WHITE PAPER

CHOOSING THE BEST MEAT PROCESSING CODING SOLUTION

INTRODUCTION

The UK meat sector is a hugely significant and important part of the food and drink industry, employing over 100,000 people in abattoirs, and meat processing and manufacturing plants.[1]

At a time when the meat processing industry is getting itself into shape for the future, selecting the right coding and marking equipment can play a significant part in ensuring that processors are ready for the opportunities lying ahead.

While the fall-out from the 2013 horsemeat scandal continues to cause uncertainty over long-term requirements for the labelling of processed meat, forward-thinking processors know that trends have been changing over a longer period, for example red meat consumption in the UK still remains at a lower level than the 1990s, while poultry consumption rises steadily.[2]

The industry is also expected to be hampered by the huge disruptions caused by the horsemeat scandal in the short term. Costs in the form of more expensive domestic meat inputs, supply chain overhaul and potential requirements for DNA testing will hit hard, narrowing what are already exceptionally tight margins.[4]

Profit has been low, with a margin of only 1.7% in 2013-14, and industry revenue is expected to decrease by 6.0% over the current year.[3]

Indeed, analyst Plimsoll reports that 46 of the UK's leading UK meat processors are in financial difficulty. It believes a combination of intense competition and rising cost has pushed these companies to the limit.[5]

British consumers bought nearly 8,000 tonnes less red meat in 2013 as sales of frozen burgers and ready meals containing beef slid in the wake of the horse meat scandal.[6]

And it's an industry increasingly dominated by major players and supermarkets buying up processing companies, enabling them to accurately track the provenance of their meat products.

LEGISLATIVE CHALLENGES

Following an EU-wide review of both general food and nutrition labelling legislation, the new Food Information for Consumers Regulation (FIR) brings EU rules on general and nutrition labelling together into a single regulation to simplify and consolidate existing labelling legislation and applies in all Member States, replacing current UK law after a three-year transitional period.[7]

Origin requirements have been tightened and also extended to fresh and frozen meat from pigs, sheep, goats and poultry. The Commission has introduced implementing rules which will require information on the place of rearing and place of slaughter for these meats. These rules are expected to apply from April 2015.

Depending on the type of food, consumers will continue to see 'best before' and 'use by' dates on pre-packed foods. Where appropriate, such as for meat and fish, there will also be a date of first freezing shown on food labels.

A minimum font size for the mandatory information on most food labels will aid clarity – as well as creating even more demands for the delivery of accurate codes. Under these conditions, effective coding and marking equipment must work effectively but unobtrusively – its task is simple, but failure can be costly in an industry where perishable goods cannot always be recoded, resulting in expensive scrappage.

Meat processors therefore need to be able to react quickly to changing trends, customer demands or legislation whilst keeping their costs down.

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FACTORS TO CONSIDER

Choosing the right coding solution for meat processing is not easy. No two applications are exactly the same and the following are all factors to be considered when deciding which coding solution to choose:

- Code content –codes are reasonably simple at present, but with future food labelling legislation always containing an element of uncertainty, will a simple, one-line date and batch code be sufficient in the future? What are the requirements from your packaging designers and customers? Will increased code complexity such as additional lines, or printing in different orientations be supported by the printer you choose, or will you need to purchase another printer?
- Substrate – consider the range of materials you need to code onto e.g. rigid or flexible plastic containers, coated card or labels for outer packaging, or cardboard secondary packaging. Ensure that you have each of these sample-coded by the printers you are considering. Is the code legible? Also consider the range of colours of the materials you want to code onto: could one coding solution be suitable for all?
- Line speed – will the coding solution keep up with your line speeds? Will the print be compromised if it cannot? Do you need to code across multi-lane production lines now, or will you need this capability in the future?
- Factory environment – if your coding environment is refrigerated and hygienic, for example, ensure that your solution has the right IP rating to perform reliably
- Available budget – not just the initial purchase price, but consider the overall cost of ownership and factor in reliability; by compromising on price you may pay more with unexpected breakdowns. Is leasing a better option, as a revenue rather than capital cost? During seasonal peaks in production, will rental give you flexibility to meet coding demands?
- Testing – will your coding and marking provider offer a free trial? You need to be sure the machine is capable of meeting the demands you will put on it

Linx's own Voice of Customer research in 2014 revealed that the key drivers behind coding purchases in the meat processing industry are: the ability to ensure traceability by coding accurately and reliably even in a washdown environment; selecting printers which keep working without costly downtime; and printers which are easy to use and switch between products. These factors, and others, are often inter-connected.

Accurate and reliable in washdown environments

Traceability is imperative and industry audits can happen without warning so you need to know your coding meets regulatory and customer standards at all times. IP55-rated coders help maintain the highest possible hygiene on production lines and can prevent wet conditions affecting the coder and bringing production to a halt. IP55-rated coders offer ultra-reliable operation and will maintain code integrity even in damp or refrigerated conditions.

Code accuracy is a major consideration. As legislation and consumer demand for reassurance lead to a requirement for more information and specific font sizes, the amount of space available for this functional information such as durability dates continues to be squeezed.

Different types of pack may require the code to be printed at different angles – from the top, side or bottom – so a printhead which can deliver from various angles is a huge advantage. Add a printer's potential to be switched easily from coding onto one pack and substrate, to another, and the value of versatile equipment is soon obvious.

Smudged codes result in wasted product. Specialist inks have been developed specifically to ensure the codes do not rub off, even when there is moisture on the packaging.

With the right coder, you can code consistently onto everything - from the latest flexible packaging through to traditional plastic products, secondary packaging and labels.

The wet or cold conditions on typical meat processing production lines can also affect code integrity. And if your production line handles a range of products and you need a coder with the flexibility to code across multiple lines, such as those used for packaging sliced meats in trays, then traversing printheads are what you require.

Versatile and adaptable for less downtime

Code quality needs to be consistent whatever the substrate, which can cause problems when switching quickly between products. Quick and frequent line changeovers, or product changes on the same line, mean downtime can be very expensive. Even cleaning printheads is time that can ill afford to be lost.

Coders should be able to operate across multi-lane production lines and print while traversing in both directions to maximise output.

A robust printhead and flexible conduit help ensure reliable operation in both static and moving printhead applications, for example where the printhead is traversing across lanes.

Easy-to-use coders reduce the chance of manual errors or mis-coding affecting your bottom line. As regulations change, modern coders can accommodate new message information, helping you future-proof your production line and respond to the ongoing demand for more traceability.

Ease of Use

Feedback from Linx research across the meat processing industry and other markets suggested that users prefer a simple, cost-effective solution rather than complex, feature-heavy machines.

A printer with an intuitive interface will save time during product changeovers when new codes are entered, for example, easy-to-use message selection tools such as code selection and content editing using a barcode scanner. Prompted coding fields can simplify this process even further, and remote control features will also allow code control from a central location, further reducing the risk of coding errors.

The costs of errors can be substantial, particularly if these are not detected until after product has left the factory. In a survey of the food and beverage industry for Ernst & Young, 81 per cent of respondents deemed financial risk from recalls as significant to catastrophic, while 58 per cent had been affected by a product recall event in the last five years.[8]

THE DIFFERENT CODING TECHNOLOGIES

There is a range of coding technologies available, each with its own particular strengths in different applications.

Continuous Ink Jet (CIJ)

Perhaps the most cost effective choice, CIJ maintains an important place in the market as it can print on almost any substrate. A wide range of inks is available to use with CIJ printers including inks of different colours to ensure legibility on any colour substrate and food grade inks for applications where the code may come into contact with the product itself. Many more inks are available, adding yet another dimension to the coding process.

CIJ can print from one to multiple lines of text and simple graphics at speeds of over 2600 characters per second. Further versatility is given by the compact printhead that can be situated above, beside or beneath a production line – even traversing from side to side across the line if necessary. With lighter models increasingly being produced, the CIJ printer is more capable of being quickly moved from line to line and is quicker to install and set up than laser coders.

Large Character Marking

Case coders are particularly well-suited for printing variable information onto secondary packaging such as cardboard boxes. These outer cases usually require text and graphics which are easy to see.

Case coders can print to a high-resolution quality, and are versatile enough for use on a variety of surfaces and materials. Easy to set-up and adjust, their reliability and predictable cost of ownership endear them to production lines in a range of industries. They are also a cost effective alternative to pre-printed boxes or labels.

Thermal Transfer Overprinting

TTO's wider ribbon gives it the ability to print longer messages for ingredients, logos and marketing information. This means that it delivers a variety of benefits for printing on packaging such as flow wrap plastic, creating labels or printing on gloss card. However in an industry where cost efficiency is especially crucial, it may not be the most simple or cost-effective solution for smaller operations.

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Laser

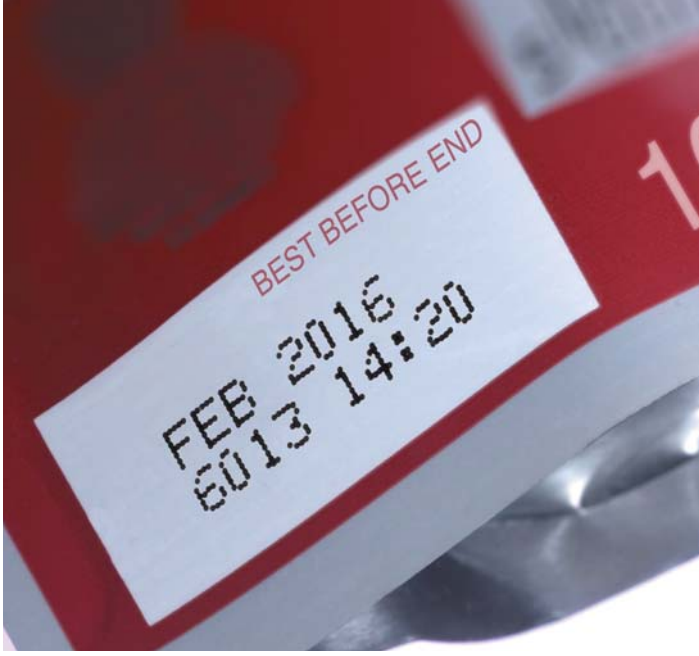
Laser coding has no ink involved in the coding process and therefore no drying time and no risk of smudging, which can be an issue on some materials where the coded product is in contact with other products or handling systems soon after coding. Laser coders are suitable for a wide range of substrates at any line speed. They are particularly attractive due to their low downtime, high-speed capability and the fact there are no consumables.

Steered beam laser systems are highly versatile as they provide clear, consistent and perfectly formed characters in a variety of fonts and message formats, and enable the use of high quality graphics and logos over relatively large print areas. They are particularly suitable where high quality codes are required, for example to blend in with the style of pre-printed packaging.

Developments in design have also recently given rise to a new generation of lower cost compact laser coders, which offer an affordable alternative to other technologies whilst still maximising functionality.

Thermal Inkjet Printers

TIJ printers also offer a flexible coding solution for both outer cases and primary packaging. Although offering a smaller print area than case coders, the high resolution coders offer superb print quality for premium packaging, and are a cost effective solution for slower production lines or where production is not 24/7.



CONCLUSION

Traceability, reliable coding in tough washdown environments, machines which minimise downtime and can switch quickly between products are all important factors to consider before making your choice.

Further, as legislation continues to alter the amount or size of information required on a pack, and the traceability requirements, be sure the printer you choose will deliver clear, robust codes at various angles onto a wide range of substrates from rigid or flexible plastics, to coated card, labels and cardboard boxes.

Printers developed for the demands of meat processing, with washdown capability, low overall ownership costs and ease of use, can help deliver the reliability and versatility needed in this industry.

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