC experience and know-how was used in the design and operation of the Wrexham factory.

I also used the opportunity to design systems in such a way that the whole factory would be much more energy efficient.

“Once Wrexham was up and running, more two-piece can factories were built in Lint in Belgium, in Hassloch, Germany, and in Bierne, France. After that, it became quiet on the expansion front. That is when I had an opportunity to join in the diversification TDV had started.”

Entering new fields

In the 1980s, can maker, TDV, had to face saturation in the canned food market, accompanied by decreasing profits. The management decided, also under the pressure of parent company, Continental Can, to look at diversification of its activities. The management called in the internationally renowned consulting agency, Innotech, and assigned it to the task of finding activities in adjacent areas to can making technology. This resulted in the foundation of the new company, Qualiplus, which was created to develop systems for automated quality control.

How actively were you involved in Qualiplus’ inception?

“Very actively indeed. Qualiplus designed machine vision systems for high-speed packaging lines. There were naturally enough opportunities for vision inspection in the can making factories, and that is where we started. The vision systems were initially bought from the company Hajime, in Japan, and based on analog electronics, as digital was not fast enough.

Later, as the capabilities of digital processing improved, hardware was also bought in the USA and developed in-house. Inspection systems for returnable and new glass bottles, tobacco leaves and cans were the main products for Qualiplus.

After the takeover of Continental Can by Kiewit in 1984, the Qualiplus company was sold to Heuft in Germany, and I stayed on as the managing director.”

Qualiplus continued on as part of the company Heuft Qualiplus. Luc Nelen stayed on board there as managing director for several years.

What was the reason behind the shift in your career?

“Heuft was mostly interested in the refillable bottle market and my interest was more in can making. Therefore, I decided to join Sencon. They were already quite active at that time in can making. It is in this period that I designed products that many of CanTech International readers will recognise, like the Hoverprobe® and the first fully automatic [double sheet](#) sensor without any settings.

Aside from the expansion of the product range, I also expanded the company geographically by setting up offices – firstly in Spain and later, Manila in the Philippines – to be able to better serve our customer base.”

Years later, Luc again decided to take another career path.

“In 2012, I amicably split from Sencon, to be able to concentrate my efforts even more in the three-piece can market. The split enabled me to have an R&D team that is fully dedicated to the market we serve.

“The products we are working on now are generally inspired by problems our customers are facing in their day-to-day operations.

Considering that the first cans were produced over 200 years ago, it is amazing that so many challenges still remain unsolved. It is probably fair to say that the issues remaining after such a long time are not the easiest to resolve. But finding solutions by applying new technology to a mature process, to help our customers make better cans more easily, is exactly what Innosen loves doing.”

“We believe that with the offices we have in Spain, Manila, Hong Kong and more recently, Fort Collins in the USA, we are able to leverage our global footprint to the advantage of both our customers and ourselves. It enables us to procure materials and labour where the price/quality ratio is most attractive, while at the same time allowing us to provide a better service to our customers. Our team can communicate with our customers in eight different languages and we have recently been able to put this to good use at the Metpack show in Essen, Germany.”

“Apart from our Hoverprobe® in an updated version, our new products for the welder were particularly popular at Metpack. We introduced the self-calibrating IS670 Missing Side Seam Lacquer Detector, which is able to detect if the external sidestripe for the weld protecting is present, and the IS625 Inverted Can Label Detector, which can see if decorated cans are facing the right way up as they exit the welder. For the rest, it can also detect if a can is inside-out or has the decoration on the inside instead of the outside.”

“We have more exciting products coming later this year, which all address a specific need in our market. Thanks to the unwavering support of our customers and the hard work of our employees, we are looking at a bright future for all of us.”

EXPERIENCE POWER IN YOUR HANDS WITH



Innosen's IS310 UV Logger

INNOVATE WITH *Confidence*

Rely on the IS310's unparalleled knowledge to drive innovation in your UV processes. Make informed decisions backed by a wealth of data, setting new standards for excellence.

With the IS310, access data and insights on power, energy, and performance metrics for up to 9 lamps simultaneously.

Knowledge is power, and now it's in your hands!

LESS EFFORT *More Impact*

Effortlessly streamline your UV measurement routine. The IS310 eliminates unnecessary effort, allowing you to focus on what truly matters – achieving outstanding results in less time.

Anticipate

AND PREVENT ISSUES BEFORE THEY OCCUR

- ✓ The IS310 UV Logger has information about your oven's power and energy
- ✓ Tells you insights about individual lamps and/or individual UV bands
- ✓ Provides 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 there is something wrong in the oven but it gives you no clue as to what to do to correct it.

Ready to elevate your UV logging experience to a whole new level?

Contact us to inquire about the IS310 UV Logger!

Maximum Convenience

IN ENAMEL RATING

Our enamel rating adapter line has just gotten bigger.

No matter the size you're looking to rate, Innosen's Enamel Rating family has you covered! Our enamel raters can assess the coating porosity of any can, end, or tube, regardless of size, shape, or material. Convenience at it's finest.



Can Stand IS9015

Specifically for a wide variety of can shapes and sizes.



Tube Stand IS9017

Specifically for a wide variety of aluminium collapsible tubes.



Large Can Stand IS9015XXL

Specifically for drums, pails and extra-large cans.



Aluminium Capsule Stand IS9018

Specially designed for measuring the coating porosity of aluminium capsules.



End Adapter IS9020TMR

For ends, caps, cones, domes, and flat sheets of different types, materials, and sizes.



Foil Adapter IS9030

Specifically for thin & thick aluminium foils.



EOE Rivet Adapter IS9025

Specifically for the rivet area of easy open ends (EOE) of different sizes and shapes.

When paired with the SI9100 Semi-Automatic Enamel Rater, which features multiple self-test functions, you can guarantee consistent and accurate measurements every time.

Notable Features

- ✓ Dependable semi-automatic operation
- ✓ Continuous self-monitoring of electrical contacts before and during each test
- ✓ Automatic voltage adjustment for enhanced accuracy and consistent results
- ✓ Automatic vacuum control for user convenience and to prevent repetitive strain injury (RSI)
- ✓ Robust, corrosion-resistant design for extended product durability

What is a *Heartbeat Sensor* and why it matters

1

A 'heartbeat' or pulse signal is given for every sheet to determine if the sensor is working properly

2

The sensor can be used as an accurate counter; no external counters are required

3

It ensures that every sheet/end/shell is being inspected



Check out these lifelines to avoid downtime and quality issues.



Plain Margin Inspector IS610

Protects your welders from contaminated margins.



Missing Lacquer Detector IS651

Detects partially coated sheets to avoid can corrosion.



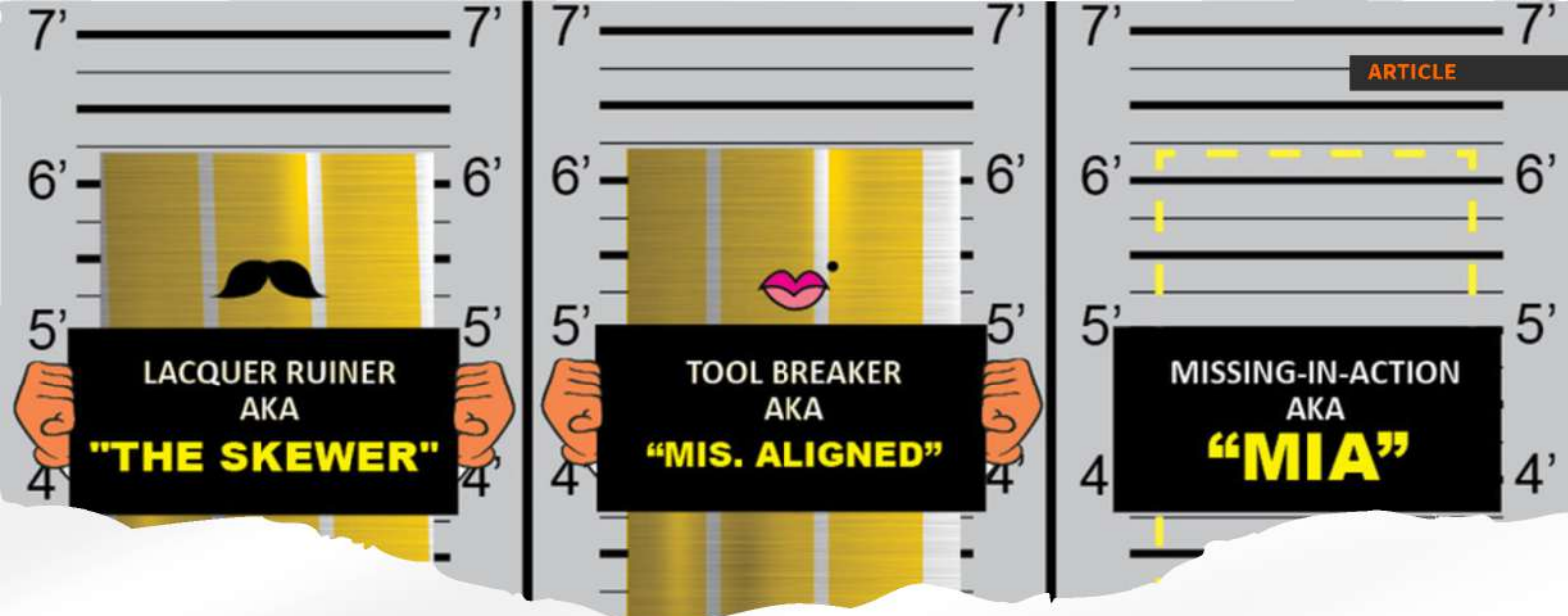
Inverted Blank Detector IS631

Detects blanks that are coated on the wrong side.



Double Sheet Detector IS231

Detects double sheets in your production line.



Who are these misbehaving sheets and how to catch them?

In every 2,000 sheets, 1 will skew, move sideways or register earlier or later as it goes through the coater.

It seems that no matter how well a process is controlled, these problems still occur and will cause issues down the production line and even the value chain. With our can maker friends, we were able to investigate the reasons why these issues happen, here's the report:

The suspects:

Lacquer Ruiner or "The Skewer"

"The Skewer" – He's so fast, you'll never know he's there!

He ruins the production line because he has totally misplaced margins caused by his sudden change of movements.

You know when a sheet goes through a coating or printing press and the leading (or trailing) edge of it should be at a 90-degree angle with the axis of the line? The Skewer always rotates and hates to be at 90 degrees. He does this to screw your entire production and increase your sheet spoilage. Beware of him as he is not easily detected and could form during the last minute of its entrance to the coater.

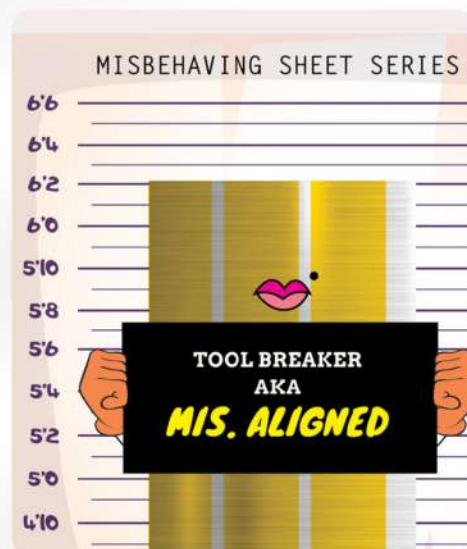


The Tool Breaker or “Mis.aligned”

“Mis.aligned” – She doesn’t mean to move sideways but she can’t help it!

She’ll blunt your tooling once you let her pass your production. She loves to miss the side guides when entering the rollers, which makes her drift sideways.

She increases the chances of breaking your weld wires because her weld margins are not properly aligned! If she succeeds without getting caught, she will cause your cans to leak and damage your tooling!



Missing-in-action or “MIA”

“MIA” – He doesn’t have a sense of time!

Spot coats and lacquer rolls should always be in sync during the coating process. MIA is either late or early, he doesn’t care about the lacquer roll and when he finally decides to arrive, he causes drama! If left undetected, you’ll end up with lots of spoilage for sure!

THE BULLSHEET SLAYERS: The best guardians of quality this industry has ever seen!

For a complete system to detect these three misbehaving sheets, use the IS416 Sheet Skew Measurement System or The SKEWminator, to exterminate The Skewer no matter where or how fast he is. It provides a complete set of data to better analyze and improve the can maker’s process capability.

An add-on to the SKEWminator is the IS430 MK II Sheet Translation Measurement or Misaligned Assassin - it kills Mis.aligned on the spot.

To complete the trinity is the PROMPTpetrator, the IS450 Sheet Registration System – it makes sure that all sheets are in perfect timing as they enter the coater.



3PC Welded Canmaking

Process Problems & Solutions

Problems per line:

- 1. Coil and Shearing Lines:** Translated coil, sheet length variations (shorter/longer sheets)
- 2. Depalletizer/Destacker/Unloader:** Double sheets
- 3. Coater:** Double sheets, misaligned margins, contaminated margins, sheets with missing lacquer, increase cost due to lacquer overconsumption, unlacquered side-seam



- 4. Curing (Wicket Oven):** Double sheets, margin contamination
- 5. Printing:** Double sheets, misaligned prints
- 6. Curing (UV Oven):** Uncured printed sheets
- 7. Slitter:** Blunting of slitter blades because of double sheets, skewed sheets
- 8. Welding:** Weld wire breakage, lacquer presence, downtime, inside-out cans, poor weld quality, inverted can labels

Recommended sensors for each line:

1. Coil & Shearing Lines

Coil Translation Measurement IS1270 MK II
On-line Sheet Length Measurement IS1261

2. Depalletizer/Destacker/Unloader

Double Sheet Detector IS231

3. Coater

Double Sheet Detector IS231
Sheet Skew Measurement System IS416
Sheet Translation Measurement System IS430 MK II
Sheet Registration Measurement System IS450
Missing Lacquer Detector IS651
Missing Side Seam Lacquer Detector IS670

4. Curing (Wicket Oven)

Double Sheet Detector IS231

5. Printing

Double Sheet Detector IS231

6. Curing (UV Oven)

Double Sheet Detector IS231
UV Logger IS310

7. Slitter

Double Sheet Detector IS231
Sheet Skew Measurement System IS416
Sheet Translation Measurement System IS430 MK II
Sheet Registration Measurement System IS450
Plain Margin Inspector IS610

8. Welding

Inverted Blank Detector IS631
Inverted Can Label Detector IS625

INNOSEN
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QUALITY MAKES QUALITY

The quality of the product you make is greatly dependent on the quality of the tools/sensors you use. Producing a can is easy but producing one with quality your customers will accept needs quality sensors.

Innovative sensors not only make quality sensors but help create an efficient process and positive production yield.

The core characteristic of Innosen sensors is quality. This is reflected in the ingenious versatility of each system that makes sure you get the value you deserve and paid for.

These sensors were designed from partnerships with can makers. You can now say that these sensors know exactly how to solve production issues whilst ensuring an uninterrupted process.

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