

I spy with my digital eye

Errors cost money, that is the same in almost any industry, but printers can at least integrate web inspection systems to help identify and eliminate and those costly errors on the web.

By Michal Lodej

There's no two ways about it, printing is a resource heavy process. As a raw material and resource-intensive industry, the search for 'energy guzzlers' within an organisation involves analysing processes, examining production paths, and scrutinising resource consumption. Since material waste is a critical aspect of printing, the search for solutions that lead to the avoidance of errors and thus to material savings is most important.

EyeC's Nico Hagemann, product management director at, said, 'EyeC has set itself the goal of reducing unintentional waste in the printing process to a minimum with its innovative solutions because reducing waste is an essential contribution to climate protection. In particular we see great opportunities in the use of inline quality control systems on the presses. This is because by integrating the solutions at different points in the production process, it is also possible to ensure different levels of material savings potential. Starting with artwork creation and pre-press, through 100% inline print control in the press, to incoming goods inspection for brand owners.'

The advantages of a 100% print inspection solution on a press in terms of waste reduction are clear: live feedback of the printing process not only provides the option of corrective action in real-time but the operator is alerted immediately in the event of an unstable process and can reduce defective material to a minimum on the fly. Furthermore, 100% control systems provide live data on printed goods and potentially overprinted areas, enabling the operator to reduce unnecessary overprints to the absolute minimum. Another advantage is that almost all print products can be checked - from brochures and labels to folding cartons and flexible packaging.

Mr Hagemann, concluded, 'What's more, ecological benefits go hand in hand with the economic advantages. Along with the material savings, other resources can be used more efficiently. If you convert the amount of waste produced into valuable production time and energy consumption, this results in time savings of hundreds of hours per press within a year.'

Two for one

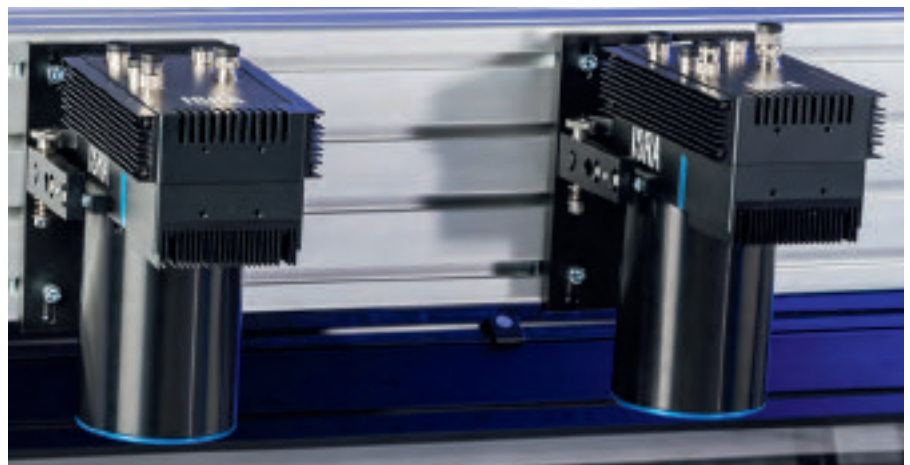
Optimising workflows in the production of flexible packaging remains a major issue for packaging manufacturers. High-performance inline inspection systems have already made a crucial contribution to maximising quality and production efficiency. ISRA VISION offers DualSTAR, a single system that combines the inspection of unprinted films, laminates, and coatings with that of printed materials for the first time.

This dual-use inspection system appeals specifically to companies involved in converting for flexible packaging. DualSTAR combines the functions of ISRA's SMASH and PrintSTAR inspection systems, achieving 100% quality control of unprinted films, laminates, coatings,

and printed materials. Now, the same inspection system can inspect both unprinted and printed substrates, for example, during rewinding, cutting, and lamination.

The surface inspection component in this dual-configuration inspection system is responsible for detecting and classifying all relevant defects during the production of unprinted web materials. The system is designed for the automatic inspection of transparent, opaque, dyed, and translucent materials and can even be used to find defects on the rewinder with outstanding results. In ongoing production of unprinted materials, the DualSTAR detects the tiniest defects, such as spots and holes, even at the highest web speeds. Typical defects in the lamination process, such as wrinkles and gaps, are also found reliably.

For printed products, DualSTAR performs continuous quality and process control of the printed image, lamination, and coating. Even at maximum speed, the high-precision system detects a wide range of print defects such as registration defects, colour deviations, defects in decorative paintwork, cold sealing defects, toner



DualSTAR, a single system that combines the inspection of unprinted films, laminates, and coatings with that of printed materials

errors, ink splashes, and missing print motifs. All print defects – either individual or repeated – are recorded and classified. The collected data is used to analyse the production process and thus improve the operations and decisions in the printshop.

Right first time

But have the needs of printers changed? What do printers need from their web inspection systems, (apart from the obvious). Antares Vision Group recently launched an enhanced version of its AV Print Inspector. Antares' Chris Collins, said, 'The major thing we see from customers is wanting flexibility in their inventory, some companies may have to throw away inventory when new graphics come in. But if label work is changed and they want to use the same inventory, we can check these labels and quickly see if they fit the customer's brief.

'I don't think from a requirement point anything has changed but it is getting harder to find qualified people. The pharmaceutical industry is our main outlet, for the most part it's a recession proof sector. Now we have seen employee shortages where everyone is looking for qualified people. If there are gaps in knowledge this is where a good inspection system can really help as printers look for ways to automate.'

Mr Collins continued, 'Getting your print correct on press is very much a "garbage in garbage out" kind of solution, in the sense that whatever you put in, you'll get the same out; if something is put in wrong, then it

will print wrong. However, if the ERP is sending feedback and knows what to inspect and there's no need to worry about quality of the operator on the press.'

Guard and defend

Using Baldwin Technology Co.'s Guardian PQV 100% Print Inspection, printers can find and remove defects quickly and monitor processes to prevent them from occurring in the first place. Guardian PQV delivers automated, inline defect detection for the entire production process on any machine and material, and in any production environment.

Guardian PQV is designed to perform without fail to the most rigorous inspection requirements, with almost any substrate, and for all printing applications including converting, label, packaging, sheet and web. The technology can also inspect special applications including holograms, coatings and varnishes, adhesives, cold seals, covert serialisation, covert security features, and more.

Systems are available for narrow to wide applications on all types of presses and rewinders, including high-speed bi-directional, sheet transports and other machine types. LED variable intensity lighting options are available in many wavelengths, including UV and IR.

Specifically designed for wide web packaging substrates, Baldwin Defender 100% Inspection is the foundation for the comprehensive defect-tracking solution. Defender Data Central and Defender Waste

Manager combine to function as a seamless defect detection and tracking workflow.

The combination of technologies enables printers to easily deliver defect-free, perfect print quality to brand owners and print customers. Empowered with valuable production data and detailed print quality reports, printers can improve their processes and put more work through the press – reducing the need for additional presses or press time.

Go turbo

'With dramatically rising prices for consumables like inks, oil-based substrates, equipment, energy and even for logistics, the return on investment of an inspection system improves directly proportional to the said price increase,' said Guy Yogev, Esko AVT senior director of product marketing.

He continued, 'Every inch of printed substrate that ends up in the waste bin is an inch too many. Print inspection solutions playing an increasingly important role, both as more businesses continue their digital transformation journey - providing advanced process control, quality assurance, and press control – and perhaps more importantly by helping reduce the contents of the waste bin at label and flexible packaging converters. This means they not only improve overall print efficiency, but also positively impact the bottom line of a print operation.'

To achieve this, Esko offers the market its AVT Argus Turbo HD, the company's flagship system for print inspection. 'With 100% inspection of the web 100% of the time, and area-based cameras that analyse images at high resolution, our solutions make it easier for packaging producers to implement high-performance quality assurance. Converters can efficiently measure print quality and colour, reliably achieving targets while detecting cumulative process errors, such as scumming, at an early stage. This enables machine operators to respond immediately and take steps to avoid waste, improving not only productivity and profitability, but also the sustainability of a process,' concluded Mr Yogev. ■



EyeC's 100% inline print control shown on press